St 3 (+2 00m)	G-1	64	G-6	G7	G8	F8	F-7	F6	F4,F1	B-1
						7 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	7 7 10000000 10000000000000000000000000	5 7 200-300 300-300 300-300 300-300 300-300 300-300 300-300	AS BELOW	AS BELOW
St: 1 (-3,00m)	AS BELOW	G 200 200 200 200 200 200 200 200 200 20	G 20 20 20 20 20 20 20 20 20 20 20 20 20	7 G = 200 200 200 200 200 200 200 200 200 200	AS BELOW	F 100,000 100,	7 F - G G G G G G G G G G G G G G G G G G	7	F - 20 - 20 - 20 - 20 - 20 - 20 - 20 - 2	25 Miles (1997)
	G S S S S S S S S S S S S S S S S S S S	G 000000000000000000000000000000000000	5 B B B B B B B B B B B B B B B B B B B	G 0000000 G 0000000 Lek 19225	G 100 100 100 100 100 100 100 100 100 10	9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7 120 100 120 100	5 5 50 50 50 50 50 50 50 50 50	130 00 00 00 00 00 00 00 00 00 00 00 00 0	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

St: 3 (-2,00m)	85,87	8A	A7	A5,A4	A1	88	84	C3,83	81	84	Н5	87	H-8
	5	AS BELOW	AS MILOW	AS BILLOW	1 S S S S S S S S S S S S S S S S S S S	1 (200,000) (200,000) (200,000) (200,000) (200,000) (200,000)	1 (200,000) (200,000) (200,000) (200,000) (200,000)		200-200 200-200 200-200 200-200 200-200 200-200 200-200 200-200	10 20 20 20 20 20 20 20 20 20 20 20 20 20	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	7 H S S S S S S S S S S S S S S S S S S S	AS BELOW
St. 2 (-6,00m)	š		1			1	1						\vdash
	B 100 100 100 500	ASBELOW	A 8 8	AS BELOW	AS BELOW	b 8 8	B 200 200	AS BELOW					
St. 1 (+3,00m)	(500:000) 4730 Link*95-225		(300x300) 4Y16 LinkY8-175			(405:300) 8730 Link:Y8-225-Y8-225	(400:300) 8736 Link YB-175						
		A 38	, <u>3</u> 8	A 3 8 8	A B B		- 	· • • • • • • • • • • • • • • • • • • •					
	100 100 300	150 150 300	150 150 20	100 100 000	150 150	200 200	200 200 400	150 150 500					
	(300:d00) 8720 Link Y8-225	(300:d30) 4Y16 Link:Y8-175	(300x300) 4Y20 LinkY8-225	(30h:300) 4Y15 LinkY8-1TS	(30h:300) 4Y15 Link:Y8-175	(405:300) 8735 Link/95-175-175	(400:d00) 8720 Link Y8-225	(300:00) 4116 Link:18-175					
	1013,1014,2013,2014,3013,3014	1016,2016,3016	1017,3017,3017	1018,1019,2018,2019,3018,3019	1020,2020,5020	1031,3031,3031	1022,3022,3022	1029,1038,3029,3030	3012	3015	3023	3034	3025

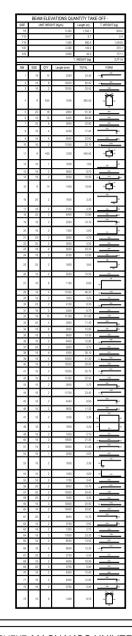
P.O BOX 136-90100, MACHAKOS,KENYA. PROJECT:

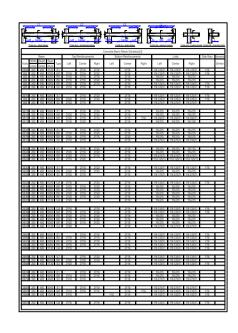
PROPOSED POST GRADUATE COMPLEX

SHEET: TYPICAL COLUMNS

DECICL DATES OF A STATE OF	DATE	SIGNATRUE
DESIGN: PATRICK MWANGI	25-05-24	p.m
DRAWN: PATRICK MWANGI	25-05-24	p.m
CHECKED:		
DRAWING NO: S001	SCALE	: 1 : 35

- Reinforcement steel to be high yield round ribbed bars of yield strength 500Nmm-2 - All reinforcement shall be inspected by structural engineer/s before concrete casting
- Concrete cover to foundations to be 50mm, columns 40mm, beams 25mm slabs 20mm and stairs 15mm.
- Concrete to beams, slabs and columns to be class 20 and to foundation class 25





			IS QUANTITY T	AKE OFF - ST	
SIZE		UNIT WEIGHT		Length (m)	T. WEIGHT (kg)
Y8			0.395	1,481.0	585.1
Y10			0.617	27.5	17.0
Y16			1.580	902.3	1,425.9
Y20 Y25			2.469 3.858	519.3 95.4	1,282.2
120			3.000	T. WEIGHT (kg)	36782
_	_				
8M	SIZE	QTY	Length (mm)	TOTAL	FORM
- 1	16	136	3100	421.60	
2	8	519	1200	622.80	-6-
3	16	90	3850	345.50	
4	8	411	1050	431.55	-6
5	8	14	800	11.20	-0-
6	25	12	4300	51.60	
7	25	12	3650	43.80	
8	20	78	4050	315.90	
9	20	54	3300	178.20	Ī
10	10	25	1100	27.50	-6
11	8	35	1650	57.75	-[]-
12	8	35	1150	40.25	-[]-
13	8	18	1960	35.10	-[-]-
14	8	18	1400	25.20	.63
15	8	18	1450	26.10	-[]-
16	16	44	3050	134.20	
17	20	8	3150	25.20	-
18	8	76	1250	95.00	-61-
19	8	42	900	37.80	-6-
20	8	45	1450	65.25	-61-
21	8	30	1100	33.00	-11-

FORM PLANS QUANTITY TAKE OFF - STOREYS: 3								
SIZE	Ī	NIT WEIG	rT (Kg/m)	Length (m)	T. WEIGHT (kg)			
Y10			0.617	4,134.0	2,551.9			
				T. WEIGHT (kg)	2,551.9			
8M	SIZE	QTY	Length (mm)	TOTAL	FORM			
- 1	10	384	5150	1977.60				
2	10	56	900	50.40				
3	10	248	3200	793.60				
- 4	10	36	1650	59.40				
5	10	20	1250	25.00	ļ			
6	10	81	1250	101.25				
7	10	81	1150	93.15	-			
8	10	36	1500	54.00				
9	10	36	1400	50.40				
10	10	66	1150	75.90	_			
11	10	66	1050	69.30	-			
12	10	80	4150	332.00				
13	10	80	750	60.00	- 2			
14	10	80	2900	232.00	_ =			
15	10	80	2000	160.00				

FORM PLANS QUANTITY TAKE OFF - STOREYS: 1							
SIZE	t	INT WEIGH	fT (Kg/m)	Length (m)	T. WEIGHT (kg)		
Y10			0.617	4,189.9	2,586.4		
		T. WEIGHT (kg)	2,586.4				
BM	SIZE	QTY	Length (mm)	TOTAL	FORM		
1	10	220	5150	1133.00			
2	10	36	900	32.40			
3	10	107	3200	342.40	_		
4	10	173	1650	285.45	_		
5	10	19	2250	42.75			
6	10	113	600	67.80			
. 7	10	19	3100	58.90			
8	10	19	1700	32.30			
9	10	19	2600	49.40			
10	10	20	2450	49.00			
11	10	40	850	34.00			
12	10	20	2500	50.00			
13	10	40	2400	96.00			
14	10	4	3000	12.00			
15	10	8	1000	8.00			
16		4	2950				
17	10	105	1250	131.25			
18	10	105	1150	120.75			
19	10	80	1500	120.00			
20	10	80	1400	112.00	-		
21	10	40	1150	46.00	1		
22	10	40	1050	42.00	4		
23	10	88	1050	90.30			
24	10	88	950	81.70	<u> </u>		
25	10	80	4150	332.00	_ =		
26	10	80	750	60.00	- 14		
27	10	19	1450	27.55			
28	10	68	1850	125.80	_ =		
29	10	19	2350	44.65			
30	10	118	1350	159.30	_ ==		
31	10	58	2150	124.70			
32	10	22	1350	29.70			
33	10	20	1450	29.00			
34	10	20	2400	48.00			
35	10	40	1450	58.00	_ =		
36	10	20	2400	48.00			
37	10	40	1350	54.00			

F	ORM PI	ANS O	UANTITY TAK	F OFF - STO	REYS: 2				
SIZE		INT WEIGH		Length (m)	T. WEIGHT (kg				
Y10			0.617	4.051.6	2.5				
	T. WEIGHT (kg)								
RM	\$17F	OTY	Length (mm)	TOTAL	FORM				
1	10	221	5150	1138.15	109				
- 2	10	36	900	32.40	_				
3	10	108	3200	345.60	-				
4	10	173	1650	285.45	-				
- 5	10	19	2250	42.75	- 10				
- 6	10	61	600	36.60					
7	10	19	3100	58.90	- 100				
8	10	19	1700	32.30	- 10				
9	10	19	2600	49.40	in .				
10	10	20	2450	49.00					
- 11	10	40	850	34.00					
12	10	20	2500	50.00	- 20				
13	10	40	2400	96.00	200				
14	10	105	1250	131.25	_				
15	10	105	1150	120.75	-				
16	10	60	1500	90.00	_				
17	10	60	1400	84.00	-				
18	10	80	4150	332.00	_ =				
19	10	80	750	00.00	. 24				
20	10	19	1450	27.55					
21	10	68	1850	125.80	- 20				
22	10	19	2350	44.65					
23	10	78	1350	105.30	- 01				
24	10	58	2150	124.70	1				
25	10	20	1450	29.00	-				
26	10	20	2400	48.00	1				
27	10	20	1450	29.00	- 44				
28	10	20	2450	49.00	- 10				
29	10	40	1350	54.00	-				
30	10	20	1600	32.00					
31	10	40	1350	54.00	_				
32	10	86	1050	90.30					
33	10	86	950	81.70					
34	10	40	1150	46.00	_				
35	10	40	1050	42.00	4				

	P.	AD FO	OTINGS QUA	INTITY TAK	E OFF
SIZE		NTWEG	HT (Kg/m)	Length (m)	T. WEIGHT (kg)
Y16			1580	1,289.2	2,037.2
				T. WEIGHT (kg)	2,037.2
Ent	SIZE	QTY	Length (mm)	TOTAL	FORM
- 1	16	90	1850	166.50	
2	16	73	2150	156.95	
3	16	112	2050	229.60	
4	16	26	2950	61.10	1
5	16	138	2550	351.90	
10	16	64	2450	156.80]
7	16	52	2250	117.00	_
80	16	34	1450	49.30	

STAIR QUANTITY TAKE-OFF											
SIZE	_	INT WEX	HT (Kgln)	Length (m)	T. WEIGHT (kg)						
78			0.395	321.6	127.1						
		T. WEIGHT (kg)	127.1								
8M	812E	QTY	Length (mm)	TOTAL	FORM						
- 1	- 8	60	1000	60.00	_						
2	8	20	4300	86.00	Ì						
3	8	16	3550	56.80							
- 4	*	16	2800	44.80							
5	**	10	1700	17.00	j						
6	8	10	1700	17.00	ļ						
7	**	10	2150	21.50	ļ						
8	- 8	10	1850	18.50	Ĺ						

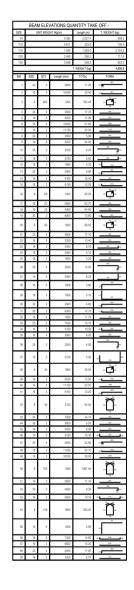
P.O BOX 136-90100, MACHAKOS, KENYA. PROJECT:

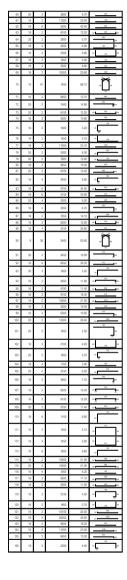
PROPOSED POST GRADUATE COMPLEX

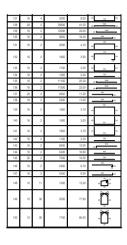
SHEET: 3 STRY BEAMS AND OTHER SCHEDULES

DEGLOS DATES OF A STATE OF	DATE	SIGNATRUE	- 1
DESIGN: PATRICK MWANGI	25-05-24	p.m	1
DRAWN: PATRICK MWANGI	25-05-24	p.m	1
CHECKED:			
DRAWING NO: S001	SCALE	: 1 : 50	

- Reinforcement steel to be high yield round ribbed bars of yield strength 500Nmm-2 - All reinforcement shall be inspected by structural engineer/s before concrete casting
- Concrete cover to foundations to be 50mm, columns 40mm, beams 25mm
- Concrete to beams, slabs and columns to be class 20 and to foundation class $25\,$







Codes							
858110-1997,858399,85 5950 Soil Parameters							
Soil Bearing Capacity (Wilm2) 180.00							
Subg	rade Reaction (kNin3)	32000.000					
Material Properties (Default)							
	Material	Reber Grade					
Columns	C16/20	Grade 500 (Type 2)					
	C16/20	Grade 410 (Type 2)					
Walts	Long. Web Reber	Grade 410 (Type 2)					
	Lat. Web Rebar	Grade 410 (Type 2)					
Beams	C16/20	Grada 500 (Type 2)					
Slabs	C16/20	Grada 500 (Type 2)					
Ribs	C16/20	Grade 410 (Type 2)					
Footings	C20/25	Grade 410 (Type 2)					
Links		Grade 410 (Type 2)					

DOWN AND		ř		Center	#	#	Center Le	# 6	s sv	a	惿	
		_				Concrete Bear	n Reber Scher	ule:121	174 24 1204			100000000000000000000000000000000000000
Bear	n		Top	Reinforcem	ents	Bott	om Reinforcen	ents		Lirks		Side Bars Re
Mark Width Dept	h Span	Туре	Left	Center	Right	Left	Center	Right	Left	Center	Right	Si
282 200 400	5000	Ξ.		2720	2925	\vdash	2716	Ė	Y8-125	Y8-125	Y8-125	-
263 200 400	5000	N	2725	2016	2725	-	20%		18-125(I) V0-110/Th	Y8-125(1)	18-125(I) V0-15270	176 V16
285 200 400	5000	N	2725	2016	2025		2/16		Y8-125	18-125	Y8-125	
288 200 400	1130	E2	2725	2720	_	_	2/16		18-125	18-125	18-125	
2990 200 500	880	CA	2000	2002	2016		2/16		Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
2510 200 400	5000	ž	2110	2110	K120H21H		2110		16-100(1)	10-100(1)	18-100(1)	110
289 200 400	5000	INT	1Y25\n2Y16	2716	21/25		21/25		Y8-125(T)	Y8-125(T)	Y8-125(T)	
288 200 400	4000	E2	2925	2/16			2016		Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
2816 200 400	1.880	CA	_	_	2/20		2016		V8.275/Th	98,275/Th	V8.275/Th	
2815 200 500	5000	N	2720	2/16	2025		2016		Y8-225	Y8-300	Y8-175	
2813 200 600	4000	INT	2725	2/16	2125W2111		2716		Y8-300	Y8-300	Y8-300	
2812 200 500	1000	E2	1725W2Y18	2125	-	Y16	2716	-	Y8-225	Y8-225	Y8-225	+
2821 200 400	880	CA	2916		2125	_	2716		Y8-275(T)	Y8-275(T)	Y8-275(T)	
2820 200 400	5000	INI	21725	2716	CYZ5WZT16		21/20		Y8-200	18-275	Y8-150	
2819 200 400	5000	INT	1125W2Y18	2/16	(Y25)(2Y1)		2125		Y8-100	Y8-175	Y10-125	
2818 200 600	4000	INI	1725/12778	2716	2Y25W211	-	2716		Y8-300	18-300	Y8-300	
2817 200 700	1000	E2	1Y25\x2Y18	2125	-	 	2116		Y8-100	Y8-300	Y8-300	+ +
	_		_	_	_		Ь—	_			_	ш
2826 200 600	880	CA			2/16		2016		Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
2825 200 600 2824 200 HI	5000	NI	27%	2016 2016	2f25 2f20	=	2716 2720		Y8-125(1) Y10-125/11	Y8-125(T)	78-125(I) 710-125/II	176 176
2823 200 700	4000	INT	2Y20	2716	2Y25W2Y16	1	2116		Y8-300	Y8-300	Y8-300	1
2822 200 500	1000	E2	1Y25W2Y16	21/25	-	Y16	2716	-	Y8-275	Y8-275	Y8-275	1 1
	•	_	_	_	_		_				_	
2830 200 400	5000	E1		2720	2725		2716		Y8-125(T)	Y8-125(T)	Y8-125(1)	Y16
2829 200 400 2828 200 500	4000	2	2Y16	2016	2016		2Y16		18-125(I) 18-125(T)	Y8-125(T) Y8-125(T)	18-125(I) 18-125(T)	116 116
2021 200	1222	178	999	_	99%		979		V 400	99 100	VV 100	776
2833 200 500	5000	DA INT	27%	2/16	2120		2016 2016		78-100(T) Y8-125(T)	78-100(T) Y8-125(T)	18-100(T) Y8-125(T)	176 Y16
2834 200 400 2835 200 400	5000	ΝZ	2720	2016	705		2016 2016		Y8-125(T) Y8,375	Y8-125(T)	Y8-125(T) Y92375	Y16
2836 200 500	5000	N	2725	2016	2720		20%		Y8-300	18-300	Y8-2/5	
2037 200 400	111301	UA.	2120				2110		10-2/3	10-2/0	10-2/3	
2838 200 500	1370	CA.	2916		2725		20%		18-125(1)	Y8-125(1)	18-125(I)	176
2849 200 400 2840 200 400	5000	N	272	2016 2016	2025		2016 2016		Y8-100(T)	Y8-100(T)	Y30-125(1) Y8-100(T)	176 716
2841 200 400 2842 200 500	5000	NI E2	2725	2016	2125	-	2016	=	Y8-125(1) Y10-125(1)	Y8-125(1)	Y8-125(1) Y10-125(1)	Y16 Y16
2844 200 400 2865 200 400	5000	E)	2725	2716 2716	2725	_	2716		18-125(I) 18-100(I)	Y8-100(1)	18-125(I) 18-100(I)	176 176
2846 200 400 2847 200 400	5000	NI N	2725	2Y16 2Y16	2725	_	2/16 2/16	_	Y8-100/Th Y8-125/Th	Y8-100(T) Y8-125(T)	Y8-100/TI Y8-125/TI	Y16 Y16
2963 200 400	5000	E2	2925	2720			2(20		Y8-100(T)	Y8-100(T)	Y8-100(T)	
2850 200 400	2080	E1		2/16	2/20		2/16		Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
2862 200 400	2930	E2	2920	2016	_	_	2016	_	Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
2851 200 700	5010	Ε1		2/16	2/16		2016		Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
2002 200 400	30101	52	21.0	2120	_		2110		10-2/3	10-2/3	10-2/3	
2853 200 400	5010	68	2Y20		2/16		2/16		Y8-275	Y8-275	Y8-275	
2854 200 400	2080	ΕT	_	2716	2720		20%		18-125(I)	Y8-125(1)	18-125(I)	176
2855 200 400	2930	N	2Y20	2716	2/16		2/16		Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
2857 200 500	5000	E	2716	2018	2110		2/16		Y8-300(1)	Y8-300(T)	Y8-300(1)	110
2000 200 1	1000	200	_	_	200		9994		Ve tour	V9 935/71	Ve titem	
2889 200 500	1130	<u>E2</u>	2920	2716	61.69		2716		Y8-275(1)	Y8-275(T)	Y8-275(1)	
2000 200 1 400	1460	51	_	2000	9996		9/14		V0.455/**	V9 +95/**	V9.1507	V46
2882 200 400	2200	Ñ	2725	2/16	2/16	=	2/16		Y8-275	18-275	Y8-275	110
zest 200 400	1300	ŁZ.	2916	2116	_	_	2/16	_	18-275	18-2/5	18-2/5	
2864 200 400	5000	SS		2/16			2/16		Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
200 00 100	Table 1		_	9/14	_		2/20		V9 1507	V9 1957**	VS HEAT	992
and 40 40	12000	- 00	_	- 2119	_		- 4141	_	- (0-1/3(I)	(0-1/2(1)	10-1(3(1)	110
28/1 200 400	2000	CR			2720		2716		18-125	18-125	Y8-125	
2873 200 400	50001	CA	27%	_	2716	_	27%	_	Y8-275	18-2/5	Y8-275	_
2872 200 400	4000	INI.	27%	2716	2720	-	2716		18-2/5(I)	Y8-275(1)	18-2/5(I)	V46
-0.00 400	- 000		- 4/87	_	_		A/19		- rise(90t))	- r n-1991()	- Coe1981)	- 116
28/4 200 400	5000	C8	27%		2016		2016		Y8-275	18-2/5	Y8-275	
2878 200 400	50001	CA	2716	_	2/16		2716		Y8-275	Y8-275	Y8-275	
2877 200 400 2828 200 400	5000	NI	2Y16 2Y16	2016	2016	=	20% 20%		Y8-275 Y8-275	18-275 18-275	78-275 78-275	\blacksquare
2875 200 400	5000	ČA	2/16	41.7	****		2/16		Y8-275	18-275	Y8-275	
283 200 20	887	CA		_	2716		2019		18-125(1)	Y8-125(11	18-125(1)	176
2879 200 400	5000	N	2/16	2/16	2/16		2/16		Y8-275	18-275	Y8-275	
2881 200 400 2881 200 400	4000	ČÄ	2720	2/16	4120		2018		18-2/5 18-2/5	18-2/5	10-2/5 Y8-2/5	
			2000		7000	.==			- No. 2077	10.400-		
100 J 43	1130	LO	41.10	_	4119		2119		(0-1/2)(I)	(0-1/2(1)	10-1/2(1)	110
2967 200 400	880	68	2416		2/16		2/16		Y8-275	Y8-275	Y8-275	
2980 200 80	11197	DR.	_	_	20%		20%	_	78.725	98.126111	78.725I**	
	21130	·	_	_				_	(I)	or read)		
	1370	C8	2716				2016		Y8-275	18-275	Y8-275	
2884 200 400			_	_	2716	_	2716		Y8-125	18-125	Y8-125	
2884 200 400 2885 200 400	1370											
2884 200 400 2885 200 400	1370	C8							_			
2884 200 400 2885 200 400 2886 200 400	1370	C8 C8	2/16		2/16		2/16		Y8-275	Y8-27S	Y8-275	

P.O BOX 136-90100, MACHAKOS,KENYA. PROJECT:

PROPOSED POST GRADUATE COMPLEX

SHEET:

BEAMS BAR SHEDULES REBAR DETAILS

	DATE	SIGNATRUE
DESIGN: PATRICK MWANGI	25-05-24	p.m
DRAWN: PATRICK MWANGI	25-05-24	p.m
CHECKED:		
DRAWING NO: 2S001	SCALE	: 1 : 50

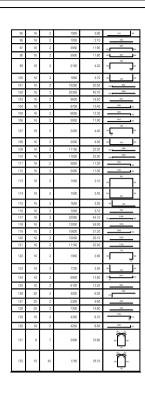
NOTES

Reinforcement steel to be high yield round ribbed bars of yield strength 500Nmm-2
 All reinforcement shall be inspected by structural engineer/s before concrete casting

Concrete cover to foundations to be 50mm, columns 40mm, beams 25mm slabs 20mm and stairs 15mm.

- Concrete to beams, slabs and columns to be class 20 and to foundation class 25

SIZE	L	INIT WEIG	HT (Kg/m)	Length (m)	T. WEIGHT (kg)
Y8			0.395	2,663.3	1,052
Y10			0.617	78.8	4
Y10			1.580	1,550.9	2.450
			2.469		2,400
Y20				178.9	441
Y25			3.858	166.4	642
				T. WEIGHT (kg)	4,635
BM	SIZE	QTY	Length (mm)	TOTAL	FORM
		-			400
- 1	20	2	7300	14.60	11 E
2	15	6	10250	61.50	900
3	15	2	10300	20.60	
,	10	- 4	10300	20.00	
4	8	1049	1500	1573.50	
5	15	- 4	4250	17.00	450
6	20	2	2950	5.90	260
7	15	4	11100	44.40	
8	15	2	5350	10.70	
9	25	2	2950	5.90	200
10	15	4	4250	17.00	- 00
- 11	20	2	2800	5.60	366
12	46	4	2650	10.60	
	- 10	_			200 30
13	15	2	1250	2.50	
14	15	6	1900	11.40	100
					_
15	15	4	1850	7.40	100 100
16	25	2	2900	5.80	200
17	16	8	4100	32.80	
17	16	4			_
18	15	- 4	5350	21.40	es
19	8	291	1400	407.40	-3
20	25	22	2850	62.70	
21	15	4	1900	7.60	- 100
22	15	22	4300	94.60	- 00
23	20	- 4	6800	27.20	06 0
24	25	8	2850	22.80	260
25	15	4	5000	20.00	_
26	15	2	5900	11.80	
27	8	359	1200	430.80	
28	15	2	1150	2.30	
29	20	2	2900	5.80	200
30	15	2	5100	10.20	- 60
	- 10				
31	15	2	5200	10.40	110
32	16	2	1900	3.80	60 100
33	16	2	2150	4.30	GS 000
34	55	2	1100	2.20	100
35	20	2	3200	6.40	300
					60
35	15	2	10400	20.80	1060
37	15	6	5300	31.80	
38	8	86	1800	154.80	
39	16	2	5800	11.60	on 10
		_			-
40	25	2	5850	11.70	20 00
41	20	4	2850	11.40	260
42	15	2	10100	20.20	- 100
					_
43	20	2	2600	5.20	_==
44	15	2	3650	7.30	
45	15	2	6550	13.10	60
45	20	2	2450	4.90	200
46	20	2	2450	4.90	
47	16	10	1100	11.00	200
48	15	2	11550	23.10	100
	15	4	11600	46.40	165
49					300
49 50	25	4	4150	16.60	100
	25 16	4	4150 2700	16.60	360



52					
52	16	4	3350	13.40	260
53	25	2	2850	5.70	200
54	16	2	11650	23.30	40 4 1006
55	25	2	4250	8.50	
56	16	2	3300	6.60	
57	25	2	2950	5.90	
58 59	16 16	2	4250 6100	8.50 12.20	
	-	-		_	40
60	20	2	5700	11.40	200
61	20	2	6850	13.70	40 to
62	16	2	5300	10.60	
63	16	2	1550	3.10	20 00
64 65	20 16	2	7500 9650	15.00 19.30	
66	20	2	9650	11.30	400
67	20	2	6700	13.40	200
					- CH - CH
68	16	4	6350	25.40	30 30
69	16	4	5850 5250	23.40	20 00 10
70 71	16 16	4	5700	21.00	
72	16	6	5150	30.90	010
73	16	4	6200	24.80	
74	16	2	5350	10.70	
75	16	2	10250	20.50	- NO
76	16	2	5150	10.30	
77	20	6	2750	16.50	-
78	16	2	4450	8.90	400
79	16	2	5250	10.50	
80	16	2	6600	13.20	00 10
81	16	2	10150	20.30	1046
82	16	2	10250	20.50	X1 000
83	16	2	11850	23.70	-
84	16	2	9400	18.80	
85	25	2	3100	6.20	- 10
86	16	2	2050	4.10	en _{en} en
87	16	4	6200	24.80	***************************************
88	16	- 4	5750	23.00	20 00 10
89	16	2	1550	3.10	20 20
90	16	2	1450	290	200 200
91	16	4	1800	7.20	06
92	16	2	10000	20.00	
93	8	50	1600	80.00	-4-
94	16	2	10750	21.50	an an

	Codes					
	BS8110-1997,BS6399	(BS 5950				
	Soil Parame	ters				
Soil Be	earing Capacity (kN/m2)	180.00				
Sub	grade Reaction (kN/m3)	32000.000				
h.	Material Properties (Default)					
	Material	Reber Grade				
Columns	C16/20	Grade 500 (Type 2)				
	C16/20	Grade 410 (Type 2)				
Walls	Long. Web Rebar	Grade 410 (Type 2)				
	Lat. Web Rebar	Grade 410 (Type 2)				
Beams	C16/20	Grade 500 (Type 2)				
Slabs	C16/20	Grade 500 (Type 2)				
Ribs	C16/20	Grade 410 (Type 2)				
Footings	C20/25	Grade 410 (Type 2)				
Links	-	Grade 410 (Type 2)				

	T.	L2 Carter	1	F	Center Lo	7	SL SM		#	· #
TYPE 61 - END SPAN	7096	NT - NTERIOR:	IPAN.	100		1,1 1	TYPE SO - SMOLE	SPAN I	PE CA CANTLE	SER TYPE CIR. CAND
Beam	Top	Reinforcem	ents	Concrete Bean Both	n Reber Sched om Reinforcen	lule:[1] nents		Links		Side Bars Re
fark Width Depth Span Type	Left	Center	Right	Left	Center	Right	Left	Center	Right	Si
1B2 200 400 5000 E1	2920	2Y20	21/20		2Y16	=	Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
194 200 400 5000 NT	2Y20	2Y15	2125 2125		2716 2716		Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
186 200 400 1130 CA	2Y20	2110	2120		2716		Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
1890 200 500 880 CA			2120		2716		Y10-125(T)	Y10-125(T)	Y10-125(T)	Y16
1810 200 500 5000 INT	2120	2116	2Y29nZY20		2716		Y8-125(1)	18-125(1)	18-125(1)	Y16
189 200 400 5000 INT	2125/02120	2116	2125		2Y25	_	18-120	Y8-125	Y8-125	
168 200 400 4000 E2	2725	2116			2716	_	Y8-125(1)	18-125(1)	18-120(1)	Y16
1B16 200 400 880 CA 1B15 200 500 5000 INT	2Y16 2Y25	2Y16	2Y25 2Y25/n2Y16		2Y16 2Y16		Y8-275(T) Y8-225	Y8-275(T) Y8-300	Y8-275(T) Y8-300	-
1814 200 500 5000 INT	2Y25\n2Y16	2Y16	2125		2Y20	\vdash	Y8-125(T)	Y8-300(T)	Y8-100(T)	-
1B13 200 400 4000 INT	2Y25	2Y15	2116		2Y16		Y8-175	Y8-275	Y8-275	
1B12 200 400 1000 CA	2Y16				2716	_	Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
1821 200 400 880 CA 1820 200 500 5000 NT	2Y16 2Y20	2Y15	2Y20 2Y25/nZY16		2Y16 2Y16	-	Y8-275(T) Y8-225	Y8-275(T) Y8-300	Y8-275(T) Y8-175	\vdash
1819 200 500 5000 INT	2Y25in2Y16	2Y16	2125		2720	\vdash	Y8-100(T)	Y8-300(T)	Y8-100(T)	
1818 200 400 4000 INT	2Y25	2Y16	2116		2Y16		Y8-175	Y8-275	Y8-275	
1817 200 500 1000 CA	2Y16				2Y16		Y8-300	Y8-300	Y8-300	
1826 200 700 880 CA 1825 200 500 5000 NT	2Y20	2Y15	2120		2Y16 2Y16	\vdash	Y8-125(T) Y8-100(T)	Y8-125(T) Y8-100/T1	Y8-125(T) Y8-100(T)	Y16 Y16
1824 200 500 5000 NT 1823 200 500 4000 NT	2Y25 2Y25	2Y15 2Y15	21/25 21/16		2Y16 2Y16		Y8-100 Y8-300	Y8-100 Y8-300	Y8-100 Y8-300	
1822 200 400 1000 CA	2Y16				2716		Y8-275(T)	Y8-275(T)	Y8-275(T)	
1B30 200 400 5000 E1	2920	2Y25 7Y35	21/20 21/20		2Y16 2Y16		Y8-175 Y8-120Th	Y8-275 Y8-12971	Y8-225 Y8-125/Th	YIE
1828 200 400 4000 NT	2Y20 2Y20	2Y16	2120		2Y16 2Y16	=	Y8-125(T) Y8-125(T)	Y8-125(T)	Y8-125(T) Y8-125(T)	Y16 Y16
					2017		OR POPUL		00.000	039
1832 200 400 1370 CA	2716		21/25/02/110		2716	_	Y8-125(1)	18-125(1)	18-125(1)	Y16
1833 200 400 5000 INT	2Y25\n2Y16	2Y16	2125		2Y16	_	Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
1835 200 400 5000 NT	2725	2Y16 2Y16	2125		2716 2716		Y8-125(T)	Y8-125(T)	18-120(I) 18-125(I)	Y16 Y16
1B37 200 400 1130 CA	2Y25	2110	2120		2Y16		Y8-175	Y8-175	Y8-175	
1B38 200 500 1370 CA			2125		2716		Y8-225(T)	Y8-225(T)	Y8-225(T)	
1B39 200 500 5000 INT 1B40 200 500 5000 INT	2Y25 2Y25	2Y16 2Y16	2125		2Y16 2Y16		Y8-225(T) Y8-200	Y8-225(T) Y8-300	Y8-225(T) Y8-275	
1B41 200 500 5000 NT 1B42 200 500 5000 E2	2Y20 2Y25	2Y16 2Y20	21/25		2Y16 2Y20		Y8-250 Y10-125(T)	Y8-300 Y10-125(T)	Y8-300 Y90-125(T)	Y15
1B44 200 400 1370 CA	2Y16	_	2125	_	2Y16	_	Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
1865 200 400 5000 INT 1846 200 400 5000 INT	2Y25 2Y25	2Y15 2Y15	2125 2125		2Y20 2Y16		Y8-100(T) Y8-100(T)	Y8-100(T) Y8-100(T)	Y8-100(T) Y8-100(T)	Y15 Y15
1B47 200 400 5000 INT 1B63 200 400 5000 E2	2Y25 2Y25	2Y16 2Y20	2125		2Y16 2Y20		Y8-125(T) Y8-100(T)	Y8-125(T) Y8-100(T)	Y8-125(T) Y8-100(T)	Y16
1845 200 400 5000 SS	_	2716		_	2716	_	Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
		1007			1017		UE 2007	UI DOOR		
1846 200 400 3000 33	_	2119			2110		16-100(1)	10-100(1)	10-100(1)	110
1B50 200 400 2080 E1 1B62 200 400 2930 E2	2Y16	2Y16 2Y16	2916		2Y16 2Y16		Y8-125(T) Y8-125(T)	Y8-125(T) Y8-125(T)	Y8-125(T) Y8-125(T)	Y16 Y16
1B51 200 400 5010 E1		2Y16	2120		2Y16		Y8-125(T)	Y8-125(T)	Y8-125(T)	Y15
1B52 200 400 5010 INT 1B53 200 400 5010 E2	2Y20 2Y20	2Y16 2Y16	2120		2Y16 2Y16		Y8-275 Y8-275	Y8-275 Y8-275	Y8-275 Y8-275	
195/1 200 1 400 1 2000 1 51		70.00	2916		2716		VE 136/T	VI.1957)	VE.19071	VIE
1855 200 400 2930 NT	2Y16	2Y15 2Y15	2916		2Y16 2Y16		Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
1B57 200 400 5000 NT	2Y20 2Y15	2Y15	2Y16		2Y16 2Y16		Y8-275 Y8-275	Y8-275 Y8-275	Y8-275 YR-275	
1889 200 500 1130 E2	2Y25	2Y16			2Y16		Y8-275	Y8-275	Y8-275	ш
1B59 200 400 1500 E1	3010	2Y15	2Y16		2Y16		Y8-275(T)	Y8-275(T)	Y8-275(T)	\vdash
1861 200 400 1300 E2	2Y16	2Y15	2176		2116 2716		18-275 Y8-275(T)	Y8-275(T)	Y8-275(T)	
1864 200 400 5000 SS		2Y16			2Y16		Y8-125(T)	Y8-125(T)	Y8-125(T)	Y16
1966 200 400 50m ss	-	2716	_		2716	\equiv	Y8-125/T1	Y8-125/T1	Y8-125/T1	Y16
	_				2019	_	Op resid	VA / ****	OR FRANCE	Vir.
1871 200 400 2000 CA	2Y16		zr16		2Y16		Y8-125(T) Y8-125(T)	18-125(T) 18-125(T)	18-125(T) Y8-125(T)	Y16 Y16
1873 200 600 5000 CA	2Y16		2116		2Y16		Y8-300	Y8-300	Y8-300	
1872 200 600 4000 NT 1887 200 400 1000 CA	2Y15 2Y15	2Y16	2116		2Y16 2Y16	E	Y8-300 Y8-125(T)	Y8-300 Y8-125(T)	Y8-300 Y8-125(T)	Y16
1878 200 500 50m CA			2116		2716	\equiv	Y8-301	Y8-300	Y8-30°	
1877 200 500 5000 NT 1876 200 500 5000 NT	2Y16 2Y16	2Y15 2Y15	2Y16 2Y16		2Y16 2Y16		Y8-300 Y8-300	Y8-300 Y8-300	Y8-300 Y8-300	\vdash
1875 200 400 5000 CA	2Y16				2Y16		Y8-275	Y8-275	Y8-275	-
1883 200 400 880 CA	20/10	OV.	2716		2Y16		Y8-275	Y8-275	Y8-275	
1980 200 400 5000 NT	2Y16 2Y16	2Y16 2Y16	2116		2716 2716	=	Y8-275 Y8-275	78-275 78-275	Y8-275 Y8-275 V8-275	\vdash
AU 40U CA	4f1b	_		_	4116	_	18-2/5	10-2/5	10/2/5	
1874 200 600 5000 CB	2Y15		2Y16		2Y16		Y8-300	Y8-300	Y8-300	\vdash
1867 200 400 880 CB	2Y16		2116		2Y16		Y8-275	Y8-275	Y8-275	
			2116		2Y16		Y8-125(T)	Y8-125(T)	Y8-125(T)	
1B58 200 400 1130 CB					1017	_	V8.275	Y8-275	Y8-275	
1868 200 400 1130 CB	2Y16									
1868 200 400 1130 C8	2716		29/16		2110		VI 27*	VI.72*	VI.77	
1888 200 400 1130 CB 1884 200 400 1370 CB 1886 200 400 1000 CB	2Y16 2Y16		2116		2716		Y8-275	Y8-275	Y8-275	
1858 200 400 1130 C8 1884 200 400 1370 C8 1885 200 400 1000 C8	2Y16 2Y16 2Y16		2Y16 2Y16		2716 2716 2716		Y8-275 Y8-275	Y8-275 Y8-275	Y8-275 Y8-275	

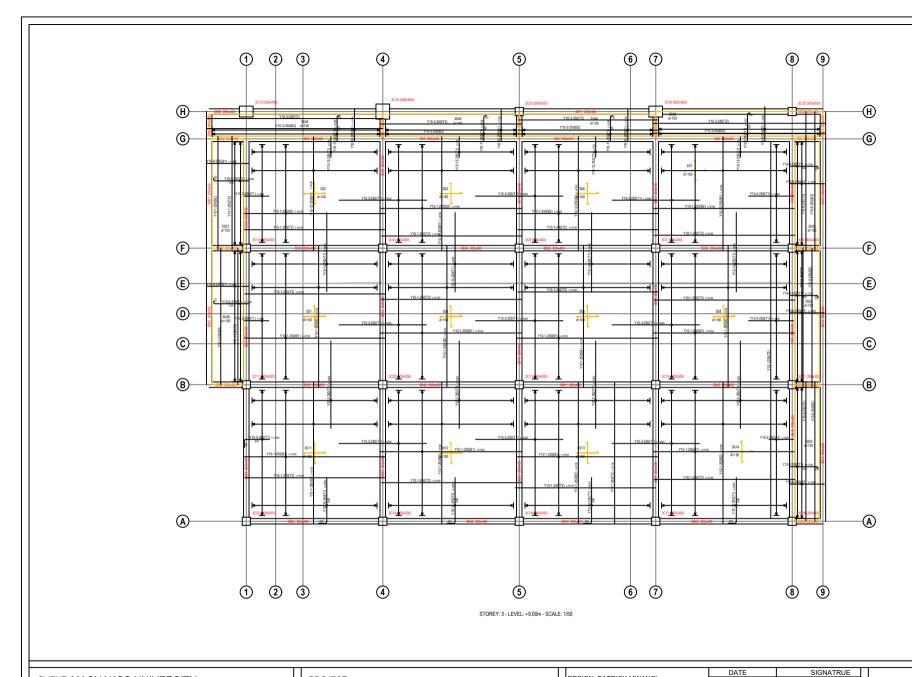
P.O BOX 136-90100, MACHAKOS,KENYA. PROJECT:

PROPOSED POST GRADUATE COMPLEX

SHEET:
BEAMS BAR SCHEDULES REBAR DETAILS

	DATE	SIGNATRUE
DESIGN: PATRICK MWANGI	25-05-24	p.m
DRAWN: PATRICK MWANGI	25-05-24	p.m
CHECKED:		
DRAWING NO: 1S001	SCALE	: 1 : 50

- Reinforcement steel to be high yield round ribbed bars of yield strength 500Nmm-2 - All reinforcement shall be inspected by structural engineer/s before concrete casting
- Concrete cover to foundations to be 50mm, columns 40mm, beams 25mm
- Concrete to beams, slabs and columns to be class 20 and to foundation class 25



P.O BOX 136-90100, MACHAKOS, KENYA. PROJECT:

PROPOSED POST GRADUATE COMPI

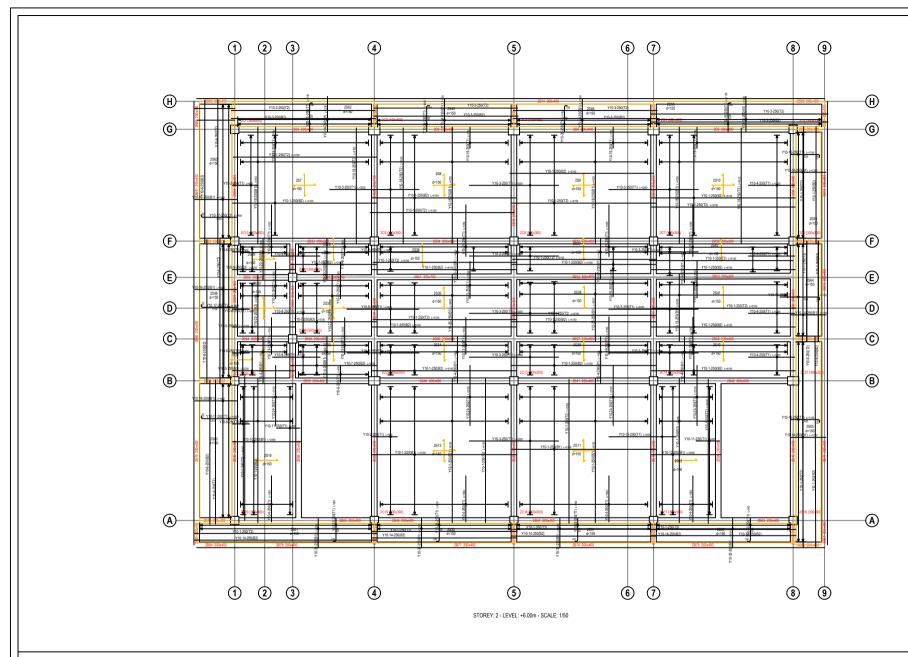
SHEET: ROOF SLAB REBAR DETAILS

	DEGIGN: 1 XTNIGK MV
LEX	DRAWN: PATRICK MW
	CHECKED:
	DRAWING NO: 3S003

DESIGN: PATRICK MWANGI 25-05-24 p.m 25-05-24 p.m

SCALE: 1:35

- Reinforcement steel to be high yield round ribbed bars of yield strength 500Nmm-2 - All reinforcement shall be inspected by structural engineer/s before concrete casting
- Concrete cover to foundations to be 50mm, columns 40mm, beams 25mm
- Concrete to beams, slabs and columns to be class 20 and to foundation class 25



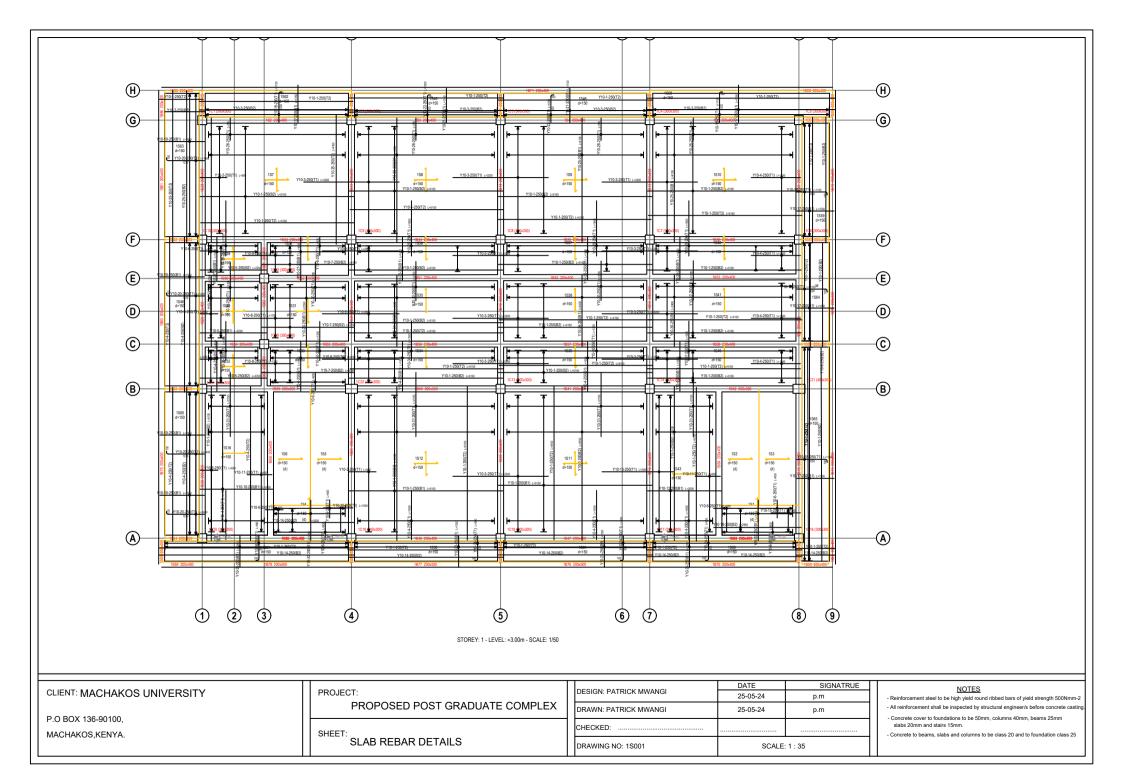
P.O BOX 136-90100, MACHAKOS, KENYA. PROJECT:

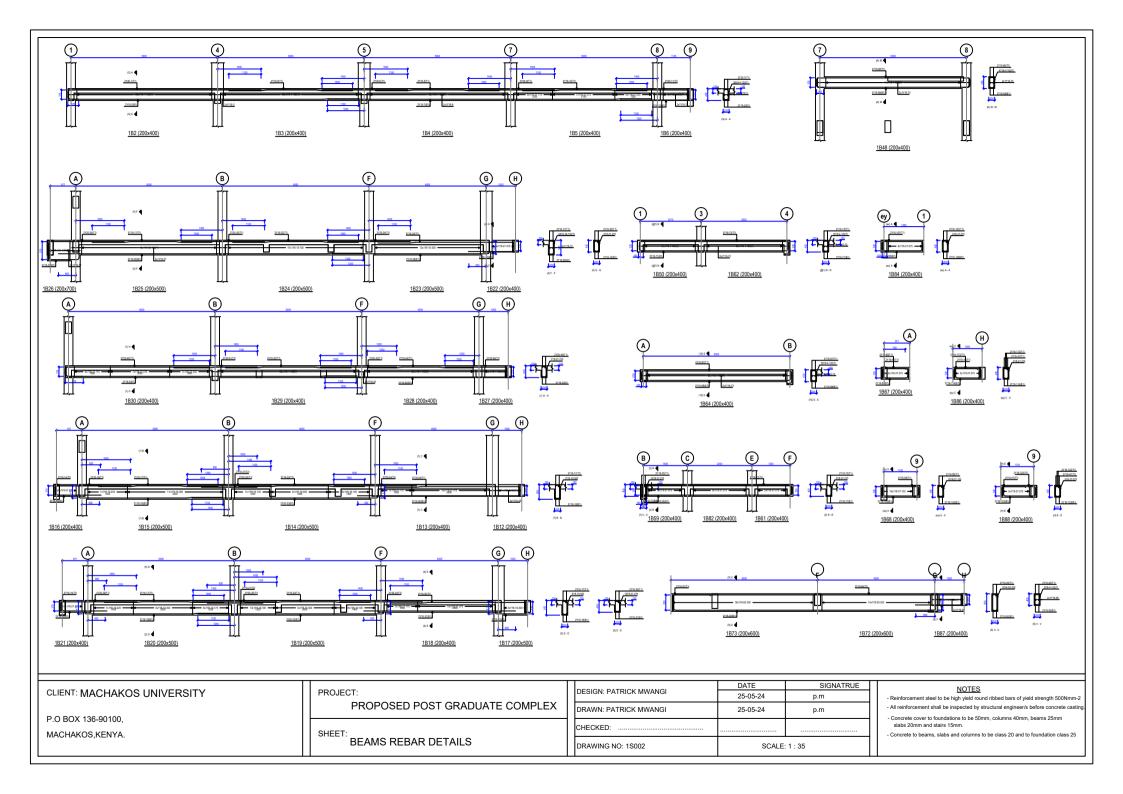
PROPOSED POST GRADUATE COMPLEX

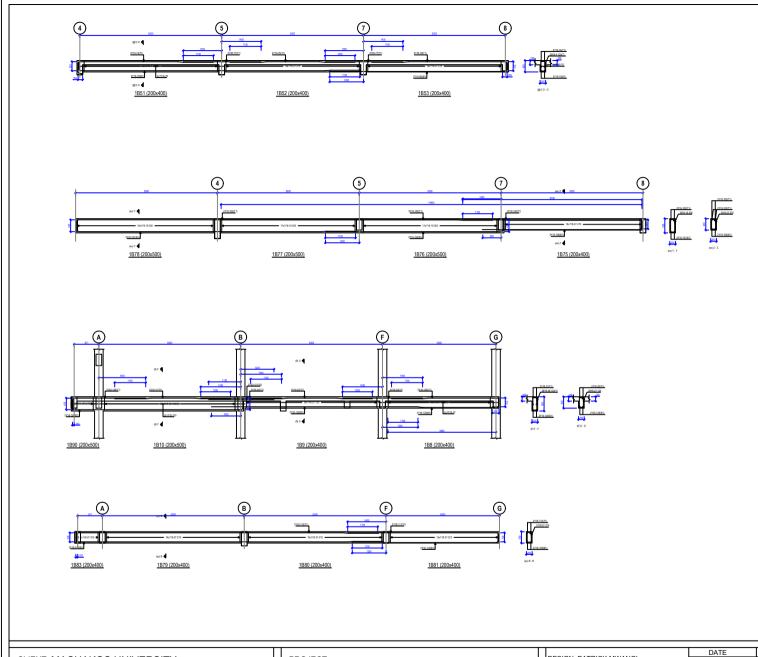
SHEET: SLAB REBAR DETAILS

	DATE	SIGNATRUE
DESIGN: PATRICK MWANGI	25-05-24	p.m
DRAWN: PATRICK MWANGI	25-05-24	p.m
CHECKED:		
DRAWING NO: 2S002	SCALE	: 1 : 35

- Reinforcement steel to be high yield round ribbed bars of yield strength 500Nmm-2 - All reinforcement shall be inspected by structural engineer/s before concrete casting
- Concrete cover to foundations to be 50mm, columns 40mm, beams 25mm
- Concrete to beams, slabs and columns to be class 20 and to foundation class 25





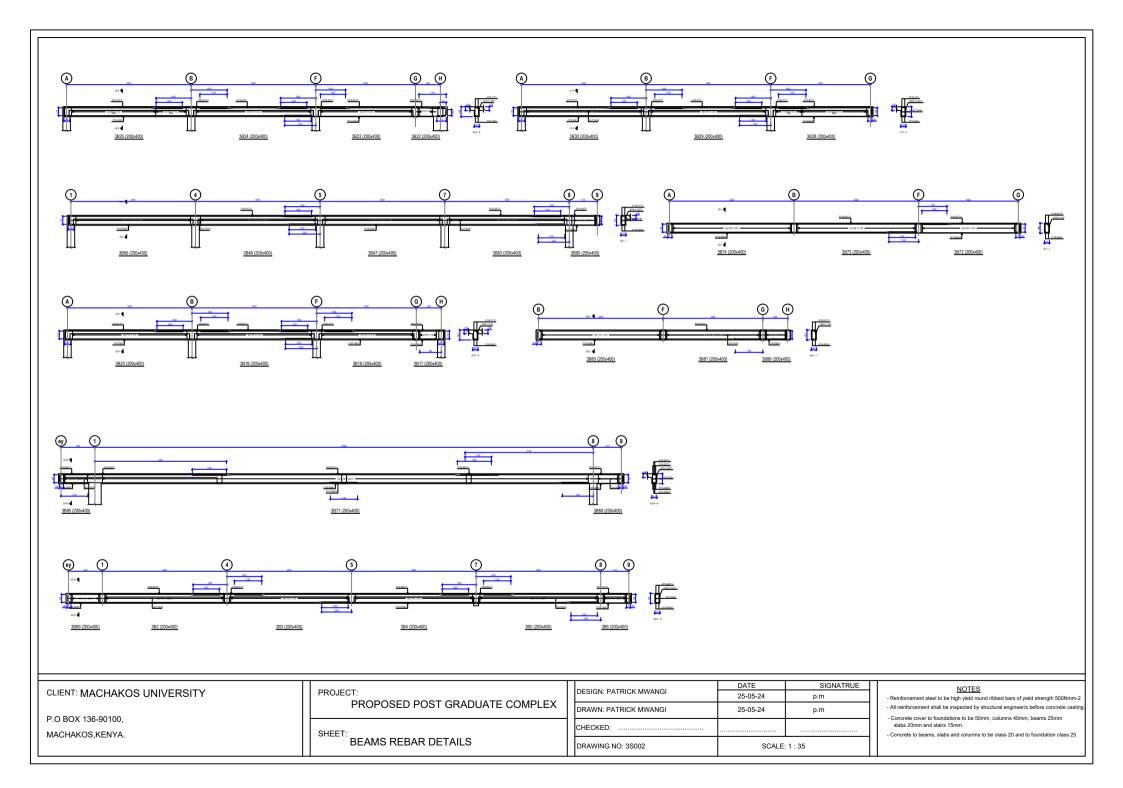


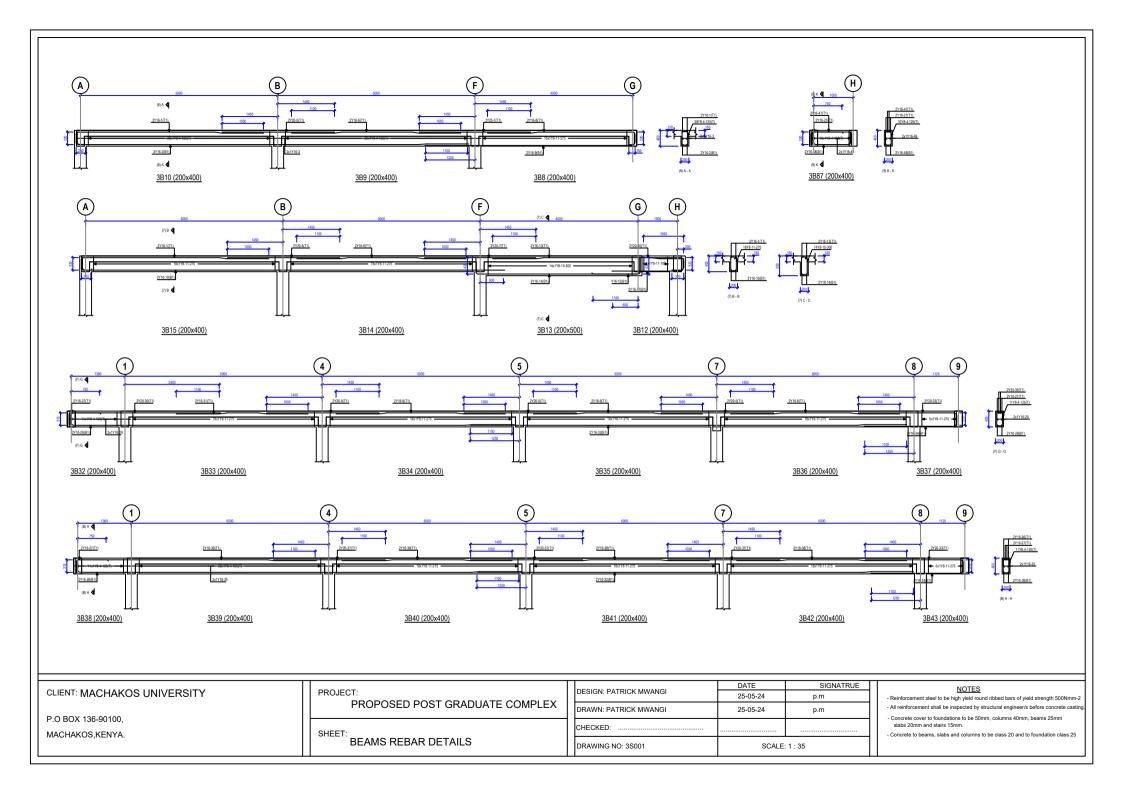
P.O BOX 136-90100, MACHAKOS,KENYA. PROJECT:
PROPOSED POST GRADUATE COMPLEX

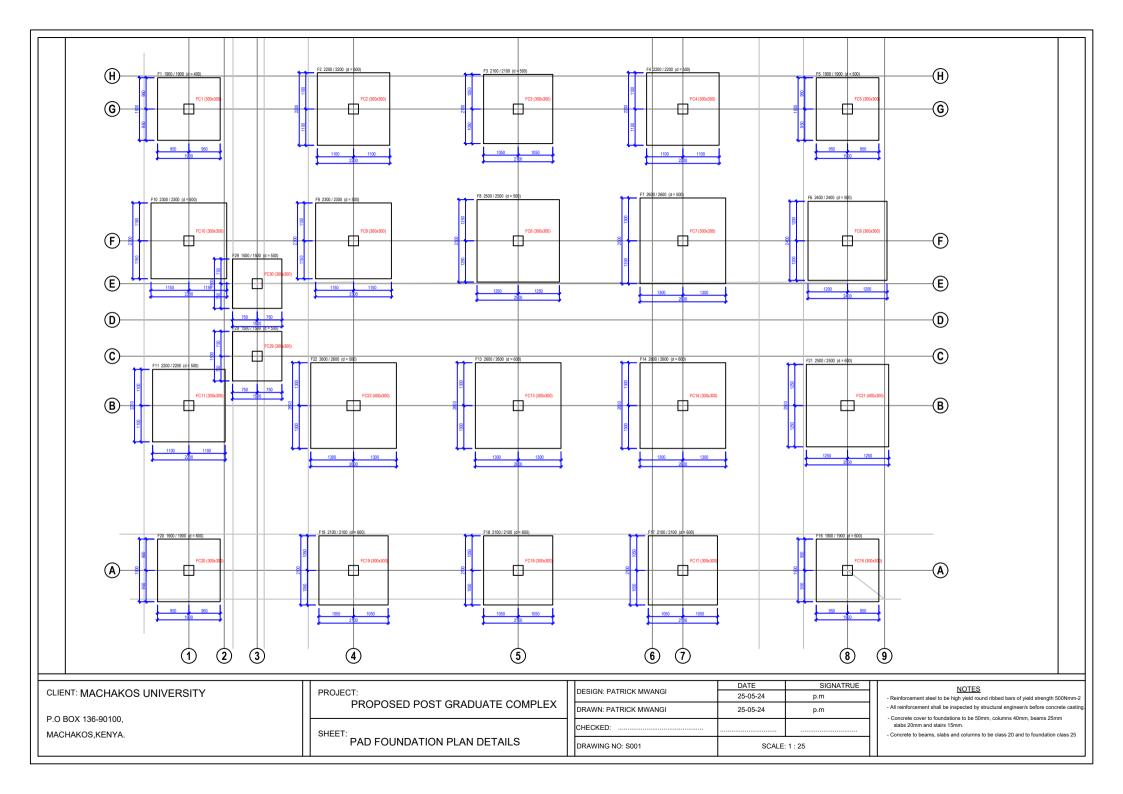
SHEET: BEAMS REBAR DETAILS

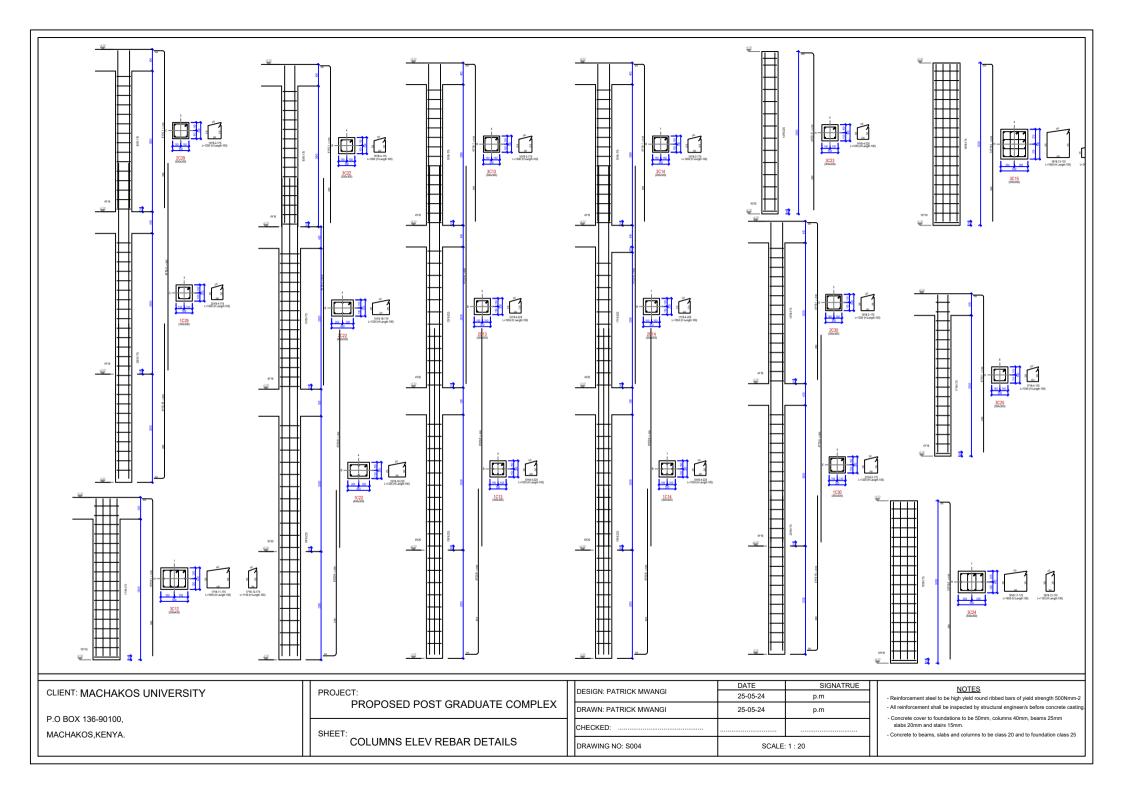
DESIGN BATTONIA MANAGE	DATE	SIGNATRUE
DESIGN: PATRICK MWANGI	25-05-24	p.m
DRAWN: PATRICK MWANGI	25-05-24	p.m
CHECKED:		
DRAWING NO: 1S003	SCALE	: 1 : 35

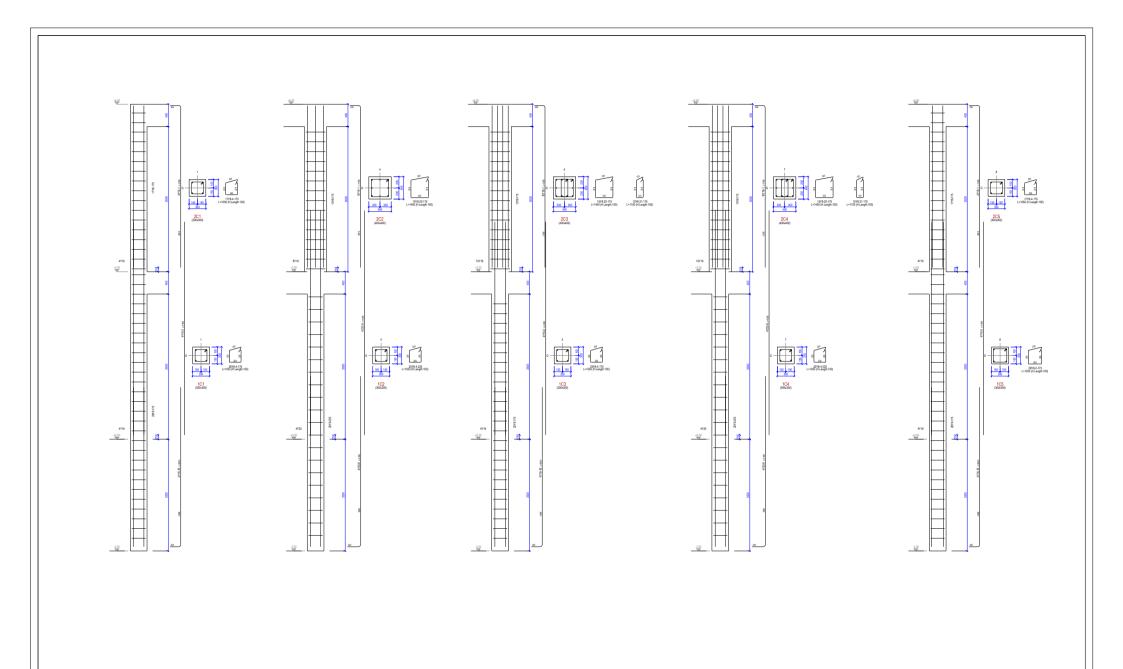
- Reinforcement steel to be high yield round ribbed bars of yield strength 500Nmm-2
 All reinforcement shall be inspected by structural engineer/s before concrete casting
- Concrete cover to foundations to be 50mm, columns 40mm, beams 25mm slabs 20mm and stairs 15mm
- Concrete to beams, slabs and columns to be class 20 and to foundation class 25











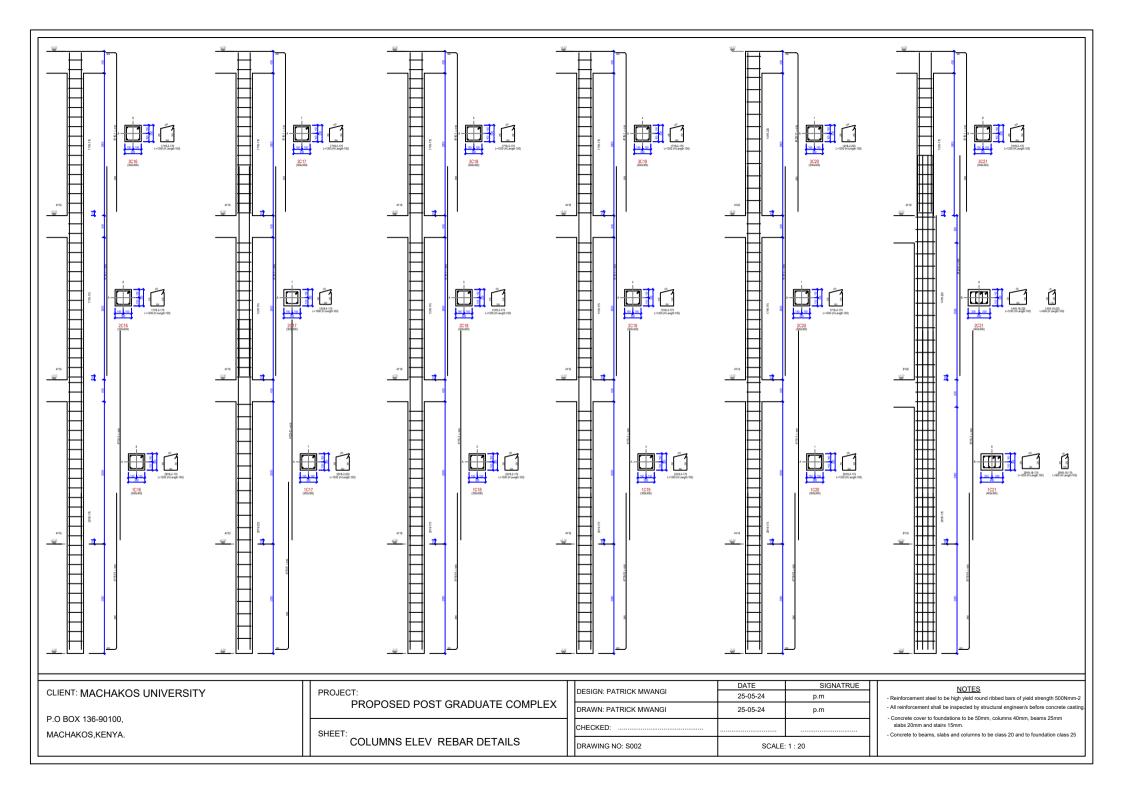
P.O BOX 136-90100, MACHAKOS, KENYA. PROJECT:

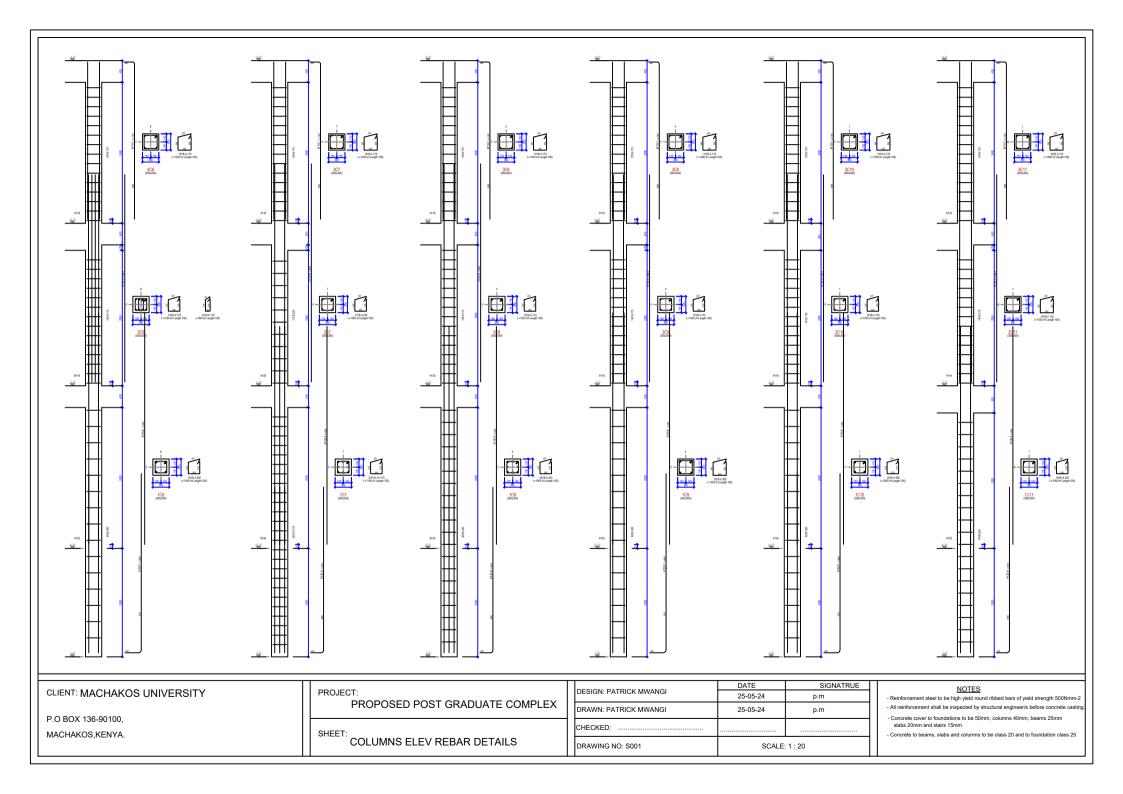
PROPOSED POST GRADUATE COMPLEX

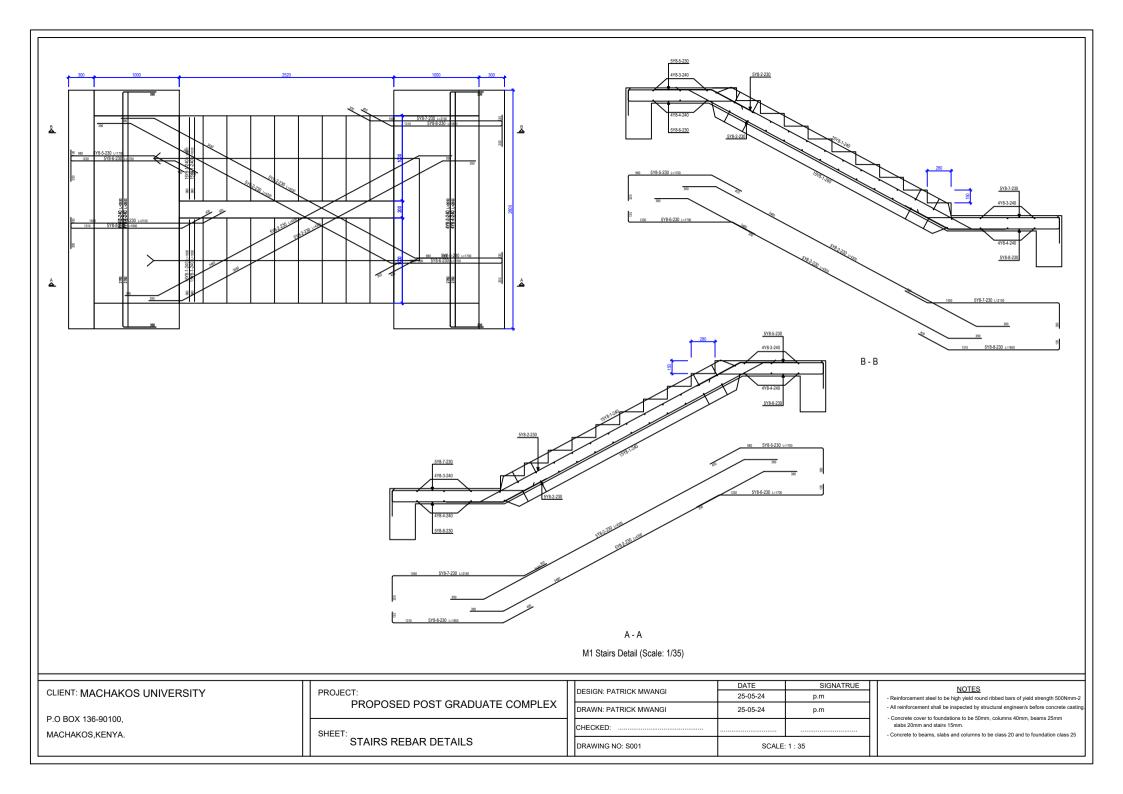
SHEET: COLUMNS ELEV REBAR DETAILS

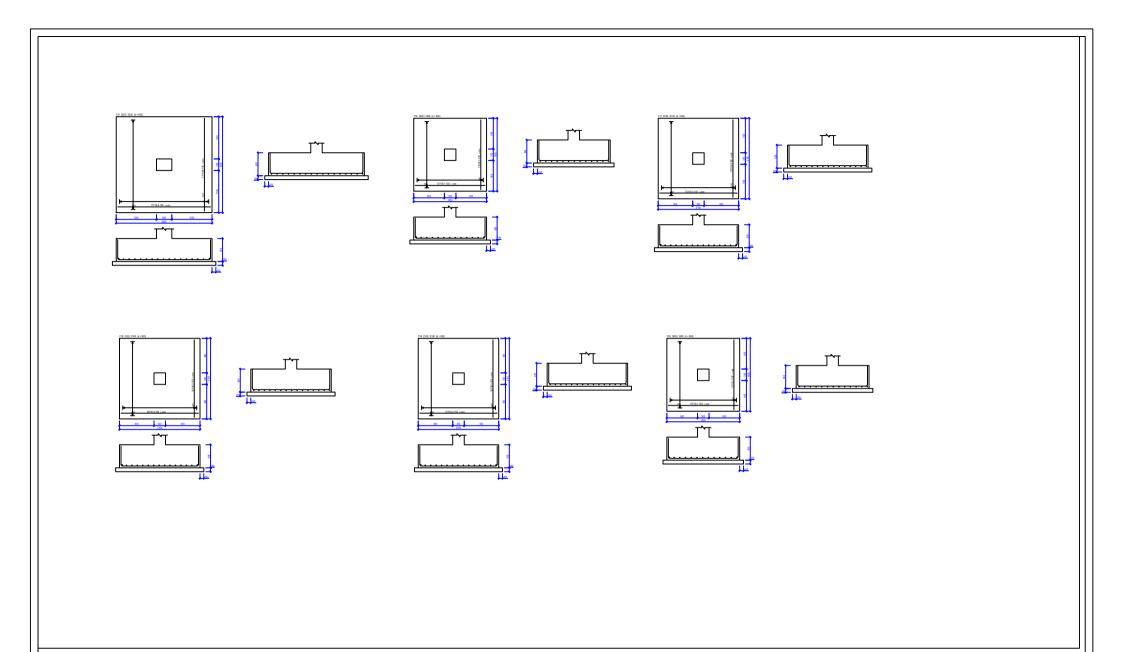
DEGICAL DATRICK MINANIOL	DATE	SIGNATRUE
DESIGN: PATRICK MWANGI	25-05-24	p.m
DRAWN: PATRICK MWANGI	25-05-24	p.m
CHECKED:		
DRAWING NO: S003	SCALE	: 1 : 20

- Reinforcement steel to be high yield round ribbed bars of yield strength 500Nmm-2 - All reinforcement shall be inspected by structural engineer/s before concrete casting
- Concrete cover to foundations to be 50mm, columns 40mm, beams 25mm
- Concrete to beams, slabs and columns to be class 20 and to foundation class 25









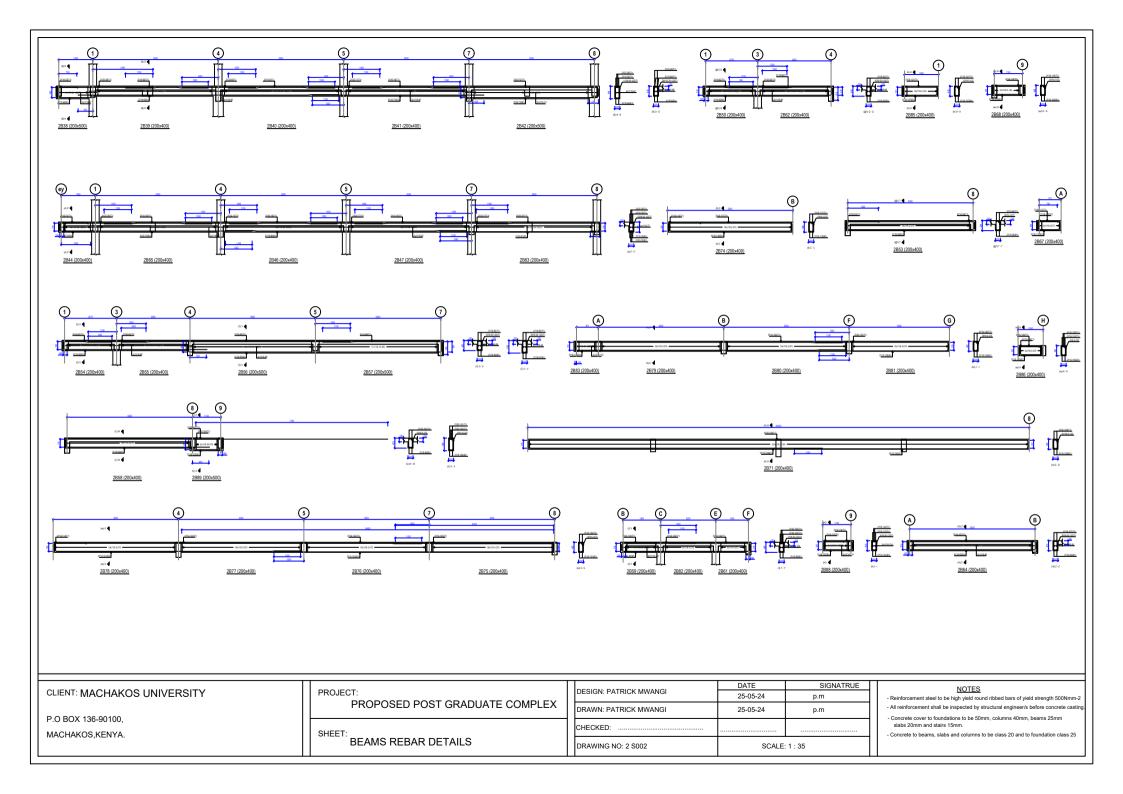
P.O BOX 136-90100, MACHAKOS,KENYA. PROJECT:

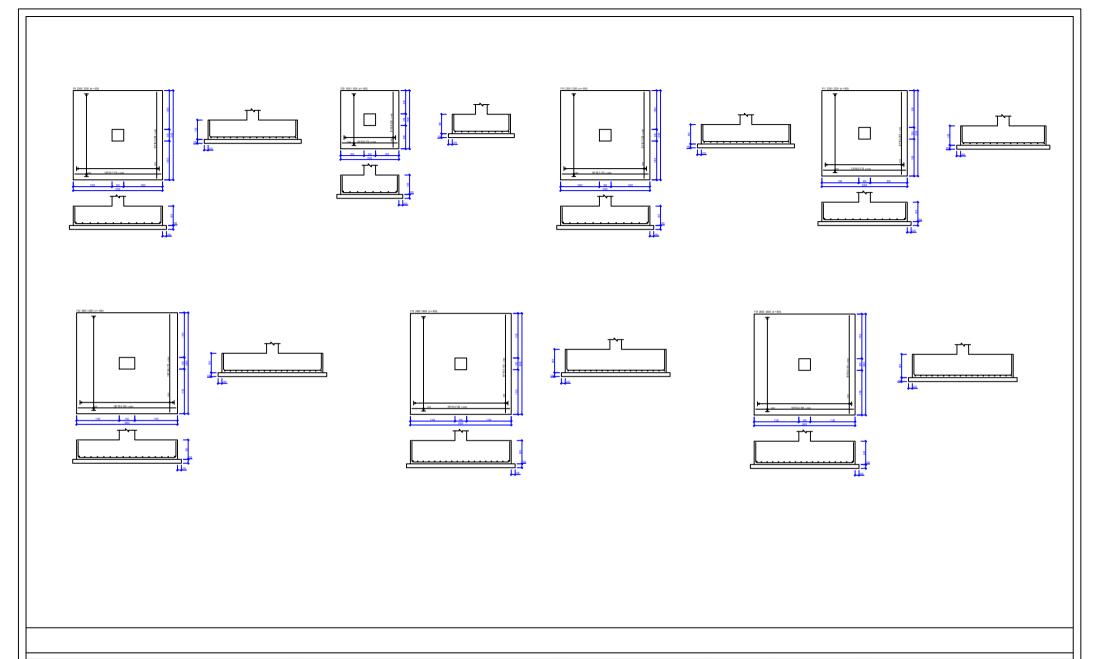
PROPOSED POST GRADUATE COMPLEX

SHEET: FOOTING REBAR DETAILS

DESIGN DATES OF THE STATE OF	DATE	SIGNATRUE
DESIGN: PATRICK MWANGI	25-05-24	p.m
DRAWN: PATRICK MWANGI	25-05-24	p.m
CHECKED:		
DRAWING NO: S003	SCALE	: 1 : 20

- Reinforcement steel to be high yield round ribbed bars of yield strength 500Nmm-2
 All reinforcement shall be inspected by structural engineer/s before concrete casting.
- Concrete cover to foundations to be 50mm, columns 40mm, beams 25mm slabs 20mm and stairs 15mm.
- Concrete to beams, slabs and columns to be class 20 and to foundation class 25





CLIENT:	MACHAKOS	UNIVERSITY
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P.O BOX 136-90100, MACHAKOS,KENYA. PROJECT:

PROPOSED POST GRADUATE COMPLEX

SHEET: FOOTING REBAR DETAILS

DESIGN DATES OF A STATE OF A STAT	DATE	SIGNATRUE
DESIGN: PATRICK MWANGI	25-05-24	p.m
DRAWN: PATRICK MWANGI	25-05-24	p.m
CHECKED:		
DRAWING NO: S002	SCALE	: 1 : 20

- Reinforcement steel to be high yield round ribbed bars of yield strength 500Nmm-2
 All reinforcement shall be inspected by structural engineer/s before concrete casting.
- Concrete cover to foundations to be 50mm, columns 40mm, beams 25mm slabs 20mm and stairs 15mm.
- Concrete to beams, slabs and columns to be class 20 and to foundation class 25

