



**KWAZULU-NATAL PROVINCE**

HEALTH  
REPUBLIC OF SOUTH AFRICA

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**Newtown A CHC: Conversion of Newtown CHC from a CHC to Large Clinic**

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**ANNEXURE 20**

**Civil Engineer Drawings**

- GENERAL NOTES**
- MEASUREMENTS AND UNITS
    - DRAWINGS SHALL NOT BE SCALED. USE DIMENSIONS SHOWN.
    - ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE INDICATED.
    - ALL LEVELS ARE SHOWN IN METRES
    - ALL EXISTING SERVICES TO BE PROVED PRIOR TO CONSTRUCTION.
  - WATER AND FIRE SERVICES
    - WATER MAINS 80mm DIAMETER HDPE, CLASS 16.
    - FIRE MAINS 110mm DIAMETER HDPE, CLASS 16. BEDDING TO BE CLASS C.

- EARTHWORKS
  - ALL CUT AND FILL BANKS TO BE SLOPED AT AN INDICATIVE MAXIMUM SLOPE OF 1:1.5 SUBJECT TO ADVICE OF GEOTECHNICAL ENGINEER.
  - GRASSING
    - ALL EARTH BANKS TO BE TOPSOILED TO A DEPTH OF AT LEAST 100mm AND GRASSED.
  - SEQUENCING
    - REFER TO ARCHITECTS DRAWING FOR SEQUENCING OF WORKS AND DEMOLITION PLANS.
- SEWER
  - SEWER MAINS 160mm PVC.
  - FOR SEWER SEE DRAWING 101.

- SEWER MANHOLES DENOTED BY MH.
  - STORMWATER
    - STORMWATER MAINS 375mm, 450mm and 525mm DIAMETER.
    - FOR STORMWATER SEE DRAWING 102.
    - STORMWATER MANHOLES DENOTED BY GI AND SWMH.
  - DRIVEWAYS AND PARKING
    - FOR DRIVEWAYS AND PARKING DETAILS SEE DRAWING 121.

**NOTE:**  
DISCHARGE FROM ROOF DRAINAGE TO BE LED INTO INDICATED MAIN STORMWATER LINES.

**LEGEND:**

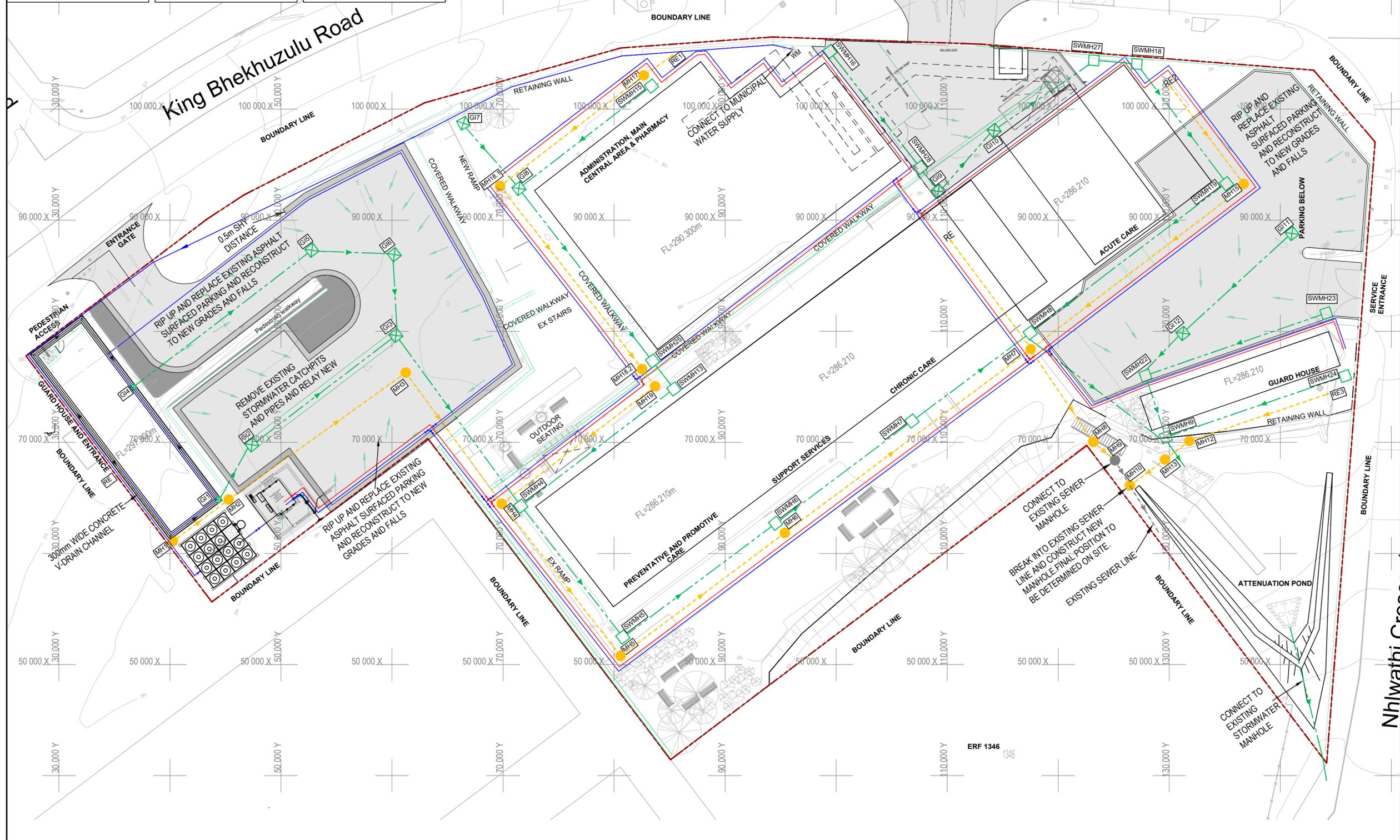
- GI PROPOSED STORMWATER WITH GRID INLET
- SWMH PROPOSED STORMWATER MANHOLE
- RE PROPOSED SEWER WITH MANHOLE
- ROD DING EYE
- PROJECT BOUNDARY
- RETAINING WALL
- PROPOSED WATER LINE
- PROPOSED FIRE LINE

ALL DIMENSIONS AND LEVELS ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR BEFORE COMMENCING ANY WORK.

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ON ORIGINAL  
0 5 10 15 20 25 30 40MM



**GENERAL NOTES:**

ISSUED FOR APPROVAL

No	Date	Details	Chd	Appr
B	2023-09-15	ISSUED FOR APPROVAL	MM	NM
A	2023-07-24	ISSUED FOR INFORMATION	MM	NM

Client: HEALTH DEPARTMENT, REPUBLIC OF SOUTH AFRICA

Architect: URISA CONSULTING

GIBB

Approved By: N. MSHWANZI  
Designed By: P. BALNATH  
Reviewed By: M. MARAIS

Project: **NEWTOWN CLINIC**

Description: **COMBINED SERVICES LAYOUT**

Scale: 1:250 Date: JULY 2023

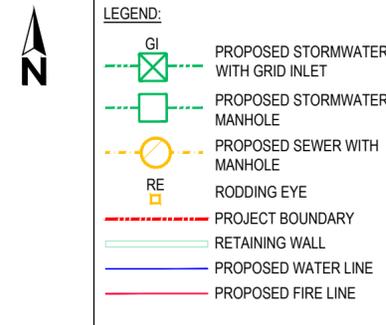
Project No: J41039 / Dig No: 100 / Rev: B

# SEWER SCHEDULE

NAME	Y-COORD	X-COORD	COVER	INLET	DEPTH	LENGTH	SLOPE	TYPE	SIZE
RE3	5587.790	3288187.842	284.775	284.275	0.500	13.142	14.488 %	PVC-U	160 mm
MH12	5600.233	3288192.072	283.871	282.371	1.500	2.773	9.845 %	PVC-U	160 mm
MH13	5602.442	3288193.748	282.348	281.591	0.757	4.496	3.892 %	PVC-U	160 mm
MH9	5606.937	3288193.817	283.480	281.860	1.620	2.636	30.008 %	PVC-U	160 mm
MH10	5605.598	3288196.088	282.626	281.026	1.600				
MH16	5621.711	3288174.036	286.024	284.467	1.557	12.132	0.500 %	PVC-U	160 mm
MH7	5614.527	3288183.812	285.915	283.915	2.000	10.087	11.064 %	PVC-U	160 mm
MH8	5608.886	3288192.174	284.299	282.799	1.500	2.549	34.366 %	PVC-U	160 mm
MH9	5606.937	3288193.817	283.480	281.860	1.620				
RE	5696.593	3288194.723	296.699	296.199	0.500	7.986	26.396 %	PVC-U	160 mm
MH1	5691.785	3288201.099	295.648	294.091	1.557	6.271	21.161 %	PVC-U	160 mm
MH2	5686.762	3288197.345	294.321	292.764	1.557	19.613	6.358 %	PVC-U	160 mm
MH3	5670.819	3288185.921	293.074	290.074	3.000	14.617	35.794 %	PVC-U	160 mm
MH4	5662.183	3288197.714	288.942	284.842	4.100	17.375	2.066 %	PVC-U	160 mm
MH5	5651.480	3288211.401	286.683	284.483	2.200	18.473	1.462 %	PVC-U	160 mm
MH6	5636.678	3288200.349	286.013	284.213	1.800	27.643	1.078 %	PVC-U	160 mm
MH7	5614.527	3288183.812	285.915	283.915	2.000				
RE1	5646.812	3288157.386	290.799	290.142	0.657	3.133	6.320 %	PVC-U	160 mm
MH17	5649.394	3288159.160	291.444	289.944	1.500	16.327	1.893 %	PVC-U	160 mm
MH18.1	5662.327	3288169.126	291.735	289.635	2.100	20.681	10.527 %	PVC-U	160 mm
MH18.2	5649.664	3288185.477	289.015	287.015	2.000	2.114	79.423 %	PVC-U	160 mm
MH19	5648.370	3288187.149	286.836	285.336	1.500	17.390	2.841 %	PVC-U	160 mm
MH4	5662.183	3288197.714	288.942	284.842	4.100				
RE2	5601.904	3288160.197	286.686	285.086	1.600	11.094	6.319 %	PVC-U	160 mm
MH15	5595.268	3288169.088	285.485	284.385	1.100	24.243	1.939 %	PVC-U	160 mm
MH7	5614.527	3288183.812	285.915	283.915	2.000				
RE1	5646.812	3288157.386	290.799	290.142	0.657				

NOTE:  
FOR RE AND MANHOLE DETAILS REFER TO DRAWING J14039/120

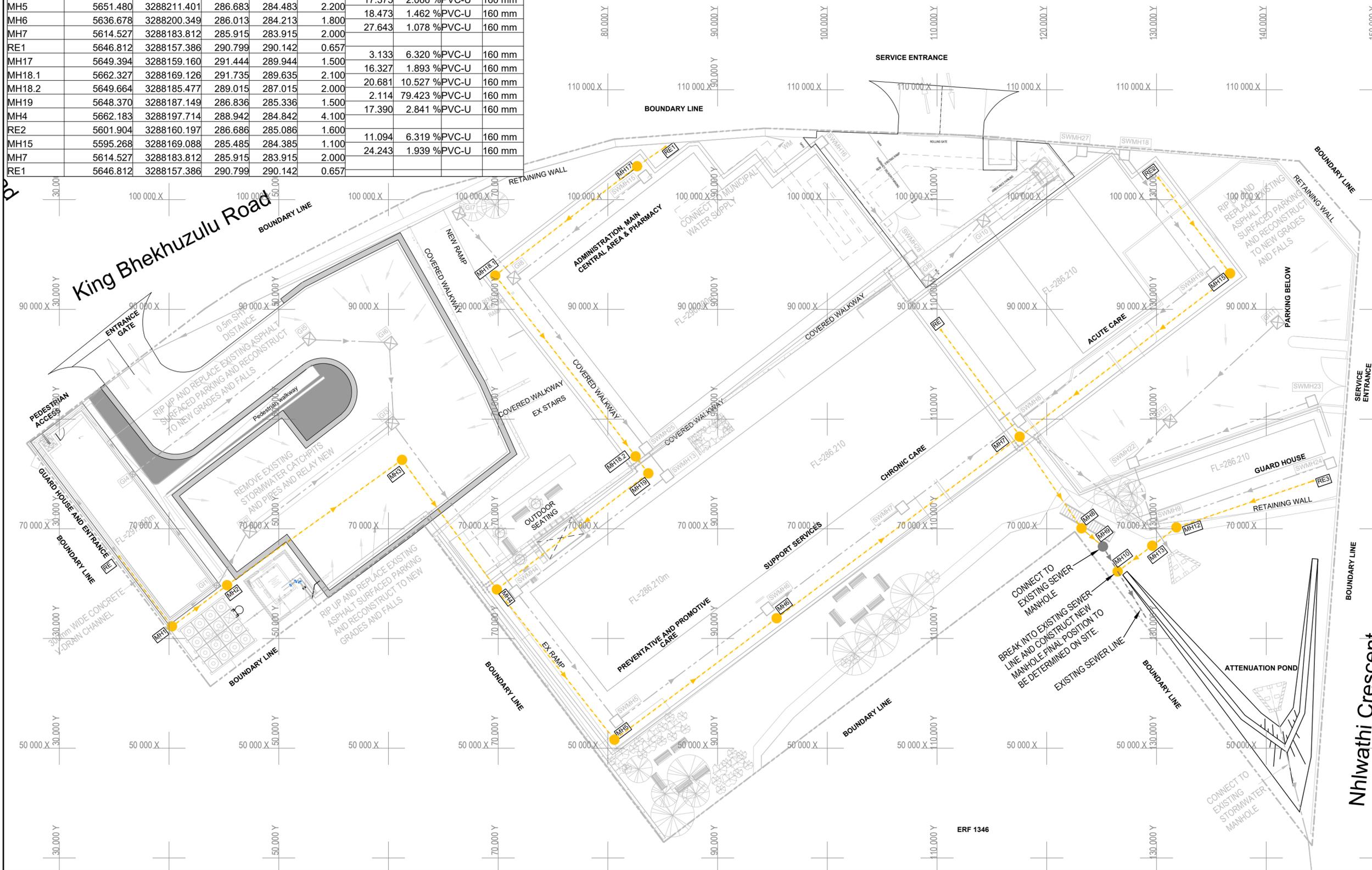
- GENERAL NOTES
- SEWER
  - SEWER MAINS 160mm PVC.
  - FOR SEWER SEE DRAWING 101.
  - SEWER MANHOLES DENOTED BY MH.
  - FOR RE AND MANHOLE DETAILS REFER TO DRAWING J14039/120.
  - ALL MANHOLE COVERS TO BE HEAVY DUTY



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GENERAL NOTES:

ISSUED FOR APPROVAL

A	2023-09-15	ISSUED FOR APPROVAL	MM	MM
No	Date	Details	Chd	Appr
Revisions				



Approved By: N. MSHWANZI

Drawn By: N. AMOD

Designed By: P. BALNATH

Reviewed By: M. MARAIS

Project: NEWTOWN CLINIC

Description: SEWER LAYOUT & SETTING OUT DETAILS

Scale: 1:250 Date: JULY 2023

Project No: J41039 / Dig No: 101 / Rev: A

**STORMWATER SCHEDULE**

NAME	Y-COORD	X-COORD	COVER	INLET	DEPTH	LENGTH	SLOPE	TYPE	SIZE
GI1	5687.53	288197.230	295.072	293.665	1.407	5.621	24.017 %	100D Concrete	375 mm
GI2	5684.74	288192.350	293.922	292.315	1.607	16.294	4.517 %	100D Concrete	375 mm
GI3	5671.73	288182.544	293.186	291.497	1.689	19.029	30.532 %	100D Concrete	450 mm
SWMH4	5660.50	288197.909	287.375	285.687	1.688	15.047	5.177 %	100D Concrete	450 mm
SWMH5	5651.26	288209.782	286.108	284.908	1.200	17.221	2.683 %	100D Concrete	525 mm
SWMH6	5637.46	288199.477	285.946	284.446	1.500	15.274	3.404 %	100D Concrete	525 mm
SWMH7	5625.23	288190.326	285.926	283.926	2.000	13.297	7.513 %	100D Concrete	525 mm
SWMH8	5614.58	288182.369	285.927	282.927	3.000	15.475	1.848 %	100D Concrete	525 mm
SWMH9	5602.46	288191.997	284.706	281.706	3.000	2.958	35.497 %	100D Concrete	525 mm
SWMH10	5600.65	288194.331	282.221	280.656	1.565	13.263	5.021 %	100D Concrete	375 mm
GI11	5591.03	288173.411	285.456	284.049	1.407	5.094	5.556 %	100D Concrete	375 mm
GI12	5600.83	288182.348	285.390	283.383	2.007	5.094	5.556 %	100D Concrete	375 mm
SWMH22	5604.28	288186.097	285.507	283.100	2.407	6.173	4.876 %	100D Concrete	375 mm
SWMH9	5602.46	288191.997	284.706	281.706	3.000	20.101	10.691 %	100D Concrete	375 mm
GI4	5695.19	288187.097	297.047	295.640	1.407	7.396	14.048 %	100D Concrete	375 mm
GI5	5679.25	288174.851	294.898	293.491	1.407	7.396	14.048 %	100D Concrete	375 mm
GI6	5671.87	288175.293	293.859	292.452	1.407	7.252	12.038 %	100D Concrete	375 mm
GI3	5671.73	288182.544	293.186	291.497	1.689	7.814	19.990 %	100D Concrete	375 mm
GI7	5665.74	288163.526	291.640	289.440	2.200	19.553	3.519 %	100D Concrete	375 mm
GI8	5660.50	288169.367	291.478	287.878	3.600	3.208	8.448 %	100D Concrete	375 mm
SWMH25	5648.62	288184.862	288.597	287.190	1.407	17.375	7.091 %	100D Concrete	375 mm
SWMH13	5646.67	288187.404	288.326	286.919	1.407	15.001	5.700 %	100D Concrete	375 mm
SWMH4	5660.50	288197.909	287.375	285.687	1.688				
SWMH15	5648.71	288160.149	290.140	288.733	1.407				
GI8	5660.50	288169.367	291.478	287.878	3.600				

**STORMWATER SCHEDULE**

NAME	Y-COORD	X-COORD	COVER	INLET	DEPTH	LENGTH	SLOPE	TYPE	SIZE
SWMH16	5632.64	288156.956	289.195	287.788	1.407	13.234	10.942 %	100D Concrete	375 mm
SWMH28	5624.55	288167.429	287.247	286.340	0.907	2.805	16.150 %	100D Concrete	375 mm
GI9	5622.83	288169.649	286.887	285.887	1.000	7.507	5.555 %	100D Concrete	375 mm
GI10	5617.86	288164.025	287.971	285.470	2.501	10.983	1.475 %	100D Concrete	375 mm
SWMH27	5608.82	288157.782	290.108	285.308	4.800	3.878	5.931 %	100D Concrete	375 mm
SWMH18	5604.96	288158.124	290.079	285.078	5.001	13.485	7.371 %	100D Concrete	375 mm
SWMH19	5596.88	288168.922	285.573	284.084	1.489	22.225	5.206 %	100D Concrete	450 mm
SWMH8	5614.58	288182.369	285.927	282.927	3.000	17.268	1.732 %	100D Concrete	375 mm
SWMH23	5587.93	288180.559	284.706	283.399	1.307	17.231	0.500 %	100D Concrete	375 mm
SWMH22	5604.28	288186.097	285.507	283.100	2.407				
SWMH24	5586.23	288186.225	283.616	282.616	1.000				
SWMH9	5602.46	288191.997	284.706	281.706	3.000				



**LEGEND:**

- PROPOSED STORMWATER WITH GRID INLET
- PROPOSED STORMWATER MANHOLE
- PROPOSED SEWER WITH MANHOLE
- RODDING EYE
- PROJECT BOUNDARY
- RETAINING WALL
- PROPOSED WATER LINE
- PROPOSED FIRE LINE

- GENERAL NOTES:**
- STORMWATER
  - 1.1. STORMWATER MAINS 375mm, 450mm and 525mm DIAMETER.
  - 1.2. FOR STORMWATER SEE DRAWING 102 & 120.
  - 1.3. STORMWATER MANHOLES DENOTED BY GI AND SWMH.

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**ISSUED FOR APPROVAL**

No	Date	Issued For Approval	MM	NM
A	2023-09-15	ISSUED FOR APPROVAL	MM	NM
Revisions				



Approved By:

Drawn By: N. AMOD | Designed By: P. BALUNATH | Reviewed By: M. MARAIS

**NEWTOWN CLINIC**

**STORMWATER LAYOUT & SETTING OUT DETAILS**

Scale: 1:250 | Date: JULY 2023

Project No: J41039 | Dwg. No: 102 | Rev: A

C:\Users\amod\OneDrive - gibb.co.za\Documents\WFH\Newtown Clinic\Drawings\1. Working\41039-102-Stormwater Layout.dwg | NEQUATH AMOD | 2009/2023 14:02:19



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GENERAL NOTES:

No	Date	Details	Chg	Appd
A	2023-09-15	ISSUED FOR APPROVAL	MM	MM

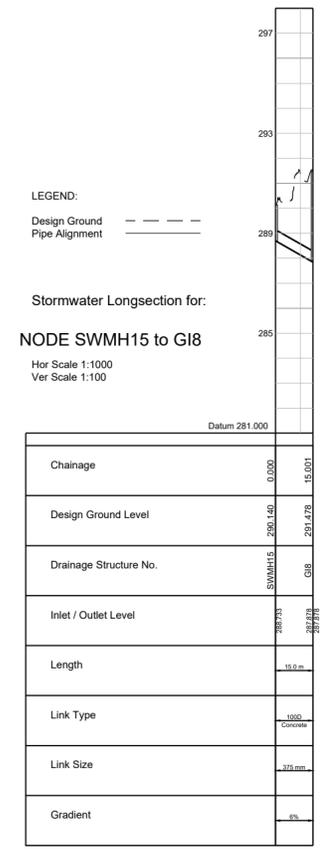
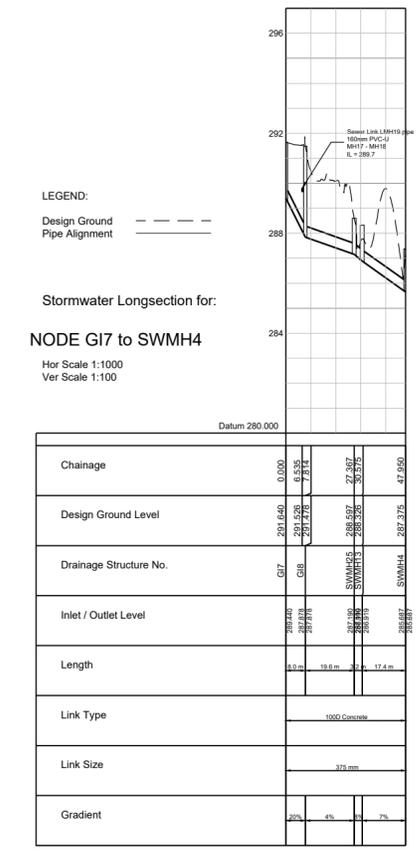
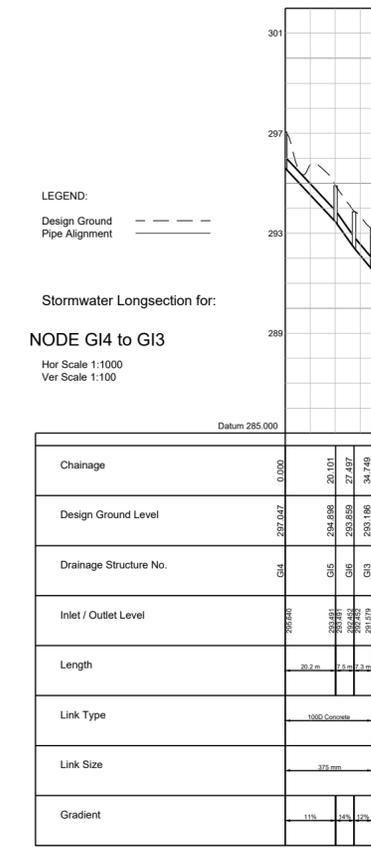
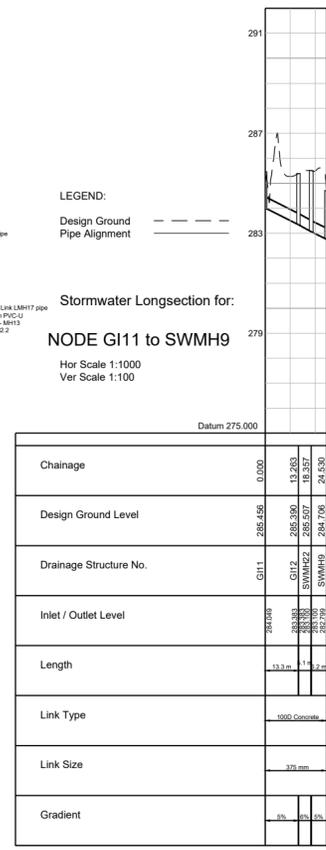
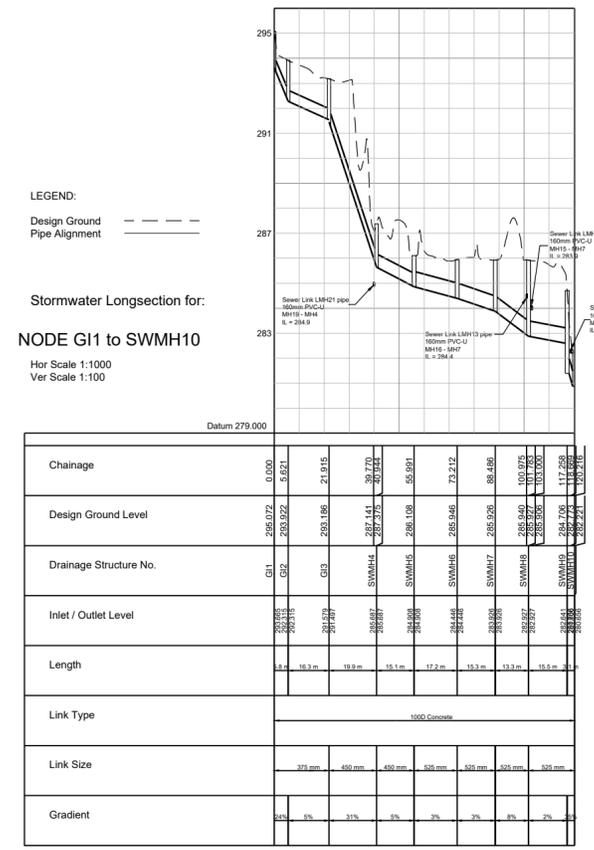
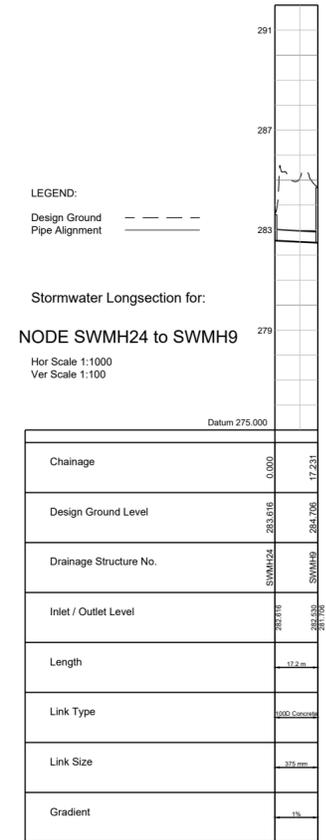
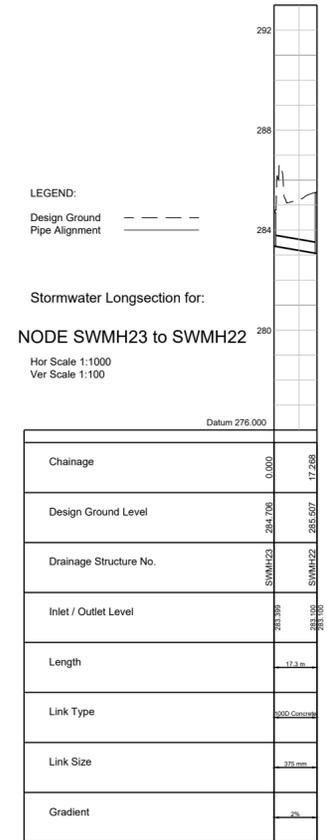
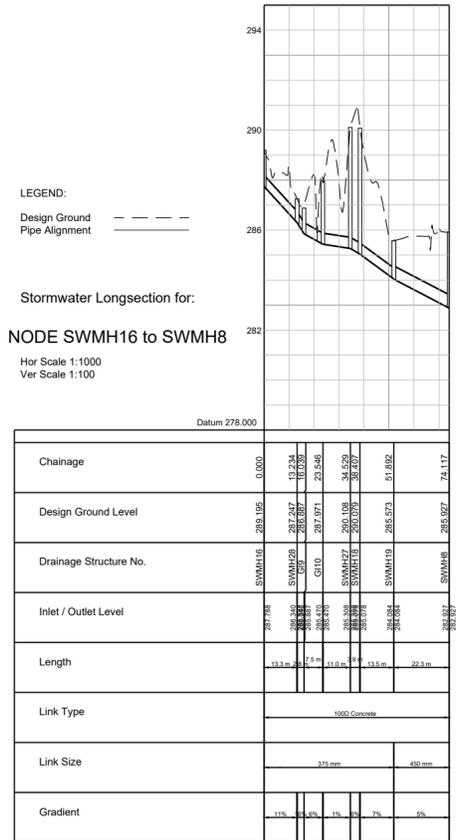


Approved By: N. MURWANAZI  
 Drawn By: N. AMOD, Designed By: N. AMOD, Reviewed By: P. BALANTH

Project: NEWTOWN CLINIC

Description: STORMWATER LONGSECTIONS

Scale: AS SHOWN, Date: SEPT 2023  
 Project No: J41039, Dwg No: 111, Rev: A



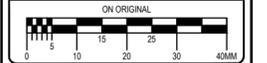




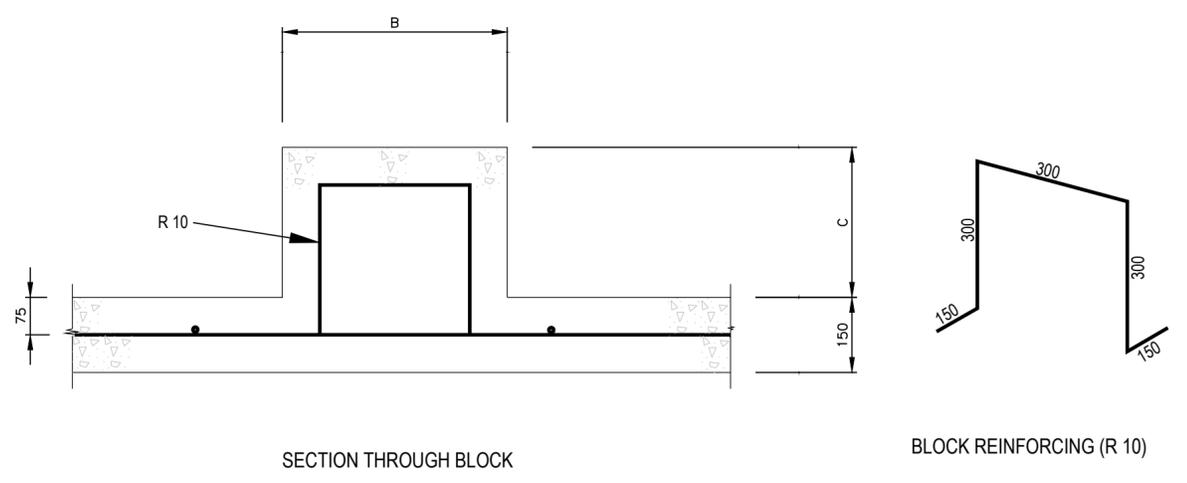
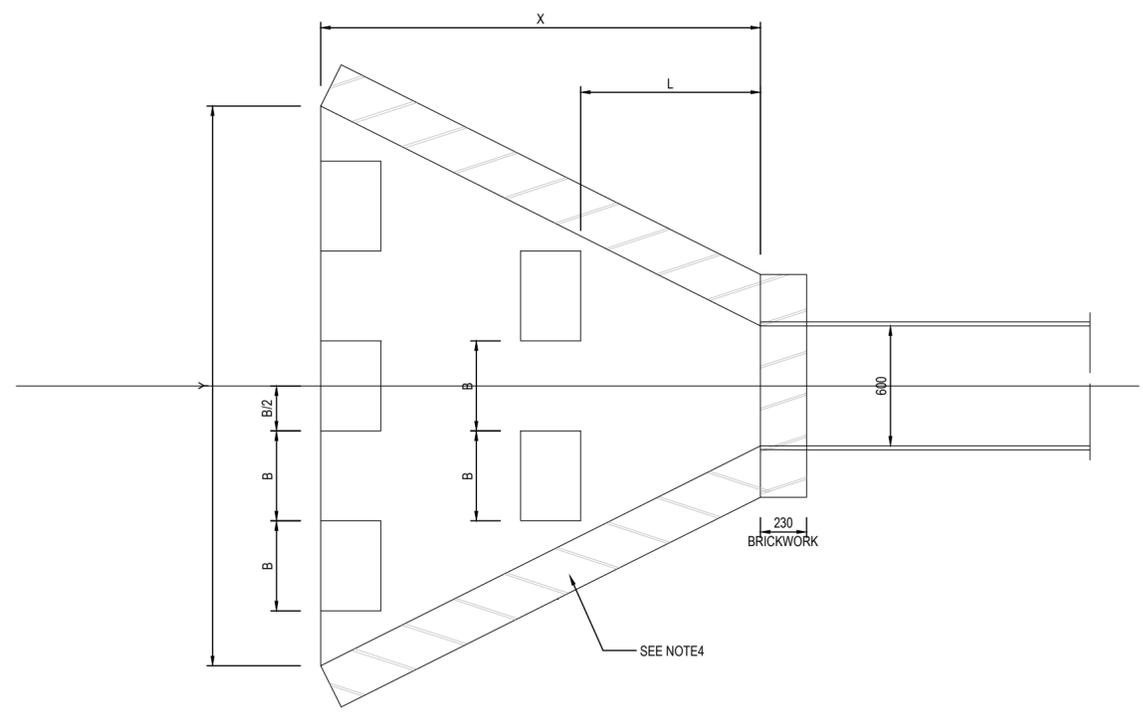
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GENERAL NOTES:

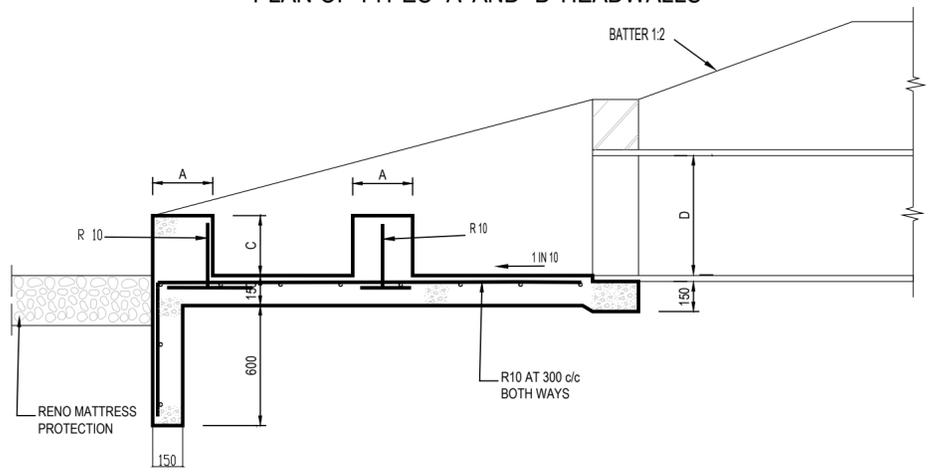


SECTION THROUGH BLOCK

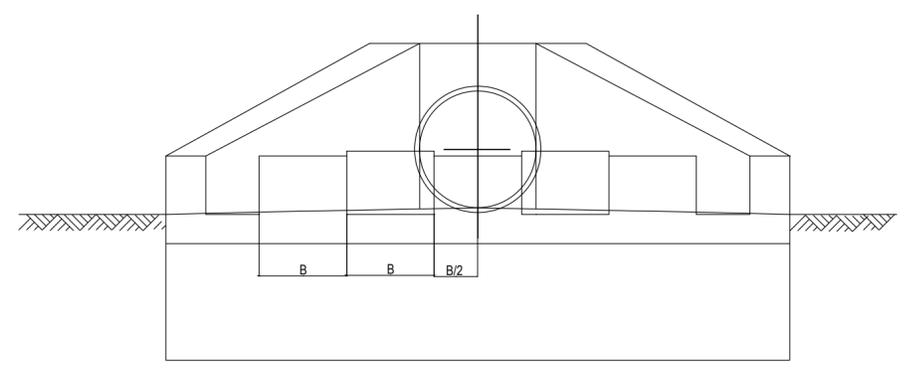
BLOCK REINFORCING (R 10)

SPLITTER BLOCK DETAILS  
SCALE 1:10

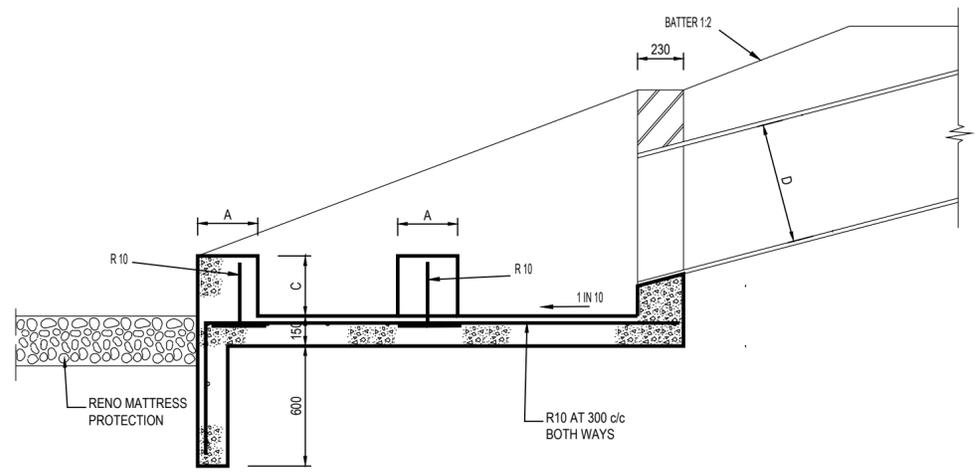
PLAN OF TYPES 'A' AND 'B' HEADWALLS



TYPE 'A' HEADWALL WHERE PIPE GRADE IS LESS THAN 20% (1:25)



TYPE 'A' HEADWALL - ELEVATION



TYPE 'B' HEADWALL WHERE PIPE GRADE IS GREATER THAN 20% (1:25)

NOM. PIPE DIA.	DIMENSIONS ( mm )						
	D	A	B	C	L	X	Y
375	245	350	250	980	1800	2175	
450	245	360	250	980	1800	2250	
525	250	375	250	1050	2000	2525	
600	300	450	300	1200	2200	2800	
750	300	450	300	1500	2400	3050	
825	300	450	300	1650	2600	3425	
900	300	450	300	1800	2800	3700	
1050	300	450	300	2100	3000	4050	
1200	300	450	300	2400	3200	4400	

- NOTES :
- 1) CONCRETE GRADE 20/26 MPa
  - 2) COVER TO STEEL 40mm MIN.
  - 3) REINFORCING TO BE CUT AND BENT ON SITE. MIN. LAPS 500mm
  - 4) HEADWALL BRICKWORK SIZES ( IN mm ) :  
WALL HEIGHT BRICKWORK  
0-1100 230  
1100-1400 345  
1400-1800 460
  - 5) ALL EXPOSED BRICKWORK TO BE FACEBRICK ( REFER CLAUSE F 3.5.2. DEPARTMENTAL STANDARD SPECIFICATION )

No	Date	Details	Chd	Appd
Revisions				



Approved By	Designed By	Reviewed By
N. MCHWANAZI	P. BALNAH	M. MARAIS

Project  
**NEWTOWN CLINIC**

Description  
**HEADWALL DETAILS**

Scale	Date	
1:250	JULY 2023	
Project No	Dwg No	Rev
J41039	122	A



**KWAZULU-NATAL PROVINCE**

HEALTH  
REPUBLIC OF SOUTH AFRICA

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**Newtown A CHC: Conversion of Newtown CHC from a CHC to Large Clinic**

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## **ANNEXURE 21**

### **Structural Engineer Drawings**

**GENERAL**

- ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE RELEVANT SECTIONS OF THE SANS 1200 **OR SANS 2001-CC1** (LATEST ADDITION).
- READ THIS DRAWING IN CONJUNCTION WITH THE ARCHITECT'S DRAWINGS AND OTHER ENGINEERING DRAWINGS AND PROJECT SPECIFICATIONS.
- ALL CONTRACTOR'S QUALITY ASSURANCE/CONTROL BEFORE DOCUMENTATION TO BE FORWARDED TO ENGINEER BEFORE COMMENCING WITH ANY STRUCTURAL WORK.
- CONTRACTOR TO CONDUCT HIS OWN QUALITY ASSURANCE/CONTROL BEFORE CALLING THE ENGINEER FOR INSPECTION.
- 48 HOURS WRITTEN NOTICE TO BE GIVEN TO ENGINEER BEFORE TIME OF INSPECTION.
- ALL LEVELS ARE IN METRES RELATIVE TO THE APPROPRIATE LOCAL DATUM.
- ALL LEVELS ON DRAWINGS INDICATE TOP OF CONCRETE UNLESS INDICATED OTHERWISE.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
- NO DIMENSIONS ON DRAWINGS ARE TO BE SCALED.
- FOR SETTING OUT DATA, SETTING OUT POINTS AND DATUM LEVELS REFER TO SURVEY INFORMATION.
- CONTRACTOR TO CHECK ALL DIMENSIONS AND LEVELS ON SITE AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE SUBMITTING FABRICATION DRAWINGS.
- JOINTS INDICATED ON SLABS ARE ALSO TO BE CONSTRUCTED IN BRICK WALLS, SCREED AND FINISHES.

**DESIGN CRITERIA**

- DESIGN IN ACCORDANCE WITH THE FOLLOWING CODES:
  - LOADINGS: SANS 10160
  - FOUNDATIONS: SANS 01610
  - CONCRETE: SANS 10100
  - STRUCTURAL STEEL: SANS 10162
  - STRUCTURAL TIMBER: SANS 10163
- DESIGN SUPERIMPOSED DEAD LOADS:
  - CONCRETE SELF WEIGHT: 24kN/m<sup>2</sup>
  - SERVICES IN FLOORS: 0.2kN/m<sup>2</sup>
  - Ceilings and Ceilings: 0.5kN/m<sup>2</sup>
- DESIGN SUPERIMPOSED LIVE LOADS:

DESCRIPTION	q <sub>d</sub> (kN/m <sup>2</sup> )	q <sub>l</sub> (kN)	q <sub>l</sub> (kN)
<b>SPECIAL LOADINGS ONLY</b>	<b>TBA</b>	<b>TBA</b>	<b>TBA</b>

**SURFACE BED**

- REFER TO ARCHITECT DETAILS FOR SURFACE FINISH AND COVERINGS.
- PROVIDE 250 MICRON DPC UNDER ALL SURFACE BEDS WITH A MINIMUM LAP OF 300mm.
- MINIMUM LAP OF MESH REINFORCEMENT IS 450mm UNLESS OTHERWISE NOTED.
- PROVIDE A VERTICAL ISOLATION JOINT BETWEEN THE SURFACE BED AND ALL VERTICAL WALLS AND COLUMNS PROTRUDING THROUGH THE SURFACE BED.
- CONCRETE CAST UNDER ROOF COVER: SAW CUT SURFACE BEDS WITHIN 24 HOURS OF CASTING.
- CONCRETE CAST IN OPEN AIR: SAW CUT FLOOR SLABS WITHIN 6 HOURS OF CASTING.
- CONSTRUCTION JOINT POSITIONS ARE INDICATIVE ONLY AND SHALL BE AGREED WITH THE ENGINEER. MOVEMENT JOINTS ARE TO BE INSTALLED AS INDICATED ON THE DRAWINGS.
- CONSTRUCTION JOINTS:
  - NO HORIZONTAL JOINTS WILL BE ALLOWED IN BASES, BEAMS AND SLABS. NO VERTICAL JOINTS IN COLUMNS AND SHEAR WALLS.
  - WHERE IT IS NECESSARY TO UTILIZE CONSTRUCTION JOINTS, SUCH JOINTS SHALL BE INSPECTED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
  - THE PROPOSED CASTING SEQUENCE OF ALL CONCRETE TO BE APPROVED BY THE ENGINEERS REPRESENTATIVE 14 DAYS BEFORE CASTING.
  - IF FOR ANY REASON A COLD JOINT SHOULD FORM DURING CASTING, THE PLANE OF THE JOINT SHOULD BE AT 45 DEGREES TO THE SOFFIT OF THE MEMBER AND THE ENGINEER SHOULD BE NOTIFIED IMMEDIATELY.
  - ARCHITECTS DRAWINGS TO BE FOLLOWED FOR CONCRETE FINISHES, GROOVES, CHAMFERS, ETC. **OR ALL EXPOSED CONCRETE CORNERS WITH AN ANGLE OF 90° OR LESS SHALL HAVE A 20mm x 20mm CHAMFER UNLESS OTHERWISE NOTED ON THE DRAWINGS.**
  - NO CONCRETE SHALL BE CAST IN LIFTS IN EXCESS OF 3m UNLESS MEASURES ARE TAKEN TO ENSURE SEGREGATION DOES NOT OCCUR, AS APPROVED BY ENGINEER.
  - ALL CONCRETE TO BE COMPACTED USING A MECHANICAL VIBRATOR OF A SUITABLE SIZE FOURS DEEPER THAN 300mm TO BE DOUBLE VIBRATED, THE SECOND VIBRATING BEING DONE JUST BEFORE INITIAL SET.
  - THE TOP OF CONCRETE ELEMENTS AND THE SURFACE OF ALL CONSTRUCTION JOINTS SHALL BE SCABBLE OR WATER JETTED TO REMOVE LATENCY AND LOOSE MATERIAL AND TO ROUGHEN EDGES PRIOR TO CASTING THE NEXT LIFT OF CONCRETE. A WET TO DRY EPOXY TO BE PROVIDED TO THE ENGINEERS APPROVAL. ON TOP OF SLABS WHERE UPSTAND BEAMS ARE CAST.
  - ALL CONCRETE TO BE CONTINUOUSLY CURED USING AN APPROVED METHOD FOR A MINIMUM OF 7 DAYS.
  - SHOULD NO ALTERNATIVE CURING METHOD BE APPROVED BY THE ENGINEER IN WRITING, THE FOLLOWING SHOULD BE DONE:
    - FOR CONCRETE CAST UNDER ROOF COVER: CURE BY WETTING SIX TIMES PER DAY FOR A MINIMUM OF 7 DAYS.
    - CONCRETE CAST IN OPEN AIR: CURE BY COVERING WITH PLASTIC SHEETING IMMEDIATELY AFTER STRIKING OFF FORMWORK.
    - FOR POWER FLOATED SLABS, COVER SLAB WITH WHITE PLASTIC SHEETING IMMEDIATELY AFTER STRIKING OFF FORMWORK AND REPLACE PLASTIC SHEETING AFTER POWER FLOATING.
    - COLUMNS TO BE WRAPPED IN PLASTIC.
    - CURING COMPOUND TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCING WORKS.
  - CONCRETE DEFECTS MAY ONLY BE REPAIRED AFTER THE ENGINEER HAS APPROVED A METHOD STATEMENT FOR THE REPAIR.

**IN SITU CONCRETE WORK**

- ALL CONCRETE WORK TO BE CARRIED OUT IN ACCORDANCE WITH SANS 1200 F. LATEST REVISION **OR SANS 2001-CC1** (LATEST ADDITION).
- MINIMUM CONCRETE CUBE STRENGTH AT 28 DAYS AND MINIMUM COVER TO REINFORCEMENT:

ELEMENT	28 DAY STRENGTH (MPa)	EXPOSURE CONDITION	COVER (mm)
BLINDING MASS CONCRETE SPREAD	15	SEVERE	N/A
INTERNAL SURFACE BEDS	30	MODERATE	40
APRON SLAB	25	SEVERE	N/A
INTERNAL RC FOUNDATIONS	25	SEVERE	50
INTERNAL RC COLUMNS	30	MODERATE	40
INTERNAL RC SLABS	30	MODERATE	40
INTERNAL RC BEAMS	30	MODERATE	40
COVERED RC FOUNDATIONS	25	SEVERE	50
EXPOSED RC COLUMNS	30	SEVERE	50
EXPOSED RC SLABS	30	SEVERE	50
EXPOSED RC BEAMS	30	SEVERE	50
LIQUID RETAINING STRUCTURE	35	SEVERE	50

- MAXIMUM NOMINAL CONCRETE AGGREGATE SIZE = 18mm UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- NO-FINES CONCRETE SHALL CONSIST OF COURSE AGGREGATE OF A SINGLE SIZE (19mm). CEMENT AND WATER ONLY. NO FINE AGGREGATE SHALL BE ALLOWED.
- MIX DESIGNS, TRIAL MIX CUBE TEST RESULTS AND SLUMP LIMITS TO BE SUBMITTED TO ENGINEER FOR APPROVAL AT LEAST 7 DAYS BEFORE CONCRETE IS DUE TO BE CAST.
- SLUMP TEST SHALL BE CARRIED OUT ON EVERY BATCH/TRUCK OF CONCRETE DELIVERED TO SITE AND ANY BATCH OR TRUCK LOAD OF CONCRETE THAT FALLS OUTSIDE THE LIMITS WILL BE REJECTED AND REMOVED FROM SITE.
- CUBES SHALL BE TESTED 28 DAYS AFTER CASTING AND RESULTS TO BE SUBMITTED TO THE ENGINEER WITHIN 7 DAYS FROM DATE OF TEST.
- DIMENSIONS OF BEAMS ARE INDICATED AS WIDTH x DEPTH.

- CONTRACTOR MUST ENSURE THAT ALL EMBEDDED ITEMS AND PENETRATIONS FOR SERVICES HAVE BEEN PROVIDED FOR AND POSITIONED ACCORDING TO THE LATEST DRAWINGS OF ALL DISCIPLINES BEFORE CASTING CONCRETE. NO HOLES ARE TO BE CORED WITHOUT THE ENGINEER'S WRITTEN APPROVAL.
- ACRONYMS ARE DEFINED AS FOLLOWS:
  - SC: SAW CUT JOINT
  - CJ: CONSTRUCTION JOINT
  - IJ: ISOLATION JOINT
  - EJ: EXPANSION JOINT
- CONSTRUCTION JOINT POSITIONS ARE INDICATIVE ONLY AND SHALL BE AGREED WITH THE ENGINEER. MOVEMENT JOINTS ARE TO BE INSTALLED AS INDICATED ON THE DRAWINGS.
- CONSTRUCTION JOINTS:
  - NO HORIZONTAL JOINTS WILL BE ALLOWED IN BASES, BEAMS AND SLABS. NO VERTICAL JOINTS IN COLUMNS AND SHEAR WALLS.
  - WHERE IT IS NECESSARY TO UTILIZE CONSTRUCTION JOINTS, SUCH JOINTS SHALL BE INSPECTED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
  - THE PROPOSED CASTING SEQUENCE OF ALL CONCRETE TO BE APPROVED BY THE ENGINEERS REPRESENTATIVE 14 DAYS BEFORE CASTING.
  - IF FOR ANY REASON A COLD JOINT SHOULD FORM DURING CASTING, THE PLANE OF THE JOINT SHOULD BE AT 45 DEGREES TO THE SOFFIT OF THE MEMBER AND THE ENGINEER SHOULD BE NOTIFIED IMMEDIATELY.
  - ARCHITECTS DRAWINGS TO BE FOLLOWED FOR CONCRETE FINISHES, GROOVES, CHAMFERS, ETC. **OR ALL EXPOSED CONCRETE CORNERS WITH AN ANGLE OF 90° OR LESS SHALL HAVE A 20mm x 20mm CHAMFER UNLESS OTHERWISE NOTED ON THE DRAWINGS.**
  - NO CONCRETE SHALL BE CAST IN LIFTS IN EXCESS OF 3m UNLESS MEASURES ARE TAKEN TO ENSURE SEGREGATION DOES NOT OCCUR, AS APPROVED BY ENGINEER.
  - ALL CONCRETE TO BE COMPACTED USING A MECHANICAL VIBRATOR OF A SUITABLE SIZE FOURS DEEPER THAN 300mm TO BE DOUBLE VIBRATED, THE SECOND VIBRATING BEING DONE JUST BEFORE INITIAL SET.
  - THE TOP OF CONCRETE ELEMENTS AND THE SURFACE OF ALL CONSTRUCTION JOINTS SHALL BE SCABBLE OR WATER JETTED TO REMOVE LATENCY AND LOOSE MATERIAL AND TO ROUGHEN EDGES PRIOR TO CASTING THE NEXT LIFT OF CONCRETE. A WET TO DRY EPOXY TO BE PROVIDED TO THE ENGINEERS APPROVAL. ON TOP OF SLABS WHERE UPSTAND BEAMS ARE CAST.
  - ALL CONCRETE TO BE CONTINUOUSLY CURED USING AN APPROVED METHOD FOR A MINIMUM OF 7 DAYS.
  - SHOULD NO ALTERNATIVE CURING METHOD BE APPROVED BY THE ENGINEER IN WRITING, THE FOLLOWING SHOULD BE DONE:
    - FOR CONCRETE CAST UNDER ROOF COVER: CURE BY WETTING SIX TIMES PER DAY FOR A MINIMUM OF 7 DAYS.
    - CONCRETE CAST IN OPEN AIR: CURE BY COVERING WITH PLASTIC SHEETING IMMEDIATELY AFTER STRIKING OFF FORMWORK.
    - FOR POWER FLOATED SLABS, COVER SLAB WITH WHITE PLASTIC SHEETING IMMEDIATELY AFTER STRIKING OFF FORMWORK AND REPLACE PLASTIC SHEETING AFTER POWER FLOATING.
    - COLUMNS TO BE WRAPPED IN PLASTIC.
    - CURING COMPOUND TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCING WORKS.
  - CONCRETE DEFECTS MAY ONLY BE REPAIRED AFTER THE ENGINEER HAS APPROVED A METHOD STATEMENT FOR THE REPAIR.

**FORMWORK**

- STAGING AND FORMWORK SHALL BE DESIGNED AND CERTIFIED BY SUITABLY EXPERIENCED PROFESSIONALLY REGISTERED ENGINEER, WHERE APPROPRIATE. THE CONTRACTOR SHALL SUBMIT FORMWORK AND TEMPORARY WORKS DESIGN AND DETAILS TO THE ENGINEER FOR REVIEW.
- THE STAGING AND BACK PROPPING DETAILS ARE TO BE SUBMITTED TO THE ENG. REP. FOR REVIEW. ALLOWANCE SHALL BE MADE FOR BACK PROPPING LOWER FLOORS WHILEST CONCRETE IS BEING CAST ABOVE.
- THE CONTRACTOR TO ENSURE THAT THE NECESSARY PROVISION IS MADE IN THE FALSEWORK FOR 3 SLABS TO SUPPORT WET WEIGHT OF ONE SLAB + 4 FOR THE CASTING OF LEVEL 5 SLAB 100% SUPPORT WORK MUST BE PROVIDED ON LEVEL 4, 70% ON LEVEL 3 AND 30% ON LEVEL 2.
- ALL SLAB PANELS WITH UPSTAND BEAMS REMAIN PROPPED UNTIL THE UPSTANDS HAVE BEEN CAST AND ARE 14 DAYS OLD.
- CLASS OF FORMWORK AS FOLLOWS:
  - FORMED VERTICAL CONCRETE SURFACE AS DEFINED IN SANS 1200 G **OR TABLE 1 OF SANS 2001-CC1**

SURFACE	FINISH
UNEXPOSED SURFACE MORE THAN 30mm BELOW GROUND LEVEL AND SIDES OF BEAMS	ROUGH
UNEXPOSED SURFACE >300mm BELOW GROUND LEVEL	SMOOTH
EXPOSED WALLS, COLUMNS, BEAMS AND SLABS IN PARKING AREAS	SMOOTH
EXPOSED WALLS, COLUMNS, BEAMS AND SLABS IN OFFICES AND OTHER HABITABLE AREAS	SMOOTH

**HORIZONTAL UNFORMED SURFACES:**

SURFACE	FINISH
SURFACE BED	POWER FLOATED
SUSPENDED SLAB	WOOD FLOATED
WALL TOPS	STEEL FLOATED
TOP OF EXPOSED FOUNDATIONS	STEEL FLOATED
TOP OF COVERED FOUNDATIONS	WOOD FLOATED

**DEGREE OF ACCURACY FOR FORMED CONCRETE SURFACES AS DEFINED IN SANS 1200 G **OR TABLE 11 OF SANS 2001-CC1****

SURFACE	DEGREE OF ACCURACY
UNEXPOSED SURFACE MORE THAN 100mm BELOW GROUND LEVEL AND SIDES OF BEAMS	II
UNEXPOSED SURFACE >300mm BELOW GROUND LEVEL	II
EXPOSED WALLS, COLUMNS, BEAMS AND SLABS IN PARKING AREAS	II
EXPOSED WALLS, COLUMNS, BEAMS AND SLABS IN OFFICES AND OTHER HABITABLE AREAS	I

**PRE-CAST PRESTRESSED CONCRETE LINTELS**

- LINTELS TO COMPLY WITH SANS 1504.
- LINTELS MINIMUM BEARING LENGTH:
 

LOADING	MIN. LENGTH (mm)
MASONRY ONLY	150
- LINTELS MAY NOT SPAN FURTHER THAN 3m UNLESS APPROVED METHOD OF CONSTRUCTION IS USED.
- LINTELS TO HAVE AT LEAST 5 LAYERS OF BRICKWORK ABOVE IT WITH BRICKFORCE AS PER MASONRY NOTES.
- LINTELS TO BE ADEQUATELY SUPPORTED FOR AT LEAST 7 DAYS AFTER COMPLETION.

**PRESTRESSED CONCRETE:**

- PRECAST CONCRETE WORKS SHOULD BE CARRIED OUT IN ACCORDANCE WITH SANS 1200 G **OR SANS 2001-CC1** (LATEST REVISION).
- PRECAST FORMED AND FLOATED SURFACES SHALL BE TO DEGREE OF ACCURACY I.
- THE CONTRACTOR SHALL SUBMIT A DETAILED METHOD STATEMENT FOR APPROVAL BY THE ENGINEER FOR THE INSTALLATION OF ANY PRECAST ELEMENTS THAT MAY FORM PART OF THE WORKS.

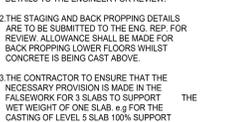
ELEMENT	REINFORCEMENT MASS (kg/m <sup>2</sup> )
BASES	95
COLUMNS	105
BEAMS	125
COVER SLABS	130
RETAINING WALLS	100
INTERNAL WALLS	75

**FOUNDATIONS**

- EXCAVATIONS, FOUNDING CONDITIONS AND LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO CASTING BLINDING.
- THE MINIMUM DEPTH TO BOTTOM OF FOUNDATION SHALL NOT BE LESS THAN 400mm DEEP BELOW UNFINISHED GROUND LEVEL.
- ANY OVER EXCAVATIONS BELOW FOUNDATIONS ARE TO BE MADE GOOD WITH 10MPa CONCRETE AT THE CONTRACTORS EXPENSE.
- UNLESS OTHERWISE SPECIFIED ALL FILL UNDER FOUNDATIONS SHALL BE AN APPROVED MATERIAL COMPACTED TO 98% MOD AASHITO.
- PROVIDE 50mm BLINDING UNDER ALL COLUMN AND WALL BASES.
- DESIGN ALL DWABLE BEARING CAPACITIES:
  - PIED FOOTINGS: 150 kPa
  - STRIP FOOTINGS: 150 kPa
- NO BACKFILL MATERIAL TO BE BROUGHT ONTO SITE WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.
- BACKFILLING OVER COLUMN BASES SHALL BE DONE WITH AN APPROVED MATERIAL, COMPACTED IN LAYERS.
- BACKFILL AROUND COLUMNS AND WALLS TO COMMERCE EVENLY.
- COMPACTION TEST RESULTS OF IN SITU MATERIAL UNDER STRUCTURES TO CONFIRM ALLOWABLE BEARING CAPACITY TO BE SUBMITTED AND APPROVED BY THE ENGINEER BEFORE CONCRETE WORKS COMMENCES.

**REINFORCEMENT**

- ALL REINFORCEMENT SHALL COMPLY WITH SANS 520, TYPE C, CLASS 2 GRADE 1.
- BAR DESIGNATION IS AS FOLLOWS:
  - R = 250MPa YIELD STRENGTH PLAIN ROUND MILD STEEL BARS
  - Y = GRADE 450MPa YIELD STRENGTH DEFORMED TYPE 2 HIGH YIELD BARS
- WIRE MESH SHALL BE WELDED WIRE FABRIC REINFORCEMENT SMOOTH ROUND BARS MINIMUM PROOF STRESS 485MPa COMPLYING WITH THE REQUIREMENTS OF SANS 1024.
- REINFORCING BARS ARE CALLED UP ON DRAWINGS IN THE FOLLOWING MANNER - NO. OFF. BAR TYPE, BAR DIAMETER, BAR MARK, PITCH, POSITION AND/OR COMMENTS E.G. Y 20 @ 3 - 200 B1
- POSITION COMMENT IS DESIGNATED AS FOLLOWS:
  - T = TOP FACE
  - B = BOTTOM FACE
  - N = NEAR FACE
  - FF = FAR FACE
  - EW = EACH WAY
  - EF = EACH FACE
  - AB = ALTERNATE BARS
  - ASB = ALTERNATE BARS REVERSED
  - AP = ALTERNATIVELY PLACED
  - AS = ALTERNATIVELY STAGGERED
  - STG = BARS STAGGERED BY AMOUNT SHOWN
  - ALT = ALTERNATING
  - SUFFIN 1,2 INDICATES THE LAYER WITH 1 BEING CLOSEST TO THE CONCRETE SURFACE WHERE TWO BAR MARKS ARE CALLED UP TOGETHER AND IDENTIFIED AS 'ALT' THE SPACING STATED IS THE SPACING OF ALL BARS, NOT OF EACH BAR MARK.
  - E.G. S 1 Y20 @ 102T ALT 1 Y20 @ 102T INDICATES 11 BARS AT 125 CENTRES IN THE TOP FACE.
- SYMBOLS DENOTING LAYERS OF REINFORCEMENT IN SLABS AND BASES ARE SHOWN IN FIGURE 1 BELOW.



**LIQUID RETAINING STRUCTURES**

- ALL EXPANSION JOINTS AND CHEMICAL TIE ANCHORS FOR FIXING INTO CONCRETE AND MASONRY TO BE INSTALLED STRICTLY TO MANUFACTURERS SPECIFICATION.
- ALL EXPANSION AND CHEMICAL ANCHORS TO BE HOT DIP GALVANISED.

**WATERPROOFING**

- ALL WATERPROOFING AND TANKING TO BE CARRIED OUT TO MANUFACTURERS SPECIFICATIONS AND ENGINEER'S DETAILS.

**PILE:**

- ALL PILING WORKS TO BE CARRIED OUT IN ACCORDANCE WITH SANS 1200 F. LATEST REVISION UNLESS OTHERWISE NOTED.
- BLINDING TO BE CAST BENEATH ALL PILE CAPS EXCEPT AS PROVIDED BY THE ENGINEER.

**PROPRIETARY EXPANSION JOINTS AND ANCHORS**

- ALL EXPANSION JOINTS AND CHEMICAL TIE ANCHORS FOR FIXING INTO CONCRETE AND MASONRY TO BE INSTALLED STRICTLY TO MANUFACTURERS SPECIFICATION.
- ALL EXPANSION AND CHEMICAL ANCHORS TO BE HOT DIP GALVANISED.

**LIQUID RETAINING STRUCTURES**

- ALL EXPANSION JOINTS AND CHEMICAL TIE ANCHORS FOR FIXING INTO CONCRETE AND MASONRY TO BE INSTALLED STRICTLY TO MANUFACTURERS SPECIFICATION.
- ALL EXPANSION AND CHEMICAL ANCHORS TO BE HOT DIP GALVANISED.

**WATERPROOFING**

- ALL WATERPROOFING AND TANKING TO BE CARRIED OUT TO MANUFACTURERS SPECIFICATIONS AND ENGINEER'S DETAILS.

**MASONRY**

- ALL REINFORCEMENT SHALL COMPLY WITH SANS 520, TYPE C, CLASS 2 GRADE 1.
- REFER TO ARCHITECTS DRAWINGS FOR MASONRY WALL LAYOUTS.
- THE FOLLOWING BRICK AND MORTAR STRENGTHS SHALL APPLY:

MASONRY COMPRESSIVE STRENGTH (MPa)	MORTAR CLASS (ANS 0164)
14	CLASS I
14	CLASS I
7	CLASS I

**LIQUID RETAINING STRUCTURES**

- ALL EXPANSION JOINTS AND CHEMICAL TIE ANCHORS FOR FIXING INTO CONCRETE AND MASONRY TO BE INSTALLED STRICTLY TO MANUFACTURERS SPECIFICATION.
- ALL EXPANSION AND CHEMICAL ANCHORS TO BE HOT DIP GALVANISED.

**WATERPROOFING**

- ALL WATERPROOFING AND TANKING TO BE CARRIED OUT TO MANUFACTURERS SPECIFICATIONS AND ENGINEER'S DETAILS.

**MASONRY**

- ALL REINFORCEMENT SHALL BE IN ACCORDANCE WITH SANS 10164, SANS 10400K **OR SANS 2001-CC1**.
- REFER TO ARCHITECTS DRAWINGS FOR MASONRY WALL LAYOUTS.
- THE FOLLOWING BRICK AND MORTAR STRENGTHS SHALL APPLY:

MASONRY COMPRESSIVE STRENGTH (MPa)	MORTAR CLASS (ANS 0164)
14	CLASS I
14	CLASS I
7	CLASS I

**LIQUID RETAINING STRUCTURES**

- ALL EXPANSION JOINTS AND CHEMICAL TIE ANCHORS FOR FIXING INTO CONCRETE AND MASONRY TO BE INSTALLED STRICTLY TO MANUFACTURERS SPECIFICATION.
- ALL EXPANSION AND CHEMICAL ANCHORS TO BE HOT DIP GALVANISED.

**WATERPROOFING**

- ALL WATERPROOFING AND TANKING TO BE CARRIED OUT TO MANUFACTURERS SPECIFICATIONS AND ENGINEER'S DETAILS.

**STEELWORK**

- ALL STRUCTURAL STEELWORK SHALL BE IN ACCORDANCE WITH SANS 1200H **OR SANS 2001-CC1** WHERE APPLICABLE.
- THE CONTRACTOR SHOULD CHECK THAT THE ENGINEERS DRAWING CONTAINS ALL THE INFORMATION REQUIRED FOR THE PREPARATION OF THE WORKSHOP DRAWING AS SOON AS POSSIBLE.
- WORKSHOP DRAWINGS TOGETHER WITH SUPPORTING CALCULATIONS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION. APPROVAL PROCESS WILL TAKE A MINIMUM OF 10 WORKING DAYS.
- MATERIALS SPECIFIED ON SHOP DRAWINGS MUST CORRESPOND WITH MATERIALS STATED ON ENGINEER'S DRAWINGS AND APPLICABLE SPECIFICATIONS.
- STEEL GRADES:

PRODUCTION METHOD	STEEL GRADE
HOT ROLLED HOLLOW SECTIONS	S355R
HOT ROLLED SECTIONS (SANS 1431)	S355R
COLD FORMED STEEL	MIN 200 MPa YIELD STRENGTH
HOLLOW SECTIONS	S355R
PLATES AND FLATS	S355R

**STEEL GRADES:**

- ALL WELDS ARE TO BE DESIGNED TO GIVE FULL MEMBER STRENGTH AND TO BE MINIMUM 6mm FILET WELD TO GRADE E70X8 UNLESS SPECIFIED OTHERWISE.
- ALL INTERSECTIONS TO BE WELDED CONTINUOUS ALL ROUND.
- NO SITE WELDING IS PERMITTED.
- ALL WELDING TO BE CARRIED OUT UNDER SUPERVISION OF A CODED WELDER AND BY A SUITABLY EXPERIENCED AND TRAINED WELDER. ALL WELDS TO BE CERTIFIED BY THE CODED WELDER.
- DETAILS OF WELDING CONSUMABLES AND CERTIFICATES TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- ALL WELDS MUST BE VISUALLY INSPECTED AND 10% OF ALL WELDS MUST BE CRACK TESTED USING DYE INDICATORS OR ANY OTHER TEST APPROVED BY THE ENGINEER.
- ALL BOLTED CONNECTIONS ARE TO BE DESIGNED TO SANS 10162.
- ALL BOLTS TO BE GRADE 8.8 UNLESS NOTED OTHERWISE. ALL BOLTS TO BE HOT DIP GALVANISED.
- ALL BOLTS TO RECEIVE WASHERS WITH MATERIAL OF WASHER TO MATCH MATERIAL OF BOLTS. EG. HOT DIP GALVANISED BOLT TO HAVE HOT DIP GALVANISED WASHER.
- ALL BOLTED CONNECTIONS TO CONSIST OF MINIMUM 2M16 GRADE 8.8 BOLTS UNLESS SPECIFIED OTHERWISE.
- ALL HOLDING DOWN BOLTS TO BE MINIMUM M16 AND HOT DIP GALVANISED.
- ALL GUSSET PLATES ARE TO BE MIN. 6mm THICK UNLESS NOTED OTHERWISE.
- PROVIDE 60MPa NON-SHRINK STRUCTURAL GROUT BELOW ALL BASE PLATES.
- CONNECTIONS TO PURLINS FOR MECHANICAL AND ELECTRICAL SUPPORTS WILL ONLY BE MADE BY BOLTING TO THE WEB OF THE PURLIN MAXIMUM LOAD 25kg.
- PROVIDE A SKIMMED MORTAR FINISH AND TWO LAYERS OF 250 MICRON DPC AS A SLIP JOINT TO THE TOPS OF ALL LOADBEARING BRICK WALLS PRIOR TO CASTING OF SLAB.
- PROVIDE A 10 mm SOFT JOINT (JOINTEX) BETWEEN THE TOP OF ALL NON LOADBEARING BRICK PANEL WALLS AND THE SOFFIT OF CONCRETE STRUCTURE ABOVE.
- HEIGHT OF BRICKWORK ERECTED IN 24 HOURS NOT TO EXCEED 10 BRICK COURSES.
- NO HORIZONTAL CHASING OF SERVICES IN WALLS WILL BE PERMITTED.
- NO BRICK WALLS ARE TO BE FOUND ON THE SURFACE BED WITHOUT WRITTEN CONSENT FROM THE ENGINEER.

**STEELWORK**

- ALL STRUCTURAL STEELWORK SHALL BE IN ACCORDANCE WITH SANS 1200H **OR SANS 2001-CC1** WHERE APPLICABLE.
- THE CONTRACTOR SHOULD CHECK THAT THE ENGINEERS DRAWING CONTAINS ALL THE INFORMATION REQUIRED FOR THE PREPARATION OF THE WORKSHOP DRAWING AS SOON AS POSSIBLE.
- WORKSHOP DRAWINGS TOGETHER WITH SUPPORTING CALCULATIONS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION. APPROVAL PROCESS WILL TAKE A MINIMUM OF 10 WORKING DAYS.
- MATERIALS SPECIFIED ON SHOP DRAWINGS MUST CORRESPOND WITH MATERIALS STATED ON ENGINEER'S DRAWINGS AND APPLICABLE SPECIFICATIONS.
- STEEL GRADES:

COACH SCREWBOLT SIZE	SCREW SHANK DIAMETER (mm)	THREADED DIAMETER (mm)
M6	6	5
M8	8	6
M10	10	8
M12	12	9

**STEELWORK**

- ALL STRUCTURAL STEEL BELOW GROUND LEVEL, CAST INTO CONCRETE OR BUILT INTO BRICKWORK, SHALL BE PAINTED WITH TWO COATS OF BITUMEN.
- SURFACE PREPARATION OF STRUCTURAL STEELWORK:
  - SANDBLAST ALL NEW STEELWORK TO A MINIMUM SA 2.5 IN ACCORDANCE WITH SWEDISH SIS 055900:1987.
- ALL STEELWORK THAT IS SPECIFIED TO BE HOT DIPPED GALVANISED SHALL BE HOT DIPPED GALVANISED FOR EXPOSURE CLASS C3 IN ACCORDANCE TO SANS 121.
- WHERE PAINTED FINISH IS SPECIFIED ON GALVANISED STEEL, DECREASE WITH GALVANISED IRON CLEANER AND 3M SCOTCH BRITE PADS AND RINSE WITH FRESH WATER PRIOR TO APPLICATION OF PRIMER COAT.
- NO ALKYL PRIMERS ON GALVANIZING.
- ALL STEELWORK SPECIFIED TO BE PAINTED SHALL BE PAINTED AS FOLLOWS:
  - PRIMER: STEELWORK TO BE PAINTED ONE COAT OF EPOXY ZINC PHOSPHATE PRIMER, (85 microns DTF).
  - INTERMEDIATE COAT: STEELWORK TO BE PAINTED WITH ONE COAT OF POLYAMIDE EPOXY MID. (125 microns DTF).
  - TOP COAT: STEELWORK TO BE SPRAY PAINTED WITH ONE COAT ACRYLIC POLYURETHANE (60 microns DTF).
- FINAL COLOUR TO ARCHITECTURAL SPEC.
- PAINT DFT TO BE TESTED USING A PAINT THICKNESS GAUGE.
- NO CUTTING, DRILLING OR WELDING OF CORROSION PROTECTED MEMBERS SHALL BE ALLOWED.
- ALL PAINTWORK DAMAGED DURING ERECTION AND TRANSPORTATION TO BE TOUCHED UP TO ABOVE SPEC.

**TIMBER STRUCTURES**

- ALL STRUCTURAL TIMBERWORK TO BE DONE IN ACCORDANCE WITH SANS 2001-C11 AND SANS 2001-C12.
- TIMBER STRUCTURES TO BE MANUFACTURED STRICTLY IN ACCORDANCE WITH ENGINEERS AND ARCHITECTS DRAWINGS.
- WORKSHOP DRAWINGS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
- TIMBER GRADE AND SIZING AVAILABILITY SHALL BE CHECKED BEFORE COMMENCEMENT OF FABRICATION OF TIMBER STRUCTURES. ANY POSSIBLE PROCUREMENT ISSUES SHALL BE REPORTED TO THE ENGINEER BEFORE ORDERING.
- TIMBER GRADES:

ELEMENT	TIMBER GRADE
LAMINATED SALWA BEAMS	T10
SALWA PILES	T10
PINE RAFTERS	S
PINE SATTENS/PURLINS	S
PINE STRIPS	S

**TIMBER GRADES:**

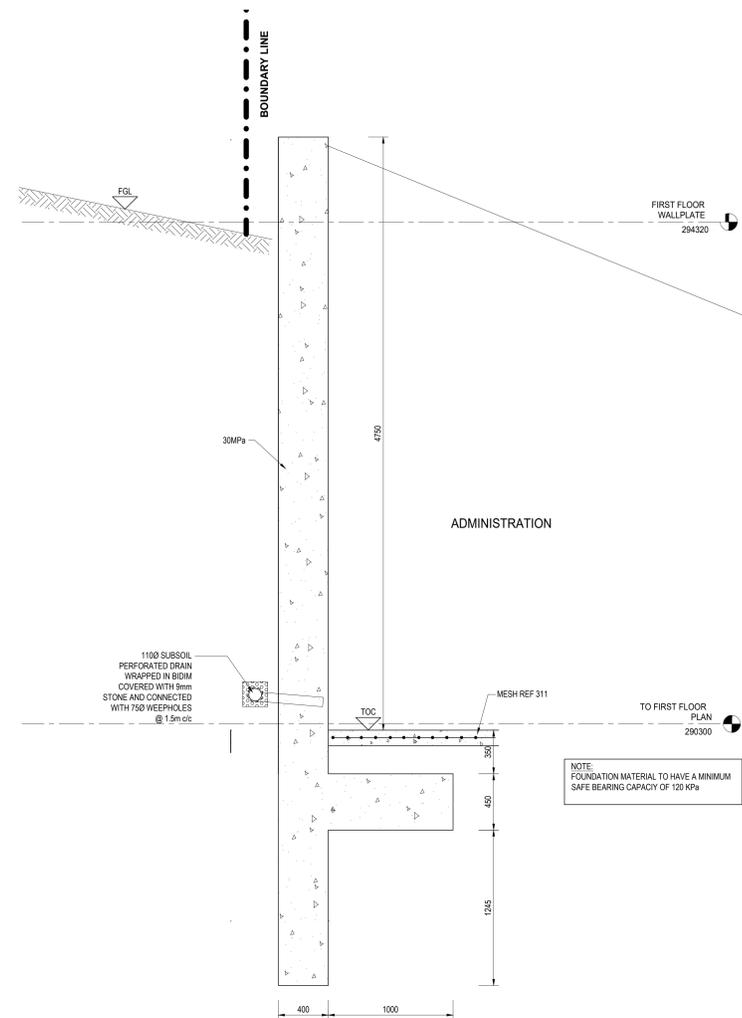
- EXTERNAL TIMBER MEMBERS SHALL BE PLANED ALL ROUND (PAR).
- ALL BOLT HOLES TO BE DRILLED A MAXIMUM OF 1mm LARGER THAN THE BOLT DIAMETER.
- BOLTS AND COACH SCRE



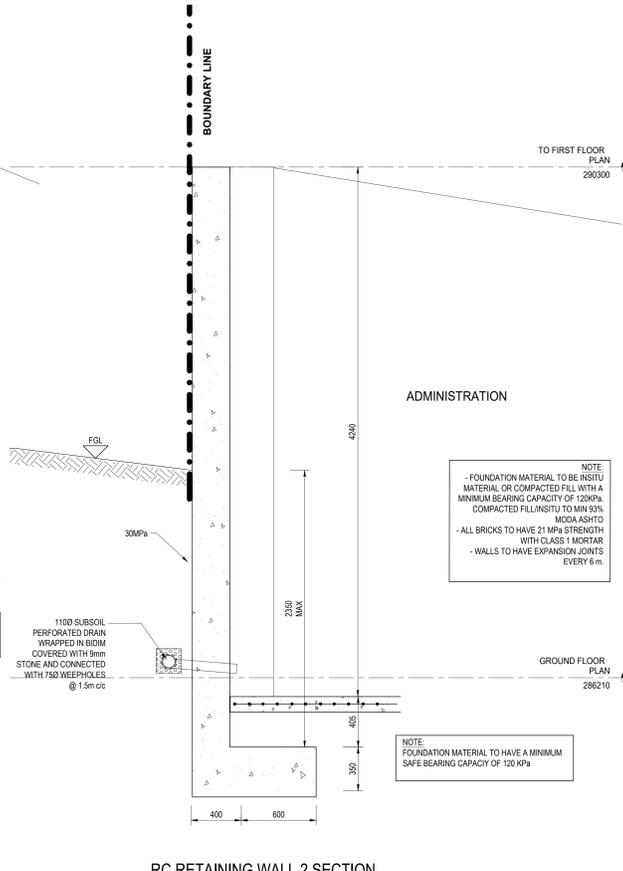


GENERAL NOTES

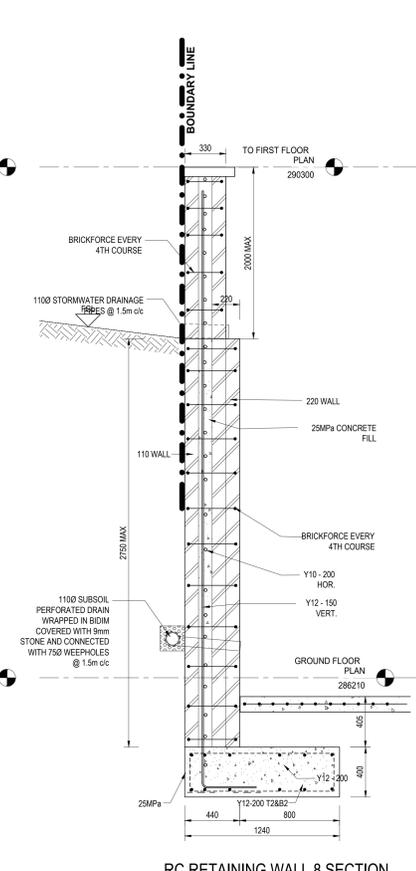
- All drawings to read to be read in conjunction with Engineers Drawings
- Contractor to report any discrepancies or contradiction to the engineer.
- No drawings are to be scaled.



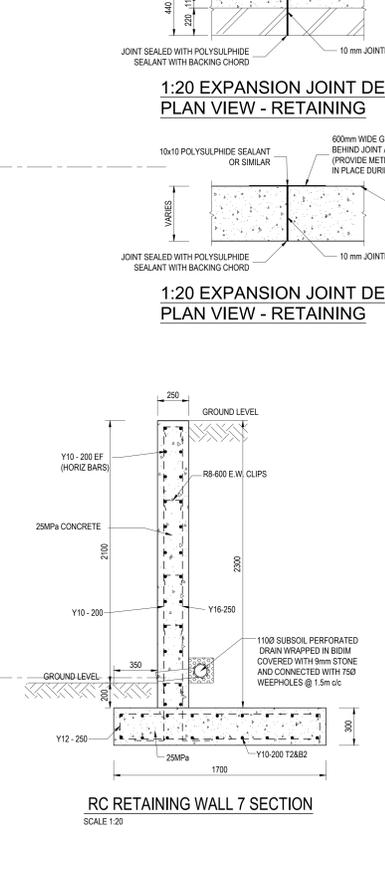
RC RETAINING WALL 1 SECTION  
SCALE 1:20



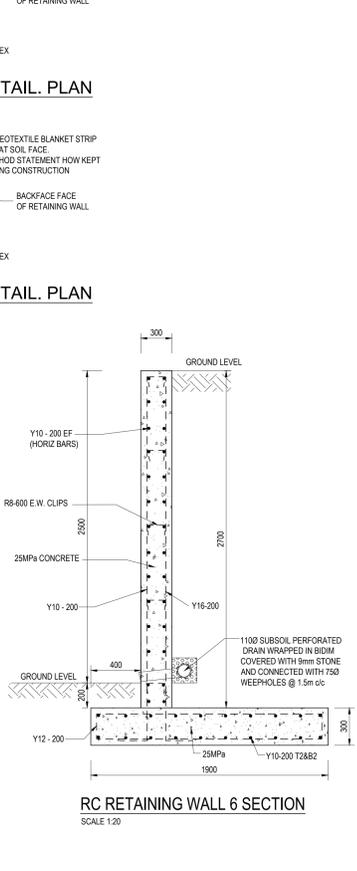
RC RETAINING WALL 2 SECTION  
SCALE 1:20



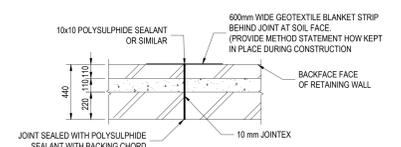
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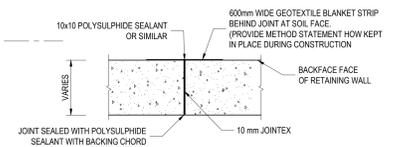
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SCALE 1:20



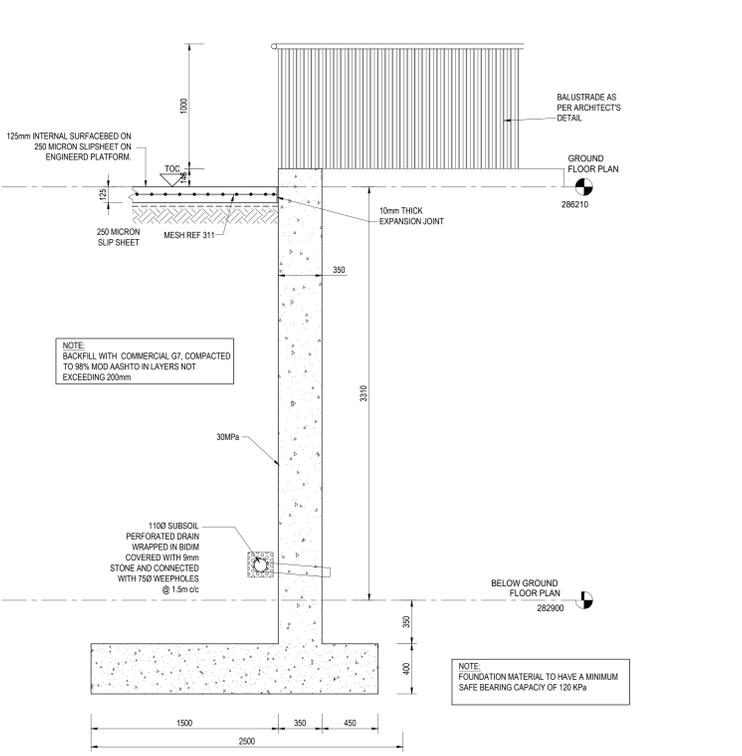
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SCALE 1:20



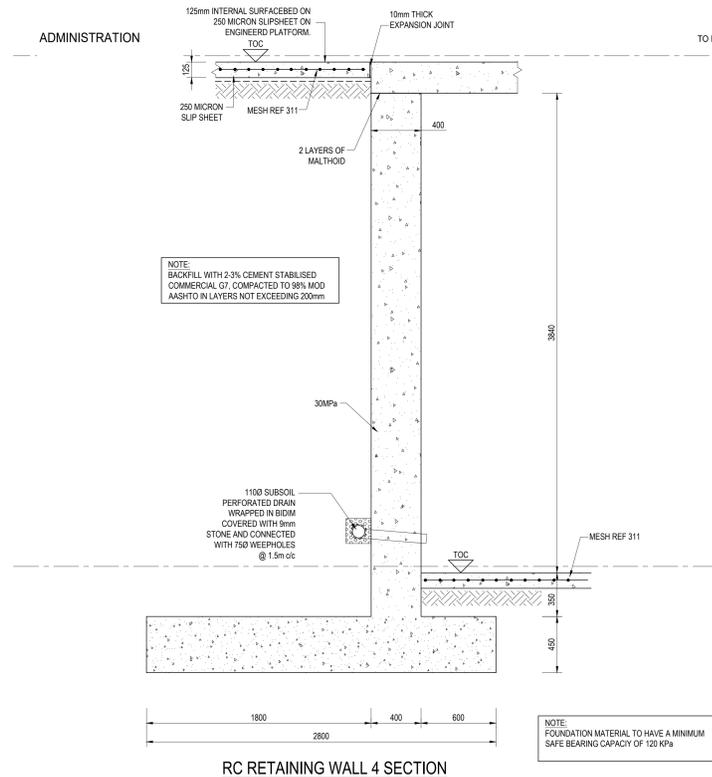
1:20 EXPANSION JOINT DETAIL. PLAN VIEW - RETAINING



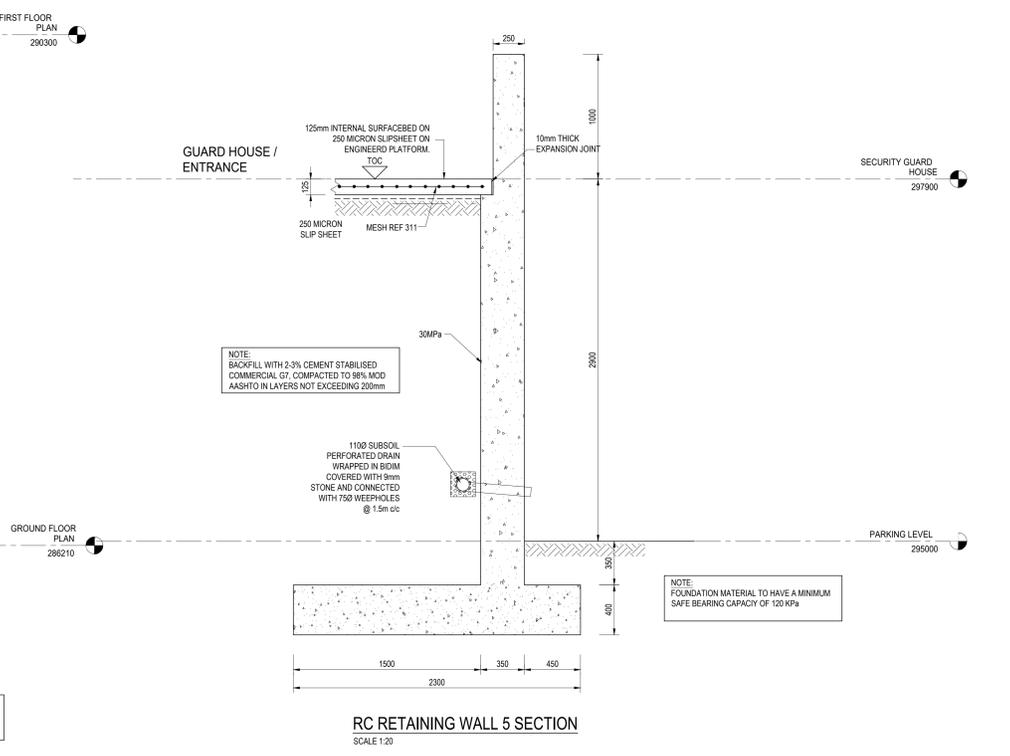
1:20 EXPANSION JOINT DETAIL. PLAN VIEW - RETAINING



RC RETAINING WALL 3 SECTION  
SCALE 1:20



RC RETAINING WALL 4 SECTION  
SCALE 1:20



RC RETAINING WALL 5 SECTION  
SCALE 1:20

Client number	page type
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DEPARTMENT SIGNATURES	
FACILITY	
FACILITY CEO	
FACILITY MANAGER	
DISTRICT MANAGER	
PROJECT LEADER	
Checked by (Professional Consultant)	
Name	
Signature	Date



Consultant  
15 The Boulevard  
Westlake Office Park,  
Wetlands  
Durban, 3030  
Tel: 031 285 0444  
email: georg@ukuza.co.za

Discipline: STRUCTURES  
Project: NEWTOWN A CHC: CONVERSION TO LARGE CLINIC OPTION 2A

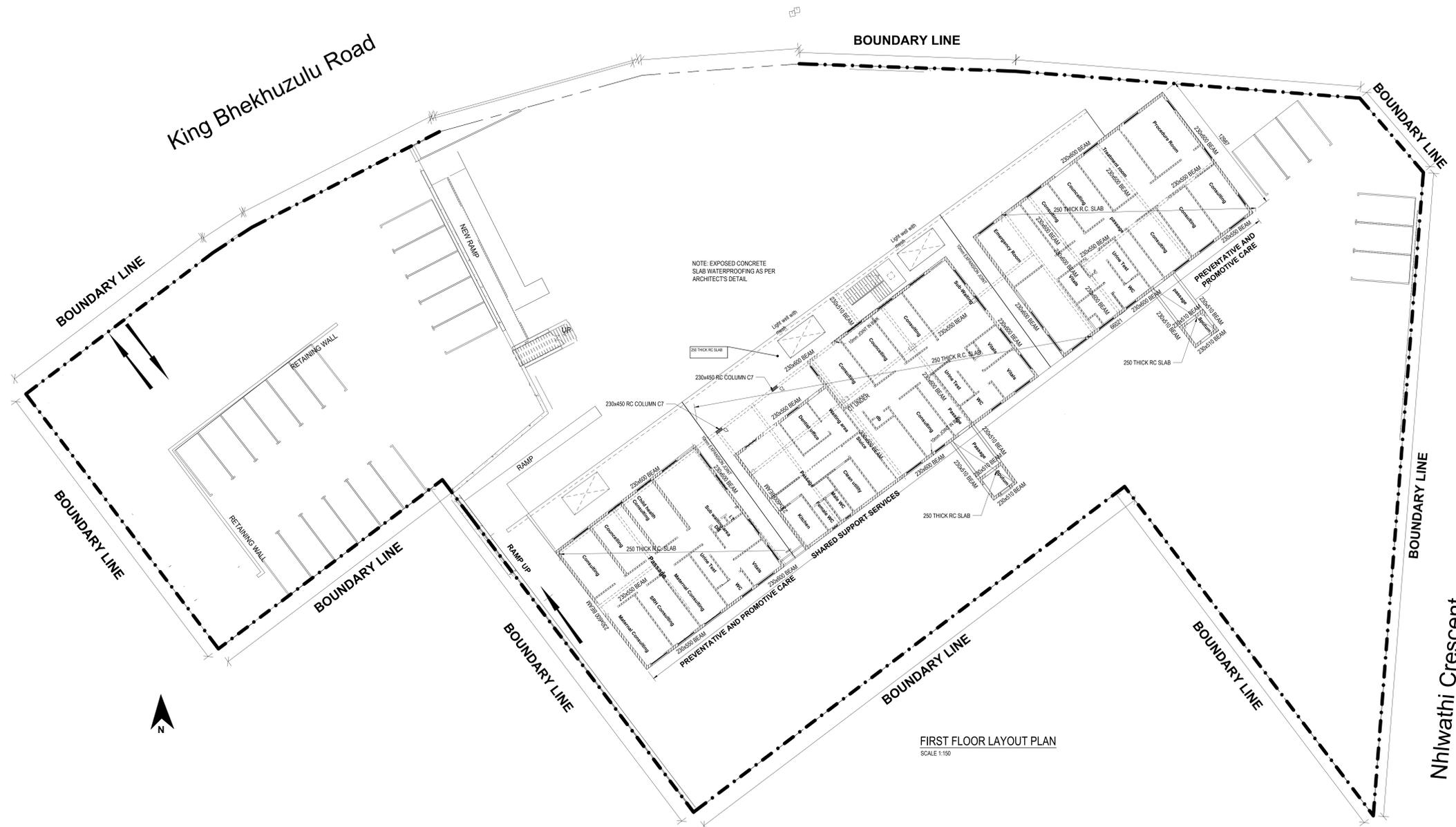
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Project stage: STAGE 3/4 CONCEPT DESIGN

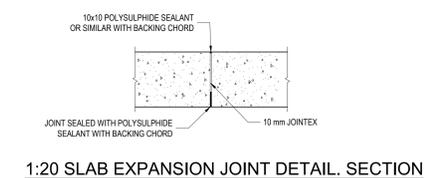
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Scale: 1:100

Drawing number: 00000 UKU - S - 1004 - 0

Drawing Number ID: 00000 = Client No  
UKU = Department  
S = Consultant Discipline  
000C = Drawing No  
0 = Revision No



FIRST FLOOR LAYOUT PLAN  
SCALE 1:150



1:20 SLAB EXPANSION JOINT DETAIL. SECTION



1:25 BEAM/SLAB TO LOAD BEARING BRICKWORK DETAILS



1:25 SLAB TO NON LOAD BEARING BRICKWORK DETAILS

No.	Date	Amendment	Issued to

GENERAL NOTES

- All drawings to read to be read in conjunction with Engineers Drawings
- Contractor to report any discrepancies or contradiction to the engineer.
- No drawings are to be scaled.

Sheet number	page type

DEPARTMENT SIGNATURES

FACILITY	
FACILITY GEO	
FACILITY MANAGER	
DISTRICT MANAGER	
PROJECT LEADER	
Checked by (Professional Consultant)	
Name	
Signature	Date

Client

Department: Health  
PROVINCE OF KWAZULU-NATAL

Consultant

UKUZA CONSULTING

Discipline	STRUCTURES
Project	
Project Title	NEWTOWN A CHC: CONVERSION TO LARGE CLINIC OPTION 2A
Drawing Title	FIRST FLOOR LAYOUT AND DETAILS
Project Stage	STAGE 3/4 CONCEPT DESIGN

Drawn	D. MUHAMMADA	Date	
Scale	1:100	2023/09/13 17:30:30	
Drawing number	00000 UKU - S - 1005 - 0		
Drawing Number ID	00000 = Client No		
UKU	= Department		
S	= Consultant Discipline		
000C	= Drawing No		
0	= Revision No		

GENERAL NOTES

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- Contractor to report any discrepancies or contradiction to the engineer.
- No drawings are to be scaled.

Client number \_\_\_\_\_ page type \_\_\_\_\_

DEPARTMENT SIGNATURES

FACILITY	
FACILITY GEO	
FACILITY MANAGER	
DISTRICT MANAGER	
PROJECT LEADER	

Checked by (Professional Consultant)

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Client



Consultant

19 The Boulevard  
Westbay Office Park,  
Waduli,  
Durban, 3030  
Tel: 031 285 0444  
email: georg@ukzu.co.za



Discipline STRUCTURES

Project  
NEWTOWN A CHC: CONVERSION  
TO LARGE CLINIC OPTION 2A

Drawing title  
SECTIONS

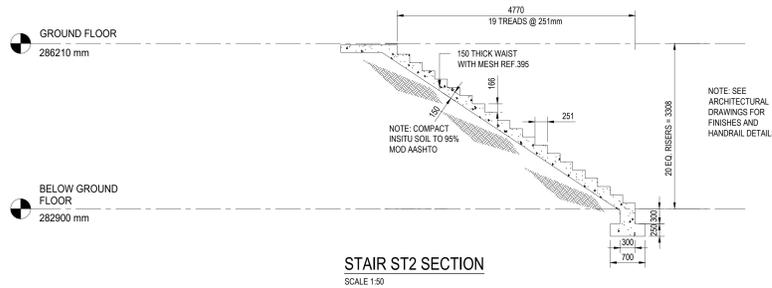
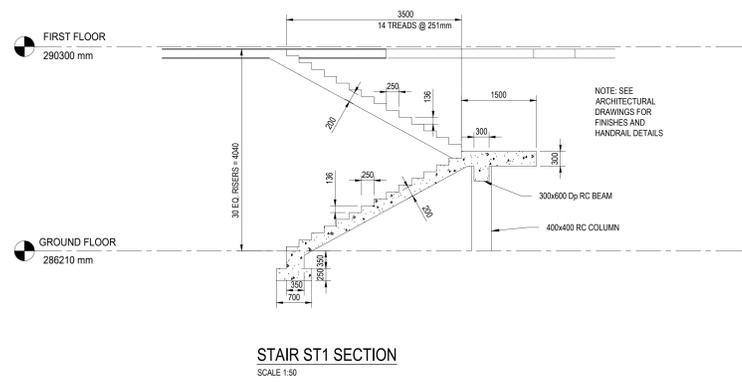
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STAGE 3/4 CONCEPT DESIGN

Drawn O. MUHAMMAD Date \_\_\_\_\_

Scale 1:100 2023/09/13 17:30:30

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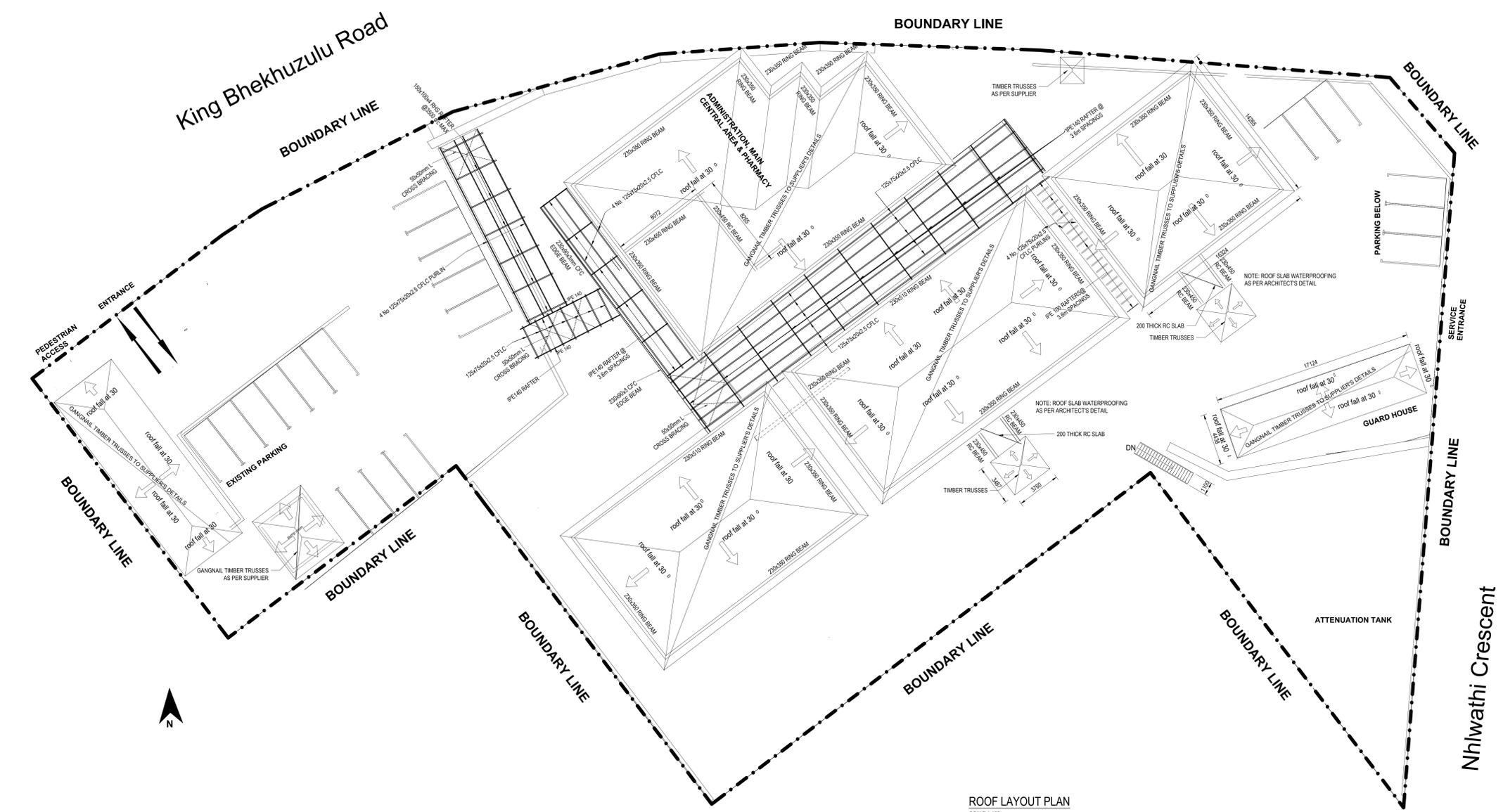
Drawing Number ID  
00000 = Client No  
UKU = Department  
S = Consultant Discipline  
000C = Drawing No  
0 = Revision No



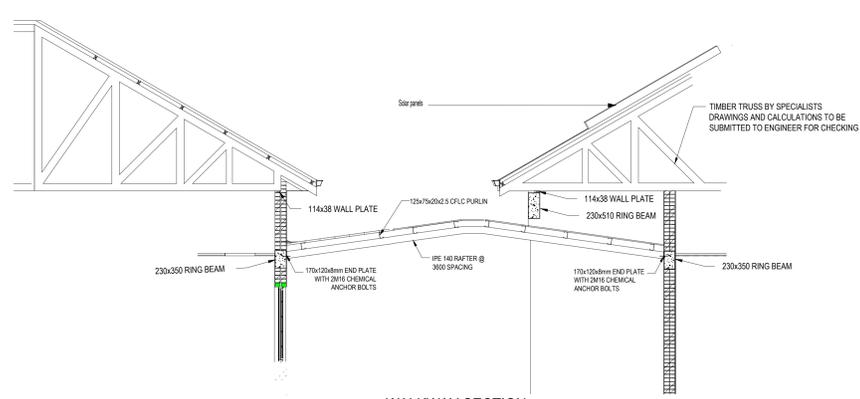
No.	Date	Amendment	Issued to

GENERAL NOTES

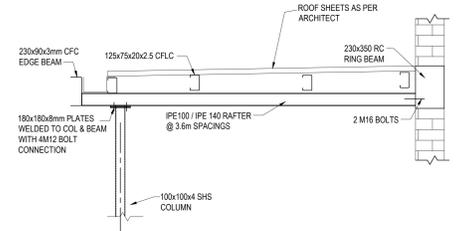
- All drawings to read to be read in conjunction with Engineers Drawings
- Contractor to report any discrepancies or contradiction to the engineer.
- No drawings are to be scaled.



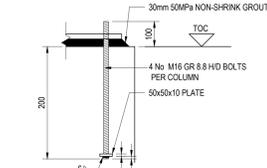
ROOF LAYOUT PLAN  
SCALE 1:150



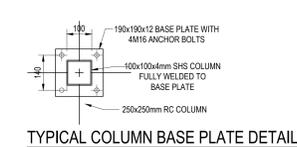
WALKWAY SECTION  
SCALE 1:50



TYPICAL ROOF SUPPORT DETAIL AT 75x75x4mm SHS  
SCALE 1:20



ANCHOR BOLT DETAIL  
SCALE 1:10



TYPICAL COLUMN BASE PLATE DETAIL  
SCALE 1:10

Client number	page type
DEPARTMENT SIGNATURES	
FACILITY	
FACILITY GEO	
FACILITY MANAGER	
DISTRICT MANAGER	
PROJECT LEADER	
Checked by (Professional Consultant)	
Name	
Signature	Date



Consultant  
10 The Boulevard  
Westway Office Park,  
Wadlode,  
Durban, 3030  
Tel: 031 285 0444  
email: info@ukzu.co.za



Discipline: STRUCTURES  
Project: NEWTOWN A CHC: CONVERSION TO LARGE CLINIC OPTION 2A  
Drawing title: ROOF LAYOUT AND DETAILS  
Project Stage: STAGE 3/4 CONCEPT DESIGN

Drawn	O. MUHYIMANA	Date	2023/09/13 17:30:30
Scale	AS SHOWN		
Drawing number	00000 UKU - S - 1007 - 0		
Drawing Number ID	00000 = Client No		
	UKU = Department		
	S = Consultant Discipline		
	000C = Drawing No		
	0 = Revision No		



**KWAZULU-NATAL PROVINCE**

HEALTH  
REPUBLIC OF SOUTH AFRICA

---

**Newtown A CHC: Conversion of Newtown CHC from a CHC to Large Clinic**

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## **ANNEXURE 22**

### **Electrical Engineer Drawings**

**GENERAL NOTES**

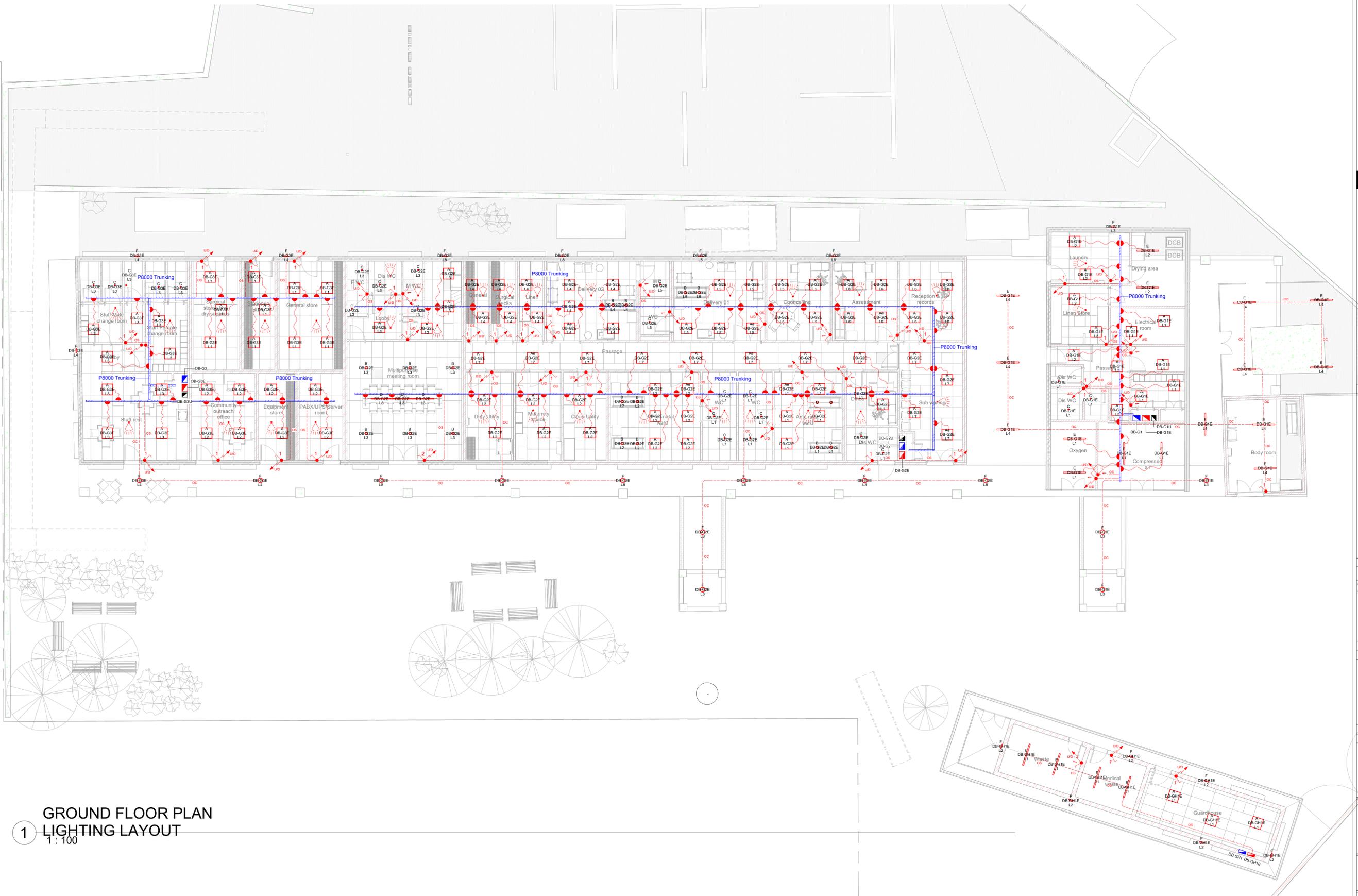
This drawing is issued for Electrical purposes only, and should be read in conjunction with the Electrical Specification. Setting out of Electrical and Electronic accessories are to be as indicated on Architects details.

Refer to Architects and Structural Drawings for all building dimensions, latest building revisions and services.

Do not scale this drawing.

All work to comply with relevant Standards, Codes of Practice, Specification and Regulations.

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**GROUND FLOOR PLAN LIGHTING LAYOUT**  
1 : 100

<p>NOTES:</p> <p>(1) - CONTRACTOR TO ENSURE MAX DISTANCE BETWEEN DRAW BOXES TO BE 20 METERS NOTWITHSTANDING ANYTHING TO CONTRARY.</p> <p>(2) - DRAW BOXES REQUIRED AFTER EVERY 90 DEGREE BEND OR 180 DEGREE TOTAL OF SLOW BENDS.</p> <p>(3) - ALL UNWIRED CONDUITS TO BE PROVIDED WITH DRAW WIRES. THESE WILL BE WITHDRAWN AND CHECKED AT RANDOM.</p> <p>(4) - CAST IN CONDUITS TO BE SPACED AT A MINIMUM OF 35MM.</p>	<p>20mm. DIA. CONDUIT</p> <p>25mm. DIA. CONDUIT</p> <p>32mm. DIA. CONDUIT</p> <p>50mm. DIA. CONDUIT</p> <p>SECTION OF CONDUIT OMITTED FOR CLARITY</p> <p>SURFIX</p> <p>TWIN AND EARTH CABLE ROUTE</p> <p>OC OVERHEAD CAST</p> <p>OS OVERHEAD ON SURFACE OR LAID ON CEILING</p> <p>FC FLOOR SLAB CAST-IN</p> <p>FS FLOOR SURFACE(IN FLOOR VOID)</p> <p>POWER SKIRTING</p> <p>TRUNKING</p> <p>CABLE SLEEVE</p> <p>CABLE TRAY/LADDER</p> <p>150 SQUARE GALV. STEEL DRAW TRAY SIZE AS SHOWN</p> <p>T TELEPHONE JUNCTION BOX</p> <p>I INTERCOM JUNCTION BOX</p> <p>D DATA/COMMS JUNCTION BOX</p> <p>S SECURITY, ETC. JUNCTION BOX</p> <p>DB-1 BOARD DESIGNATION NUMBER</p>	<p>16A SANS 164-1 SWITCHED SOCKET OUTLET (SSO)</p> <p>16A SANS 164-1 DOUBLE SSO</p> <p>16A SANS 164-1 SSO ON PEDESTAL</p> <p>16A SANS 164-2 3 PIN SSO</p> <p>16A SANS 164-1 AND 164-2 COMBINATION SSO</p> <p>16A SANS 164-4 RED SSO (Ø SHAVED EARTH PIN)</p> <p>16A SANS 164-4 RED SSO ON PEDESTAL</p> <p>3 PHASE C-FORM SSO</p> <p>16A SANS 164-4 UNSWITCHED SOCKET OUTLET</p> <p>2 POLE ISOLATOR</p> <p>3 POLE ISOLATOR</p> <p>4 POLE ISOLATOR</p> <p>SINGLE LEVER ONE WAY LIGHT SWITCH</p> <p>INTERMEDIATE LIGHT SWITCH</p> <p>TWO WAY LIGHT SWITCH</p> <p>LED PANEL LUMINAIRE</p>	<p>LINEAR LUMINAIRE</p> <p>BULKHEAD/DOWNLIGHTER, ETC</p> <p>WALL MOUNTED LUMINAIRE</p> <p>POLE MOUNTED LUMINAIRE</p> <p>MOTION SENSOR</p> <p>LIGHT SWITCH WITH MOTION SENSOR</p> <p>TELEPHONE POINT</p> <p>TELEPHONE POINT ON PEDESTAL</p> <p>DIRECT OUTSIDE LINE TELEPHONE POINT(CALL BOX)</p> <p>TV OUTLET</p> <p>DATA/COMMS OUTLET</p> <p>BELL PUSH</p> <p>BELL OUTLET</p> <p>SIGN POINT</p> <p>CLOCK OUTLET</p> <p>PHOTOCELL</p>	<p>1 REFERENCE TO QUANTITY i.e. 3No</p> <p>2 REFERENCE TO QUANTITY i.e. DETAIL 2</p> <p>3 REFERENCE TO AN ELECTRICAL NOTE i.e. NOTE 4</p> <p>4 REFERENCE TO STANDARD DRAWING i.e. STANDARD DRAWING No.34</p> <p>1 CABLE NUMBER - REFER TO CABLE SCHEDULE FOR DETAILS</p> <p>B LUMINAIRE TYPE "B" - REFER TO LUMINAIRE SCHEDULE</p> <p>FB RECESSED FLOOR BOX</p> <p>CB RECESSED CLUSTER BOX</p>
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NO.	DATE	DESCRIPTION	REV. BY:
0	2023/09/13	Original Issue	CP
A	2023/10/11	Updated Architectural Layout	CP

Designed By: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_



Client: Owner  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

PROJECT: **NEWTOWN CLINIC**

ADDRESS: \_\_\_\_\_  
Enter address here

DRAWING TITLE: **GROUND FLOOR LIGHTING LAYOUT**

Services: <b>Electrical</b>	DATE: <b>09/11/23</b>
Paper Size: <b>A1</b>	SCALE: <b>1 : 100</b>

Drawn: <b>CP</b>	Checked: <b>MK</b>	Approved: <b>MK</b>
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IBUYA PROJECT NO. **23023**  
IBUYA DRAWING NO.: **100**

REVISION: **A**



**GENERAL NOTES**

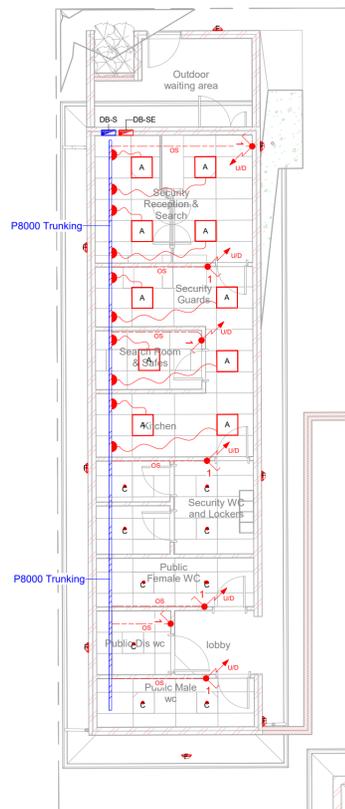
This drawing is issued for Electrical purposes only, and should be read in conjunction with the Electrical Specification. Setting out of Electrical and Electronic accessories are to be as indicated on Architects details.

Refer to Architects and Structural Drawings for all building dimensions, latest building revisions and services.

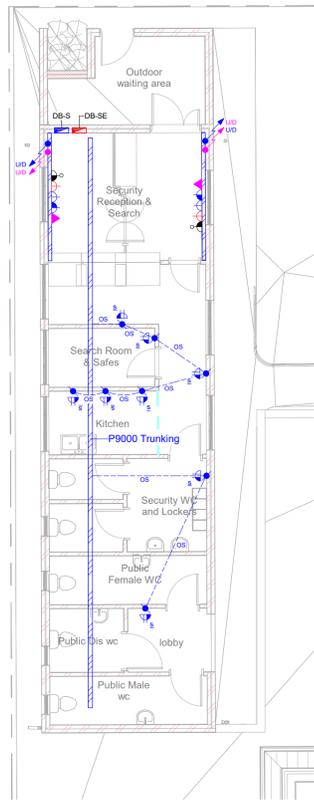
Do not scale this drawing.

All work to comply with relevant Standards, Codes of Practice, Specification and Regulations.

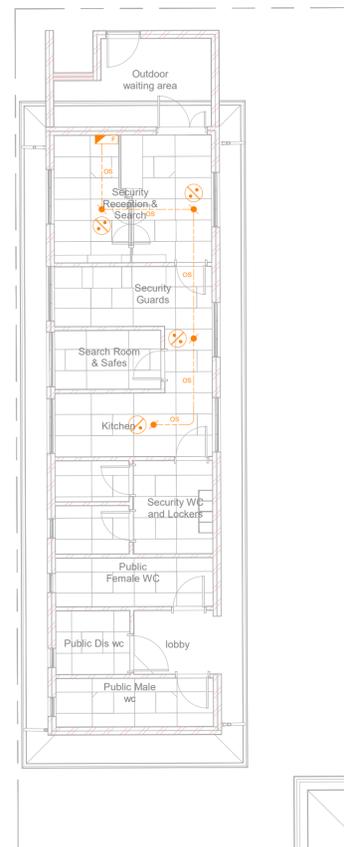
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**1 SECURITY GUARD HOUSE LIGHTING LAYOUT**  
1 : 100



**2 SECURITY GUARD HOUSE SMALL POWER**  
1 : 100



**3 SECURITY GUARD HOUSE ELECTRONICS LAYOUT**  
1 : 100

NO.	DATE	DESCRIPTION	REV BY:
0	2023/09/13	Original Issue	CP

Designed By: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_



Client: Owner  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

PROJECT:  
**NEWTOWN CLINIC**  
ADDRESS:  
Enter address here

DRAWING TITLE:  
**SECURITY GUARD HOUSE LIGHTING, SMALL POWER AND ELECTRONICS LAYOUT**

Services: **Electrical** DATE: **09/13/23**  
Paper Size: **A1** SCALE: **1 : 100**

Drawn: **CP** Checked: **MK** Approved: **MK**

IBUYA PROJECT NO. **23023** REVISION: **0**  
IBUYA DRAWING NO.: **102**

<p>NOTES:</p> <p>(1) - CONTRACTOR TO ENSURE MAX DISTANCE BETWEEN DRAW BOXES TO BE 20 METERS NOTWITHSTANDING ANYTHING TO THE CONTRARY.</p> <p>(2) - DRAW BOXES REQUIRED AFTER EVERY 90 DEGREE BEND OR 180 DEGREE TOTAL OF SLOW BENDS.</p> <p>(3) - ALL UNWIRED CONDUITS TO BE PROVIDED WITH DRAW WIRES. THESE WILL BE WITHDRAWN AND CHECKED AT RANDOM.</p> <p>(4) - CAST IN CONDUITS TO BE SPACED AT A MINIMUM OF 35MM.</p>	<p>20mm. DIA. CONDUIT</p> <p>25mm. DIA. CONDUIT</p> <p>32mm. DIA. CONDUIT</p> <p>50mm. DIA. CONDUIT</p> <p>SECTION OF CONDUIT OMITTED FOR CLARITY</p> <p>TWIN AND EARTH CABLE ROUTE</p> <p>OC OVERHEAD CAST</p> <p>OS OVERHEAD ON SURFACE OR LAID ON CEILING</p> <p>FC FLOOR SLAB CAST-IN</p> <p>FS FLOOR SURFACE(IN FLOOR VOID)</p> <p>POWER SKIRTING</p> <p>TRUNKING</p> <p>CABLE SLEEVE</p> <p>CABLE TRAY/LADDER</p> <p>150 SQUARE GALV. STEEL DRAW TRAY SIZE AS SHOWN</p> <p>T TELEPHONE JUNCTION BOX</p> <p>D DATA/COMMS JUNCTION BOX</p> <p>S SECURITY, ETC. JUNCTION BOX</p> <p>DB-1 BOARD DESIGNATION NUMBER</p> <p>16A SANS 164-1 SWITCHED SOCKET OUTLET (SSO)</p> <p>16A SANS 164-1 DOUBLE SSO</p> <p>16A SANS 164-1 SSO ON PEDESTAL</p> <p>16A SANS 164-2 3 PIN SSO</p> <p>16A SANS 164-1 AND 164-2 COMBINATION SSO</p> <p>16A SANS 164-4 RED SSO (Ø SHAVED EARTH PIN)</p> <p>16A SANS 164-4 RED SSO ON PEDESTAL</p> <p>3 PHASE C-FORM SSO</p> <p>16A SANS 164-4 UNSWITCHED SOCKET OUTLET</p> <p>2 POLE ISOLATOR</p> <p>3 POLE ISOLATOR</p> <p>4 POLE ISOLATOR</p> <p>SINGLE LEVER ONE WAY LIGHT SWITCH</p> <p>INTERMEDIATE LIGHT SWITCH</p> <p>TWO WAY LIGHT SWITCH</p> <p>LED PANEL LUMINAIRE</p> <p>LINEAR LUMINAIRE</p> <p>BULKHEAD/DOWNLIGHTER, ETC</p> <p>WALL MOUNTED LUMINAIRES</p> <p>POLE MOUNTED LUMINAIRE</p> <p>MOTION SENSOR</p> <p>LIGHT SWITCH WITH MOTION SENSOR</p> <p>TELEPHONE POINT</p> <p>TELEPHONE POINT ON PEDESTAL</p> <p>DIRECT OUTSIDE LINE</p> <p>TELEPHONE POINT(CALL BOX)</p> <p>TV OUTLET</p> <p>DATA/COMMS OUTLET</p> <p>BELL PUSH</p> <p>BELL OUTLET</p> <p>SIGN POINT</p> <p>CLOCK OUTLET</p> <p>PHOTOCELL</p> <p>REFERENCE TO QUANTITY i.e. 3No</p> <p>REFERENCE TO QUANTITY i.e. DETAIL 2</p> <p>REFERENCE TO AN ELECTRICAL NOTE i.e. NOTE 4</p> <p>REFERENCE TO STANDARD DRAWING i.e. STANDARD DRAWING No.34</p> <p>1 CABLE NUMBER - REFER TO CABLE SCHEDULE FOR DETAILS</p> <p>B LUMINAIRE TYPE "B" - REFER TO LUMINAIRE SCHEDULE</p> <p>FB RECESSED FLOOR BOX</p> <p>CB RECESSED CLUSTER BOX</p>
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**FLOOR PLAN SMALL**  
**1 POWER**  
 1:100

**GENERAL NOTES**

This drawing is issued for Electrical purposes only, and should be read in conjunction with the Electrical Specification. Setting out of Electrical and Electronic accessories are to be as indicated on Architects details.

Refer to Architects and Structural Drawings for all building dimensions, latest building revisions and services.

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**Drawing Notes**

Key Value	Keynote Text
1	Cluster box mounted at 1200mm AFFL consisting of 1 x Normal S.S.O (SANS 164-1), 1 x Euro S.S.O (SANS 164-2), 1 x Essential S.S.O (SANS 164-1) and 1 x RJ45 outlets.
2	Conduit Dropper: 2 x 32mm PVC Conduit built in brickwork/partition for voice/data (Refer to Detail F).
3	Conduit Dropper: 3 x 25mm PVC Conduit built in brickwork/partition for power (Refer to Detail F).
4	Conduits cast-in feeds to Power skirting, 3 x 32mm(power) and 2 x 32mm(voice/data).
5	Power Skirting Mounted above Worktop.
6	Vertical Behead Trunking consisting of 4 No. UPS Dedicated S.S.O (SANS 164-4), 4 No. Essential Euro S.S.O (SANS 164-2), 2 No. Oxygen points, 1 No. LP Air point and 2 No. Vaccum points.
7	Cast-in Floor box consisting of 1 x Normal S.S.O (SANS 164-1), 1 x Essential S.S.O (SANS 164-1), 1 x Essential Euro S.S.O (SANS 164-2), 1 x Dedicated UPS S.S.O (SANS 164-4), 1 x RJ45 outlets and 1 x HDMI Power Point.
10	300mm x 300mm Data Junction Box.
11	SSO at 1100mm AFFL.
12	SSO mounted on soffit.
13	Data point mounted on soffit.
14	SSO mounted at 1350mm AFFL for examination light.

**REVISIONS**

NO.	DATE	DESCRIPTION	REV BY:
0	2023/09/13	Original Issue	CP
A	2023/10/11	Updated Architectural Layout	CP

Designed By:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_



Client: Owner

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**PROJECT:**  
 NEWTOWN CLINIC

**ADDRESS:**  
 Enter address here

**DRAWING TITLE:**  
 FIRST FLOOR SMALL POWER LAYOUT

**Services:** Electrical **DATE:** 09/06/23  
**Paper Size:** A1 **SCALE:** 1:100

**Drawn:** CP **Checked:** MK **Approved:** MK

**IBUYA PROJECT NO.:** 23023  
**IBUYA DRAWING NO.:** 201 **REVISION:** A

NOTES:	(1) - CONTRACTOR TO ENSURE MAX DISTANCE BETWEEN DRAW BOXES TO BE 20 METERS NOTWITHSTANDING ANYTHING TO THE CONTRARY.	(2) - DRAW BOXES REQUIRED AFTER EVERY 90 DEGREE BEND OR 180 DEGREE TOTAL OF SLOW BENDS.	(3) - ALL UNWIRED CONDUITS TO BE PROVIDED WITH DRAW WIRES. THESE WILL BE WITHDRAWN AND CHECKED AT RANDOM.	(4) - CAST IN CONDUITS TO BE SPACED AT A MINIMUM OF 35MM.								
<ul style="list-style-type: none"> <li>100 x 100 CONDUIT BOX</li> <li>100 x 100 CONDUIT BOX AT 500AFFL</li> <li>100 x 100 CONDUIT BOX AT 1400AFFL</li> <li>100 x 50 CONDUIT BOX</li> <li>100 x 50 CONDUIT BOX AT 300AFFL</li> <li>100 x 50 CONDUIT BOX AT 1400AFFL</li> <li>ROUND CONDUIT BOX</li> <li>CLUSTER BOX(SIZE AS NOTED)</li> </ul>	<ul style="list-style-type: none"> <li>ROUND DRAW BOX</li> <li>100 x 100 DRAW BOX</li> <li>100 x 100 BOX BEHIND POWER SKIRTING</li> <li>CONDUIT TURNED UP (UP FOR DOWN)</li> <li>DOWN CONDUCTOR TO EARTH TIE</li> </ul>	<ul style="list-style-type: none"> <li>ROUND CONDUIT BOX FOR:               <ul style="list-style-type: none"> <li>DM - DOOR MONITOR</li> <li>CAM - CAMERA</li> <li>AA - ACCESS CONTROL</li> <li>CR - CARD READER</li> <li>COM - COMMUNICATION/INTERCOM</li> <li>BGM - BACK GROUND MUSIC</li> <li>EL - ELECTRIC LOCK/STRIKE</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>20mm. DIA. CONDUIT</li> <li>25mm. DIA. CONDUIT</li> <li>32mm. DIA. CONDUIT</li> <li>50mm. DIA. CONDUIT</li> <li>SECTION OF CONDUIT OMITTED FOR CLARITY</li> <li>SURFIX</li> <li>TWIN AND EARTH CABLE ROUTE</li> </ul>	<ul style="list-style-type: none"> <li>OC OVERHEAD CAST</li> <li>OS OVERHEAD ON SURFACE OR LAID ON CEILING</li> <li>FC FLOOR SLAB CAST-IN</li> <li>FS FLOOR SURFACE(IN FLOOR VOID)</li> <li>POWER SKIRTING</li> <li>TRUNKING</li> <li>CABLE SLEEVE</li> <li>CABLE TRAY/LADDER</li> </ul>	<ul style="list-style-type: none"> <li>SQUARE GALV. STEEL DRAW TRAY SIZE AS SHOWN</li> <li>TELEPHONE JUNCTION BOX</li> <li>INTERCOM JUNCTION BOX</li> <li>DATA/COMMS JUNCTION BOX</li> <li>SECURITY, ETC. JUNCTION BOX</li> <li>DISTRIBUTION BOARD POSITION</li> <li>DB-1 BOARD DESIGNATION NUMBER</li> </ul>	<ul style="list-style-type: none"> <li>16A SANS 164-1 SWITCHED SOCKET OUTLET (SSO)</li> <li>16A SANS 164-1 DOUBLE SSO</li> <li>16A SANS 164-1 SSO ON PEDESTAL</li> <li>16A SANS 164-2 3 PIN SSO</li> <li>16A SANS 164-1 AND 164-2 COMBINATION SSO</li> <li>16A SANS 164-4 RED SSO (Ø SHAVED EARTH PIN)</li> <li>16A SANS 164-4 RED SSO ON PEDESTAL</li> <li>3 PHASE C-FORM SSO</li> </ul>	<ul style="list-style-type: none"> <li>16A SANS 164-4 UNSWITCHED SOCKET OUTLET</li> <li>2 POLE ISOLATOR</li> <li>3 POLE ISOLATOR</li> <li>4 POLE ISOLATOR</li> <li>SINGLE LEVER ONE WAY LIGHT SWITCH</li> <li>INTERMEDIATE LIGHT SWITCH</li> <li>TWO WAY LIGHT SWITCH</li> <li>LED PANEL LUMINAIRE</li> </ul>	<ul style="list-style-type: none"> <li>LINEAR LUMINAIRE</li> <li>BULKHEAD/DOWNLIGHTER, ETC</li> <li>WALL MOUNTED LUMINAIRES</li> <li>POLE MOUNTED LUMINAIRE</li> <li>MOTION SENSOR</li> <li>LIGHT SWITCH WITH MOTION SENSOR</li> </ul>	<ul style="list-style-type: none"> <li>TELEPHONE POINT</li> <li>TELEPHONE POINT ON PEDESTAL</li> <li>DIRECT OUTSIDE LINE</li> <li>TELEPHONE POINT(CALL BOX)</li> <li>TV OUTLET</li> <li>DATA/COMMS OUTLET</li> </ul>	<ul style="list-style-type: none"> <li>BELL PUSH</li> <li>BELL OUTLET</li> <li>SIGN POINT</li> <li>CLOCK OUTLET</li> <li>PHOTOCELL</li> </ul>	<ul style="list-style-type: none"> <li>REFERENCE TO QUANTITY i.e. 3No</li> <li>REFERENCE TO QUANTITY i.e. DETAIL 2</li> <li>REFERENCE TO AN ELECTRICAL NOTE i.e. NOTE 4</li> <li>REFERENCE TO STANDARD DRAWING i.e. STANDARD DRAWING No.34</li> </ul>	<ul style="list-style-type: none"> <li>CABLE NUMBER - REFER TO CABLE SCHEDULE FOR DETAILS</li> <li>LUMINAIRE TYPE "B" - REFER TO LUMINAIRE SCHEDULE</li> <li>RECESSED FLOOR BOX</li> <li>RECESSED CLUSTER BOX</li> </ul>

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**1 GROUND FLOOR ELECTRONICS LAYOUT**  
1 : 100

NO.	DATE	DESCRIPTION	REV BY:
0		Original Issue	CP
A	2023/09/13	Updated Architectural Layout	CP

Designed By: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_



Client: Owner  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

PROJECT:  
**NEWTOWN CLINIC**

ADDRESS:  
Enter address here

DRAWING TITLE:  
**GROUND FLOOR ELECTRONICS LAYOUT**

Services: <b>Electrical</b>	DATE: <b>09/13/23</b>
Paper Size: <b>A1</b>	SCALE: <b>1 : 100</b>
Drawn: <b>CP</b>	Checked: <b>MK</b>
Approved: <b>MK</b>	REVISION: <b>A</b>

NOTES: (1) - CONTRACTOR TO ENSURE MAX DISTANCE BETWEEN DRAW BOXES TO BE 20 METERS NOTWITHSTANDING ANYTHING TO CONTRARY.		(2) - DRAW BOXES REQUIRED AFTER EVERY 90 DEGREE BEND OR 180 DEGREE TOTAL OF SLOW BENDS.		(3) - ALL UNWIRED CONDUITS TO BE PROVIDED WITH DRAW WIRES. THESE WILL BE WITHDRAWN AND CHECKED AT RANDOM.		(4) - CAST IN CONDUITS TO BE SPACED AT A MINIMUM OF 35MM.						
<ul style="list-style-type: none"> <li>100 x 100 CONDUIT BOX</li> <li>100 x 100 CONDUIT BOX AT 500AFL</li> <li>100 x 100 CONDUIT BOX AT 1400AFL</li> <li>100 x 50 CONDUIT BOX</li> <li>100 x 50 CONDUIT BOX AT 300AFL</li> <li>100 x 50 CONDUIT BOX AT 1400AFL</li> <li>ROUND CONDUIT BOX</li> <li>CLUSTER BOX(SIZE AS NOTED)</li> </ul>	<ul style="list-style-type: none"> <li>ROUND DRAW BOX</li> <li>100 x 100 DRAW BOX</li> <li>100 x 100 BOX BEHIND POWER SKIRTING</li> <li>CONDUIT TURNED UP (UP FOR DOWN)</li> <li>DOWN CONDUCTOR TO EARTH TIE</li> </ul>	<ul style="list-style-type: none"> <li>DM</li> <li>CAM</li> <li>etc.</li> </ul>	<ul style="list-style-type: none"> <li>20mm. DIA. CONDUIT</li> <li>25mm. DIA. CONDUIT</li> <li>32mm. DIA. CONDUIT</li> <li>50mm. DIA. CONDUIT</li> <li>SECTION OF CONDUIT OMITTED FOR CLARITY</li> <li>SURFIX</li> <li>TWIN AND EARTH CABLE ROUTE</li> </ul>	<ul style="list-style-type: none"> <li>OC OVERHEAD CAST</li> <li>OS OVERHEAD ON SURFACE OR LAID ON CEILING</li> <li>FC FLOOR SLAB CAST-IN</li> <li>FS FLOOR SURFACE(IN FLOOR VOID)</li> <li>POWER SKIRTING</li> <li>TRUNKING</li> <li>CABLE SLEEVE</li> <li>CABLE TRAY/LADDER</li> </ul>	<ul style="list-style-type: none"> <li>150 SQUARE GALV. STEEL DRAW TRAY SIZE AS SHOWN</li> <li>T TELEPHONE JUNCTION BOX</li> <li>I INTERCOM JUNCTION BOX</li> <li>D DATA/COMMS JUNCTION BOX</li> <li>S SECURITY, ETC. JUNCTION BOX</li> <li>DISTRIBUTION BOARD POSITION</li> <li>DB-1 BOARD DESIGNATION NUMBER</li> </ul>	<ul style="list-style-type: none"> <li>16A SANS 164-1 SWITCHED SOCKET OUTLET (SSO)</li> <li>16A SANS 164-1 DOUBLE SSO</li> <li>16A SANS 164-1 SSO ON PEDESTAL</li> <li>16A SANS 164-2 3 PIN SSO</li> <li>16A SANS 164-1 AND 164-2 COMBINATION SSO</li> <li>16A SANS 164-4 RED SSO (Ø SHAVED EARTH PIN)</li> <li>16A SANS 164-4 RED SSO ON PEDESTAL</li> <li>3 PHASE C-FORM SSO</li> </ul>	<ul style="list-style-type: none"> <li>16A SANS 164-4 UNSWITCHED SOCKET OUTLET</li> <li>2 POLE ISOLATOR</li> <li>3 POLE ISOLATOR</li> <li>4 POLE ISOLATOR</li> <li>SINGLE LEVER ONE WAY LIGHT SWITCH</li> <li>INTERMEDIATE LIGHT SWITCH</li> <li>TWO WAY LIGHT SWITCH</li> <li>LED PANEL LUMINAIRE</li> </ul>	<ul style="list-style-type: none"> <li>LINEAR LUMINAIRE</li> <li>BULKHEAD/DOWNLIGHTER, ETC</li> <li>WALL MOUNTED LUMINAIRE</li> <li>POLE MOUNTED LUMINAIRE</li> <li>MOTION SENSOR</li> <li>LIGHT SWITCH WITH MOTION SENSOR</li> </ul>	<ul style="list-style-type: none"> <li>TELEPHONE POINT</li> <li>TELEPHONE POINT ON PEDESTAL</li> <li>DIRECT OUTSIDE LINE TELEPHONE POINT(CALL BOX)</li> <li>TV OUTLET</li> <li>DATA/COMMS OUTLET</li> </ul>	<ul style="list-style-type: none"> <li>BELL PUSH</li> <li>BELL OUTLET</li> <li>SIGN POINT</li> <li>CLOCK OUTLET</li> <li>PHOTOCELL</li> </ul>	<ul style="list-style-type: none"> <li>REFERENCE TO QUANTITY i.e. 3No</li> <li>REFERENCE TO QUANTITY i.e. DETAIL 2</li> <li>REFERENCE TO AN ELECTRICAL NOTE i.e. NOTE 4</li> <li>REFERENCE TO STANDARD DRAWING i.e. STANDARD DRAWING No.34</li> </ul>	<ul style="list-style-type: none"> <li>1 CABLE NUMBER - REFER TO CABLE SCHEDULE FOR DETAILS</li> <li>B LUMINAIRE TYPE "B" - REFER TO LUMINAIRE SCHEDULE</li> <li>FB RECESSED FLOOR BOX</li> <li>CB RECESSED CLUSTER BOX</li> </ul>



# FIRST FLOOR ELECTRONICS LAYOUT

1  
1 : 100

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### REVISIONS

NO.	DATE	DESCRIPTION	REV. BY:
0	2023/09/13	Original Issue	CP
A	2023/10/11	Updated Architectural Layout	CP

Designed By:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_



Client: Owner

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

PROJECT:  
**NEWTOWN CLINIC**

ADDRESS:  
Enter address here

DRAWING TITLE:  
**FIRST FLOOR ELECTRONICS LAYOUT**

Services:	Electrical	DATE:	09/13/23
Paper Size:	A1	SCALE:	1 : 100

Drawn:	CP	Checked:	MK	Approved:	MK
IBUYA PROJECT NO.	23023	IBUYA DRAWING NO.:	301	REVISION:	A

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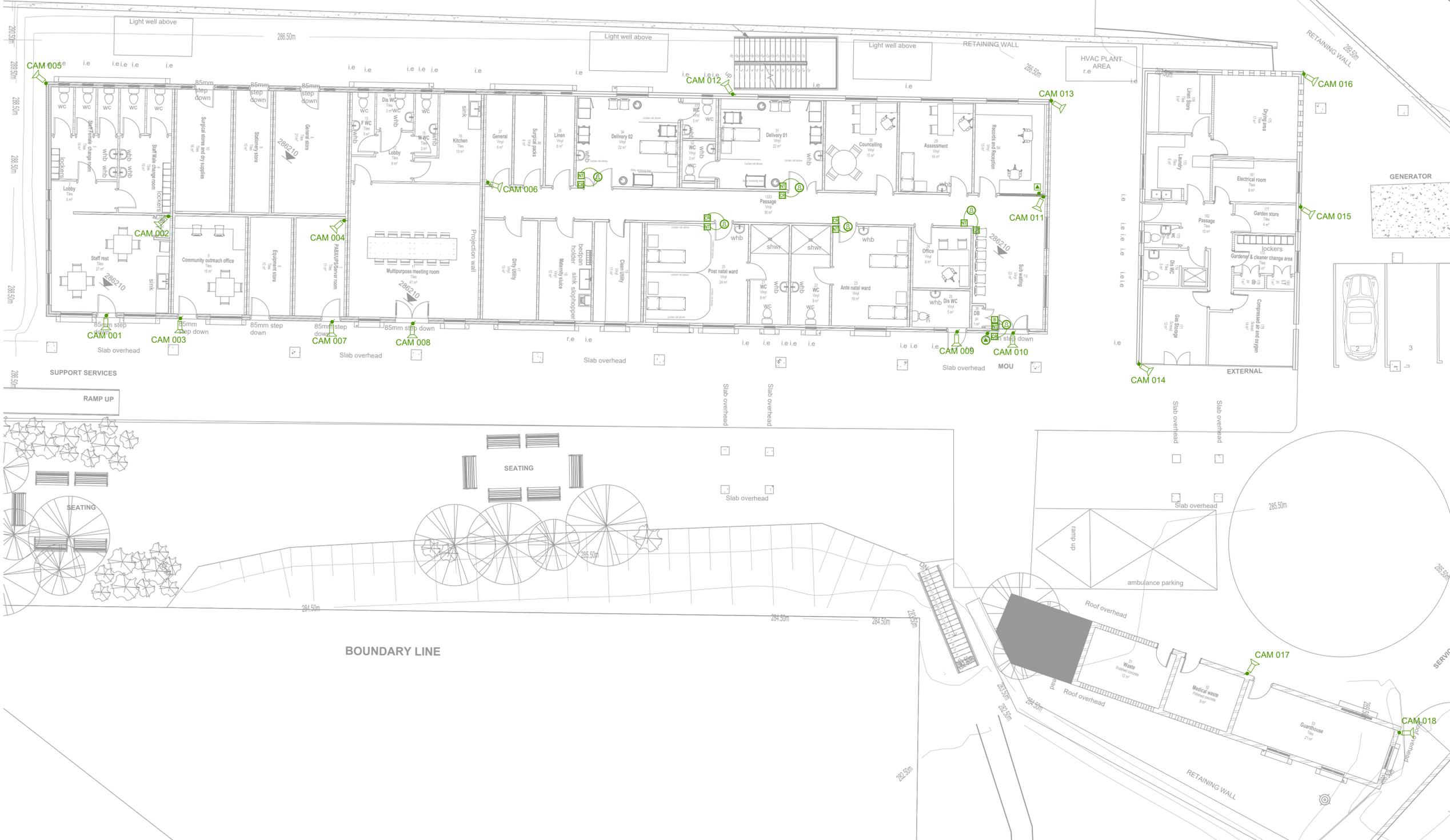
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**DRAWING NOTES:**



REV	DATE	BY	DESCRIPTION	CHK
0	05/07/23	CP	Original Issue	MK
REVISIONS				

**IBUYA** Consulting Engineers  
 "POWERING DEVELOPMENT"  
 BAKER TILLY HOUSE  
 FIRST FLOOR  
 18 WESTVILLE ROAD  
 WESTVILLE, 3609  
 P.O. Box 1469  
 WESTVILLE, 3630  
 TEL: +27 (0)31 2967332  
 E-mail: buya@buya.co.za

PROJECT/SERVICES				
Newtown Conversion to Large Clinic				
TITLE				
Ground Floor CCTV Layout				
ENGINEER:	DRAWN BY:	DATE:	CHECKED:	SCALE:
MK	CP	05/07/23	MK	1:100
PROJECT No:	DRAWING No:	SHEET:	REV:	
23023	310	1 of 1	0	
FILE:	LAYERS:			

<b>NOTES:</b> (1) - Contractor to ensure max distance between draw boxes 20 metres notwithstanding anything to contrary. (2) - Draw boxes required after every second 90 deg. bend or 180 deg. total of slow bends. (3) - All unwired conduits to be provided with draw wires. These will be withdrawn and checked at random. (4) - Cast in conduits to be spaced 35mm. minimum.					
100x100 CONDUIT BOX 100x100 CONDUIT BOX AT 500AFTL. 100x100 CONDUIT BOX AT 1400AFTL. 100x50 CONDUIT BOX 100x50 CONDUIT BOX AT 300AFTL. 100x50 CONDUIT BOX AT 1100AFTL. ROUND CONDUIT BOX. ROUND DRAW BOX 100x100 DRAW BOX	100x50 BOX BOUND POWER SKIRTING CONDUIT TURNED UP ("C" FOR DOWN) DOWN CONDUIT TO EARTH OR EARTH T.E. SQUARE GALV. STEEL DRAW TRAY AS SHOWN SHOWN. SECTION OF CONDUIT OMITTED FOR CLARITY 20mm. DIA. CONDUIT. 25mm. DIA. CONDUIT. 32mm. DIA. CONDUIT. 50mm. DIA. CONDUIT. POWER SKIRTING TRUNKING CABLE SLEEVE. CABLE TRAY/LADDER POWER CABLE	OVERHEAD CAST-IN OVERHEAD ON SURFACE OR LAID ON CEILING. FLOOR SLAB CAST-IN. REFERENCE TO QUANTITY I.e. 3No. REFERENCE TO A DETAIL I.e. DETAL 2. REFERENCE TO AN ELECTRICAL NOTE I.e. NOTE 4. REFERENCE TO A STANDARD DRAWING I.e. STANDARD DRAWING No.34 CABLE NUMBER - REFER TO SCHEDULE FOR DETAILS TELEPHONE JUNCTION BOX. INTERCOM JUNCTION BOX. DATA/COMMS JUNCTION BOX. SECURITY, ETC. JUNCTION BOX. DISTRIBUTION BOARD POSITION. DB-1 BOARD DESIGNATION NUMBER. TELEPHONE POINT. DATA/COMMS OUTLET.	CCTV CAMERA CCTV CAMERA ON AUTO PANNING MOUNT CCTV CAMERA ON PAN & TILT MOUNT CCTV CAMERA ON AUTO PANNING IN DISCRETE OPAQUE DOME COVER CCTV CAMERA FIELD OF VIEW CCTV CAMERA INFRARED BEAM TRANSMITTER AND RECEIVER INFRARED OR ULTRASONIC MOTION DETECTOR DOOR MONITOR - FLATLINE OF SYMBOL, FACES ATTACK SIDE X-RAY INSPECTION MACHINE OR LETTER/PARCEL BOMB /EXPLOSIVE DETECTOR WALK THROUGH METAL DETECTOR 220 VOLT POWER OUTLET FACILITY SIGNAL OUTLET 2x4/4x4 FLUSH CONDUIT BOX. SECURITY CONTROL PANEL/JUNCTION BOX ELECTRIC LOCK/STRIKE KEY SWITCH FLOOR PEDAL SWITCH SPRING RETURN PUSH BUTTON/LEVER RELEASE DOOR MONITOR CAMERA ER - ELECTRIC RELEASE	ELECTRIC LOCK/STRIKE MOTION ALARM ACCESS CONTROL CARD READER POLE MOUNTED ACCESS CONTROL CARD READER VEHICLE BARRIER BOOM CONTROLLER ACCESS ALARM ACCESS CONTROL CARD READER EXIT OVERRIDE ALARM OVERRIDE COMMUNICATION PANEL/JUNCTION BOX INTERCOM MASTER STATION INTERCOM SLAVE/STATION INTERCOM CALL PUSH BUTTON UNIT HORN/TRUMPET LOUDSPEAKER CEILING FLUSH MOUNTED LOUDSPEAKER WALL MOUNTED LOUDSPEAKER TALK-BACK WALL MOUNTED LOUDSPEAKER COLUMN SPEAKER ATTENUATOR MICROPHONE INPUT JACK IN 100x100 CONDUIT BOX SPEAKER OUTPUT JACK IN 100x100 CONDUIT BOX FM OR AM ANTENNA AS SPECIFIED SOUND EQUIPMENT - CABINET RACK	COMMUNICATION/INTERCOM ROOM - BACK GROUND MUSIC SYSTEM WITH OR WITHOUT AUDIBLE VOICE REINFORCEMENT (P.A.) CEILING MOUNTED MICROPHONE MICROPHONE RADIO MICROPHONE FIRE ALARM PANEL/ANCTION BOX ALARM BELL SMOKE IONISATION DETECTOR HEAT DETECTOR BREAK GLASS UNIT



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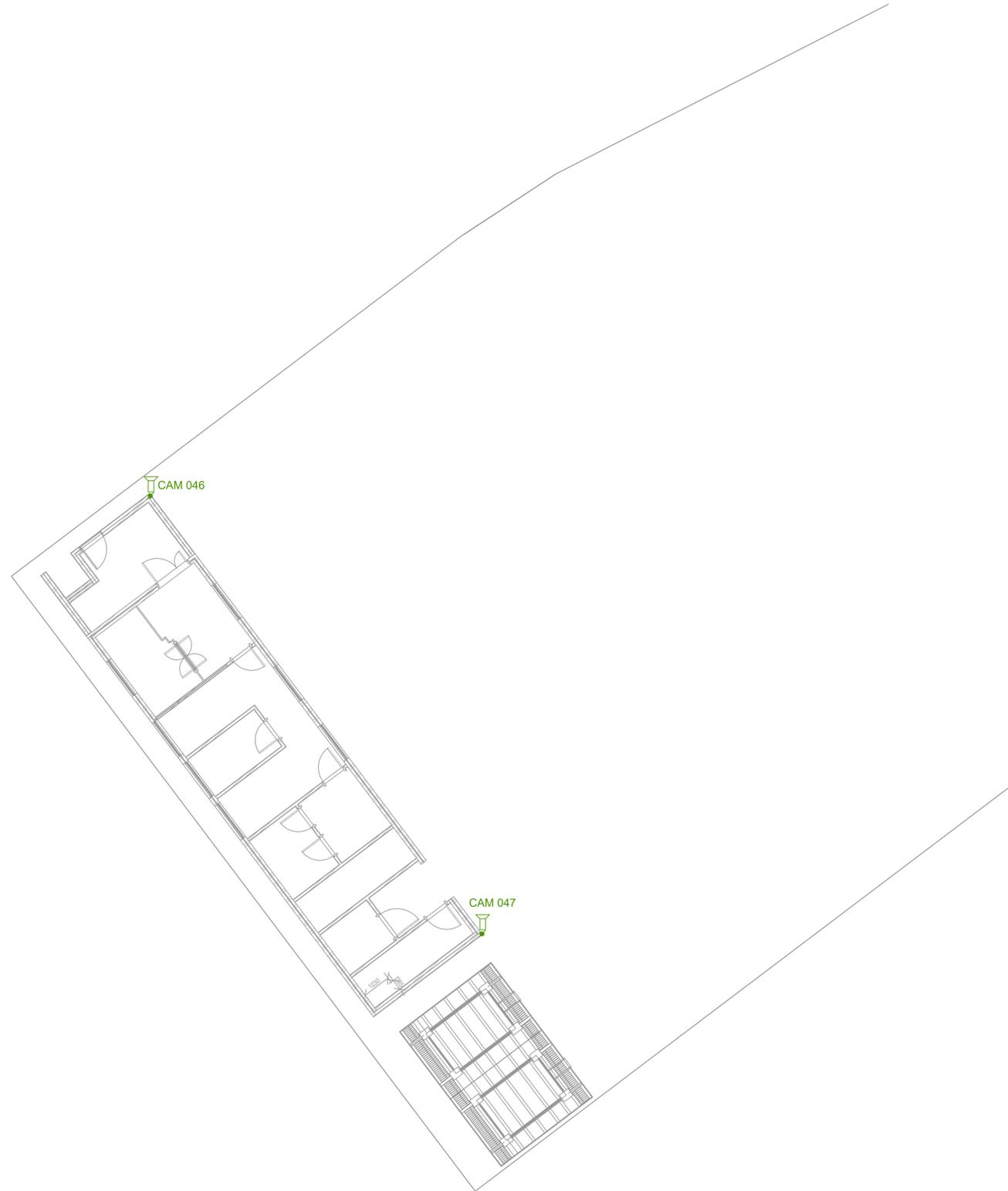
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**DRAWING NOTES:**



REV	DATE	BY	DESCRIPTION	CHK
0	05/07/23	CP	Original Issue	MK
REVISIONS				

**IBUYA** Consulting Engineers  
"POWERING DEVELOPMENT"

BAKER TILLY HOUSE  
FIRST FLOOR  
18 WESTVILLE ROAD  
WESTVILLE, 3609  
P.O. Box 1469  
WESTVILLE, 3630  
TEL: +27 (0)11 2967332  
E-mail: buya@buya.co.za

**PROJECT/SERVICES**  
Newtown Conversion to Large Clinic

**TITLE**  
Security Level  
CCTV Layout

ENGINEER:	DRAWN BY:	DATE:	CHECKED:	SCALE:
MK	CP	05/07/23	MK	1:100
PROJECT No:	DRAWING No:	SHEET:	REV:	
23023	312	1 of 1	0	
FILE:	LAYERS:			

<b>NOTES:</b> (1) - Contractor to ensure max distance between draw boxes 20 metres notwithstanding anything to contrary.		(2) - Draw boxes required after every second 90 deg. bend or 180 deg. total of slow bends.		(3) - All unwired conduits to be provided with draw wires. These will be withdrawn and checked at random.		(4) - Cast in conduits to be spaced 35mm. minimum.	
<ul style="list-style-type: none"> <li>100x100 CONDUIT BOX</li> <li>100x100 CONDUIT BOX AT 500AFPL</li> <li>100x100 CONDUIT BOX AT 1400AFPL</li> <li>100x50 CONDUIT BOX</li> <li>100x50 CONDUIT BOX AT 300AFPL</li> <li>100x50 CONDUIT BOX AT 1100AFPL</li> <li>ROUND CONDUIT BOX</li> <li>ROUND DRAW BOX</li> <li>100x100 DRAW BOX</li> </ul>	<ul style="list-style-type: none"> <li>100x50 BOX BEHIND POWER SKIRTING</li> <li>CONDUIT TURNED UP ('D' FOR DOWN)</li> <li>DOWN CONDUCTOR TO EARTH OR EARTH TIE</li> <li>SQUARE GALV. STEEL DRAW TRAY AS SHOWN SHOWING</li> <li>SECTION OF CONDUIT OMITTED FOR CLARITY</li> <li>20mm. DIA. CONDUIT</li> <li>25mm. DIA. CONDUIT</li> <li>32mm. DIA. CONDUIT</li> <li>50mm. DIA. CONDUIT</li> <li>POWER SKIRTING</li> <li>TRUNKING</li> <li>CABLE SLEEVE</li> <li>CABLE TRAY/LADDER</li> <li>POWER CABLE</li> </ul>	<ul style="list-style-type: none"> <li>OC OVERHEAD CAST-IN</li> <li>OS OVERHEAD ON SURFACE OR LAID ON CEILING</li> <li>FC FLOOR SLAB CAST-IN</li> <li>TELEPHONE JUNCTION BOX</li> <li>INTERCOM JUNCTION BOX</li> <li>DATA/COMMS JUNCTION BOX</li> <li>SECURITY, ETC. JUNCTION BOX</li> <li>DISTRIBUTION BOARD POSITION</li> <li>DB-1 BOARD DESIGNATION NUMBER</li> <li>TELEPHONE POINT</li> <li>DATA/COMMS OUTLET</li> </ul>	<ul style="list-style-type: none"> <li>REFERENCE TO QUANTITY I.e. 3No.</li> <li>REFERENCE TO A DETAIL I.e. DETAIL 2.</li> <li>REFERENCE TO AN ELECTRICAL NOTE I.e. NOTE 4.</li> <li>REFERENCE TO A STANDARD DRAWING I.e. STANDARD DRAWING No.34</li> <li>CABLE NUMBER - REFER TO SCHEDULE FOR DETAILS</li> <li>TELEPHONE JUNCTION BOX</li> <li>INTERCOM JUNCTION BOX</li> <li>DATA/COMMS JUNCTION BOX</li> <li>SECURITY, ETC. JUNCTION BOX</li> <li>DISTRIBUTION BOARD POSITION</li> <li>DB-1 BOARD DESIGNATION NUMBER</li> <li>TELEPHONE POINT</li> <li>DATA/COMMS OUTLET</li> <li>CCTV CAMERA</li> <li>CCTV CAMERA ON AUTO PANNING MOUNT</li> <li>CCTV CAMERA ON PAN &amp; TILT MOUNT</li> <li>CCTV CAMERA ON AUTO PANNING IN DISCRETE OPAQUE DOME COVER</li> <li>CCTV CAMERA FIELD OF VIEW</li> <li>PASSIVE INFRARED CURTAIN DETECTOR</li> <li>INFRARED BEAM TRANSMITTER AND RECEIVER</li> <li>INFRARED OR ULTRASONIC MOTION DETECTOR</li> <li>DOOR MONITOR - FLATLINE OF SYMBOL FACES ATTACK SIDE</li> <li>3-RAY INSPECTION MACHINE OR LETTER/PARCEL BOMB /EXPLOSIVE DETECTOR</li> <li>WALK THROUGH METAL DETECTOR</li> <li>220 VOLT POWER OUTLET FACILITY</li> <li>SIGNAL OUTLET 2x4/4x4 FLUSH CONDUIT BOX</li> <li>SECURITY CONTROL PANEL/JUNCTION BOX</li> <li>ELECTRIC LOCK/STRIKE</li> <li>KEY SWITCH</li> <li>FLOOR PEDAL SWITCH</li> <li>SPRING RETURN PUSH BUTTON/LEVER RELEASE</li> <li>DM - DOOR MONITOR</li> <li>CM - CAMERA</li> <li>CR - ELECTRIC RELEASE</li> <li>ELECTRIC LOCK/STRIKE</li> <li>MOTION ALARM</li> <li>ACCESS CONTROL CARD READER</li> <li>POLE MOUNTED ACCESS CONTROL CARD READER</li> <li>VEHICLE BARRIER BOOM CONTROLLER</li> <li>ACCESS ALARM</li> <li>ACCESS CONTROL</li> <li>CARD READER</li> <li>EXIT OVERRIDE</li> <li>ALARM OVERRIDE</li> <li>COMMUNICATION PANEL/JUNCTION BOX</li> <li>INTERCOM MASTER STATION</li> <li>INTERCOM SLAVE/SUBSTATION</li> <li>INTERCOM CALL PUSH BUTTON UNIT</li> <li>HORN/TRUMPET LOUDSPEAKER</li> <li>CEILING FLUSH MOUNTED LOUDSPEAKER</li> <li>WALL MOUNTED LOUDSPEAKER</li> <li>TALK-BACK WALL MOUNTED LOUDSPEAKER</li> <li>COLUMN SPEAKER</li> <li>ATTENUATOR</li> <li>MICROPHONE INPUT JACK IN 100x100 CONDUIT BOX</li> <li>SPEAKER OUTPUT JACK IN 100x100 CONDUIT BOX</li> <li>FM OR AM ANTENNA AS SPECIFIED</li> <li>SOUND EQUIPMENT - CABINET RACK</li> <li>COM - COMMUNICATION/INTERCOM</li> <li>BGM - BACK GROUND MUSIC SYSTEM WITH OR WITHOUT AUDIBLE VOICE REINFORCEMENT (PA)</li> <li>CEILING MOUNTED MICROPHONE</li> <li>MICROPHONE</li> <li>RADIO MICROPHONE</li> <li>FIRE ALARM PANEL/JUNCTION BOX</li> <li>ALARM BELL</li> <li>SMOKE IONISATION DETECTOR</li> <li>HEAT DETECTOR</li> <li>BREAK GLASS UNIT</li> </ul>				

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**DRAWING NOTES:**



REV	DATE	BY	DESCRIPTION	CHK
0	05/07/23	CP	Original Issue	MK
REVISIONS				

**IBUYA** Consulting Engineers  
 "POWERING DEVELOPMENT"  
 BAKER TILLY HOUSE  
 FIRST FLOOR  
 18 WESTVILLE ROAD  
 WESTVILLE, 3609  
 P.O. Box 1469  
 WESTVILLE, 3630  
 TEL: +27 (0)31 2667332  
 E-mail: ibuya@ibuya.co.za

**PROJECT/SERVICES**  
 Newtown Conversion to Large Clinic

**Electrical Installation**  
 TITLE  
 Ground Floor  
 Access Control Layout

ENGINEER:	DRAWN BY:	DATE:	CHECKED:	SCALE:
MK	CP	05/07/23	MK	1:100
PROJECT No:	DRAWING No:	SHEET:	REV:	SIZE:
23023	320	1 of 1	0	A1
FILE:	LAYERS:			

**NOTES:**

(1) - Contractor to ensure max distance between draw boxes 20 metres notwithstanding anything to contrary.

(2) - Draw boxes required after every second 90 deg. bend or 180 deg. total of slow bends.

(3) - All unwired conduits to be provided with draw wires. These will be withdrawn and checked at random.

(4) - Cast in conduits to be spaced 35mm, minimum.

<ul style="list-style-type: none"> <li>100x100 CONDUIT BOX</li> <li>100x100 CONDUIT BOX AT 500AFL.</li> <li>100x100 CONDUIT BOX AT 1400AFL.</li> <li>100x50 CONDUIT BOX</li> <li>100x50 CONDUIT BOX AT 300AFL.</li> <li>100x50 CONDUIT BOX AT 1100AFL.</li> <li>ROUND CONDUIT BOX</li> <li>ROUND DRAW BOX</li> <li>100x100 DRAW BOX</li> </ul>	<ul style="list-style-type: none"> <li>100x50 BOX BEHIND POWER SKIRTING</li> <li>CONDUIT TURNED UP (°) FOR DOWN</li> <li>DOWN CONDUCTOR TO EARTH OR EARTH TR.</li> <li>SQUARE GALV. STEEL DRAW TRAY AS SHOWN</li> <li>SECTION OF CONDUIT OMITTED FOR CLARITY</li> <li>20mm. DA. CONDUIT.</li> <li>25mm. DA. CONDUIT.</li> <li>30mm. DA. CONDUIT.</li> <li>50mm. DA. CONDUIT.</li> </ul>	<ul style="list-style-type: none"> <li>OVERHEAD CAST-IN</li> <li>OVERHEAD ON SURFACE OR LAD ON CEILING</li> <li>FLOOR SLAB CAST-IN</li> <li>POWER SKIRTING</li> <li>TRUNKING</li> <li>CABLE SLEEVE</li> <li>CABLE TRAY/LADDER</li> <li>POWER CABLE</li> </ul>	<ul style="list-style-type: none"> <li>REFERENCE TO QUANTITY I.e. No.</li> <li>REFERENCE TO A DETAIL I.e. DETAIL 2.</li> <li>REFERENCE TO AN ELECTRICAL NOTE I.e. NOTE 4.</li> <li>REFERENCE TO A STANDARD DRAWING I.e. STANDARD DRAWING No.34</li> <li>CABLE NUMBER - REFER TO SCHEDULE FOR DETAILS</li> </ul>	<ul style="list-style-type: none"> <li>TELEPHONE JUNCTION BOX</li> <li>INTERCOM JUNCTION BOX</li> <li>DATA/COMMS JUNCTION BOX</li> <li>SECURITY, ETC. JUNCTION BOX</li> <li>DISTRIBUTION BOARD POSITION</li> <li>DB-1 BOARD DESIGNATION NUMBER</li> <li>TELEPHONE POINT</li> <li>DATA/COMMS OUTLET</li> </ul>	<ul style="list-style-type: none"> <li>CCTV CAMERA</li> <li>CCTV CAMERA ON AUTO PANNING MOUNT</li> <li>CCTV CAMERA ON PAN &amp; TILT MOUNT</li> <li>CCTV CAMERA ON AUTO PANNING IN DISCRETE OPAQUE DOME COVER</li> <li>CCTV CAMERA FIELD OF VIEW</li> <li>PASSIVE INFRARED CURTAIN DETECTOR</li> <li>INFRARED BEAM TRANSMITTER AND RECEIVER</li> <li>INFRARED OR ULTRASONIC MOTION DETECTOR</li> <li>DOOR MONITOR - FLATLINE OF SYMBOL FACES ATTACK SIDE</li> <li>2-RAY INSPECTION MACHINE OR LETTER/PARCEL SNAB /EXPLOSIVE DETECTOR</li> <li>WALK THROUGH METAL DETECTOR</li> </ul>	<ul style="list-style-type: none"> <li>230 VOLT POWER OUTLET FACILITY</li> <li>SIGNAL OUTLET 2x4/4x4 FLUSH CONDUIT BOX</li> <li>SECURITY CONTROL PANEL/JUNCTION BOX</li> <li>ELECTRIC LOCK/STRIKE</li> <li>KEY SWITCH</li> <li>FLOOR PEDAL SWITCH</li> <li>SPRING RETURN PUSH BUTTON/LEVER RELEASE</li> <li>DM - DOOR MONITOR</li> <li>CM - CAMERA</li> <li>ER - ELECTRIC RELEASE</li> <li>ELECTRIC LOCK/STRIKE</li> <li>MOTION ALARM</li> <li>ACCESS CONTROL CARD READER</li> <li>POLE MOUNTED ACCESS CONTROL CARD READER</li> <li>VEHICLE BARRIER BOOM CONTROLLER</li> <li>ACCESS ALARM</li> <li>ACCESS CONTROL</li> <li>CARD READER</li> <li>EXIT OVERRIDE</li> <li>ALARM OVERRIDE</li> </ul>	<ul style="list-style-type: none"> <li>COMMUNICATION PANEL/JUNCTION BOX</li> <li>INTERCOM MASTER STATION</li> <li>INTERCOM SLAVE/SUBSTATION</li> <li>INTERCOM CALL PUSH BUTTON UNIT</li> <li>HORN/TRUMPET LOUSPEAKER</li> <li>CEILING FLUSH MOUNTED LOUSPEAKER</li> <li>WALL MOUNTED LOUSPEAKER</li> <li>TALK-BACK WALL MOUNTED LOUSPEAKER</li> <li>COMMUNICATION PANEL/JUNCTION BOX</li> <li>ALARM BELL</li> <li>SMOKE IONISATION DETECTOR</li> <li>HEAT DETECTOR</li> <li>BREAK GLASS UNIT</li> </ul>	<ul style="list-style-type: none"> <li>COLUMN SPEAKER</li> <li>ATTENUATOR</li> <li>MICROPHONE INPUT JACK IN 100x100 CONDUIT BOX</li> <li>SPEAKER OUTPUT JACK IN 100x100 CONDUIT BOX</li> <li>FM OR AM ANTENNA AS SPECIFIED</li> <li>SOUND EQUIPMENT - CABINET RACK</li> <li>COM - COMMUNICATION/INTERCOM</li> <li>BOM - BACK GROUND MUSIC SYSTEM WITH OR WITHOUT ADJUSTABLE VOICE REINFORCEMENT (P.A.)</li> <li>CEILING MOUNTED MICROPHONE</li> <li>MICROPHONE</li> <li>RADIO MICROPHONE</li> </ul>	<ul style="list-style-type: none"> <li>FIRE ALARM PANEL/JUNCTION BOX</li> <li>ALARM BELL</li> <li>SMOKE IONISATION DETECTOR</li> <li>HEAT DETECTOR</li> <li>BREAK GLASS UNIT</li> </ul>
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**DRAWING NOTES:**



REV	DATE	BY	DESCRIPTION	CHK
0	05/07/23	CP	Original Issue	MK
REVISIONS				

**IBUYA** Consulting Engineers  
 "POWERING DEVELOPMENT"  
 BAKER TILLY HOUSE  
 FIRST FLOOR  
 18 WESTVILLE ROAD  
 WESTVILLE, 3609  
 P.O. Box 1469  
 WESTVILLE, 3630  
 TEL: +27 (0)31 2667332  
 E-mail: b@buoya.co.za

**PROJECT/SERVICES**  
 Newtown Conversion to Large Clinic

**Electrical Installation**  
 TITLE  
 First Floor  
 Access Control Layout

ENGINEER:	DRAWN BY:	DATE:	CHECKED:	SCALE:
MK	CP	05/07/23	MK	1:100
PROJECT No:	DRAWING No:	SHEET:	REV:	SIZE:
23023	321	1 of 1	0	A1
FILE:	LAYERS:			

NOTES:		(1) - Contractor to ensure max distance between draw boxes 20 metres notwithstanding anything to contrary.		(2) - Draw boxes required after every second 90 deg. bend or 180 deg. total of slow bends.		(3) - All unwired conduits to be provided with draw wires. These will be withdrawn and checked at random.		(4) - Cast in conduits to be spaced 35mm. minimum.	
<ul style="list-style-type: none"> <li>100x100 CONDUIT BOX.</li> <li>100x100 CONDUIT BOX AT 500AFFL.</li> <li>100x100 CONDUIT BOX AT 1400AFFL.</li> <li>100x50 CONDUIT BOX AT 300AFFL.</li> <li>100x50 CONDUIT BOX AT 1100AFFL.</li> <li>ROUND CONDUIT BOX.</li> <li>ROUND DRAW BOX.</li> <li>100x100 DRAW BOX.</li> </ul>	<ul style="list-style-type: none"> <li>100x50 BOX BEHIND POWER SKIRTING</li> <li>CONDUIT TURNED UP ("U" FOR DOWN)</li> <li>DOWN CONDUCTOR TO EARTH OR EARTH TIE.</li> <li>SQUARE GALV. STEEL DRAW TRAY AS SHOWN.</li> <li>SECTION OF CONDUIT OMITTED FOR CLARITY</li> <li>20mm. DIA. CONDUIT.</li> <li>25mm. DIA. CONDUIT.</li> <li>32mm. DIA. CONDUIT.</li> <li>50mm. DIA. CONDUIT.</li> </ul>	<ul style="list-style-type: none"> <li>OVERHEAD CAST-IN OS OVERHEAD ON SURFACE OR LAID ON CEILING.</li> <li>FLOOR SLAB CAST-IN.</li> <li>POWER SKIRTING</li> <li>TRUNKING</li> <li>CABLE SLEEVE.</li> <li>CABLE TRAY/LADDER</li> <li>POWER CABLE</li> </ul>	<ul style="list-style-type: none"> <li>REFERENCE TO QUANTITY I.e. 3m.</li> <li>REFERENCE TO A DETAIL I.e. DETAIL 2.</li> <li>REFERENCE TO AN ELECTRICAL NOTE I.e. NOTE 4.</li> <li>REFERENCE TO A STANDARD DRAWING I.e. STANDARD DRAWING NO.34</li> <li>CABLE NUMBER - REFER TO SCHEDULE FOR DETAILS.</li> </ul>	<ul style="list-style-type: none"> <li>TELEPHONE JUNCTION BOX.</li> <li>INTERCOM JUNCTION BOX.</li> <li>DATA/COMMS JUNCTION BOX.</li> <li>SECURITY, ETC. JUNCTION BOX.</li> <li>DISTRIBUTION BOARD POSITION.</li> <li>BOARD DESIGNATION NUMBER.</li> <li>TELEPHONE POINT.</li> <li>DATA/COMMS OUTLET.</li> </ul>	<ul style="list-style-type: none"> <li>CCTV CAMERA</li> <li>CCTV CAMERA ON AUTO PANNING MOUNT</li> <li>CCTV CAMERA ON PAN &amp; TILT MOUNT</li> <li>CCTV CAMERA ON AUDIT PANNING IN DISCRETE SPACE. TOME COVER</li> <li>CCTV CAMERA FIELD OF VIEW</li> <li>PASSIVE INFRARED CURTAIN</li> <li>INFRARED BEAM TRANSMITTER AND RECEIVER</li> <li>INFRARED OR ULTRASONIC MOTION DETECTOR</li> <li>DOOR MONITOR - FLATLINE OF SYMBOL.</li> <li>FACES ATTACK SIDE.</li> <li>X-RAY INSPECTION MACHINE OR LETTER/PARCEL BOMB /EXPLOSIVE DETECTOR</li> <li>WALK THROUGH METAL DETECTOR</li> </ul>	<ul style="list-style-type: none"> <li>220 VOLT POWER OUTLET FACILITY</li> <li>SIGNAL OUTLET 2x4/4x4 FLUSH CONDUIT BOX.</li> <li>SECURITY CONTROL PANEL/JUNCTION BOX</li> <li>ELECTRIC LOCK/STRIKE</li> <li>KEY SWITCH</li> <li>FLOOR PEDAL SWITCH</li> <li>SPRING RETURN PUSH BUTTON/LEVER RELEASE</li> <li>DOOR MONITOR</li> <li>CAM</li> <li>ALARM OVERIDE</li> <li>ER - ELECTRIC RELEASE</li> </ul>	<ul style="list-style-type: none"> <li>ELECTRIC LOCK/STRIKE</li> <li>MOTION ALARM</li> <li>ACCESS CONTROL CARD READER</li> <li>POLE MOUNTED ACCESS CONTROL CARD READER</li> <li>VEHICLE BARRIER BOOM CONTROLLER</li> <li>CEILING FLUSH MOUNTED LOUSPEAKER</li> <li>WALL MOUNTED LOUSPEAKER</li> <li>TALK-BACK WALL MOUNTED LOUSPEAKER</li> <li>COLUMN SPEAKER</li> <li>ATTENUATOR</li> <li>MICROPHONE INPUT JACK IN 100x100 CONDUIT BOX</li> <li>SPEAKER OUTPUT JACK IN 100x100 CONDUIT BOX</li> <li>FM OR AM ANTENNA AS SPECIFIED</li> <li>SOUND EQUIPMENT - CABINET RACK</li> </ul>	<ul style="list-style-type: none"> <li>COM - COMMUNICATION/INTERCOM</li> <li>BCM - BACK GROUND MUSIC SYSTEM WITH OR WITHOUT AUDIO/VOICE REINFORCEMENT (P.A.)</li> <li>FIRE ALARM PANEL/JUNCTION BOX</li> <li>ALARM BELL</li> <li>SMOKE IONISATION DETECTOR</li> <li>HEAT DETECTOR</li> <li>BREAK GLASS UNIT</li> <li>CEILING MOUNTED MICROPHONE</li> <li>MICROPHONE</li> <li>RADIO MICROPHONE</li> </ul>	

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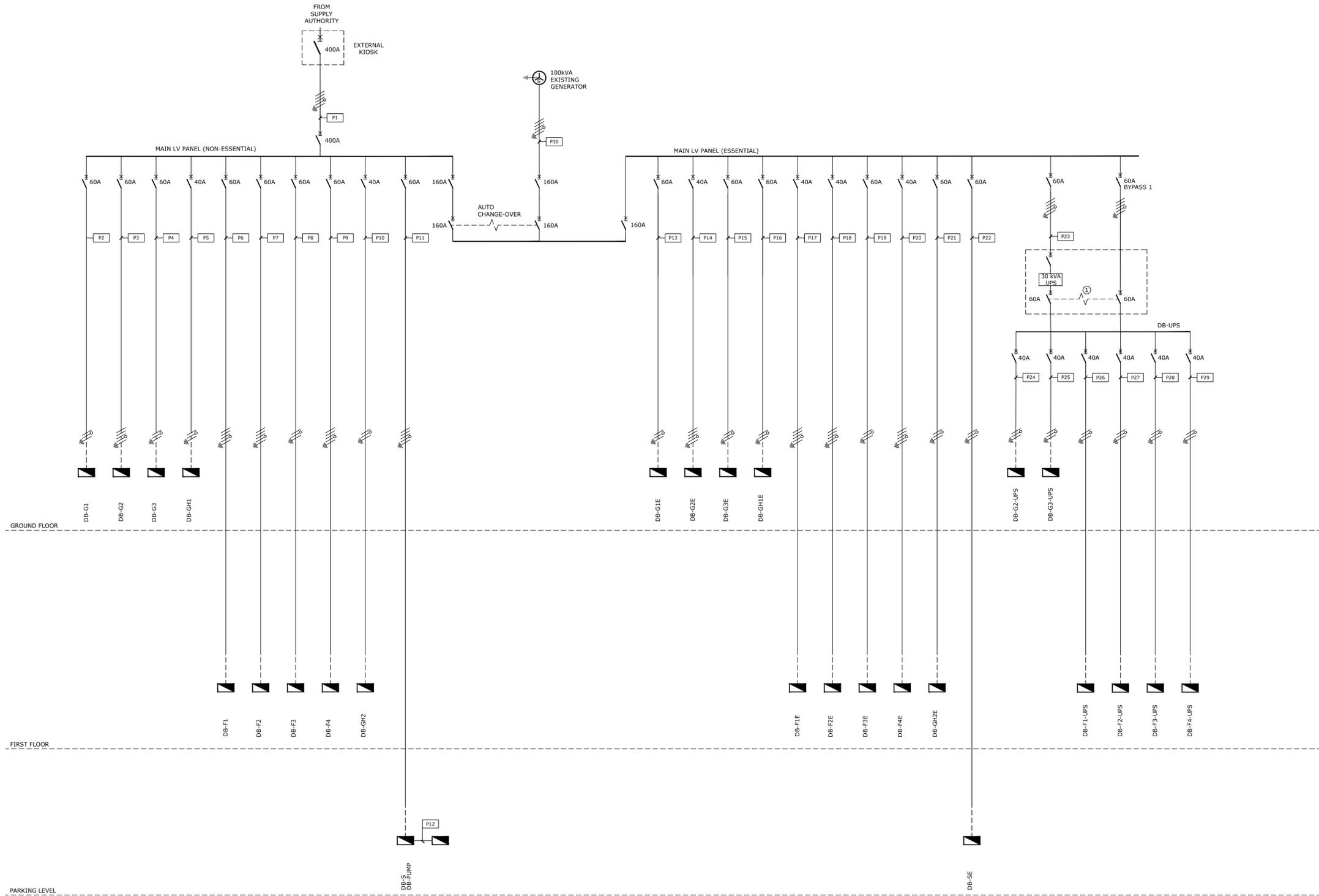
Do not scale this drawing.

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**DRAWING NOTES**

- 1) Mechanical interlocking circuit breaker



REV	DATE	BY	DESCRIPTION	CHK
0	7/9/23	CG	Original Issue	
REVISIONS				

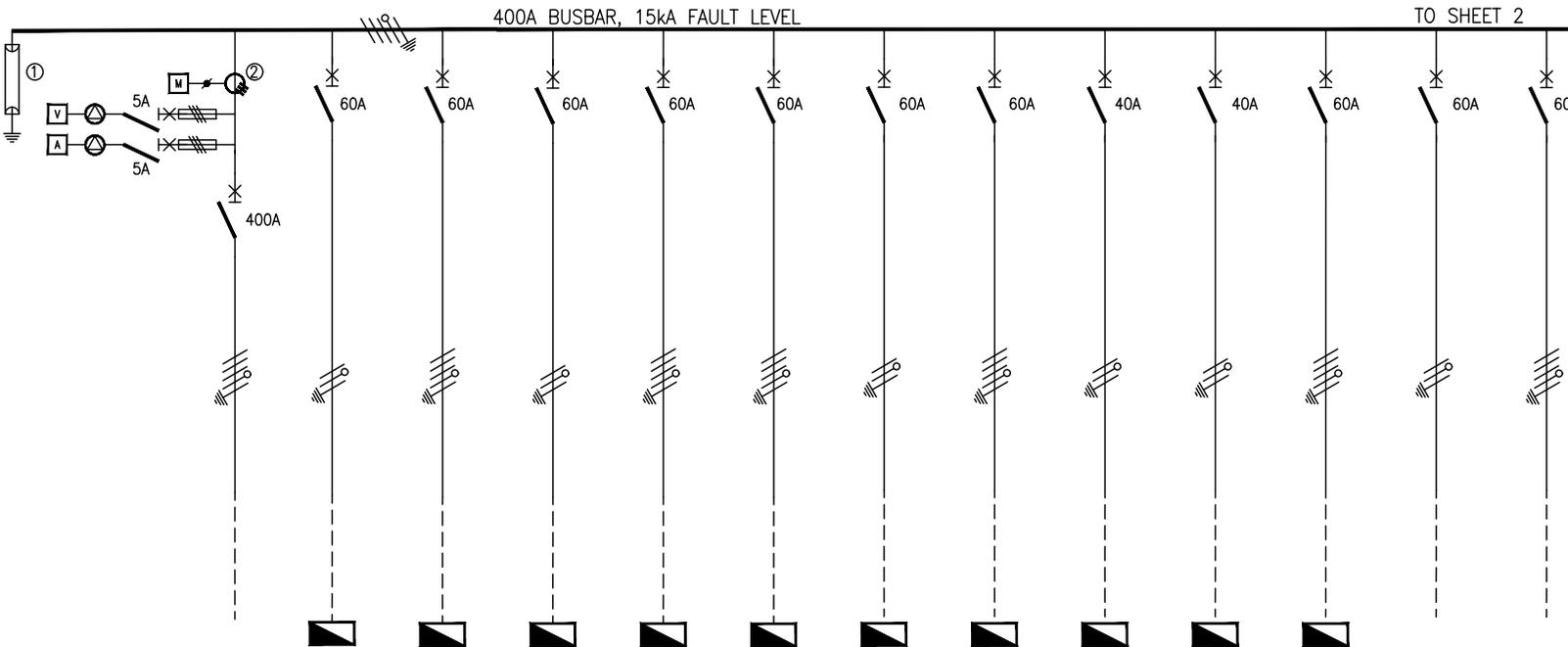


PROJECT/SERVICES  
**Newtown conversion to Large Clinic**

Electrical Installation  
 Electrical Reticulation Schematic

ENGINEER:	DRAWN BY:	DATE:	CHECKED:	SCALE:
M.Kambaran	CG	6/9/23		nts
PROJECT No:	DRAWING No:	SHEET:	PAPER:	SCALE:
23023	400	1 of 1	A1	A1
FILE:	LAYERS:	REV:	REV:	REV:
		0		

<p><b>NOTES:</b></p> <p>(1) - Contractor to ensure max distance between draw boxes 20 metres notwithstanding anything to contrary.</p> <p>(2) - Draw boxes required after every second 90 deg. bend or 180 deg. total of slow bends.</p> <p>(3) - All unwired conduits to be provided with draw wires. These will be withdrawn and checked at random.</p> <p>(4) - Cast in conduits to be spaced 35mm. minimum.</p>	<p>100-100 CONDUIT BOX</p> <p>100-100 CONDUIT BOX AT 500AFL</p> <p>100-100 CONDUIT BOX AT 1400AFL</p> <p>100-50 CONDUIT BOX</p> <p>100-50 CONDUIT BOX AT 300AFL</p> <p>100-50 CONDUIT BOX AT 1400AFL</p> <p>ROUND CONDUIT BOX</p> <p>CLUSTER BOX (SIZE AS NOTED)</p>	<p>ROUND CONDUIT BOX FOR:</p> <p>DM - DOOR MONITOR</p> <p>CM - CAMERA</p> <p>AM - ACCESS ALARM</p> <p>AC - ACCESS CONTROL</p> <p>CR - CARD READER</p> <p>COM - COMMUNICATION/INTERCOM</p> <p>BGM - BACK GROUND MUSIC</p> <p>EL - ELECTRIC LOCK/STRIKE</p>	<p>20mm DIA. CONDUIT</p> <p>25mm DIA. CONDUIT</p> <p>32mm DIA. CONDUIT</p> <p>50mm DIA. CONDUIT</p> <p>SECTION OF CONDUIT OMITTED FOR CLARITY</p> <p>SURFIT</p> <p>TWIN AND EARTH CABLE ROUTE</p>	<p>OC OVERHEAD CAST-IN</p> <p>OS OVERHEAD ON SURFACE OR LAID ON CEILING</p> <p>FS FLOOR SLAB CAST-IN</p> <p>FS FLOOR SURFACE (IN FLOOR VOID)</p> <p>POWER SKIRTING</p> <p>TRUNKING</p> <p>CABLE SLEEVE</p> <p>CABLE TRAY/LADDER</p>	<p>SQUARE GALV. STEEL DRAW TRAY SIZE AS SHOWN</p> <p>TELEPHONE JUNCTION BOX</p> <p>INTERCOM JUNCTION BOX</p> <p>DATA/COMMS JUNCTION BOX</p> <p>SECURITY, ETC. JUNCTION BOX</p> <p>DISTRIBUTION BOARD POSITION</p> <p>DB-1 BOARD DESIGNATION NUMBER</p>	<p>16A SANS 164-1 SWITCHED SOCKET OUTLET (SSO)</p> <p>16A SANS 164-1 DOUBLE SSO</p> <p>16A SANS 164-1 SSO ON PEDESTAL</p> <p>16A SANS 164-2 3 PIN SSO</p> <p>16A SANS 164-1 &amp; 164-2 COMBINATION SSO</p> <p>16A SANS 164-4 RED SSO (7° SHAWED DARTH PIN)</p> <p>16A SANS 164-4 RED SSO ON PEDESTAL</p> <p>3 PHASE C-FORM SSO</p> <p>2 POLE ISOLATOR</p> <p>3 POLE ISOLATOR</p> <p>4 POLE ISOLATOR</p>	<p>16A SANS 164-3 1/2 SOCKET OUTLET</p> <p>SINGLE LEVER ONE WAY LIGHT SWITCH</p> <p>INTERMEDIATE LIGHT SWITCH</p> <p>TWO WAY LIGHT SWITCH</p> <p>MOTION SENSOR</p> <p>LIGHT SWITCH WITH MOTION SENSOR</p>	<p>LINEAR LUMINAIRE</p> <p>BULKHEAD/DOWNLIGHTER, ETC.</p> <p>WALL MOUNTED LUMINAIRES</p> <p>POLE MOUNTED LUMINAIRE</p>	<p>TELEPHONE POINT</p> <p>TELEPHONE POINT ON PEDESTAL</p> <p>EMERGENCY OUTSIDE LINE TELEPHONE POINT (CALL BOX)</p> <p>TV OUTLET</p> <p>DATA/COMMS OUTLET</p>	<p>BELL PUSH</p> <p>BELL OUTLET</p> <p>SIGN POINT</p> <p>CLOCK OUTLET</p> <p>PHOTOCELL</p>	<p>REFERENCE TO QUANTITY I.e. Jno.</p> <p>REFERENCE TO A DETAIL I.e. DETAIL 2</p> <p>REFERENCE TO AN ELECTRICAL NOTE I.e. NOTE 4</p> <p>REFERENCE TO A STANDARD DRAWING I.e. STANDARD DRAWING No.34</p>	<p>CABLE NUMBER - REFER CABLE SCHEDULE FOR DETAILS.</p> <p>LUMINAIRE TYPE "B" - REFER LUMINAIRE SCHEDULE.</p>
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FIELD

CIRCUIT No.  
PHASE

DESIGNATION

WIRING

LOAD (AMPS)

No. OF POINTS

CABLE No.

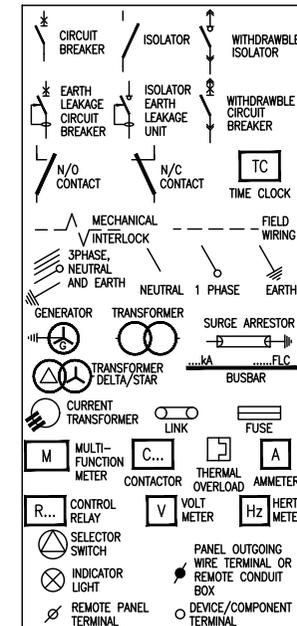
INCOMER	DB-G1	DB-G2	DB-G3	DB-F1	DB-F2	DB-F3	DB-F4	DB-GH1	DB-GH2	DB-S
2x95mm <sup>2</sup> 4CORE Cu PVC SWA PVC ECC CABLE	16mm <sup>2</sup> 2CORE Cu PVC SWA PVC ECC CABLE	16mm <sup>2</sup> 4CORE Cu PVC SWA PVC ECC CABLE	16mm <sup>2</sup> 2CORE Cu PVC SWA PVC ECC CABLE	16mm <sup>2</sup> 4CORE Cu PVC SWA PVC ECC CABLE	16mm <sup>2</sup> 4CORE Cu PVC SWA PVC ECC CABLE	16mm <sup>2</sup> 2CORE Cu PVC SWA PVC ECC CABLE	16mm <sup>2</sup> 4CORE Cu PVC SWA PVC ECC CABLE	16mm <sup>2</sup> 2CORE Cu PVC SWA PVC ECC CABLE	16mm <sup>2</sup> 2CORE Cu PVC SWA PVC ECC CABLE	16mm <sup>2</sup> 4CORE Cu PVC SWA PVC ECC CABLE
P001	P002	P003	P004	P006	P007	P008	P009	P005	P010	P011

NOTES

- 1) DROPPERS/TAILS TO BE RATED FOR FULL P<sub>L</sub> LET THROUGH.
- 2) HARNESSED WIRING TO BE DERATED.
- 3) TUFFNOL BRACES ARE NOT TO BE USED ABOVE 10kA.
- 4) COPPER BUSBARS TO BE CONTINUOUS RATED.
- 5) ALL OUTGOING CIRCUIT BREAKERS TO BE FITTED WITH COPPER TAILS TO FACILITATE CABLE TERMINATIONS IN THE CABLE CHAMBER AND NOT ON THE CIRCUIT BREAKER.
- 6) COPPER TAILS FROM DROPPER BUSBAR AND OUTGOING COPPER TAILS TO BE ADEQUATELY BRACED FOR FAULT LEVEL AND SHROUDED WITH HEAT SHRINK.
- 7) ALL CIRCUIT BREAKERS TO BE FITTED WITH TERMINAL SHIELD ON LIVE AND LOAD SIDES.
- 8) ENCLOSURE TO BE IP54.
- 9) PHASING RWB, TOP TO BOTTOM, LEFT TO RIGHT, BACK TO FRONT.
- 10) INTERNAL TEMP TO BE LIMITED TO 5° ABOVE AMBIANT, MAX 40°C.
- 11) ALL CIRCUITS TO BE LABELED.
- 12) 25% SPARE SPACE. SPARE SPACES ARE TO BE FITTED WITH COPPER BUSBAR TAILS CONNECTED TO DROPPER BUSBARS TO ALLOW INSTALLATION OF CIRCUIT BREAKERS WITH A MINIMAL SHUTDOWN PERIOD.
- 13) CHANGEOVER TO BE CONTROLLED BY STANDBY GENERATOR CONTROLLER.

- INCOMING CABLE -BOTTOM  
 OUTGOING CIRCUITS -CABLES / TOP  
 COLOUR -ORANGE/RED  
 MOUNTING -FLOOR STANDING  
 ACCESS -FRONT / REAR  
 PROTECTIVE DEVICES -SCHNEIDER  
 ACB'S (1250A-4000A) -MASTERPACT NW  
 MCCB'S(800A - 1000A) -COMPACT NS  
 MCCB'S(60A-630A) -EASYPACT CSV  
 MCB'S -MULTI 9, TYPE 2  
 CONTACTORS -AC3 HEAVY DUTY  
 METERS -SCHNEIDER

- 1) CLASS 2 SURGE ARRESTOR
- 2) SHNEIDER PMS320



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ENGINEER	DRAWN	DATE	SCALE:	CHKD.
M.Kambarab	C.G	Sep 23	n.t.s PAPER SIZE: A3	
DRAWING No.	SHEET:	REV.		
23023-401	1 of 2	0		
0	Original Issue	CG	13/9/23	
REV	DESCRIPTION	BY	DATE	CHKD.

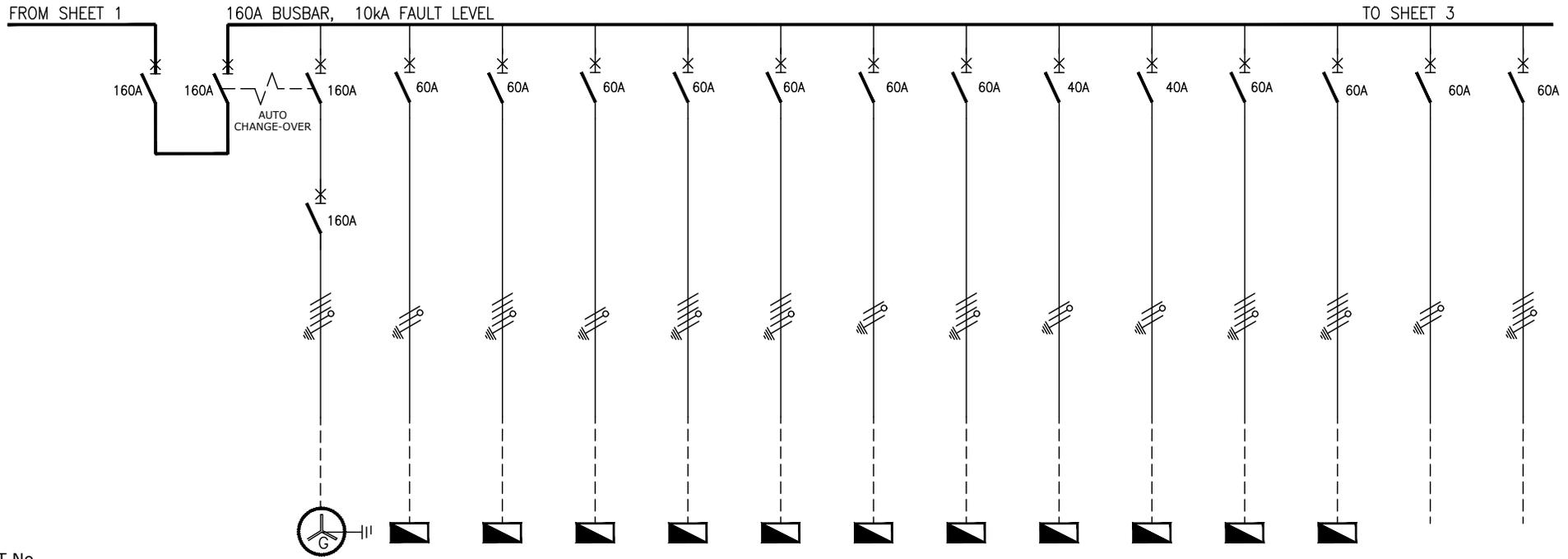
PROJECT: **Newtown conversion to Large Clinic**

DRAWING TITLE: **Main LV Board**  
**Single Line Diagram**

**IBUYA** Consulting Engineers  
 "POWERING DEVELOPMENT"

FIRST FLOOR  
 BAKER TILLY HOUSE  
 18 WESTVILLE ROAD  
 WESTVILLE, 3629  
 PO BOX 1469  
 WESTVILLE, 3630

TEL: +27 (031) 2667332  
 E-mail: ibuya@ibuya.co.za



FIELD  
CIRCUIT No.  
PHASE

DESIGNATION

WIRING

LOAD (AMPS)  
No. OF POINTS  
CABLE No.



DB-G1E

50mm<sup>2</sup> 4CORE Cu PVC  
SWA PVC ECC CABLE

P030

16mm<sup>2</sup> 2CORE Cu PVC  
SWA PVC ECC CABLE

P013

16mm<sup>2</sup> 4CORE Cu PVC  
SWA PVC ECC CABLE

P014

16mm<sup>2</sup> 2CORE Cu PVC  
SWA PVC ECC CABLE

P015

16mm<sup>2</sup> 4CORE Cu PVC  
SWA PVC ECC CABLE

P017

16mm<sup>2</sup> 4CORE Cu PVC  
SWA PVC ECC CABLE

P018

16mm<sup>2</sup> 2CORE Cu PVC  
SWA PVC ECC CABLE

P019

16mm<sup>2</sup> 4CORE Cu PVC  
SWA PVC ECC CABLE

P020

16mm<sup>2</sup> 2CORE Cu PVC  
SWA PVC ECC CABLE

P016

16mm<sup>2</sup> 2CORE Cu PVC  
SWA PVC ECC CABLE

P021

16mm<sup>2</sup> 4CORE Cu PVC  
SWA PVC ECC CABLE

P022

16mm<sup>2</sup> 4CORE Cu PVC  
SWA PVC ECC CABLE

P023

0	Original Issue	CG	10/7/21	
REV	DESCRIPTION	BY	DATE	CHKD.

ENGINEER	DRAWN	DATE:	SCALE:	CHKD.
M.Kambarab	C.G	Sep 23	n.t.s PAPER SIZE: A3	
DRAWING No.		SHEET:	REV.	
23023-401		2 of 2	0	
Ibuya Drawing No. : 21010_401_0 Lyr: 0:1:A3				

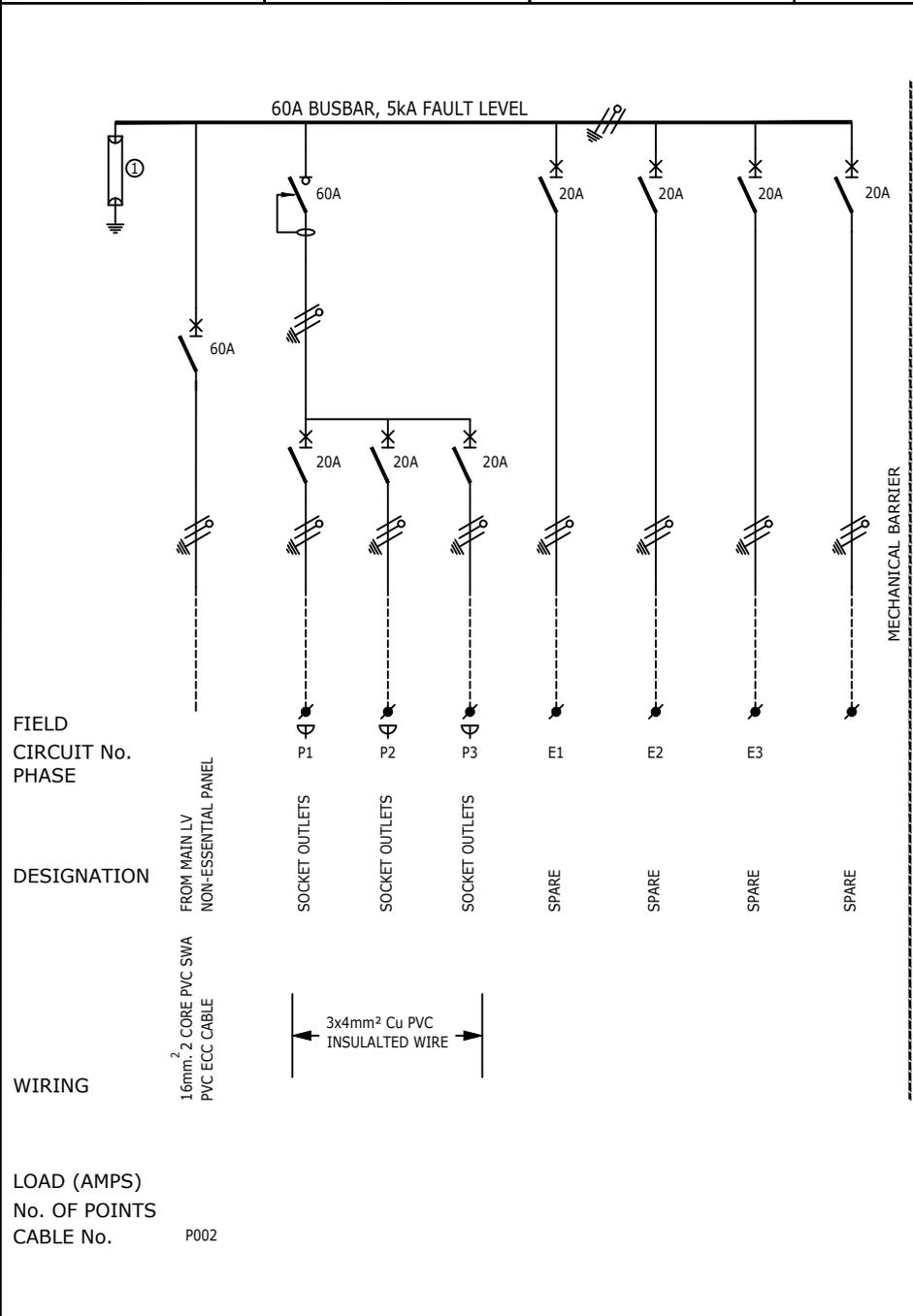
NOT WITHSTANDING ANYTHING TO THE CONTRARY, ALL RIGHTS RESERVED. NO PART OF THIS DRAWING MAY BE REPRODUCED IN ANY MATERIAL FORM (INCLUDING PHOTOCOPYING OR STORING IN ANY MEDIUM OR BY ELECTRONIC MEANS WHETHER OR NOT TRANSIENTLY OR INCIDENTALLY TO SOME OTHER USE OF THIS DRAWING) AND ALSO, THIS DRAWING MAY NOT BE USED FOR ANY PURPOSE OR REASON OTHER THAN FOR WHICH IT WAS ORIGINALLY ISSUED, WITHOUT THE WRITTEN PERMISSION OF REABOW CONSULTING ENGINEERS.

PROJECT:	Newtown conversion to Large Clinic
DRAWING TITLE:	Main LV Board Single Line Diagram

**IBUYA** Consulting Engineers  
"POWERING DEVELOPMENT"

FIRST FLOOR  
BAKER TILLY HOUSE  
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WESTVILLE, 3629  
PO BOX: 1469  
WESTVILLE, 3630

TEL: +27 (031) 2667332  
E-mail: ibuya@ibuya.co.za



FIELD  
CIRCUIT No.  
PHASE

DESIGNATION

FROM MAIN LV  
NON-ESSENTIAL PANEL

16mm. 2 CORE PVC SWA  
PVC ECC CABLE

SOCKET OUTLETS P1 P2 P3

SOCKET OUTLETS

SOCKET OUTLETS

SPARE E1 E2 E3

SPARE

SPARE

SPARE

SPARE

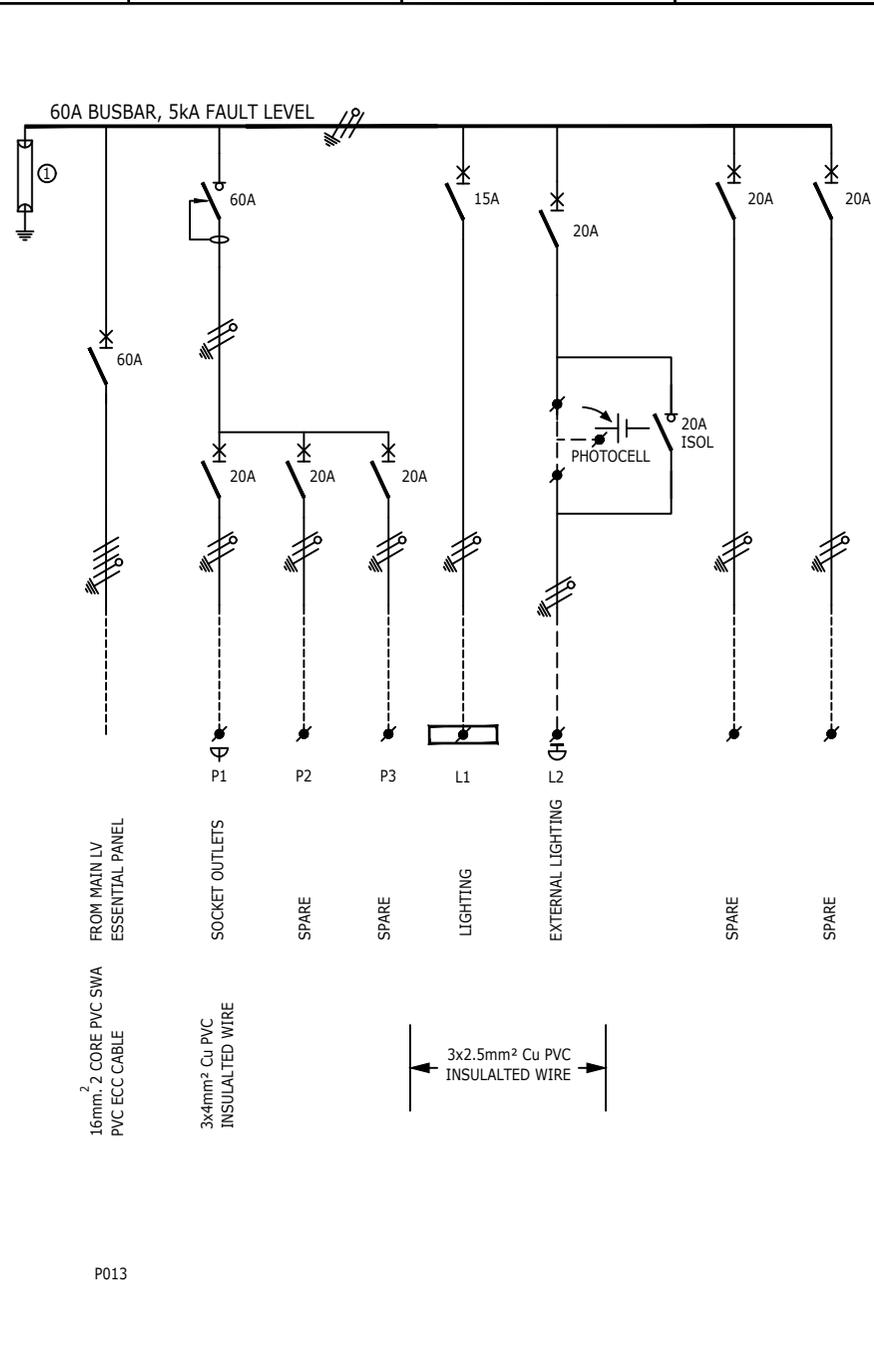
3x4mm<sup>2</sup> Cu PVC  
INSULATED WIRE

WIRING

LOAD (AMPS)

No. OF POINTS

CABLE No. P002



FIELD  
CIRCUIT No.  
PHASE

DESIGNATION

FROM MAIN LV  
ESSENTIAL PANEL

16mm. 2 CORE PVC SWA  
PVC ECC CABLE

SOCKET OUTLETS P1 P2 P3

SOCKET OUTLETS

SOCKET OUTLETS

LIGHTING L1

EXTERNAL LIGHTING L2

SPARE

SPARE

3x4mm<sup>2</sup> Cu PVC  
INSULATED WIRE

WIRING

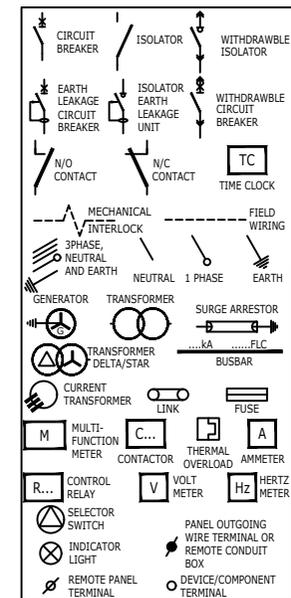
LOAD (AMPS)

No. OF POINTS

CABLE No. P013

- NOTES**
- 1) DROPPERS/TAILS TO BE RATED FOR FULL P<sub>L</sub> LET THROUGH.
  - 2) HARNESSSED WIRING TO BE DERATED.
  - 3) TUFFENOL BRACES ARE NOT TO BE USED ABOVE 10kA.
  - 4) COPPER BUSBARS TO BE CONTINUOUS RATED.
  - 5) SUFFICIENT SPACE REQUIRED FOR SAFE ACCESS FOR REWIRING.
  - 6) EARTH AND NEUTRAL BARS TO BE EASILY ACCESSIBLE.
  - 7) ALL CIRCUIT BREAKERS TO BE FITTED WITH TERMINAL SHIELD ON LIVE AND LOAD SIDES.
  - 8) ENCLOSURE TO BE IP54.
  - 9) PHASING RWB, TOP TO BOTTOM, LEFT TO RIGHT, BACK TO FRONT.
  - 10) INTERNAL TEMP TO BE LIMITED TO 5° ABOVE AMBIANT, MAX 40°C.
  - 11) ALL CIRCUITS TO BE LABELED.
  - 12) 25% SPARE SPACE. SPARE SPACES ARE TO BE FITTED WITH COPPER BUSBAR TAILS CONNECTED TO DROPPER BUSBARS TO ALLOW INSTALLATION OF CIRCUIT BREAKERS WITH A MINIMAL SHUTDOWN PERIOD.
  - 13) DB TO BE FITTED WITH A4 LEGEND CARD HOLDER WITH STANDARD IBUYA A4 LEGEND CARD.
  - 14) EACH CIRCUIT TO BE LABELED WITH DETAILED DESCRIPTION OF CONNECTED DEVICE.
  - 15) EXTERNAL EARTH STUD MOUNTED ADJACENT CABLE ENTRY.

- INCOMING CABLE - BOTTOM
- OUTGOING CIRCUITS - TOP/BOTTOM
- COLOUR - NORMAL - WHITE
- ESSENTIAL-RED
- MOUNTING ACCESS - FRONT
- PROTECTIVE DEVICES - SCHNEIDER
- ACB'S (1250A-4000A) - MASTERPACT NW
- MCCB'S(800A - 1000A) - COMPACT NS
- MCCB'S(60A-630A) - EASYPACT CSV
- MCB'S - MULTI 9, TYPE 2
- CONTACTORS - AC3 HEAVY DUTY
- METERS - SCHNEIDER
- 1) CLASS 2 SURGE ARRESTOR



ENGINEER	DRAWN	DATE	SCALE:	CHKD.
S.Nzama	C.G	Sep 23	n.t.s PAPER SIZE: A3	
DRAWING No.	SHEET:	REV.		
23023 - 402	1 of 1	0		
0	Original Issue	CG	4/9/23	
REV	DESCRIPTION	BY	DATE	CHKD.
	Ibuya Drawing No. :			Lyr: 0:1:A3

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**NEWTOWN CONVERSION TO LARGE CLINIC**

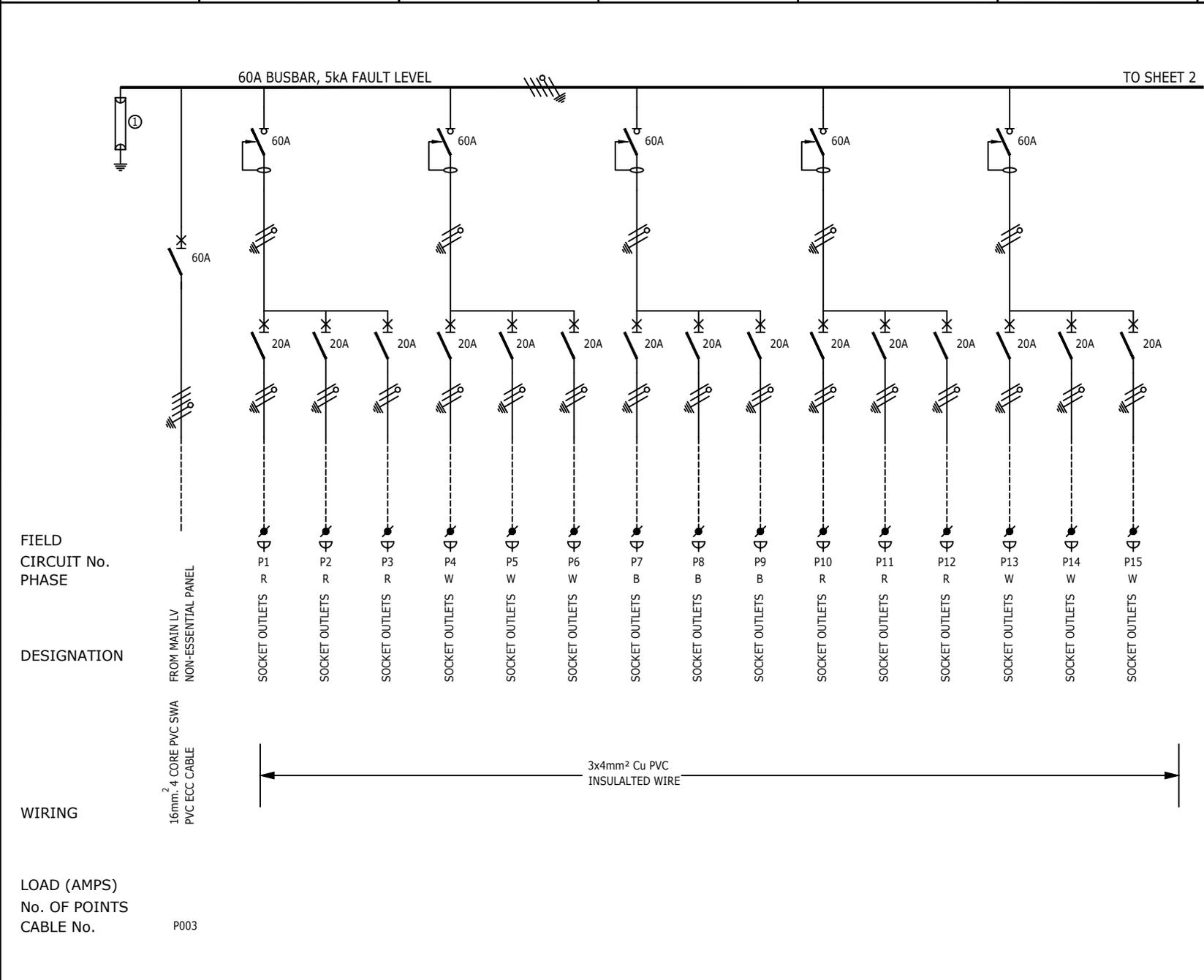
DRAWING TITLE: DB-G1/DB-G1-E

Single Line Diagram

**Ibuya Consulting Engineers**  
"POWERING DEVELOPMENT"

FIRST FLOOR  
BAKER TILLY HOUSE  
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TEL: +27 (031) 2667332  
E-mail: ibuya@ibuya.co.za



FIELD  
CIRCUIT No.  
PHASE

DESIGNATION

WIRING

LOAD (AMPS)  
No. OF POINTS  
CABLE No.

FROM MAIN LV  
NON-ESSENTIAL PANEL

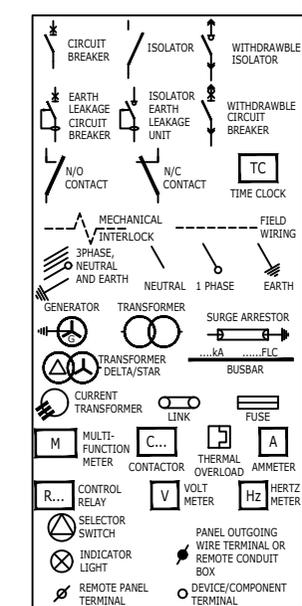
16mm<sup>2</sup> 4 CORE PVC SWA  
PVC ECC CABLE

3x4mm<sup>2</sup> Cu PVC  
INSULATED WIRE

P003

- NOTES**
- 1) DROPPERS/TAILS TO BE RATED FOR FULL PLT LET THROUGH.
  - 2) HARNESSSED WIRING TO BE DERATED.
  - 3) TUFFENOL BRACES ARE NOT TO BE USED ABOVE 10kA.
  - 4) COPPER BUSBARS TO BE CONTINUOUS RATED.
  - 5) SUFFICIENT SPACE REQUIRED FOR SAFE ACCESS FOR REWIRING.
  - 6) EARTH AND NEUTRAL BARS TO BE EASILY ACCESSIBLE.
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  - 14) EACH CIRCUIT TO BE LABELED WITH DETAILED DESCRIPTION OF CONNECTED DEVICE.
  - 15) EXTERNAL EARTH STUD MOUNTED ADJACENT CABLE ENTRY.

- INCOMING CABLE
- OUTGOING CIRCUITS
- COLOUR
- MOUNTING
- ACCESS
- PROTECTIVE DEVICES
- ACB'S (1250A-4000A)
- MCCB'S(800A - 1000A)
- MCCB'S(60A-630A)
- MCB'S
- CONTACTORS
- METERS
- 1) CLASS 2 SURGE ARRESTOR
- BOTTOM  
-TOP/BOTTOM  
-NORMAL - WHITE  
-ESSENTIAL-RED  
-UPS-BLUE  
-SURFACE  
-FRONT
- SCHNEIDER  
-MASTERPACT NW  
-COMPACT NS  
-EASYPACT CSV  
-MULTI 9, TYPE 2  
-AC3 HEAVY DUTY  
-SCHNEIDER



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ENGINEER	DRAWN	DATE	SCALE:	CHKD.	TITLE
S.Nzama	C.G	Sep 23	n.t.s PAPER SIZE: A3		Newtown Conversion to Large Clinic
DRAWING No.	SHEET:	REV.	DRAWING TITLE:		
23023 - 403	1 of 5	0	DB-G2/DB-G2-E/DB-G2-UPS		
0	Original Issue	CG	13/09/23	SM	Single Line Diagram
REV	DESCRIPTION	BY	DATE	CHKD.	Ibuya Drawing No. : 21010_403_0 Lyr: 0:1:A3

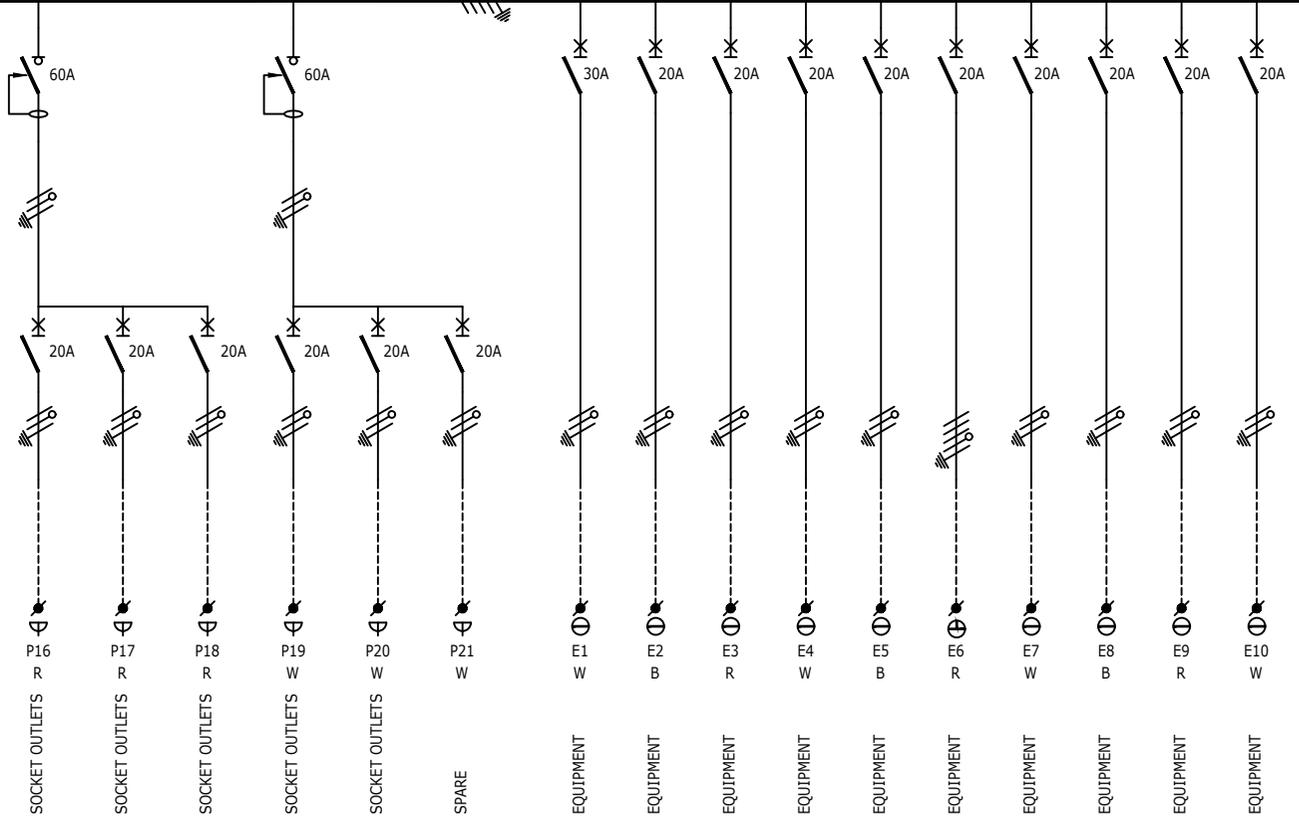
**IBUYA** Consulting Engineers  
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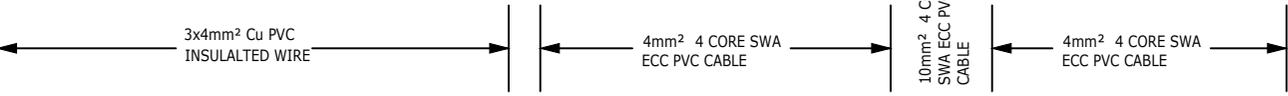
FROM SHEET 1

60A BUSBAR, 5KA FAULT LEVEL



FIELD  
CIRCUIT No.  
PHASE

DESIGNATION



WIRING

LOAD (AMPS)  
No. OF POINTS  
CABLE No.

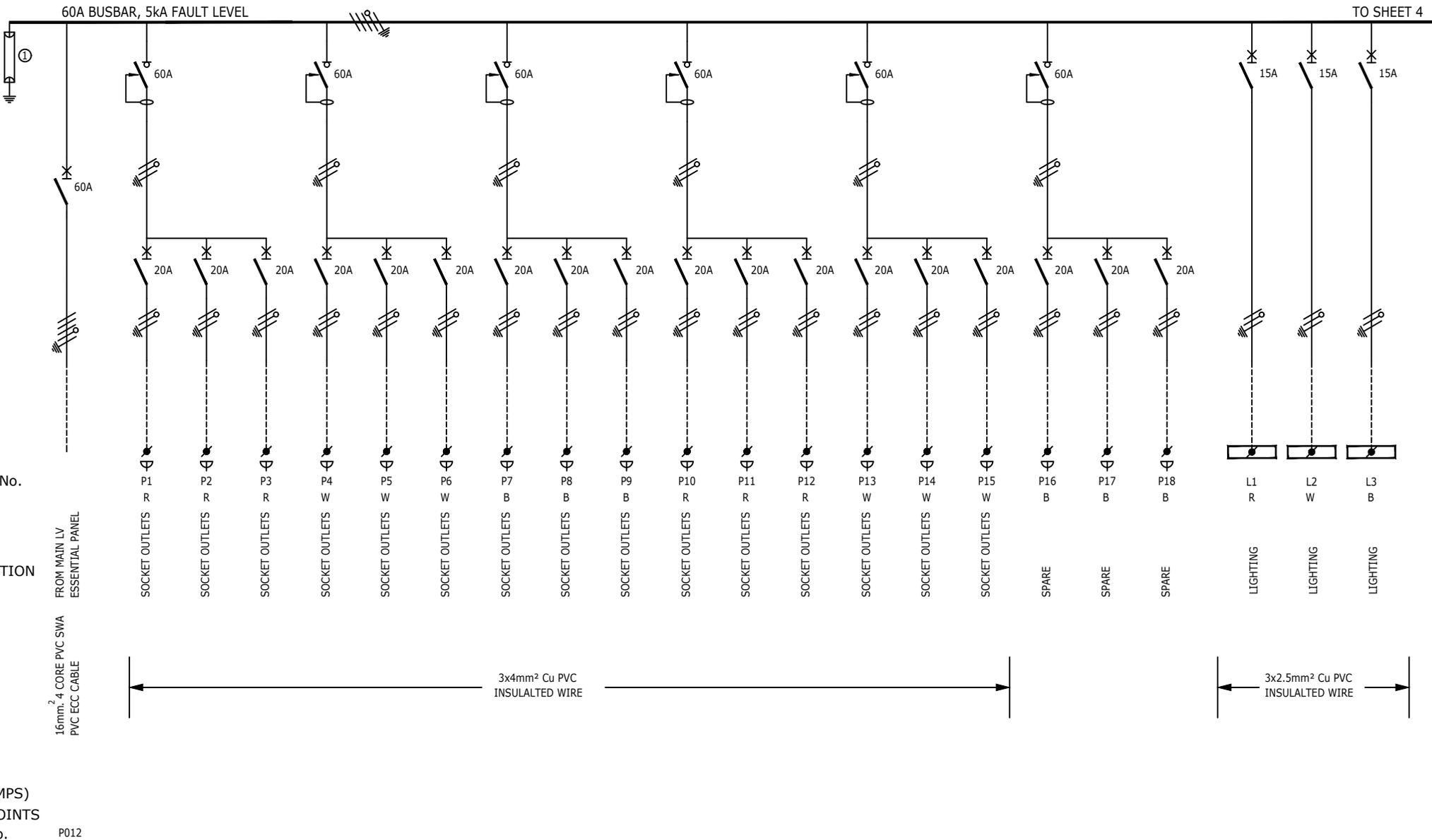
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ENGINEER	DRAWN	DATE	SCALE	CHKD.
S.Nzama	C.G	Sep 23	n.t.s	
DRAWING No.			SHEET:	REV.
23023 - 403			2 of 5	0
REV	DESCRIPTION	BY	DATE	CHKD.
0	Original Issue	CG	13/09/23	SN
Ibuya Drawing No. : 21010_403_0 Lyr:0:1:A3				

TITLE	DB-G2/DB-G2-E/DB-G2-UPS
DRAWING TITLE:	Single Line Diagram

FIRST FLOOR  
BAKER TILLY HOUSE  
18 WESTVILLE ROAD  
WESTVILLE, 3629  
PO BOX 1469  
WESTVILLE, 3630

TEL: +27 (031) 2667332  
E-mail: ibuya@ibuya.co.za



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ENGINEER	DRAWN	DATE	SCALE	CHKD.
S.Nzama	C.G	Sep 23	n.t.s PAPER SIZE: A3	
DRAWING No.	SHEET:	REV.		
23023 - 403	3 of 5	0		
REV	DESCRIPTION	BY	DATE	CHKD.
0	Original Issue	CG	13/09/23	SN
Ibuya Drawing No. : 21010_403_0 Lyr:0:1:A3				

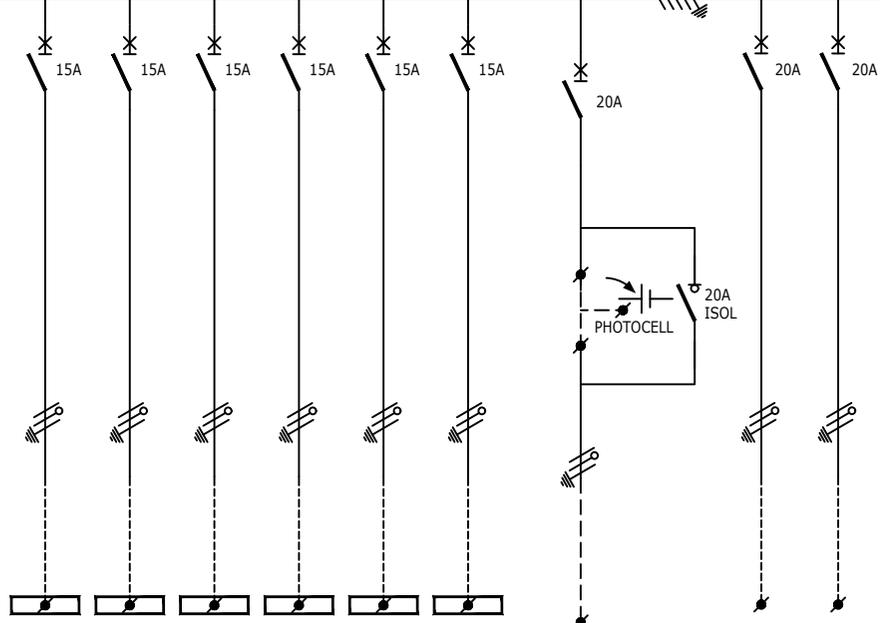
TITLE	DB-G2/DB-G2-E/DB-G2-UPS
DRAWING TITLE:	Single Line Diagram



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E-mail: ibuya@ibuya.co.za

FROM SHEET 3 60A BUSBAR, 5kA FAULT LEVEL



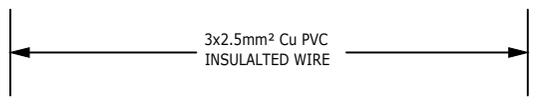
FIELD  
CIRCUIT No.  
PHASE

L4 R  
L5 W  
L6 B  
L7 R  
L8 W  
L9 B

DESIGNATION

LIGHTING  
LIGHTING  
LIGHTING  
LIGHTING  
LIGHTING  
LIGHTING

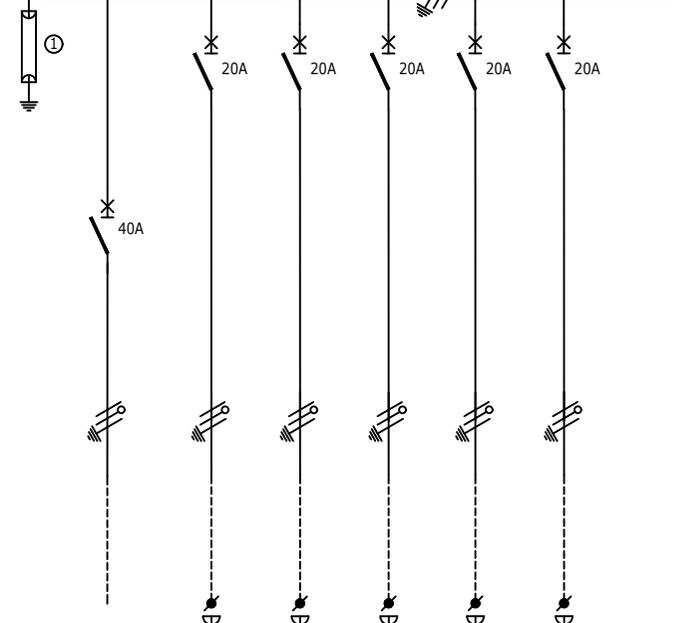
EXTERNAL LIGHTING  
SPARE  
SPARE



WIRING

LOAD (AMPS)  
No. OF POINTS  
CABLE No.

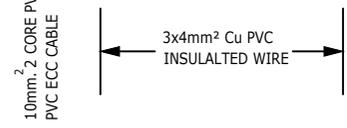
40A BUSBAR, 5kA FAULT LEVEL TO SHEET 5



FIELD  
CIRCUIT No.  
PHASE

INCOMER FROM UPS DB  
DEDICATED SSO's  
DEDICATED SSO's  
DEDICATED SSO's  
DEDICATED SSO's  
DEDICATED SSO's

DESIGNATION



WIRING

LOAD (AMPS)  
No. OF POINTS  
CABLE No.

P022

MECHANICAL BARRIER

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ENGINEER	DRAWN	DATE:	SCALE:	CHKD.	TITLE
S.Nzama	C.G	Sep 23	n.t.s		Newtown Conversion to Large Clinic
DRAWING No.	SHEET:	REV.	PAPER SIZE:		DRAWING TITLE:
23023 - 403	4 of 5	0	A3		DB-G2/DB-G2-E/DB-G2-UPS
0	Original Issue	CG	13/09/23	SN	
REV	DESCRIPTION	BY	DATE	CHKD.	Ibuya Drawing No. : 21010_403_0

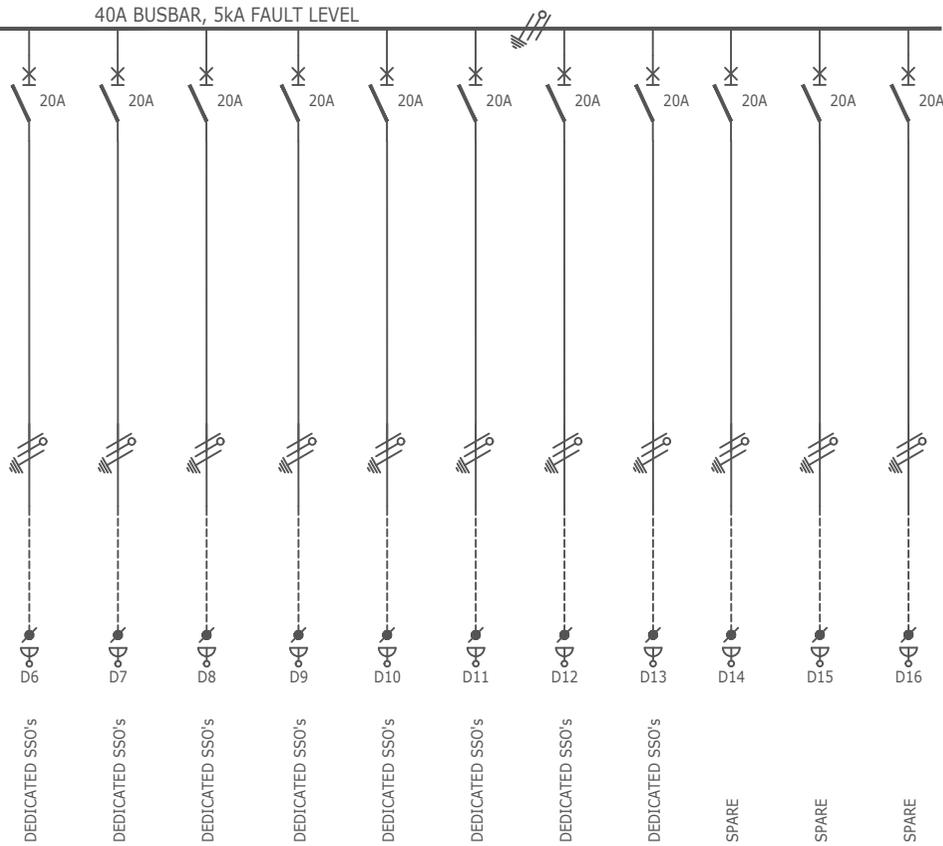
SCALE:	CHKD.	TITLE
n.t.s		Newtown Conversion to Large Clinic
PAPER SIZE:	REV.	DRAWING TITLE:
A3	0	DB-G2/DB-G2-E/DB-G2-UPS
		Single Line Diagram

FIRST FLOOR  
BAKER TILLY HOUSE  
18 WESTVILLE ROAD  
WESTVILLE, 3629  
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WESTVILLE, 3630

TEL: +27 (031) 2667332  
E-mail: ibuya@ibuya.co.za

FROM SHEET 4

40A BUSBAR, 5kA FAULT LEVEL



FIELD  
CIRCUIT No.  
PHASE

DESIGNATION

WIRING

LOAD (AMPS)  
No. OF POINTS  
CABLE No.

NOT WITHSTANDING ANYTHING TO THE CONTRARY, ALL RIGHTS RESERVED. NO PART OF THIS DRAWING MAY BE REPRODUCED IN ANY MATERIAL FORM (INCLUDING PHOTOCOPYING OR STORING IN ANY MEDIUM OR BY ELECTRONIC MEANS WHETHER OR NOT TRANSIENTLY OR INCIDENTLY TO SOME OTHER USE OF THIS DRAWING) AND ALSO, THIS DRAWING MAY NOT BE USED FOR ANY PURPOSE OR REASON OTHER THAN FOR WHICH IT WAS ORIGINALLY ISSUED, WITHOUT THE WRITTEN PERMISSION OF IBUYA CONSULTING ENGINEERS.

				ENGINEER S.Nzama	DRAWN C.G	DATE: Sep 23	SCALE: n.t.s PAPER SIZE: A3	CHKD.
				DRAWING No. 23023 - 402		SHEET: 5 of 5	REV. 0	
0	Original Issue	CG	13/09/23	SN				
REV	DESCRIPTION	BY	DATE	CHKD.	Ibuya Drawing No. : 21010_403_0			Lyr:0:1:A3

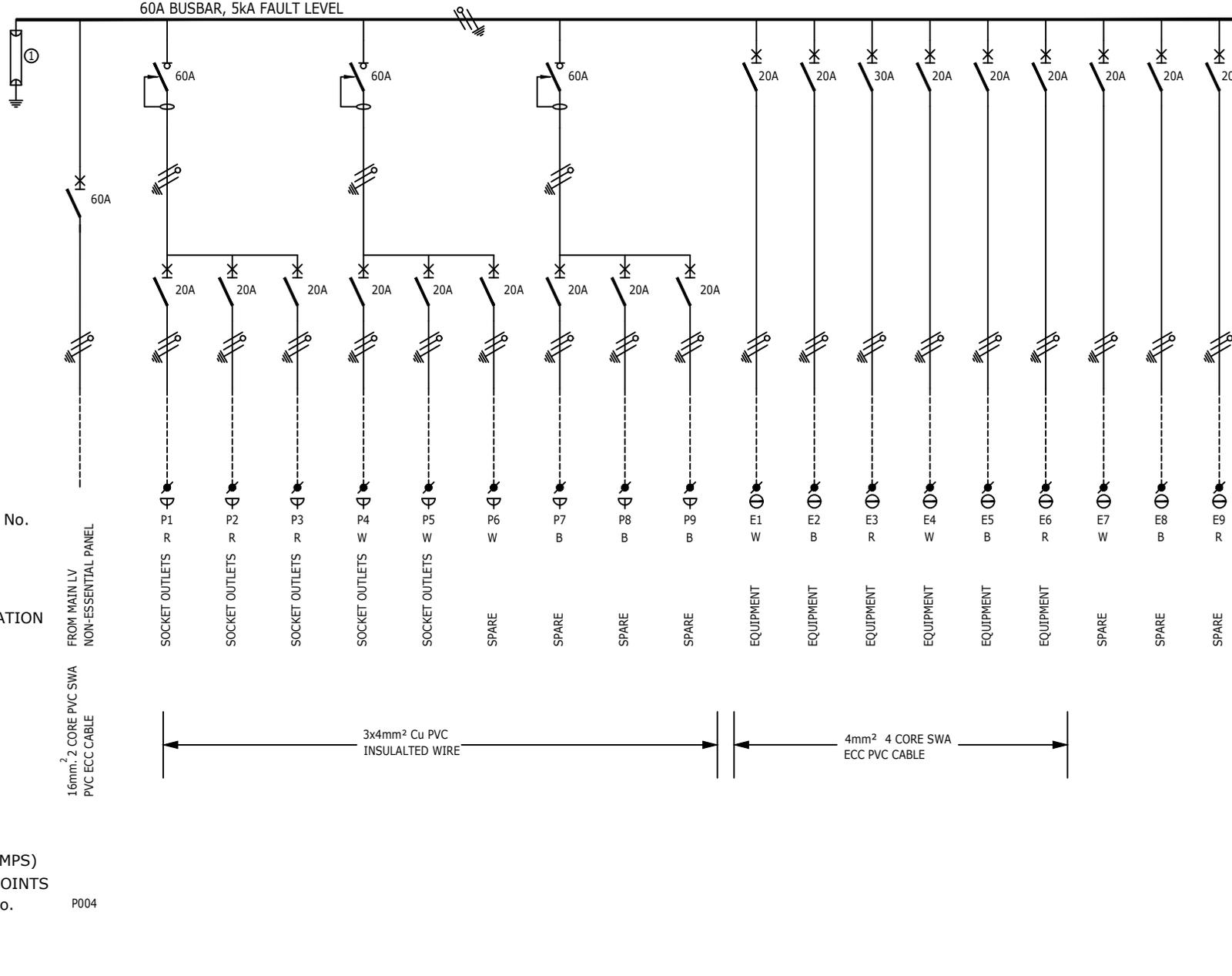
TITLE Newtown Conversion to Large Clinic
DRAWING TITLE: DB-G2/DB-G2-E/DB-G2-UPS
Single Line Diagram



FIRST FLOOR  
BAKER TILLY HOUSE  
18 WESTVILLE ROAD  
WESTVILLE, 3629  
PO BOX 1469  
WESTVILLE, 3630

TEL: +27 (031) 2667332  
E-mail: ibuya@ibuya.co.za

60A BUSBAR, 5KA FAULT LEVEL



FIELD  
CIRCUIT No.  
PHASE

DESIGNATION

WIRING

LOAD (AMPS)  
No. OF POINTS  
CABLE No.

FROM MAIN LV  
NON-ESSENTIAL PANEL

16mm<sup>2</sup> 2 CORE PVC SWA  
PVC ECC CABLE

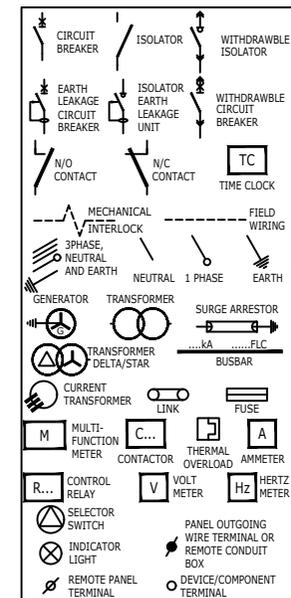
3x4mm<sup>2</sup> Cu PVC  
INSULATED WIRE

4mm<sup>2</sup> 4 CORE SWA  
ECC PVC CABLE

P004

- NOTES**
- 1) DROPPERS/TAILS TO BE RATED FOR FULL Pt LET THROUGH.
  - 2) HARNESSSED WIRING TO BE DERATED.
  - 3) TUFFENOL BRACES ARE NOT TO BE USED ABOVE 10kA.
  - 4) COPPER BUSBARS TO BE CONTINUOUS RATED.
  - 5) SUFFICIENT SPACE REQUIRED FOR SAFE ACCESS FOR REWIRING.
  - 6) EARTH AND NEUTRAL BARS TO BE EASILY ACCESSIBLE.
  - 7) ALL CIRCUIT BREAKERS TO BE FITTED WITH TERMINAL SHIELD ON LIVE AND LOAD SIDES. ENCLOSURE TO BE IP54.
  - 8) PHASING RWB, TOP TO BOTTOM, LEFT TO RIGHT, BACK TO FRONT.
  - 9) INTERNAL TEMP TO BE LIMITED TO 5° ABOVE AMBIANT, MAX 40°C.
  - 10) ALL CIRCUITS TO BE LABELED.
  - 11) 25% SPARE SPACE. SPARE SPACES ARE TO BE FITTED WITH COPPER BUSBAR TAILS CONNECTED TO DROPPER BUSBARS TO ALLOW INSTALLATION OF CIRCUIT BREAKERS WITH A MINIMAL SHUTDOWN PERIOD.
  - 12) DB TO BE FITTED WITH A4 LEGEND CARD HOLDER WITH STANDARD IBUYA A4 LEGEND CARD.
  - 13) EACH CIRCUIT TO BE LABELED WITH DETAILED DESCRIPTION OF CONNECTED DEVICE.
  - 14) EXTERNAL EARTH STUD MOUNTED ADJACENT CABLE ENTRY.

- INCOMING CABLE - BOTTOM  
OUTGOING CIRCUITS - TOP/BOTTOM  
COLOUR - NORMAL - WHITE  
ESSENTIAL - RED  
UPS - BLUE  
ACCESS - SURFACE  
- FRONT  
MOUNTING - FRONT  
PROTECTIVE DEVICES - SCHNEIDER  
ACB'S (1250A-4000A) - MASTERPACT NW  
MCCB'S(800A - 1000A) - COMPACT NS  
MCCB'S(60A-630A) - EASYPACT CSV  
MCB'S - MULTI 9, TYPE 2  
CONTACTORS - AC3 HEAVY DUTY  
METERS - SCHNEIDER
- 1) CLASS 2 SURGE ARRESTOR



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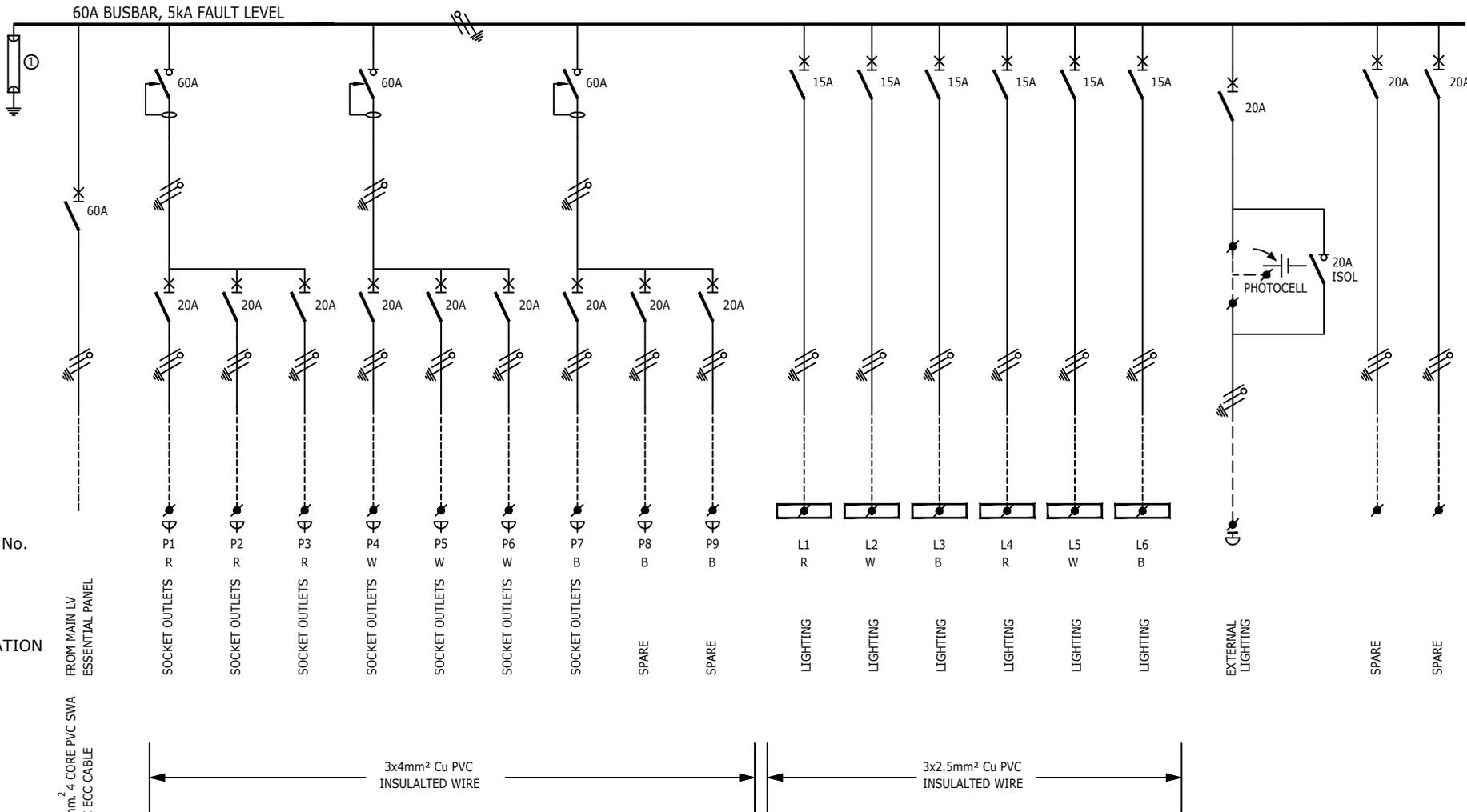
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S.Nzama	C.G	Sep 23	n.t.s PAPER SIZE: A3	
DRAWING No.	SHEET:	REV.		
23023 - 404	1 of 3	0		
BY	DATE	CHKD.	Ibuya Drawing No. : 21010_404_0	
CG	13/09/23	SM	Lyr: 0:1:A3	

TITLE	NEWTON CONVERSION TO LARGE CLINIC
DRAWING TITLE:	DB-G3/DB-G3-E/DB-G3-UPS
	Single Line Diagram

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"POWERING DEVELOPMENT"

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FIELD  
CIRCUIT No.  
PHASE

DESIGNATION

WIRING

LOAD (AMPS)  
No. OF POINTS  
CABLE No.

FROM MAIN LV  
ESSENTIAL PANEL

16mm<sup>2</sup> 4 CORE PVC SWA  
PVC ECC CABLE

3x4mm<sup>2</sup> Cu PVC  
INSULATED WIRE

3x2.5mm<sup>2</sup> Cu PVC  
INSULATED WIRE

P013

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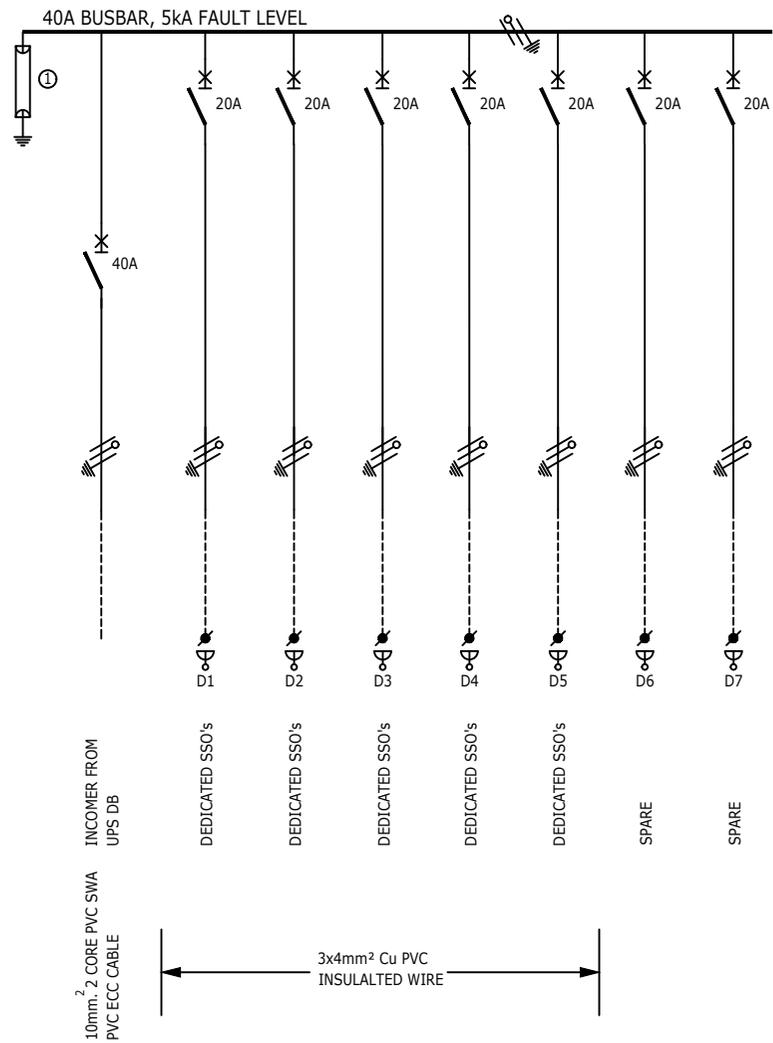
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S.Nzama	C.G	Sep 23	n.t.s	
DRAWING No.	SHEET:	REV.		
23023 - 404	2 of 3	0		
IBUYA Drawing No. : 21010_404_0	Lyr:0:1:A3			

TITLE	Newtown Conversion to Large Clinic
DRAWING TITLE:	DB-G3/DB-G3-E/DB-G3-UPS
	Single Line Diagram



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FIELD  
CIRCUIT No.  
PHASE

DESIGNATION

WIRING

LOAD (AMPS)  
No. OF POINTS  
CABLE No.

INCOMER FROM  
UPS DB

DEDICATED SSO's

DEDICATED SSO's

DEDICATED SSO's

DEDICATED SSO's

DEDICATED SSO's

SPARE

SPARE

10mm<sup>2</sup> 2 CORE PVC SWA  
PVC ECC CABLE

3x4mm<sup>2</sup> Cu PVC  
INSULATED WIRE

P023

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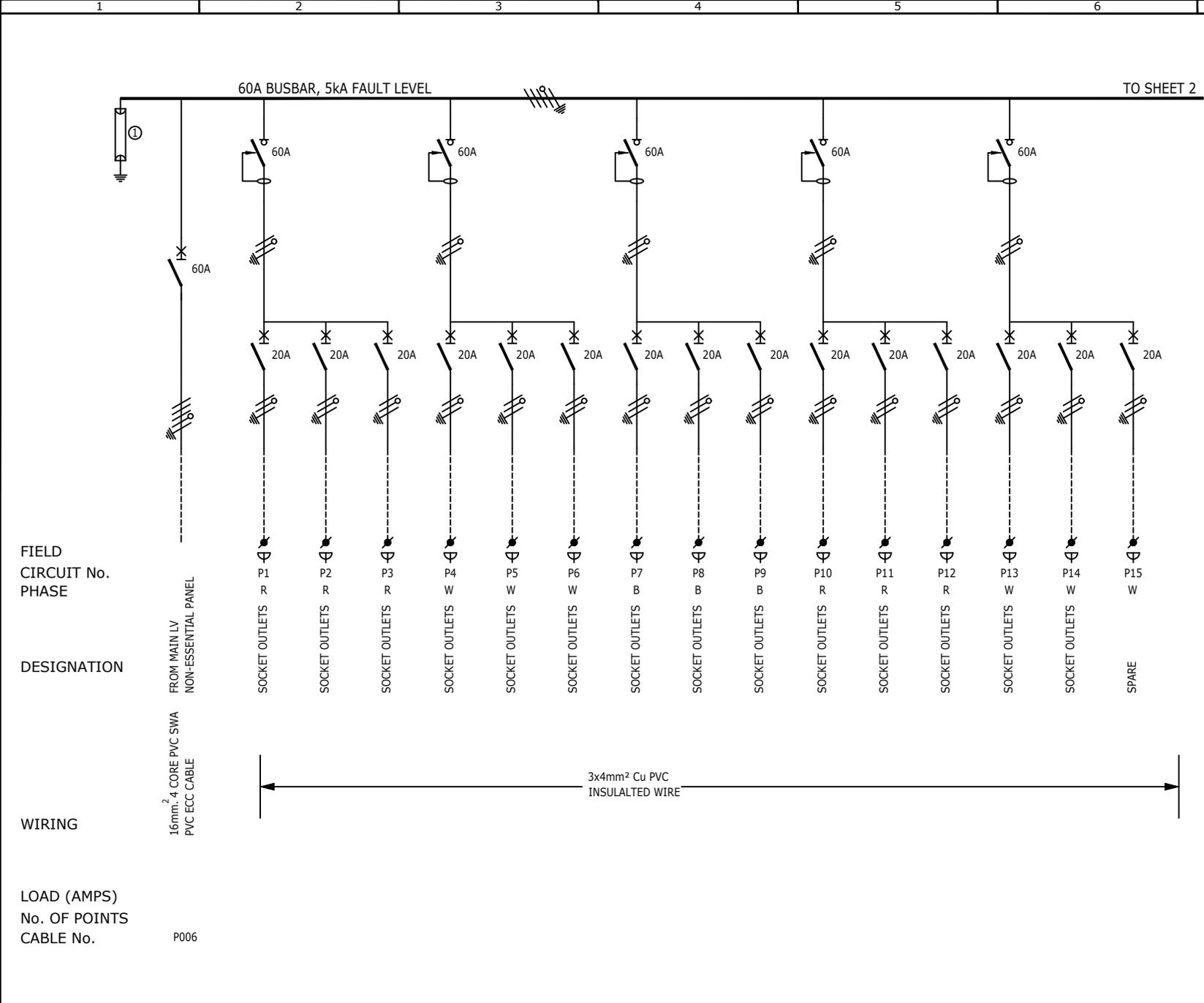
				ENGINEER S.Nzama	DRAWN C.G	DATE Sep 23	SCALE: n.t.s	CHKD.
				DRAWING No. 23023 - 404		SHEET: 3 of 3	REV. 0	
REV	DESCRIPTION	BY	DATE	CHKD.	Ibuya Drawing No. : 21010_404_0 Lyr:0:1:A3			

TITLE Newtown Conversion to Large Clinic
DRAWING TITLE: DB-G3/DB-G3-E/DB-G3-UPS Single Line Diagram



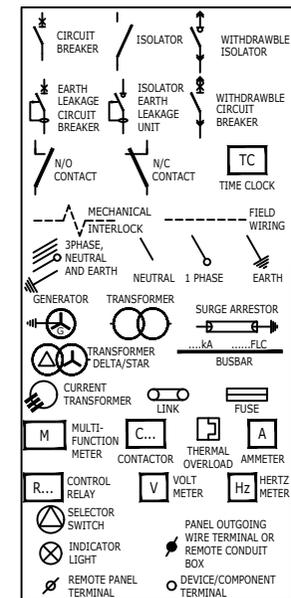
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  - 15) EXTERNAL EARTH STUD MOUNTED ADJACENT CABLE ENTRY.

- INCOMING CABLE**
- TOP/BOTTOM
  - NORMAL - WHITE
  - ESSENTIAL - RED
  - UPS - BLUE
- ACCESS**
- SURFACE
  - FRONT
- PROTECTIVE DEVICES**
- SCHNEIDER
  - ACB'S (1250A-4000A) -MASTERPACT NW
  - MCCB'S(800A - 1000A) -COMPACT NS
  - MCCB'S(60A-630A) -EASYPACT CSV
  - MCB'S -MULTI 9, TYPE 2
- CONTACTORS**
- AC3 HEAVY DUTY
- METERS**
- SCHNEIDER
- 1) CLASS 2 SURGE ARRESTOR



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ENGINEER	DRAWN	DATE	SCALE:	CHKD.	TITLE
S.Nzama	C.G	Sep 23	n.t.s PAPER SIZE: A3		Newtown Conversion to Large Clinic
DRAWING No.	SHEET:	REV.	DRAWING TITLE:		
23023 - 405	1 of 4	0	DB-F1/DB-F1-E/DB-F1-UPS		
REV	DESCRIPTION	BY	DATE	CHKD.	Ibuya Drawing No. : 21010_405_0
0	Original Issue	CG	13/09/23	SM	Lyr: 0:1:A3

TITLE		Newtown Conversion to Large Clinic	
DRAWING TITLE:		DB-F1/DB-F1-E/DB-F1-UPS	
		Single Line Diagram	

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