PROPOSED CONSTRUCT + FINANCE OF A MIXED-USE AHP DEVELOPMENT IN MUGUGA AGRI CITY, KIKUYU CONSTITUENCY, KIAMBU COUNTY WITH ASSOCIATED SOCIAL INFRASTRUCTURE

Item	Description		
1	**Tender No**	MLPWHUD/SDHUD/AHP/334/2023-2024	
2	**Site location**	Kikuyu Constituency, Kiambu County	
4	**Site conditions**	TBC	
3	**Land Size**	Approximately 11.3 Acres	
5	**Scope**	2024No. Of Units in 21No. of blocks distributed as follows	
		13No. Of Type B Blocks 1040No. Of Units	10 No. of 2Bedroom units AHP 30 No. of 2Bedroom units MKT 10 No. of 3Bedroom units AHP 30 No. of 3Bedroom units MKT
		8No. Of Type C Blocks 984No. Of Units	29No. of studio units 10 No. of 1 Room units 18 No. of 2 Room units 37No. of 2Bedroom units 10No. of 3 Room units 10No. of 3Bedroom units 9No. Retail Shops
6	**Amenities**		
7	**External works**	Civil works, Boundary wall, Guard Houses, Basketball Picthes, Garbage Receptacles, Community Centre, Club House, Kindergarten, Swimming Pool	
8	**Built area**	124428.187sm	

PREAMBLES

BILL NO. 1: PREAMBLES

EXCAVATION AND EARTHWORK

Nature of Excavation

A The Contractor must ascertain for himself the nature of the materials to be excavated and price the work accordingly as no allowance will be made beyond the Contract Sum for any alleged ignorance in this respect.

Site Clearance

B. The Contractor shall clear the construction areas within the site of all bushes, roots, brush, boulders, natural obstructions, rubbish and any other natural or artificial obstructions which would interfere with construction of buildings, roads, paths and drains.

C. Clear away all anti/termite hills and nests over the area of the site, excavate for, locate and destroy queens.

D. Treat the cavity formed by the removal of the nest as described hereinafter under "Soil Sterilization" and backfill with approved material well rammed and consolidated in layers not exceeding 300 mm thick.

E. All areas of the site must be thoroughly proofed against rodents and special care must be taken to ensure that no unconsolidated areas are left near banks and ditches

Commencing Levels

F. Unless specifically stated otherwise the commencing levels for excavation shall be deemed to be existing ground level or underside of reduced level excavation.

G. All measurements are based upon reduced level excavation being executed first and no adjustment will be made should a differing sequence of operations be adopted, unless specifically ordered by the Architect in writing.

Excavations

H. Excavations shall be to the widths and depths indicated the drawings or to such lesser or greater depths as the Architect may deem necessary and so instruct the Contractor in order to obtain satisfactory foundations.

J. Any difference in the quantity of works actually executed under such instructions and that provided in the Bills of Quantities shall be measured and valued by the Quantity Surveyor as a variation under the relevant Conditions of Contract.

A. If, however, the Contractor excavates to any greater depth or widths than are shown on the drawings or directed by the Architect, then the Contractor shall at his own expense fill in such extra depths and widths with concrete similar to that described for foundations to the satisfaction of the Architect.

Bottoms to Excavation

B. The Contractor shall report to the Architect as and when a secure bottom to the excavations has been obtained and the same is ready to receive concrete. Any excess depth unnecessarily excavated below the formation level shall be backfilled with and compacted as directed by the Architect and no payment shall be made for excess excavation or for the fillings & compaction

C. Any concrete or other work put in before excavations have been inspected and approved shall, if so directed, be removed and new work substituted after excavations have been approved all at the Contractor's expense.

D. If so directed, the Contractor shall water and well ram the bottoms of excavations to the satisfaction of the architect.

Measurement of Excavation Work

E. Excavation work is measured net as before digging and the Contractor must allow for increase in bulk after digging.

Trenches for pipes, cables kerbs, etc., other than drain pipes

F. Prices for excavation of trenches for pipes, cables, kerbs, etc., shall include for grading and ramming bottoms to the levels required, all necessary planking and strutting, carefully returning, filling and ramming selected excavated materials and for carting away any surplus materials.

Rock

G. Any rock or other hard materials encountered in excavating to the required depth which, in the opinion of the Architect, can only be removed by wedges or compressor plant shall be paid for as an extra and the price shall include for trimming and levelling. No blasting will be allowed. Hard compacted murram which can be removed by pick will not be classed as rock notwithstanding that the Contractor may decide to remove it by wedges or compressor plant.

H. The Contractor must give notification to the Architect or his representative when such material is encountered and its extent must be agreed with Architect or Quantity Surveyor or their authorised representative before the work is carried out. No allowance will be made for rock excavation unless the foregoing procedure has been followed.

Rates for Excavation

J. The rates for excavation shall include for excavating by hand or machine in all types of materials except rock, as previously specified.

A. Excavations for plain concrete foundations have been measured to the **net sizes** required by concrete dimensions.

B. An allowance for working space and formwork has been measured to reinforced concrete foundation, but if the Architect's approval is given to pouring concrete against the face of the excavations these items will be measured and adjusted in the Final Account.

C. The rates for excavation must include for such excavating in all types of ground encountered including sand, murram, hard murram, tree roots and loose boulders.

Levelling

D. No item is measured for levelling and consolidating ground and rates for excavations must include for levelling and preparing the ground for concrete or other works including ramming or rolling.

Disposal of Water

E The Contractor shall keep the excavations free from standing water and silt (or excavated materials softened by water) and he shall include for the cost of pumping, construction of temporary drains, soakaway pits, etc., as deemed necessary to achieve this. An item has been included for this in the Bills of Quantities in each relevant section. The cost of pumping to dispose of any spring or running water has been covered by Provisional Sum. If spring or running water is encountered, the cost of any pumping ordered by the Architect will be paid for in accordance with the Dayworks Schedule.

Planking and Strutting

F. Sides of all excavations must be supported in order to prevent falls from or collapse of the earth face. The term "planking and strutting" is deemed to include any method or methods which the Contractor elects to adopt, uphold, protect and maintain the sides of excavations. The Contractor will be responsible for any consequences of his failure in this respect including clearing away fallen materials and any extra concrete or other works including formwork ordered by the Architect due to such failure. An item has been included in these Bills of Quantities in each relevant section.

Return, Fill in and Ram

H. Material returned around foundations externally shall be selected hard, dry excavated materials arising from the excavations free from vegetable soil, roots and rubbish carefully filled in, spread, watered and compacted in layers not exceeding 200 mm thick. Backfilling internally shall be hardcore, or selected hard dry granular materials as above to approval.

J. No excavations or foundation work shall be filled in or covered up until all measurements necessary for the adjustment of variations have been made. Walling shall not be built upon the foundations until four days after deposition of concrete.

Cart Away

A. All surplus excavated material, where so directed, and all rubbish is to be removed from the site and the Contractor is to find his own dump and pay all charges.

Approval Before Filling

B. No fill materials shall be placed before approval has been given by the Architect for filling to begin.

Measurement of Filling Generally

C. Filling is measured net as after consolidation.

Earth Filling

D. Levels specified to be made up with surplus soil, etc., are to be filled in with selected soil free from vegetable growth to the approval of the Architect and is to be laid in layers not exceeding 200 mm thick, each layer to be levelled, well rammed and consolidated and watered if necessary.

Hardcore Filling

E. Hardcore shall consist of clean hard broken stone or rubble graded to pass in all directions a 100 mm ring with sufficient sand added to fill the interstices. The hardcore shall be well packed, rammed and where possible, rolled with a heavy roller. Where rolling is impossible compaction shall be by hand or by mechanical tampers. Before any concrete is laid on hardcore, the hardcore shall be levelled and blinded with sand, rolled and well watered through a sprinkler rose.

Borrow Pits

F. No borrow pits will be allowed to be opened on the site

Soil Sterilization

G. Anti-termite treatment is to be carried out using one of the chemicals below and the Contractor will be required, upon completion of the soil sterilization, to furnish a written guarantee certifying the following:-

(a) That the chemicals applied comply with the requirements specified herein for chemical concentration and rates of application.

(b) That the treatment will remain effective against termite infestation for a period of five years.

(c) Application shall not be done whilst its raining or to surface of filling which are wet, and strictly in accordance to manufacturer's instructions

Soil Sterilization

A. The chemicals used shall be one of the following:-

5 Termicide A; 1 part to 45 parts water
7 Pentachlorophenol; 5% in oil solution
8 Trichlorobenzene; 1 part to 3 parts oil

B. Some of the chemicals listed above are toxic to animals and plant life and must, therefore, be applied only with caution by an experienced person. Where individual water supply systems are proposed, precautions must be taken to prevent infiltering and endangering the water supply. Treatment shall not be made when soils or fill is excessively wet or immediately after heavy rains.

C. Precautions must also be taken to prevent disturbance of the treatment by animals or human contact with the treated soil. The treated areas are to be covered as quickly as possible after treatment.

D. The rate of applications is to be 7 litres per square meter and the areas measured include those under floor and around wall and column foundations.

CONCRETE WORK

Code of Practice for Reinforced Concrete Work

A. All workmanship, materials and tests in connection with reinforced concrete work are to be conformity with B.S. Code of Practice B S 8110 : 1985 - The Structural Use of Concrete.

Generally

B. A competent person shall be employed whose first duty it will be to supervise all stages in the preparation and placing of concrete. All cubes shall be made and site tests carried out under his direct supervision.

C. All materials which have been damaged, contaminated or have deteriorated. or which do not comply in any way with the requirements of the specification, shall be rejected and shall be immediately removed from the site.

D. No materials shall be stored or stacked on suspended floors without the Engineer's prior approval.

Samples

E. Samples of all materials are to be submitted for approval of the Engineer at least one week before it is desired to commence deliveries. All condemned materials are to be removed from the site within 24 hours.

Cement

F. Cement used shall be ordinary Portland cement and shall be obtained only from manufacturers approved by the Engineer, and shall comply in every respect with B.S. 197-1. The Contractor at his own expense may use rapid hardening Portland Cement (to B.S. 197-1) in order to speed up progress of the Works. If rapid hardening Portland Cement is used, the prior approval of the Engineer shall be obtained in writing.

G. Each consignment of cement shall be accompanied by the manufacturer's certificate showing that a representative sample of the consignment has been tested and complies with the appropriate specification. From time to time as requested by the Engineer, copies of the cement manufacturer's test certificates shall be delivered to the Engineer or his representative on thesite promptly, but such documents shall not preclude the Engineer from rejecting any cement which does not in every way comply with the specification.

Cement Storage

H. The cement must be delivered in the manufacturer's sealed and branded bags and stored separately in dry, water-tight stores with their floors raised above ground level and shall be at all times carefully protected from moisture.

I The cement shall be stored in such a way that each consignment may be identified and used in the order of its delivery. Cement may be delivered in bulk containers provided additional suitable arrangements are made for bulk storage on site to the approval of the Engineer.

Inferior Cement

A. Any cement which has failed to pass the tests or has been damaged by water or contaminated in any way on site shall immediately be put into bags and removed from the site.

Aggregate

B. Aggregates shall be granite or other equal and approved obtained from an approved source and shall comply with B.S. 1260. They must be chemically inert, strong, hard, durable, free from adhering coating, salts, organic or other impurities and shall be washed or screened as directed.

Fine Aggregate and Sand

C. Fine aggregate and sand shall be clean, sharp, coarse, hard siliceous materials and equal at all times to the samples which shall be deposited with and approved by the Architect or Engineer. It shall comply with the requirements of B.S. 1260, Table 2, Zones 1,2 or 3. The caustic soda tests for organic impurities shall show a colour not deeper than that of the standard solution. The settling test for natural sand shall be made and after being allowed to settle for three hours the layer of silt deposit on the coarse materials shall not exceed 10% for crushed stone and 3% for natural sand or crushed gravel.

D. The Contractor shall supply all necessary equipment for testing of fine aggregate and sand for use of the Clerk of Works.

Coarse Aggregates

E. Coarse aggregates shall be granite from approved quarries, clean, free from earth and extraneous matter, and shall conform to B.S. 1260. The amount of fine particles occurring in a free state or as loose adherent shall not exceed 1% when determined by the laboratory sedimentation test.

F. After twenty-four hours in water, a previously dried sample shall not gain more than 1`0% in weight for crushed stone or 3% for natural sand or crushed gravel

G. The four nominal aggregate sizes shall be 40 mm (1.5"): 20 mm (.75"): 10 mm (3/8"): 6 mm (1/4") : and the grading when analyzed as described in B.S. 812 shall be within the limits given in B.S. 1260.

Aggregate Storage

A. Each grade of aggregate shall be stored in the works in separate heaps so that there shall be no possibility of any inter-mixing. Any materials which have become inter-mixed shall be removed from the site forthwith by the Contractor.

B. The materials shall be stored on a timber or concrete floor and the piles shall be as large as possible, flat topped and drained.

Water

C. All water used on the Works shall be clean, free from earthy vegetable and organic matter and from acidic and alkaline substances in suspension or solution. It shall preferably be obtained from the water mains of the Ministry of Water and Energy Department or Water Authority and shall be stored in proper water storage tanks to the approval of the Architect or Engineer. Any approved water shall be tested in accordance with B.S. EN 1008.

Admixtures

D. Admixtures of any kind for accelerating the setting of cement, plasticiser, hardeners, water proof etc., shall be used only if approved or specified by the Architect or Engineer.

Proportion of Concrete Mix

E. The quantity of cement shall be measured by weight and each batch of concrete is to use one or more whole bags. The quantity of fine aggregate and coarse aggregate shall be measured separately by weight in an approved weight batching plant. Volume mixing will not be permitted. The weight of damp aggregates must be adjusted to take into account the weight of water in the aggregates, and must be adjusted to take into account the weight of water in the aggregates, and this in turn will affect the amount of water to be added into the mix.

F. Throughout the carrying out of the Contract "Work Tests" are to be made from concrete drawn from newly laid concrete or concrete about to be placed in position, such cubes being made when directed by the Clerk of Works and in his presence. Such cubes shall be made in 150 mm or six inch cube steel or cast from mould and shall be marked and cured strictly in accordance with Appendices of the Code of Practice, and shall be forwarded carriage paid in time for testing at the required age to a testing laboratory to be nominated by the Architect or Engineer.

G. Six cubes shall be made on each occasion, and cured in compliance with B.S. 1881 Part 3, 1983 concrete for each cube being from a difference batch. Three cubes shall be forwarded in time for testing at the age of seven days from casting and three cubes in time to testing in twenty-eight days. Each cube shall be marked with the date of casting and a distinctive reference number in accordance with a system agreed by the Engineer. A record shall be kept of the position from which the concrete for each set of cube was drawn, or to which it was about to be placed.

Concrete Work Cont'd

A. At least three sets of six cubes shall be cast during each week concrete is being cast including sets of cubes for each quality of concrete used during the period.

B. Concrete is required to have the properties and give the strength in Newtons per square millimetre as set out in the table below which is to be considered as the minimum standard that will be accepted in the finished Works.

C. The workability of the fresh concrete should be such that concrete is suitable for handling, placing and compaction so that it surrounds the reinforcement, tendons and ducts and completely fills the formwork.

Grade	Quality	Maximum size of coarse agregate	Maximum Water Cement Ratio by weight of Aggregate	Minimum Crushing Strength of Works Test Cubes	
				7 days	28 days
30	1:1:2	20	0.45	30	36
25	1:1.5:3	20	0.55	21	26
25	1:1.5:3	10	0.55	21	26
20	1:2:4	20	0.60	14	21
20	1:2:4	10	0.60	14	21
15	1:3:6	10	0.60	-	12
10	1:3:6	10	0.60	8	10
7	1:4:8	40	0.60	-	7
-	1:10	All in Agregate		-	-

D. If the strengths required in the table are not attained and maintained throughout the carrying out of the Contract, the Contractor will be required to increase the proportion of cement or substitute better aggregate at his own cost so as to give concrete which does comply with the requirements of this Clause. The Contractor may be required to remove and replace at his own cost any concrete which fails to attain the required strength as ascertained by the Works Cube Tests.

Unsatisfactory Concrete Work

E. Should in the opinion of the Engineer any of the results of the specified tests of concrete or materials be unsatisfactory, the Engineer may order the work to be stopped pending his further instructions. Executed work for which test cubes are unsatisfactory shall be liable to rejection and, if so directed by the Engineer, the work represented by the tests shall be cut out and re-executed at the Contractor's expense.

A. In the case of seven day Works Cube Tests proving unsatisfactory, the work may be stopped, but shall not be liable to rejection until the result of the twenty-eight day test is known.

B. In the event of the results of the twenty-eight day Works Cube Tests proving unsatisfactory, the work represented shall be immediately liable to rejection. The Contractor may, however, be given the option of cutting three specimens from the completed work subject to the direction of the Engineer, and preparing therefrom test cubes or cores Tests in accordance with the requirements of Part 4 of B.S. 1881 Part 3, 1983.which shall be sent to the Testing Laboratory for testing as for Works Cube

C. Should the average strength of these specimens attain the specified minimum twenty-eight day strength, the work will, subject to the Engineer's discretion be accepted. Alternatively, the Engineer may instruct the Contractor to make a loading test as described hereinafter. The cost of all cutting, preparation of specimens, testing and making good the portions of the structure affected, shall be borne by the Contractor. The cost of all delays on site due to concrete not attaining the desired strength, or caused by investigation of defects, cutting away and making good, shall be entirely the Contractor's responsibility.

Structural Test

D. If, in the Engineer's opinion, there is a doubt as to the strength of a structure, solely or in part, for the reason that the site-made concrete cubes fail to attain the specified fail, the Contractor shall be reimbursed for the cost of the test. If the result of the test is not satisfactory, the Contractor shall bear the cost of the test and the cost of correcting any defects in accordance with the instructions of the Engineer.strength, or because of one or more circumstances attributable to alleged negligence on the part of the Contractor to make a loading test on the Works or any part thereof. The nature of the test and the loading shall be in accordance with Clause 605 of C.P. 114. If the result of the test is satisfactory, except where the test has been made because test cubes

Formwork

E. The formwork shall be so constructed as to remain sufficiently rigid during the placing compaction of the concrete and shall be sufficiently tight to prevent loss of liquid from the concrete. Vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without injury. All rubbish, chippings, shavings and sawdust shall be removed from the interior of the forms before the concrete is placed, and suitable washout holes shall be provided to facilitate this, and the formwork in contact with the concrete shall be clean and thoroughly wetted and treated with the approved mould oil. Care shall be taken that such oil is kept out of contact with the reinforcement and shall be used a sparingly as possible. In no circumstances shall forms be struck until the concrete reaches a cube strength of at least twice the stress to which the concrete may be subjected at the time of striking, and in any case the minimum permissible times shall be as follows:-

Vertical sides of wall and columns	2 days
Sides of beams and lintels	2 days
Soffits of slabs (Subject to retention of props until 21 days	14 days
Soffits of beams and lintels (Subject to retention of props until 21 days)	14 days

A. No formwork is to be removed if, in the opinion of the Engineer, the concrete has not hardened sufficiently. Approval of the Engineer shall not relieve the Contactor of his liability to make good any concrete which may be damaged by premature removal or collapse of forms. Notwithstanding any other clauses in this specification the responsibility for the safe removal of the formwork rests with the Contactor.

B. All formwork shall be removed without such shock or vibration as would damage the reinforced concrete.

C. Forms shall be true to lines and levels and braced and strutted to prevent

D. Before placing of the concrete, bolts and fixings shall be in position and cores and other devices used for forming openings, holes pockets, recesses, ducts or other cavities shall be fixed to the shuttering.

E. Concrete shall not be poured in horizontal layers to a depth exceeding 1500 mm in formwork, except where prior approval of the Engineer has been obtained.

F. Formwork is measured to the actual net surface of the concrete to be supported and the Contractor shall allow in his prices for any waste, fixing at the various levels, straight cuttings, splayed edges, notchings, fillets to form chamfered arises, extra materials, joints, overleaves for angles, extra labour for narrow widths and small quantities, props, stays, struts, hangers, brackets, edges, wiring, bolts, and everything necessary to keep all quite firm and rigid, and any other labour and materials necessary to fix, ease, adjust and remove the formwork as described.

Normal Finish to Faces of Structural Concrete

G. After removal of shuttering, unless instructed to the contrary, the face of exposed concrete is to be rubbed down immediately to remove fins or other irregularities. In the event of parts of the concrete being honeycombed, such portions are to be cut to a depth and shape required by the Engineer and made up with fine concrete of equal quality in such a manner as shall be directed. The face of concrete for which shuttering is not provided, other than slab, is to be smoothed with a wooden float to give a finish equal to that of the rubbed-down surface where shuttering is provided. The top face of a slab which is to not intended to cover with other materials is to be levelled and floated before setting to a smooth finish at the level or falls shown on the drawings or elsewhere. The floating must be carried out in such a way as will prevent an excess or mortar being brought to the surface of the concrete. The top face of a slab intended to be surfaced with mortar, granolithic, or similar materials is to be brushed with a stiff broom while still green to remove any laitence © and to provide a roughened surface.

Fairfaced Concrete

A. Where so described or measured, faced of concrete shall be finished fair by means of formwork lined with approved waterproof plywood so as to produce a perfectly true surface and shall have all imperfections in the concrete face cut out, made good in cement mortar and rubbed down with carborundum stone and finally bag rubbed with cement slurry to finish to a high standard without trace of shuttering marks, joints or other disfigurements.

Wrought Boarded Face Formwork to give a Board Mark Finish

B. Where so described or measured, faces of concrete shall be finished fair by means of 100 mm or 150 mm (nominal) width tongued and grooved boarding of 25 mm (minimum) thickness.The edges of all boards shall be nominal 2 mm chamfer to form controlled fins.

C. Such formwork to column faces shall be of continuous length boards between construction joints.

D. End joints will be permitted to beams faces, etc., and shall be tongued, staggered and well distributed.

E. All imperfections shall be cut out and made good in concrete of equal quality.

F. The resulting concrete shall show grain and individual board marks, be free from honeycombing and excessive air holes, of uniform colour and to the entire satisfaction of the Engineer.

Wall Ties

G. Where blockwalls abut columns or solid concrete walls two 6 mm diameter steel reinforcing bar ties are to be cast into the concrete at vertical intervals of 400 mm. Ties to be 300 mm long and project 150 mm into blockwork.

Holes, Pipes Etc.

H. The Contractor shall be responsible for the co-ordination with sub-contactors for incorporating any electrical conduits pipes, fixing blocks, chases, holes, etc., in the concrete members as required. The Contractor shall submit full details of these items to the Engineer for approval before the work is put in hand. Concrete fixing blocks may be embedded in the concrete provided that the strength or effective cover of any part of the structure is not adversely affected nor the finished work damaged by any movement of the blocks. All fixing blocks, chases, holes etc.., to be left in concrete shall be accurately set out and cast with the concrete. No openings, chases, holes or other voids shall be cut or formed in concrete without the approval of the Engineer.

Blinding Concrete

A. No casting of any concrete on the ground shall take place until the ground has been passed as satisfactory by the Engineer. All ground to carry reinforced concrete shall be covered with a 50 mm minimum blinding layer of concrete 1:4:8. The cover for concrete under reinforcement shall be entirely above the blinding layer.

Mixing

B. Concrete is to be mixed in a batch mixer of approved type having a drum rotating about a horizontal or inclined axis. The speed of the drum is to be not more than twenty and not less than fourteen revolutions per minute. Each mixer is to be fitted with a water measuring device capable of accurate measurement to one gallon for one cubic yard mixers and pro rate for smaller sizes and so arranged that the accuracy is not affected by variations in the pressure of the water supply line.

C. The fine and coarse aggregate and the cement are to be mixed for at least four turns of the drum, after which the required amount of water is to be added gradually while the drum is in motion and the concrete then mixed for at least one and a half minutes and until a mix of uniform colour and consistency is attained.

D. The volume of concrete mixed in any one batch is not to exceed the rated capacity of the mixer.

E. The whole of the mixed batch is to be removed before materials for a fresh batch enter the drum.

F. On cessation of work, including all stoppages exceeding twenty minutes, the mixers and all handling plant are to be washed out with clean water.

G. Concrete mixed as above is not to be modified by the addition of water or otherwise in order to facilitate handling, or for any other purpose.

H. At least one slump test shall be made each day concreting is in progress under the supervision of the Clerk of Works. The slump shall not exceed 75 mm but at 25 mm slump may be allowed by the Engineer in certain structural members.

Transporting

J. Concrete is to be handled from the place of mixing to the place of final deposit as rapidly as practicable by the methods which will prevent segregation or loss of ingredients and maintain the required workability. It should be deposited as nearly as practicable in its final position to avoid rehandling.

K. Concrete shall be placed into the forms from as small a height as possible and shall in no case be dropped from a height of more than 1500 mm except with the approval of the Engineer.

A. When chuting is used, the inclination of the chute must be such as to allow the concrete to flow without the use of excessive water and without segregation or loss of the ingredients. Details of any proposed chuting plant must be approved by the Engineer before the plant is delivered to the site.

B. If the Contractor wishes to distribute concrete by means of pumps, full details of the system must be made available to the Engineer for approval.

Placing and Consolidation

C. The concrete shall be placed before setting has commenced and in any case within thirty minutes from the time the water is added, and must not be subsequently disturbed. Concrete shall be thoroughly compacted during the operation of placing, and thoroughly worked around the reinforcement, around embedded fixtures, and into corners of the formwork. Mechanical vibration with an approved type insertion vibrator shall be used.

D. The use of mechanical vibration will not relive the Contractor of his responsibility for making good work which may be damaged by excessive or ill-applied vibration.

E. All methods of placing and consolidation of the concrete are to be such as not to cause any disturbance or movement to the formwork or reinforcement. After being placed in position, the concrete is to be left absolutely undisturbed by any movements or thrusts while setting.

F. An accurate record is to be kept by the Contractor showing dates and times when various portions of the work were concreted. The concreting foreman must not vary the approved mix or water content without the permission of the representative of the Engineer. it may occasionally be found that in constructed structural members or where the proportion of reinforcement to concrete is high, the workability of the concrete must be increased locally in order to effect full compaction. Such increase in workability shall be achieved by an increase in the cement content of not more than 10% of the concrete by weight in any single batch and must be made only with the approval of the representative of the Engineer.

G. The workability of the concrete must never be altered by the use of additional water or sand alone.

Construction Joint

H. The form and location of all construction joints shall be approved by the Engineer before commencement of work.

A The Centering to form the stop shall be fitted with splay fillets on the concrete face and will be firmly fixed and scribed around the reinforcing steel. If any concrete shall flow past the stop, it shall be hacked off as soon as the concrete has set. Before any new concrete is placed up against the stopped face, the concrete previously placed shall be hacked and scoured with a wire brush to remove the scum. The joint shall then be soaked with water and covered with a sand cement mortar of proportions in the same ration in the concrete used. In all cases of application of mortar the punning must be adequate to incorporate the mortar in the body of the concrete. In no circumstances shall the concrete be allowed to finish at a break running down a rough slope. Such cases, if found, will be treated as contrary to the specification and the Contractor will be required to cut out the member and re-cast. In the case of horizontal joints, any excess water and laitence shall be removed from the surface after the concrete is deposited and before it has set.

B Before casting slabs the haunchings or seatings for the slab shall be thoroughly hacked, scoured and washed and covered with at least 5 mm of mortar immediately before the slab is cast.

C Slabs to be cast using alternate bay construction, maximum size of single panel 40 square meters.

Column Plinths

D Column kicker plinths 75 mm high not cast monolithically with the beam or slab will be allowed only at the discretion of the Engineer and special precautions must be taken if permission is granted, especially in regard to the quality of the mix used and the curing of concrete.

Curing

E The curing of the concrete must receive particularly careful attention. The concrete shall be covered with a layer of a sacking, canvas, hessian or suitable absorbent materials, and concrete, formwork and covering kept constantly wet for the first seven days after casting. Foundation concrete must be protected from falling earth and kept free from deleterious substances.

Dimensions of Finished Concrete

F Except where specially noted, dimensions, levels, sizes, positions, and covers are to be exactly as dimensioned or specified with the following tolerances for concrete cast in situ.

(a) For sizes of beams or columns, slab or wall thicknesses, not less than specified, nor more than 5 mm above. Dimensions between column faces not to have a greater tolerance than 10 mm.

(b) For layout positions or dimensions horizontal or vertical 5 mm plus or minus.

(c) Levels of floor, ceilings, beams, lintels, etc., (top and bottom), 5 mm plus or minus and no surface intended to be horizontal must slope more than 2 mm in 1 meter.

(d) Errors in plumbing 5 mm plus or minus, and no line or surface intended to be vertical must slope more than 2 mm in 1 meter.

(e) For cover of concrete around reinforcement 3 mm plus or minus.
Permissible tolerance shall not be cumulative.
Steel Reinforcement

A. Mild steel rod reinforcement shall comply with B.S. 4449.

B. High tensile steel rod reinforcement shall be hot rolled deformed steel complying with B.S. 4661 grade 460.

C. Welded steel fabric reinforcement shall comply with B.S. 4483.

D. The steel shall be stored so that it is kept clean and reasonably free from rust.

E. All metal for reinforcement is to be free from loose mill scale, loose rust, oil and grease, or other harmful matter immediately before placing of the concrete.

F. All reinforcement is to be placed and maintained in the positions shown on the drawings. Some definite method of ensuring the amount of cover required by the designer must be agreed between the Contractor and the Engineer.

G. Reinforcement must be bent or straightened in a manner that will not injure the materials, and in accordance with B.S. 4466.

H. All bars are to be bent cold.

J. Starter bars are to be positioned accurately.

K. All crossings of bars are to be securely wired.

L. Bars at the top of slabs are to have substantial support.

M. The prices of all rod reinforcement are to include for cutting to lengths and for all bending, hooked ends, etc., and for placing in position with distance pieces where necessary to ensure the rigidity of the bars and for tying together with approved wire in order to prevent displacement during concreting.

N. The placing of all reinforcement shall be checked by the Engineer and in no circumstances is concrete to be deposited around any steel that has not been passed. At least forty eight (48) hours notice shall be given to the Engineer that reinforcement will be ready for inspection.

O. Where bending schedules are provided, the measured weight of reinforcement for purposes of payment will be taken from the bending schedules and the Contractor must make due allowance in his rates for rolling margins and all the foregoing items and labour including cutting to waste from random lengths.

Cover to Reinforcement

A. The thickness of the concrete cover to reinforcement shall conform in all respects to the B.S. Code of Practice B. S. 8110 : 1995 unless specifically shown on the drawings. Some approved method of ensuring the correct amount of cover shall be used.

Spacing Blocks and Chairs etc.

B. Properly formed spacing blocks of concrete with wire ties or other approved means shall be securely wired or attached to the reinforcing bars to ensure the maintenance of the proper cover of concrete.

C. These shall be dense concrete left with a wire brushed surface or dipped in grout before fixing. These blocks are particularly important where the surface of the concrete is exposed to the weather or dampness. The Contractor must ensure that the bars are securely fixed so as to maintain their indicated positions during the progress or pouring, tamping or vibration of concrete. Four chairs per drop are to be provided around columns to hold steel in positions and chairs are to be made up of 12 mm diameter mild steel bars. The cost of all such fixing steel must be allowed for the Contractor in his rates for reinforcement generally.

Precast Concrete

D. Concrete shall all be cast in properly made strong mould to form shapes required. For work described as "finished fair" the mould shall be lined with sheet iron or other approved material.

E. The coarse aggregate for precast concrete shall be 10 mm gauge where 1:1.5:3 mix concrete is specified.

F. The concrete shall be of the mixes described and shall be thoroughly tamped in the mould and shall not be removed from them until seven days after placing the concrete, but the sides may be removed after three days providing the mould are such that the sides are easily removable without damaging the concrete.

G. The precast work shall be cast under sheds and shall remain under same for seven days in the mould and a further seven days after removal from the moulds. During the whole of this period the concrete shall be shield by sacking or other approved materials and kept wet. It shall then be removed from the sheds and stacked in the open for at least seven days to season.

H. All precast work shall be in lengths convenient for handling, unless otherwise described.

J. Prices for precast concrete shall include for all moulds, hoisting and fixing to the levels required, bedding and pointing in cement mortar (1:3) and for finishing exposed faces fair and smooth where so described.

WALLING

Setting out Walling

A. The Contractor shall provide proper setting out rods and set out all work on same for courses, openings, heights, etc., and shall build the walls and piers etc., to the widths, depths and heights indicated on the drawings and as directed and approved by the Architect.

Cement

B. Cement shall be described in Concrete Work.

Fine Aggregate

C. Fine aggregate for concrete blocks shall be as described for fine aggregate in Concrete Work.

Coarse Aggregate

D. Coarse Aggregate for concrete blocks shall be good, hard, clean aggregates from approved quarries. It shall be free from all decomposed materials and shall be graded up to 10 mm all as described for coarse aggregate in Concrete Work.

Concrete Block

E. Concrete blocks for walling shall be provided by the Contractor complying with B.S. 2028 Type A, and made in approved block making machines or a composition as follows:-

Portland Cement; 1 Cubic Meter
Fine Aggregate (graded up to 5 mm); 3 Cubic Meters
Coarse Aggregate (graded up to 10 mm); 6 Cubic Meters

F. Blocks shall be solid or hollow two-hole type as specified and are to be made under sheds erected by the Contractor to the directions and approval of the Architect. In hollow blocks of the volume of the cavities shall be not less than 45% and not more than 50% of the gross

G. The compressive strength Type A blocks shall be not less than:-

Average of 13 hollow blocks; 5.75 N/mm2 gross area
Lowest individual hollow block; 4.0 N/mm2 gross area

A. The concrete is to be put into the machine's moulds in thin layers and all properly tamped therein. On removal from the machines the blocks are to be carefully deposited on wet the whole time, after which they shall be put out in the open on racks and protected with the approved matting, sacking or straw and kept wet for a further five days, then kept in the same position and under the same mat cover, but without wetting, for a further two days and then left in the open without matting or wetting for a further seven wet the whole time, after which they shall be put out in the open on racks and protected with the approved matting, sacking or straw and kept wet for a further five days, then kept in the same position and under the same mat cover, but without wetting, for a further two days and then left in the open without matting or wetting for a further seven days to season. All blocks must be left with good sharp edges. The blocks for use in the Works shall be 190 mm high and may vary in length from 300 mm to 400 mm and no variation above or below these lengths will be allowed except where required to form proper bonding at corners, round openings, sills, lintels, beams, etc., and the like positions and the Contractor must make or cut blocks to all the varying sizes required for these purposes and include this in his price. days to season. All blocks must be left with good sharp edges. The blocks for use in the Works shall be 190 mm high and may vary in length from 300 mm to 400 mm and no variation above or below these lengths will be allowed except where required to form proper bonding at corners, round openings, sills, lintels, beams, etc., and the like positions and the Contractor must make or cut blocks to all the varying sizes required for these purposes and include this in his price.racks under sheds erected by the Contractor to the direction and approval of the Architect and there left for three days and kept thoroughly

Bonding Walling

B. The blocks shall be properly bonded together in such manner that no vertical joint in any one course shall be within 100 mm of a similar joint in the courses immediately above or below. Sufficient through bonders shall be provided as directed by the Architect. Alternate courses of walling at all angles and intersections shall be carried through the full thickness of the adjoining walls. All walling shall be built up entirely solid in blocks without void, allowance being made for joints 10 mm thick only. All perpends, reveals and other angles of the walling shall be built strictly true and square

Wall Reinforcement

C. Where so specified hollow block walls shall be reinforced vertically with 10 mm diameter mild steel bars built into the cavities of the blocks at 400 mm centres, unless otherwise specified, all bars in walls to have a minimum lap of 350 mm.

D. Prices for walling described as reinforced must include for all extra costs involved in slotting blocks over the vertical reinforcement.

Filling of Hollow Blockwork

E. All cavities where specified and shown above ground and all cavities below ground level shall be filled in solid with concrete of the mix described and placed and consolidated in sections not exceeding 1190 mm in height.

F. In reinforced walls the filling shall be carefully compacted around the reinforcement.

Blocks to be Wetted

A All concrete blocks and stone walling shall be well wetted before being laid and the top of walling where left off shall be wetted before re-commencing building. Walls to be kept wet three days after building.

Mortar

B Mortar to be used for all walling work shall be composed of 1 part of Portland Cement to 1 part lime to 6 parts of fine aggregate measured by volume in specially prepared dry on clean and watertight mixing platforms, with water added afterwards from a can with a fine rose until all parts are completely incorporated and brought to a proper consistency and then used within thirty minutes of mixing.gauge boxes and thoroughly mixed

C No partially or wholly set mortar will be allowed to be used or re-mixed.

Fair Face Walling

D Where walling is to be finished with a fair face, the concrete blocks are to be selected for freedom from defects and the joints raked out as the Works proceed and flush pointed with a neat joint in cement mortar.

Joints for Walling

E The blocks shall be bedded and jointed in cement mortar as described with beds and joints 10 mm thick, full flushed up and grouted solid as the work proceeds. Joints shall be raked out where the surfaces or walling are to be plastered.

F All walling shall be properly protected while mortar is setting as the Architect shall direct.

Building Walling

G All walls throughout the Works shall be carried up evenly in 12 mm course, no part being allowed to be carried up more than 800 mm higher at one time than any other part and in such cases the jointing shall

Putlog Holes

H Putlog holes shall be carefully, properly and completely filled up on completion of walling work.

Rough Cutting etc.

H. The Contractor shall allow in his prices for the walling which is measured net herein, for all ordinary rough cutting, bonding, plumbing angles, forming reveals and fitting up to under side of concrete beams, slabs and lintels etc.

Stone Pitching

A The ground to receive pitching shall be well compacted and the stones, which shall be flat bedded and not less than 230 mm either way along the bearing surface, shall be punned to the required falls and inclinations so that neither wedges nor spalls are required to keep the pitching rigidly in place. The joints shall be no more than 13 mm thick and shall be solidly filled with 1:3 cement mortar.

B Stone for pitching shall be coral obtained from approved quarries. It shall be hard, sound, durable and clean.

Stone for Walling

C Stone for walling shall be from an approved quarry, roughly square and built random and uncoursed in mortar as described. The stone shall be well bonded with a minimum of one good bond or through stone evenly spaced to each square meter. All cavities and joints in stonework are to be filled in and flushed up solid with mortar.

D Jointing and pointing is as detailed or instructed.

Precast Screen and Louvre Block Walling

E Precast concrete screen blocks shall be manufactured in concrete of 30.0 N/mm2 strength using 10 mm aggregate, the blocks shall be 390 mm and 190 mm long x 190 mm high and 150 mm on bed in accordance with detailed drawings and finished fair on all surfaces and bedded, jointed and pointed in cement mortar with a neat flush joint.

F Precast concrete louvre blocks shall be of similar concrete, similarly jointed and pointed and constructed to detail drawing.

Damp Proof Course

G Damp proof courses shall be hessian based bituminous felt to B.S. 743 Type 5A laid on and including a levelling screed of cement and sand and lapped 230 mm at joints.

ROOFING - ASPHALT WORKS

APPROVED SUPPLIER

A. All materials shall be supplied by a firm approved in writing by the Architect and the works executed by workmen approved by the supplier.

Guarantee

B. The Contractor shall deposit with the Architect, a written guarantee and undertaking to the effect that during a period of not less than twelve calendar months from and after the certified date of completion of the whole of the works the contractor shall at his own expense make good to the satisfaction of the Architect all and any defects in the asphalt work which shall be attributed to improper materials or faulty workmanship and shall bear the cost of any consequential damage as shall be provided for in such guarantee.

Samples

C. The Contractor shall when required by the Architect submit samples of any material for testing.

MATERIALS

Asphalt for roofing

D. Asphalt for roofing shall comply with B.S. 1162 tropicalised mastic asphalt for roofing purposes.

Felt underlay

E. The underlay shall be saturated "Cabro" sheathing felt complying with B.S. 1162 (or equivalent).

Insulating screeds

F. Insulating screeds shall consist of lightweight concrete composed of one part Portland Cement and eight parts vermiculite aggregate and shall be covered with 10 mm cement and sand (1:4) screed wood floated to receive asphalt coverings.

WORKMANSHIP

Preparation of surfaces

A. All surfaces to receive asphalt and other roof coverings are to be dry, wood floated and finished to suppliers specifications.

Laying

B. Asphalt and other roof coverings shall be laid in bays generally not exceeding 2 m wide and succeeding coats shall be laid at breaking joint. Junctions between bays and fillets shall be properly married the whole being worked so that the joints are neatly made.

C. Horizontal asphalt for roof coverings shall be 20 mm thick built up into two layers each 10 mm thick. The first layer shall be applied to sheathing felt and the final coat shall be left ready to receive roofing tiles.

Air pockets and stains

D. Air pockets and stains on the asphalt and other roof coverings will not be permitted and the finished work shall not ring hollow over any parts of its surface.

Joints and fillets

E. Joints in all asphalt work and other roof coverings shall be carefully made and complete fusion obtained to make them watertight. Fillets shall be run at all internal angles and in at least two operations. Perfectly watertight joints shall be made around pipes passing through walls and floors etc.

Felt underlay

F. The felt underlay shall be fixed and laid loose or partially bonded in hot bitumen with but joints.

Testing for falls

G. To ensure that asphalt and other roof coverings have been truly laid to falls, the contractor is to arrange for the roof areas and gutters to be flushed with water in the presence of the Architect. Any defects or depressions in the asphalt or other roof coverings are to be rectified and retested for approval.

CARPENTRY

Terminology

A. All technical terms shall be as defined in the "Timber Act (amended 2012)".

Timber Generally

B. The timber for carpentry and joinery shall be specified and obtained from an approved sawmill.

C. The timber for carpentry shall be Second or Select Grade for strength.

D. The timber shall be reasonably straight grained.

E. All timber for the Works is to be purchased immediately the Contract is signed and is to be open-stacked for as long as possible before use or kiln drying.

F. All timber as it arrives on the site shall be inspected by the Architect, and any timber brought on to the site and not approved must be removed forthwith.

G. All timber and assembled woodwork shall be protected from the weather and stored in such a way as to prevent attack by termites, insects or fungi.

Species of Timber for Structural Work

H. The following softwoods shall be used for structural work;

Standard Common Name	Botanical Name
Podo	Podocarpus
Cypress	Cuppressues Lusitanica

J. Both to be second strength Grade P5 or equivalent. Whilst either timber is suitable, intermixing of species will not be accepted.

K. The Contractor is permitted to propose substitute species but these shall not be used without the written approval of the Architect and no adjustment shall be made to the basic rates for softwood trusses in the event of a substitute species being accepted.

Insect Damage

L. All timber shall be free from live borer beetle or other insect attack when brought upon the Site. The Contractor shall be responsible up to the end of the maintenance period for executing at his own cost all work necessary to eradicate insect attack of timber which becomes evident, including the replacement of timber attacked or suspected of being attacked, notwithstanding that the timber concerned may have already been inspected and passed as fit for use.

Seasoning of Timber

A. All timber shall be seasoned to a moisture content of not more than 18% for carpentry and 15% for joinery. The Contractor's price must include for any kiln drying that may be necessary to achieve these figures.

Pressure Impregnation

B. The softwood described as pressure impregnated shall be treated with the "Celcure A" "Tanalith C" full cell process. Timber must be seasoned to a moisture content not exceeding 25% before being treated. The treatment shall be to the minimum standard of:-
Solution concentration; 2%
Absorption of preservative; 520 Litres per cubic meter
Net dry salt retention; 10.4 Kg per cubic meter

C. After treatment, the timber shall be seasoned to the specified moisture content.

D. Cut ends and faces of timber sawn, drilled and cut after treatment are to be swabbed liberally with approved preservatives until saturated, allowed to dry and then treated with a second coat and rates for timber must include for this. Approved preservatives are: Atlas A; Brunophan Nr 2; Cuprinol Clear or Water Repellant Clear; Ensele Woodtreat 55.

Inspection and Testing

E. The Architect shall be given facilities for inspection of all works in progress whether in workshops or on site. All timber as it arrives on the site must be inspected by the Architect and any timber brought onto the site and not approved by him must be removed forthwith, failing which he may arrange for the removal of the rejects and dispose of them as he may consider advisable at the Contractor's expense.

F. Notwithstanding approval having been given above, any timber incorporated in the Works found to be in any way defective before the expiry of the maintenance period shall be removed and renewed at the Contractor's expense. The Contractor is to allow for testing of prototypes of special construction units and the Architect shall be at liberty to select any samples he may required for the purpose of testing, i.e. for moisture content, or identification of species, strength, etc.

G. Where timbers need to be extended into a wall, they shall be thoroughly "brush treated" with Ensele in addition to preservative treatment as already described above, and as much clear air space maintained around the timber where it adjoins the wall as possible.

Clearing Up

H. The Contractor is to clear out and destroy or remove all cut ends, shavings and other woodwaste from all parts of the building and the site generally, as the work progresses and at the conclusion of the Work.

Workmanship

A. All carpentry shall be executed with workmanship of the best quality. Scantlings and boardings shall be accurately sawn and shall be of uniform width and thickness throughout.All carpenter's work shall be left with sawn surfaces except where particularly specified to be wrought.

B. All carpentry shall be accurately set out in strict accordance with the drawings.

C. All structural timbers shall be frame or jointed together as is most appropriate in the circumstances in accordance with the rules of good practice. Joints must be executed in strict conformity with the drawings.

D. All joints shall be secured with a sufficient number of nails disposed as shown on the drawings and rates must include for the jointing of timbers. Surfaces must be in good contact over the whole area of the joint before securing. Holes for nails must be pre-drilled undersize; holes for bolts must be bored slightly over size from both sides of the timber and washers must be used under the nut which must be tightened sufficiently to permanently secure the joint but not to crush the timber.

E. Actual dimensions of scantlings for carpentry shall not vary from the specified dimensions by more than 3 mm in deficiency or excess but must be uniform throughout. Boards 25 mm thick or less shall hold up to the specified size. All timbers shall be as long as possible and practicable, in order to eliminate joints.

Joints

F. All nails, screws, bolts, connectors, etc., are to be as specified under "Metalwork" and as shown on the drawings.

General

A. The provisions contained in the "Carpentry" section shall apply also to the Joinery Section where applicable.

Species of Timber

B. The following timber of First or Prime Grade for appearance shall be used for Joinery Work in conjunction with the term "softwood" or "approved softwood":-

Standard Name; Botanical Name

Podo (for grounds, etc., only); Podocarpus spp.

African Mahogany; Khaya Nyasica

Mninga, Pterocarpus Angolensis

Iroko (Mvula); Chlorophora excelsa

C. The following may also be used as "local hardwood" (referred to hereafter) with the Architect's approval:-
Adina; East African Afrormosia; East African Afzelia

Generally

D. All joinery work shall be accurately set out on boards to full size for the information and guidance of the artisans before commencing the respective works, with all joints, iron work and other work connected therewith full delineated. Such setting out must be submitted to the Architect and approved before such respective works are commenced.

E. **All joinery work shall be cut and framed together as soon after the commencement of the building as is practicable,** but not to be wedged up or glued until the building is ready for fixing same. Any portions that warp, wind or develop shakes or other defects within six months after completion of the Works shall be removed and new fixed in their place together with all other work which may be affected thereby, all at the Contractor's own expense.

F. All work shall be properly morticed, tenoned, housed, shouldered, dovetailed, notched, wedged, pinned, bradded, etc., as directed and to the satisfaction of the Architect and all properly glued up with the best quality approved glue.

A. Joints in joinery must be as specified or detailed, and so designed and secured so as to resist or compensate for any stresses to which they may be subjected. All nails, springs, etc., are to be punched and puttied. Loose joints are to be made where provision must be made for shrinkage; with glued joints where shrinkage need not be considered and where sealed joints are required. Glue for load-bearing joints or where conditions may be damp must be of the resin type. For non-load-bearing joints or where dry conditions may be guaranteed casein or organic glues may be used. All exposed surface of joinery work shall be wrought and all arises "eased-off" by planning and sand-papering to an approved finish suitable to the specified treatment.

Dimensions

B 3 mm reduction off specified sizes will be allowed for each wrought face except where described as (f) i.e. **finished** size in which case joinery shall hold up to the full dimensions. Dimensions of 25 mm or less shall hold up to the specified sizes.

Fixing Joinery

C All beads, fillets and small members shall be fixed with round or oval brads or nails well punched in and stopped. All large members shall be fixed with brass screws, the heads let in and pellated to march the grain where natural finish timber is specified.

Mastic

D Mastic where specified for bedding, joinery, sills, water bars, etc., is to be approved non-hardening plastic, phlysulphide synthetic rubber or butyl composition filler or sealer.

Fiberboard

E Fiberboard shall be "Celotex" or equal and approved.

Plywood

F Plywood shall be from an approved source and comply with B.S. 1455, first or second grade, as required and unless otherwise stated shall be "interior" quality. Where veneered plywood is specified, samples must be submitted for prior approval. Where stated to be "exterior" quality, this shall be waterproof (Bonding W.B.P.).

G Routine tests will be required from time to time to check the quality of manufacture. Plywood used in structural members shall be bonded with a suitable adhesive.

Chipboard

H Chipboard shall be approved medium density resin bonded wood chipboard equivalent to B.S. 2604 with sanded finish or thickness stated. Where faced with plastic sheeting the chipboard shall be counterbalanced.

Blockboard

J Blockboard shall be laminated board to B.S. 3444. Where faced with plastic sheeting the blockboard shall be counterbalanced.

Flush Doors

A. Flush doors shall be from an approved source and manufacture, be hollow / semi-solid core constructed generally in accordance with B.S. 459-2 finished with 6 mm veneer plywood (to Architect's approval) and lipped all round with softwood 12 mm thick.

B. The thickness stated is the overall finished thickness.

Plastic Sheeting

C. Plastic sheeting shall be Formica or equal and approved laminated sheeting 1.5mm thick fixed with an approved adhesive. All colours are to be selected by the Architect.

Plugging Walls

D. All work described as plugged shall be fixed with brass screws to plugs formed by drilling concrete, walls, etc., with a proper tool of suitable size at 500 mm spacings and filling the holes completely with an approved proprietary plugging compound used in accordance with the manufacturer's instructions.

Protect Joinery

E. All fixed joinery which, in the opinion of the Architect, is liable to become bruised or damaged in any way shall be completely cased and protected by the Contractor until the completion of the Works.

Bottom Edges

F. Bottom edges of doors shall be painted with one coat of approved primer before fixing

Mosquito Screening

G. Mosquito screening shall be "Alcad" or equal and approved aluminium fine wire mesh screening.

Bird Screening

H. Bird screening shall be approved galvanized coffee tray wire.

Ironmongery

J. All ironmongery shall be fixed with screws to match. Before the woodwork is painted, handles shall be removed, carefully stored and refixed after completion of painting, and locks oiled and left in perfect working order. Prices for fixing locks must include for organizing masterkeying systems if required and all keys shall be labelled with door references marked on approved labels before handing to the Architect on completion.

STRUCTURAL STEELWORK

Standard of Construction

A. The whole of the structural steelwork and testing shall comply with the relevant clauses of B.S. 449, B.S 4360; 1980 and B.S. 5940 grade 43.

Fabrication by Specialist Firm.

B. The steelwork shall be fabricated by a specialist firm or under proper factory conditions to be approved by the Architect.

Contractor to Submit Drawings

C. The Contractor shall include for the preparation of all shop details from the drawing supplied by the Architect. All such details shall be approved in writing, by the Architect, before the work is put in hand. Every drawing shall show the number and sizes of all rivets and bolts, complete details of welds, type of electrodes, welding procedure, whether the welds are to be made in the shop or elsewhere and any other relevant information.

Accuracy of Drawings.

D. The Contractor shall be responsible for the correctness of his shop details and for shop fittings and site connections.

Erection Scheme

E. The Contractor shall submit to the Architect for approval, drawings showing the proposed erection scheme, together with all calculations for erection stresses, etc. The approval by the Architect will not absolve the Contractor in any way from his responsibility.

Dimensions to be Verified

F. The Contractor shall take the dimensions from the site or buildings and he shall verify all dimensions given on the drawings before the work is put in hand.

Copies of Orders

G. A copy of all orders for materials shall be supplied by the Contractor to the Architect at the time of ordering, for identification purposes.

Damage

H. Any damage to materials on the site due to inadequate precautions being taken during the erection of the steelwork shall be made good to the satisfaction of the Architect at the Contractor's expense.

Materials

Quality of Steel

A. (i) All structural and rivet mild steel shall comply with B.S 4360 Part 2

(ii) Nil

(iii) Nil

(iv) All structural steel tubes shall comply with B.S. 1775 and B.S. 449

(v) Mild steel and medium tensile steel electrodes for metal-arc welding shall comply with the requirements of B.S 2549.

(vi) High tensile steel electrodes for metal-arc welding shall comply with the requirements of B.S. 2549.

(vii) All mild steel bolts and nuts shall have a tensile strength of not less than 432 N per Square Millimetre (28 tons per square inch) and a minimum elongation of 17 percent as defined in Clause 2 of B.S. 916 or in B.S. 2708.

(viii) All high tensile steel bolts, nuts and washers shall have a minimum tensile strength of 570 N per square millimetre (37 tones per square inch).

(ix) High strength friction grip bolts and washers shall comply with B.S. 3139, Part 1.

(x) All plan washers shall be of steel. Tapered or other specially shaped washers shall be made of steel or malleable case iron complying with B.S. 3410.shall be made of steel or malleable case iron complying with B.S. 3410.

Marking of Steel

B. Each piece of steel shall be legibly marked with the maker's name or trade mark and with cast numbers or identification marks by which the steel can be traced to the cast from which it was made.

C. For rivet bars and small pieces securely bundled, a metal tag marked with the cast number will be sufficient.

Standard Dimensions

D. The dimensions and allied requirements of all structural rolled sections shall comply with B.S. 4. The dimensions, weight, tolerances etc., of all rivets, bolts, nuts, studs, etc., shall conform to the following standards. Rivets shall comply with the requirements of B.S. 275 for dimensions

E. Black bolts, nuts, studs, lock nuts and washers shall comply with the requirements of B.S. 916 for dimensions and with B.S. 1580 for unified black bolts etc.

A. Turned bolts shall have the shank turned to the specified diameter allowing only a minus tolerance up to 0.13mm (0.005 inch).

Weight of Steel

B. For the purpose of measurement, the weight of mild steel shall be as given in B.S. 648 which will be the basis for measurement of variations. The weights per meter given on the drawings do not include the shelf angles riveted to webs, nor the plates riveted to the flanges of R.S. Js or other sections.

Conditions of Surfaces

C. All surfaces of steel work shall be clean, free from loose millscale and loose rust.

Tests and Inspection

D. Manufacturer's Mill Test Certificates for all structural steel shall be supplied to the Architect as and when required. Where and when directed by the Architect, the Contractor shall take and deliver samples of structural steel for testing to the Employer's Highways and Transportation Testing Station. Should the results of either test be unsatisfactory the whole consignment of steel which the sample represents shall be rejected and shall be replaced by other material of proper quality at the expense of the Contractor.

E. The Architect or his representative shall at all reasonable times, be given free access to the Works.

Metallic Coatings

F. Galvanized steelwork shall comply with B.S. 729 Part 1 entirely coated with zincafter fabrication by complete immersion in a zinc bath in one operation and excess carefully removed. The finished surfaces shall be clean and uniform.

ii) Zinc sprayed steelwork shall comply with B.S. 2569 Part 1. The nominal thicknessof zinc coating shall be not less than 0.102 mm (0.004 inches) and at no point less than0.076mm (0.003 inches).

Generally

G. The whole of the fabrication and erection of the steelwork shall be carried out in accordance with B.S. 449

Materials (Cont'd)

A. The welding of steel to B.S. 1962 must conform to:B.S. 1856 - "General requirements for the metal-arc welding of mild steel"or B.S. 2642 - Are applicable."General requirements for the arc welding of steel to B.S. 968 and similar steel"

B. For welding any particular type of joint the Contractor shall provide evidence acceptable to the Architect that the welder has satisfactorily completed the appropriate tests as described in B.S. 5950 - 7

C. Any welder's tests shall be made at the Contractor's expense and shall include the cost of any fees incurred by the Employer for witnessing of, or making such tests.

D. The right is reserved to make non-destructive tests on the welding to determine if the welding conforms to the standards laid down in either B.S. 1856 or B.S. 2642 as applicable. This will normally consist of radiography on butt welds, ultrasonic examination of fillet welds or other tests as appropriate to the actual configuration of the weld in question.

Rejection

E. Any portion of the work which, in the opinion of the Architect, is not in accordance with the drawings, or specification shall be rejected whether before or after delivery and must be removed from the site if delivered within 24 hours from receipt of such notice or rejection at the Contractor's expense. Any delay caused by such rejection will not in any way relieve the Contractor from his responsibility with regard to the provisions of the Contract. If any welding is found to be defective the cost of all remedial measures shall be borne by the Contractor, including the cost of re-testing the subsequent inspection of welds as referred to in the P.C. Sum hereafter.

F. The Contractor is responsible for the good quality of all welding work and no exceptions will be made on the grounds that the Architect or his representative have inspected any part or parts of the work at some stage during production.

Fabrication

G. As much of the work of fabrication of the steelwork as is reasonably practicable shall be completed in the manufacturer's works. Field connections shall be made in accordance with the approved drawings. The Contactor shall give four day's clear notice of steelwork ready for inspection at the manufacturer's works, to facilitate inspection before delivery.

Cast of Temporary Erection, etc.

A. Trial erection of principal or other units may be called for at the discretion of the Architect or his representative.

B. The cost of any necessary temporary erection, testing, packing, marking, carriage and delivery is deemed to be included by the Contractor in the Tender price.

Joints and Connections

C. No variation of the number, type or position of the joints or connections shown on the drawings shall be made without the consent of the Architect. If such consent is desired the Contractor shall submit detailed drawings of the proposed joints for the approval of the Architect and no extra cost incurred by reason of such additions or alterations will be allowed to the Contractor.

Painting at Works

D. Where described as primed at works, steelwork shall be freed of rust, millscale, welding slag and flux residue and shall be dry immediately prior to painting with primer as Clause Q 14 a.

E. For joints with high strength friction grip bolts the contact surfaces shall be left unpainted but special care shall be taken after assembly to paint all edges and corners near the joints together with bolt head, nuts and washers to prevent the ingress of moisture.

F. For joints made with other bolts and rivets the contact surfaces shall each be given a coat of priming paint and for shop connections the contact surfaces shall be brought together while the paint is still wet.

G. For welded connections where the contact surfaces are not completed sealed the contact surfaces shall be painted to within 50mm of the edges that are to be welded.

H. The primer shall be touched up with similar primer if damaged by subsequent handling.

METALWORK

Mild Steel

A. Mild steel shall comply with B.S. 4360 Grade 1 and the sizes of all small sections shall be in accordance with B.S. 4 and 4A.

Galvanized Work

B. Iron and steel, where galvanized, shall comply with B.S.1461 Part 1 entirely coated with zinc after fabrication by complete immersion in a zinc bath in one operation and all excess carefully removed. The finished surface shall be clean and uniform.

Aluminium

C. Aluminium shall be of the alloys described in and shall comply with B.S. 485. Aluminium sheet for flashings shall be soft-temper, super purity (S1 or S1A) and not less than 20 s.w.g. (0.9mm) in thickness.

Smithying, Shearing and Cutting

D. All smithying, welding, cutting and bending shall be soundly and neatly executed, care being taken not to overheat. All flame cut edges and welds shall be neatly ground off on completion.

Bolts

E. Mild steel bolts, nuts and washers shall comply with B.S. 916 for black bolts with hexagonal heads and nuts. High tensile steel bolts and nuts shall be in accordance with B.S. 3139 Part 1.

Anchor Bolts

F. Anchor bolts in concrete for steel works etc., are to be self drilling anchor bolts of one of the following types:-

Phillips redhead concrete anchors
Rawlplug super drilanchor
Spit self-drilling anchors

G. Rates are to include for fixing complete with washer. Mortices in concrete have not been measured for this item.

Shop Inspection

A. The Architect shall be granted full facilities and any necessary assistance for inspection or materials and assembled parts in the Contractor's (or his Sub-Contractor's) workshops. At least two weeks notice shall be given to the Architect in writing prior to the despatch of finished components to the site to enable the Architect to inspect and approve the materials and workmanship at the workshops. Approval of work at the workshop does not relieve the Contractor of this obligations to carry out the work complete at the site to the Architect's satisfaction in accordance with the Contract.

Marking

B. All components delivered to the site are to be marked in paint with the Mark number in accordance with any shop and erection drawings.

Storage

C. All components are to be stored at the site in proper racks provided for the purpose which provide full support to each member to obviate any deflection and distortion. Steelwork is to be stored at least 25cm clear of the ground and temporary protection is to be provided for protection against water and damage from any other source.

Erection

D. Rates for all metalwork are to include for the complete for the complete erection including any temporary supports required and any necessary templates and wedges.

Painting

E. All steel is to be thoroughly de-rusted and degreased prior to despatch to the site and is to be given one coat zinc chromate primer at the works. Further painting treatment will be carried out at the site. Painting is measured separately and the cost thereof is not to be included in the rates for metalwork.

PLUMBING AND ENGINEERING INSTALLATION

Execution of the Works

A. The work shall be carried out strictly in accordance with:-

(a) "British Standard Code of Practice" C.P. 310: 1965: Water Supply
(b) "British Standard Code of Practice" C.P. 404: 1968: Sanitary Pipework above ground

(c) All other relevant British Standard Specifications and Codes of Practice
(d) Bye-laws of the Local Authority
(e) The working drawings

Extent of Work

B. The Contractor will be responsible for all below ground plumbing and drainage work and the installation of the Sanitary Fittings only, the remainder of the Plumbing and Engineering Installation will be executed by a Nominated Sub-Contractor.

Quality of Materials and Workmanship

C. All materials, equipment and accessories are to be new and in accordance with the requirements of the current rules and regulations where such exist, or in their absence with the relevant British Standard Specification.

D. Uniformity of type and manufacture of equipment or accessories is to be preserved as far as practicable throughout the whole work.

E. The Contractor shall, if required by the Architect, submit samples of materials to the Architect for his approval before placing an order.

F. If in these Preambles the practice is adopted of specifying a particular item as "similar" to that of a particular firm's product, it is to be clearly understood that this is to indicate the type and quality of the equipment required. No attempt is being made to give preference to the equipment supplied by the firm whose name or product is quoted.

G. Where particular manufacturers are specified herein, no alternative makes will be considered and the Architect shall be allowed to reject any other makes.

H. The Contractor will be entirely responsible for all materials, apparatus, equipment, etc., furnished by him in connection with his work, and shall take all special care to protect all parts of finished work from damage until handed over.

J. The work shall be carried out by competent workmen under skilled supervision. The Architect shall have the authority to have any of the work taken down or changed which is executed in an unsatisfactory manner.

Galvanized Steel Tubes and Fittings

A. Galvanized steel tubing shall comply with B.S. 1387 with plain galvanized malleable fittings complying with B.S. 143/1256.

B. Tubes and fittings shall be jointed by means of screwed threads to B.S. 21, by means of P.T.F.E., tape or hemp and "Bosswhite". All joints shall be perfectly smooth inside without excrescences.

C. Where sleeves are required for pipework passing through concrete, blockwork or below concrete slabs, they shall be galvanized steel tube or drain pipes of sufficient diameter to give at least 25mm clearance all round the water main.

D. Galvanized water mains below ground level or below slabs shall be double wrapped in "Denso" tape.

Brasswork

E. Stop valves shall comply with B.S. 1010 and shall be with crutch handles or loose keys where so described on the drawings. Draincocks shall comply with B.S. 2879.

Testing

F. Upon completion the whole of the water main shall be tested to a pressure not less than twice times the working pressure for a period of thirty minutes.

G. Notwithstanding the foregoing clauses, all water mains and fittings and installation thereof shall comply fully with the requirements of the Water Supply Authority.

Sanitary and Other Appliances

H. The appliances shall be fixed in the positions shown on the drawings or as described by the Architect.

J. The Contractor shall include in his rates for providing all necessary screws, bolts, etc., together with all jointing materials required and also for temporarily erecting and securing fittings in the required position or service and discharge pipes, taking down, storing and fixing after completion of wall finishings permanently fixing and connecting to service and discharge.

K. Care shall be taken at all times and particularly after fixing, to protect appliances from damage.

L. Upon completion of the work, all appliances shall be cleaned of plaster, paint, etc., and carefully examined for defects.

Fire Fighting Equipment

A. The specified fire fighting equipment shall be supplied and installed by the Contractor in the positions shown on the drawings

B. Portable fire extinguishers shall comply with the following British Standards:-

(a) Water type (soda acid); B.S. 138: 1948

(b) Foam type (chemicals); B.S. 740: Part 1: 1948

(c) Foam type (gas pressure); B.S. 740: Part 2: 1952

(d) Water type (gas pressure); B.S. 1382: 1948

(e) Carbon tetrachloride and chlorobromethane; B.S. 1721: 1960

(f) Carbon dioxide type; B.S. 3326: 1960

(g) Dry powder type; B.S. 3465: 1962

(h) Water type (store pressure); B.S. 3709: 1964

C. Fire hose couplings and ancillary equipment shall comply with B.S. 336: 1965; rubber reel hose shall comply with B.S. 3169: 1959.

D. Underground fire hydrants and surface box openings for same shall comply with B.S. 750: 1964.

E. The installation of hydrants and fire extinguishers shall be in accordance with C.P. 402:101: 1952 and C.P. 402 part 3: 1964 respectively.

F. If nothing else is specified, fire extinguishers and hose reels shall be supplied in the colour "fire red" and be similar to manufacture "ANGUS".

FLOOR WALL AND CEILING FINISHINGS

Sand

A. Sand for backing, floor and wall finishes is to comply with B.S. 13139, Table 1.

Cement

B. Cement is to be as described for "Concrete Work:.

Lime

C. Lime is to be no-hydraulic hydrated lime to B.S. 459 Class "A" obtained from an approved source and run into putty at least 24 hours before use.

Workmanship

D. All concrete beds or slabs shall be thoroughly brushed clean, hacked if necessary and well wetted and flushed over with a cement sand (1:1) grout immediately before screeds or pavings are laid.

E. Screeds and cement pavings shall be laid in accordance with the relevant B.S. Code of Practice. Working joints between bays of the floor finish should be placed in accordance with the Architect's instructions and will be plain butt joints placed over joints in the concrete bed under. Pavings shall be damp cured with sand or sawdust and kept damp for at least 7 days after laying.

F. All surfaces to be plastered or rendered must be brushed clean and well wetted before plaster is applied. Joints of walling shall be raked out and concrete hacked to form a key. Care shall be taken to see that paving and plastering do not dry out prematurely.

G. Adequate time intervals must be left between successive coats in two-coat work in order that the drying shrinkage of the undercoat may be substantially complete. All internal and external angles shall be pencil rounded.

In-Situ Pavings Generally

H. Before laying in-situ floor finishes, the concrete beds are to be thoroughly hacked for key, cleaned off, thoroughly wetted with clean water and coated with a stiff cement slurry and rates for screed, granolithic and terrazzo paving are to include for this. They are also to include for all necessary curing and protecting until the building is handed over.

Cement and Sand Paving

J. The cement and sand paving shall be in proportions of 1:4 by volume and incorporating or treated with an approved hardener.

Polished Granolithic Paving

A. The aggregate for granolithic paving shall be in accordance with B.S. 1201 and shall be mixed in the proportions of 1:1:1.50 cement, fine and coarse aggregate respectively. The mix shall incorporate an approved hardener suitable for incorporation and not for surface treatment. The water cement ratio shall be kept as low as possible and shall not in any case exceed 0.45.The paving is to be laid to the full thickness described and to be finished with a wood float and with no extra cement trowelled into the surface which is to be laid true and level. The paving is to be thoroughly cured after laying by covering with polythene sheeting and periodically watered to keep it moist for at least one week after laying. The surface is to be polished with approved rotary carborundum discs mechanically operated coarse and fine grain and with cement and sand slurry to produce a blemish-free surface.

B. The granolithic shall be laid in bays not exceeding 3.50 square meters with ebonite dividing strips for the full depth of the paving and shall be executed by Specialist who have a thorough knowledge of the work.

Polished Terrazzo Paving

C. The ins-Situ terrazzo shall consist of white or coloured cement and marble aggregate; the colours of the cement and aggregate shall be selected by the Architect. The mix shall comprise three parts of 6mm nominal aggregate to one part coloured cement by volume. The aggregate shall be clean and granular and shall not contain flaky particles or dust. The underbed shall be cement and sand 1:4 by volume.

D. The terrazzo shall be laid in bays not exceeding 3.5 square meters with ebonite dividing strips for the full depth of the terrazzo and underbed, and shall be executed by Specialist who have a thorough knowledge of the work.

E. The terrazzo topping shall be laid to a minimum of 12mm thickness in a plastic condition while the underbed is still green and this should be watered to minimise absorption from the topping. The terrazzo must be well tamped into position and rolled with a suitable hand roller. The topping should be allowedto take an initial set and then any surface voids must be grouted up with neat cement of the same colour used in the mix.The surface should be cured by keeping moist by covering with damp sacking for at least 72 hours.When dry and hard the surface shall be machine polished by grinding with carborundum or other stone discs of suitable grade and with rotary polishing pads.

F. Rates must include for all necessary protection until the building is handed over to the Architect. The depths stated are for the full depth including topping and underbed.

P.V.C. Flooring and Skirting

G. P.V.C. floor tiles shall comply with B.S. 10595. The tiles and accessories shall be supplied in the sizes and thickness specified in colours selected by the Architect and are to be fixed to the screed base with a suitable adhesive supplied (or recommended) by the Manufacturer and used in accordance with his instructions. Rates for floor tiles shall include for thoroughly washing and cleaning on completion and for the application of one coat of water based wax polish.

Brushed Terrazzo Rendering

A. Brushed terrazzo rendering is to comprise two coats as described. The undercoat shall consist of cement and sand mixed in the proportion of (1:4) by volume and applied to a minimum thickness of 10mm finished with a wood float and scratched to provide key for top coat. The finishing coat shall consist of one part white cement to two parts marble chippings or approved size applied to a minimum thickness of 10mm and the final surface wet brushed to expose the aggregate.

B. The Contractor will be required to produce a sample panel of rendering on site for the approval of the Architect.

Internal Plaster

C. Internal plaster shall be applied in two coats and adequate time intervals must be allowed between successive coats in order that the drying shrinkage of the undercoat my be substantially complete. The first coat must be well scratched, keyed and wetted to receive the finishing coat. The finishing coat shall be finished smooth with a steel float but care must be taken not to overwork the surface in order to minimize the incidence of shrinkage cracks. All internal and external angles shall be pencil rounded.

D. Internal plaster, unless otherwise described, shall be lime plaster of 12mm minimum overall finished thickness applied in two coats, the first coat consisting of cement, lime putty and sand mixed in the proportion of 1:2:9. The finishing coat shall be a skim coat comprising cement and lime putty in the proportion of 1:10.

E. Cement plaster is to be employed where specified on the drawings and is to be applied in two coats of approximately equal thickness to a total of 12mm minimum overall finished thickness. The composition of both boats shall be the same and shall comprise cement and sand (1:3) but a small percentage addition (not more than 10%) lime putty y may be permitted if the Architect considers that this will reduce the incidence of shrinkage cracks.

F. The Contractor shall cut out and make good all cracks, blisters and other defects and leave the whole of the plastering and rendering perfect at completion. When making good defects the plaster shall be cut out to a rectangular shape with edges undercut to form dovetailed key, and all finished flush with the face of surrounding plaster.

Marmoran Finishings

G. Prepare and prime surface, apply one coat 3 mm thick PVC Resin Bonded plaster with trowel, apply 3.2 mm thick stone chips with low pressure spray gun or by hand, roll flat by roller immediately after application. Colours and texture of the plaster and stone chips are subject to specifier's approval. Specifications must be strictly in accordance with manufacturer's instructions.

Wall Tiles

A. Glazed wall tiles shall be from an approved manufacturer and shall conform with the requirements of B.S. 1281. Tiles shall be white with slightly rounded or "cushion" edges and unless otherwise specifically described shall be size 150 x 150 x 6mm thick. Tiles shall be laid with continuous straight joint and internal angles shall be butt jointed. Rounded on edge tiles shall be used at all external angles and at edges of panels. Tiles shall be bedded in approved tiles adhesive and pointed in white cement.

B. Backing to tiles is to be cement and sand in the proportion of 1:4 rendering in one coat to a minimum thickness of 12mm trowelled smooth. Backings have been measured separately.

Carpet Tiles

C. Carpet floor tiles shall be from an approved manufacturer and shall conform to specification as per M/s Protex of South Africa. Graveltex Protex Carpet tiles shall be of heavy duty grade, 100% stain proof miracle fibre with density of 920, g/sq.m (fibre) and 4500 g/sq.m (total) with fire resistance (S.A.B.S) of 3, lavender colour. The size shall be 500 x 500 x 9.50mm thick. Tiles shall be laid with continuous straight joint. Tiles shall be bedded in approved tiles adhesive.

D. Beds to tiles are to be cement and sand in the proportion of 1:4 rendering in one coat to a minimum thickness of 30mm trowelled smooth. Backings have been measured separately.

Floor tiles

Porcelain tiles

E. Porcelain floor tiles shall be from an approved manufacturer and shall be of black polished, cocowhite-polished or gardenia green matt. The size shall be size 400 x 400 x 10 x thick. Tiles shall be laid with continuous straight joint. Tiles shall be bedded in approved tiles adhesive.

F. Beds and backings to tiles is to be cement and sand in the proportion of 1:4 rendering in one coat to a minimum thickness of 30mm trowelled smooth. Beds and backings have been measured separately.

Laying of Marble, Granite, Porcelain or Ceramic Floor Tiles

G. Before laying the tiles, level the flooring area, ensure the surface is rough and clean.

Laying Floor tiles with Traditional Mortar

H. The cement thickness needed to lay tiles should be around 40 mm. The mixture for indoor is 1 volume of Portland cement and 3 volumes of sand. The mixture must be made with appropriate quantity of water in order to dampen the materials. Clean and wet the flooring area, making sure to leave completely clean. Spread the mixture and level with a ruler, in order to reach the 40 mm of thickness. Spread dry cement over the mixture, until the water that remains over the surface has been completely absorbed. Lay the tiles, already mixed from different boxes, with a wide joint and in the desired way. Wet tiles, then cover to achieve a perfect level.

Laying Floor tiles with Adhesive

A. The bed needed for this kind of laying, should be around 30 mm. The flooring area should be steel or wood trowelled and levelled. Spread the adhesive with a spatula with ridges. It is very important to lay a good quantity of adhesive so that there is no free space between the tiles.

Mixing the Colour Shades of Floor tiles

B. Before laying the tiles at least 5 to 6 boxes must be laid over a dry surface in order to ensure that the different shades have a uniform look. The best result is obtained this way.

The Joints of Floor tiles

C. The tiles have to be laid with a minimum of at least a joint separation between tiles of 3 to 10 mm.

Setting the Joints of Floor tiles

D. The cord or wire system can be used in the 4 or 5 joints, ensuring they are all parallel with the reference joint. Plastic crosses used for this purpose, in different sizes, can be obtained in specialized shops, giving a much better finishing and final result.

Filling the Joints of Floor tiles

E. Apply a mixture composed of 2 volumes of Portland cement and 1 of fine washed sand, with enough water in order to amplify the handing. There are suitable preparations for different uses and in different colours now available, so as to achieve the desired effects. Spread the substance by use of a rubber or plastic spatula. Clean the tiles before the mixture dries. After the joints are completely dry, wash with plenty of water several times.

Concrete Tiles

F. Concrete tile for finishing the roofs shall be 25mm thick of natural colour with bevelled top arises on all sides and shall comply with B.S. 1197. The tiles shall be laid to regular pattern with open joints. Care should be taken to ensure that the surface level is even and follows accurately the levels of the roof finish. All cement stains shall be carefully removed.

Precast Concrete Paving Slabs and Kerbs

A. Precast concrete paving slabs shall comply with B.S. 368. precast concrete kerbs shall comply with B.S. 340 figure 5 and shall be finished true and smooth on all exposed faces.

B. Precast paving shall be bedded on a compacted sand bed with 6mm wide joints filled and pointed with cement mortar coloured to match the colour of the slabs. The pavings shall be finished true and even and to the falls shown with no surface irregularities.

GLAZING

Method of Glazing

C. Notwithstanding reference in the descriptions of glazing method to glazing beads, or the like with associated fixings, and insulating strips, such components will be measured separately in accordance with the appropriate rules of the S.M.M.

D. The provision of glazing compounds and putties and springs, clips and other sundry fixings shall be deemed to be included with all items of glazing.

E. Distance pieces and setting blocks, in appropriate materials, shall be provided in accordance with good glazing practice and they shall be deemed to be included with all items of glazing.

MATERIALS

Glass generally

F. All glass shall comply in all respects with the appropriate section of B.S. 952. Plain sheet clear glass shall be O.Q.; plate glass shall be GG. All glass shall comply in all respects with the latest British Standards including the British Codes of Safety.

Putting for glazing to wood

G. Putty for glazing to wood shall comply with B.S. 544.

Samples

H. Samples not less than 150 mm square, are to be submitted to the Architect for approval before any glass is cut.

WORKMANSHIP

Glass to be kept free from moisture

J. All glass surfaces shall be kept dry during transit and storage. Glass becoming moist from condensation or other causes, shall be thoroughly dried and aired.

Rebates and beads

A. All glazing beads in wood shall be primed, (as measured in Painting and Decorating), before glazing is commenced.

Edges of glass

B. All glass shall have clean cut edges. The edges of louvres shall be rounded and polished.

Bead glazing

C. Glazing fixed by beads shall have both glass and beads bedded and back puttied, and the putty trimmed off flush. Where sealing strip is used, it shall pass round both faces of the glass and be trimmed off flush on both sides. Metal surfaces to receive sealing strip shall be treated with mineral oil before glazing.

Method of measurement

D. Beads and sealing strips have been measured separately. Prices for glazing with beads are to include for taking out and re-fixing beads as required, which shall be deemed to be bradded unless otherwise described.

PAINTING

Execution by a Specialist Firm

E. All work under this section must be executed by a Specialist Firm, approved by the Architect.

Approved Paints

G All paints shall be obtained from the same manufacturer and shall be approved by the Architect.

H The Contractor must allow for providing the Architect with colour charts from the approved firm and for executing sample panels as required.

Generally

I All materials shall be delivered on site intact in the original drums or tins and shall be mixed and applied strictly in accordance with the manufacturer's instruction and to the approval of the Architect.

J The only addition which will be allowed to be made locally will be liquid thinners and driers supplied or recommended by the manufacturers and none shall be thinned more than approved by the Architect.

Preparation

K All surfaces to receive treatment are to be clean and dry before paint application and surface irregularities are to be removed by filling or the use of suitable abrasives.

External Rendered Surfaces

A External cement slurry finished wall which are to be painted must be clean and must be thoroughly brushed and washed to remove any dust, loose flakes or other foreign matter and must be well wetted prior to the application of finish.

Plastered Surfaces

B Internal plastered surfaces which are to be painted are to be allowed to dry out thoroughly prior to paint application. All cracks and surface imperfections are to be cut back and filled with a patent filler in accordance with the manufacturer's instructions and rubbed down to a true and even surface.

Woodwork Preparations

C Large knots in woodwork are to be cut and replace with sound wood or scorched back and after priming the surface made good with stopping. All knots are to be treated with two thin coats of patent knotting free from resin. After priming, all nails holes and other imperfections shall be filled with stopping and the whole surface rubbed down to a smooth even finish. The stopping must be "Sadofill" or other approved make.

Woodwork - Fittings

D Unless otherwise specified, fittings are to be treated with two cots of linseed oil.

Metalwork

E All rust and loose scale on steel and iron work must be removed by wire brushing and rubbing with emery paper. Where patches of ingrained rust cannot be removed they are to be thoroughly rubbed down and treated with one coat of "Galvafroid" or other zinc rich paint in accordance with the manufacturer's instructions. One coat of zinc chromate primer will then be applied followed by two undercoat and one finishing coat of gloss paint as described for Woodwork above. The Contractor is tonote that where mild steel burglar bars are housed into wood frames, the full length or the bar is to be treated before fixing.

F Galvanized metalwork is to receive one coat of white spirit or mordant degreasing solution washed off prior to the application of calcium plumbate primer followed by two undercoats and one finishing coat of gloss as previously described.

G Galvanized metal work is to be painted only where instructions are given by the Architect as in some cases galvanized metalwork is to be left untreated.

DRAINAGE

Generally

Preambles to Other Sections

A The preambles contained in other sections of this document shall apply equally hereto where applicable, so far as is consistent with the clauses following.

Notices

B The Contractor shall give all requisite noticed. Uncoloured plans will be supplied by the Architect at the Contractor's request.

Drainage Bye-Laws

C All of the works shall comply with the requirements of the drainage bye-laws made by the Local Authority and shall be executed to the satisfaction of the Architect and Local Authority.

Inspections

D The Contractor shall give written notice to the Architect for the purpose of inspections and measurements, whenever section of:-

(a) excavations are completed

(b) concrete beds are laid

(c) drains are completed

and no further work shall be executed until each stage of the work has been inspected

Levels of Existing Drains

E The Contractor shall check the invert levels of existing drains, sewer and manholes before laying new drains, and shall notify the Architect immediately if the declared invert levels are found to be inaccurate

Pitch Impregnated Fibre Drain Pipes, Couplings and Fittings

F Pitch impregnated fibre drain couplings and fittings shall comply with B.S. 2760.

UPVC Pipes and Fittings

G UPVC pipe and fittings shall comply with B.S. 3506 Class O to be obtained from a manufacturing source approved by the Architect in writing.

Spun Cast Iron Drain Pipes and Cast Iron Fittings, Gullies etc.

H Spun cast iron drain pipes shall be coated centrifugally cast (spun) iron pipes complying with B.S.1211 Class B.

A Fittings, gullies, etc., shall be of coated cast iron and shall comply with B.S. 1130.

Concrete Pipes and Fittings

B Concrete pipes and fittings shall comply with B.S. 556. They shall be reinforced, and of sulphate resisting cement if specified.

Manhole Covers and Road Gratings

C Manhole covers and road gratings and frames shall comply with B.S. 497.

Step Irons

D Step irons shall be galvanized malleable cast iron complying with B.S. 1247.

Mesh Reinforcement

E Mesh reinforcement shall be steel fabric complying with B.S. 1221 Part A or B.S. 4483

Setting Out

F The Contractor shall set out all drains in accordance with the drawings, and provide all profiles, etc., necessary for the execution of the work.

Excavation

G The bottoms of all excavations shall be trimmed and consolidated to the correct levels. Unauthorized excavations below the required levels shall be filled with concrete of the same composition as for drain beds, at the Contractor's expense.

H Where the bottom is insufficiently firm, the Contractor shall excavate until, in the Architect's opinion, a firm bottom is obtained and the level shall be made up with concrete of the same composition as for drain beds. Particulars of such additional work shall be agreed with the Architect's representative before the work is covered up, otherwise no claim in this respect will be entertained.

Planking and Strutting

I Care shall be taken not to undermine the foundations of the buildings and, if so directed by the Architect, planking and strutting shall be left in, or other means adopted to protect the foundations. Details of such additional items shall be agreed with the Architect's representative before the work is covered up, otherwise no claim in this respect will be entertained.

Backfilling

J Trenches for pitch impregnated fibre of UPVC pipes shall first be filled with selected screened excavated materials carefully hand-tamped between the pipe and sides of the trench, followed by 150mm - 200mm of similar materials before the general filling is carried out.

A Trenches for concrete or cast iron drains shall first be filled to a depth of 300mm with selected fine materials carefully hand-packed around the pipe. On no account shall materials be tipped into the trench until first 300mm has been completed.

B Filling shall be continued in layers not exceeding 300mm thick, well rammed and, if necessary, watered.

Laying Drains

C Drains shall be laid truly straight on line and gradient with sockets upstream and the full bore shall be unobstructed.

Pitch Impregnated Fibre Drains

D All hard obstructions shall be removed from trench bottoms before laying pitch impregnated fibre pipes. The pipes shall be bedded in sand and laid and jointed in accordance with Appendix "C" to B.S. 2760.

UPVC Drains

E UPVC drain pipes shall be laid and jointed with solvent welded joints entirely in accordance with the manufacturer's instructions.

F Pipes shall be bedded in sand after all hard obstructions have been removed from trench bottoms.

Cast Iron Drains

G Cast iron drains shall be laid on concrete beds where specified or shown on the drawings and shall be jointed with gasket of hemp, well caulked, to a depth of 30mm for 100mm pipes and 40mm for large pipes, and remainder of the socket shall be filled with molten lead or lead fibre solidly caulked.

H Connection of iron to concrete drains shall be jointed as described for concrete drains.

I Cast iron drains fixed to walls or beams shall be supported on brackets at 1,350mm centres.

J Gullies, outlets, etc., on drains under concrete floors shall be set in position at correct levels before the floors are laid.

Concrete Drains

K Concrete drains shall be jointed with one turn of tarred gaskin, well caulked and the remainder of the socket filled with cement and sand (1:3), finished with an angle fillet around the pipe. All surplus mortar shall be removed from the inside of the pipe with a badger. Where pipes are sulphate resisting, the jointing mortar shall contain sulphate resisting cement.

Concrete Beds, Haunches and Coverings

A Where specified or shown on drawings, drains shall be laid on concrete, (105kg/sq.cm - 40mm aggregate), beds 100mm thick, 400mm wide for 100mm diameter drains and 450mm wide diameter drains. The concrete shall be haunched up both sides of the barrel to give lateral support.

B Where drains, other than cast iron drains, are laid under buildings or pavings carrying vehicular traffic, they shall be completely surrounded in concrete, (105kg/sq.cm - 40mm aggregate), 150mm thick, (i.e. 400mm x 400mm overall for 100mm pipes and 450 x 450mm overall for 150mm pipes). Where directed, drain beds shall be reinforced.

C Gullies shall be bedded and surrounded in concrete 105kg/sq.cm - 40mm aggregate minimum 150mm thick all round.

Sleeves

D All drains passing through walls or foundations shall have sleeves of cast iron pipe of sufficient size to allow a clearance round the drain.

Benching

E Benching in bottom of manholes shall be concrete (105kg/sq.cm - 40mm aggregate) to falls of not less than 10 degrees to channels finished with cement and sand (1:2), 25mm thick, trowelled hard and smooth with all angles rounded.

Bedding and Sealing Covers and Frames

F Frames to manhole covers shall be bedded in cement mortar (1:3), and the covers in grease and sand.

Testing

G All drains and manholes shall be tested for water tightness and straightness to the satisfaction, and in the present of, the Architects and the Local Authority. Drains shall be filled with water to a head of 1.50 meters and are to be tested in sections agreed with the Architect:-

(i) after jointing
(ii) after haunching and backfilling
(iii) after completion of the works

H The Contractor shall provide all necessary testing apparatus and shall carry out such other tests as are required by the Architect and the Local Authority.

Clean and Flush all Drains

I All drains, gullies, manholes, etc., shall be cored, cleaned and flushed on completion.

Method of Measurement

A Where not otherwise stated, the starting level for trench manhole excavation shall be:-

(i) the formation level in areas where the site is excavated to reduce levels.

(ii) existing ground level in areas where no excavation is required, or where filling is required.

B The depths of all the trenches in the following description lie within the same 1.5m stages as the average depths stated.

C Prices for excavating pipes trenches shall be deemed to include keeping them free from general water (i.e. all water except spring or running water).

D Notwithstanding the provisions of SMM Clause V.7 (a) to (c) the descriptions of excavating manholes, yard gullies, septic tanks and soakpits shall be deemed to include grading bottoms, planking and strutting, return filling and compacting, disposal of surplus soil and keeping excavation free from water.

E Prices for building pipes into manholes shall include for building in on rake where necessary.

F Prices for concrete beds, benchings and covering for pipes laid in trenches, shall be deemed to include for any necessary formwork. Formwork required for beds, etc., for pipes above ground, and for casing to vertical pipes, is referred to in the descriptions of such items.

G Prices for all gullies shall be deemed to include for all necessary excavation, return filling, disposal of surplus excavated materials, planking and strutting, and trimming and ramming bottoms.

EXTERNAL PAVINGS

Generally

A. The Preambles contained in other sections of the document shall apply equally to this sections so far as is consistent with the following clauses.

Materials

Soil for Planted Areas

B. Soil for planted areas shall be vegetable soil free from roots and rubbish and treated with weed killer to prevent the growth of weeds.

Sand for Filling under Footpaths

C. Sand for filing under footpaths shall be clean, dry, pit or river sand, free from vegetable soil, roots and rubbish.

Crusher Dust for Sub-Base Course of Macadam Paving

D. Crusher dust shall be from an approved source and shall be free from clay or other deleterious matter.

Stone for Base Course to Macadam Paving.

E. Stone for base course to macadam paving shall be 40mm gauge, clean and hard and free from clay or other deleterious matter.

Blinding For Stone Base Course

F. Blinding for stone base course shall be 4mm gauge hard stone chippings, free from clay, dust or other deleterious matter.

Precast Paving Slabs

G. Precast paving slabs shall comply with B.S. 368 except for sizes.

Kerbs

H. Precast concrete kerbs shall comply with B.S. 340, and shall be finished true and smooth on all exposed faces.

Prime Coat for Macadam Paving

J. The prime coat for macadam paving shall be bitumen grade M.C.I.

Bitumen for surfacing

A. The bitumen for surfacing shall be made 500/700 grade bitumen.

Workmanship

Generally

B. The sub-grade, sub-base and base courses for roads and parking area shall be prepared and laid at a convenient time before completion of the contract, as shall be agreed between the Architect and the Contractor, together with their kerbs and foundations.

C. The wiring course shall be applied at a later date, and prior to laying, the base course shall be made good in accordance with the requirements specified herein. The Contractor shall make good at his own expense any damage to kerbs.

Surveying

D. The Contractor shall verify all dimensions and levels prior to the commencement of work.

E. All surveying necessary for the accomplishment of the works shall be done by the Contractor at his own expense and he shall give notice of his intention to carry out such work in order that the arrangements can be made for supervision and checking. The Contractor shall also provide, without extra charge, all necessary instruments, appliances, labour and any other materials required for checking the survey work.

F. The Contractor shall make all necessary surveys using given bench marks as reference points. These bench marks he shall carefully preserve.

G. The Contractor shall draft, in accordance with these surveys, all plans and drawings which are necessary for the completion of the work, and shall submit these plans and drawings to the Architect for approval in writing.

Levels, Falls, Crossfalls and Cambers

H. The works shall be executed to the levels, falls, crossfalls and cambers shown on the drawings

Accuracy

J. The Contractor shall be responsible for ensuring that the works are carried out to the line, levels and dimensions shown on the drawings, and shall provide camber gauges and straight edges for checking to ensure that the surfaces are within the following tolerances:-

(a) **Sub-Grade** -

The camber or crossfall shall not vary more than 20mm from that shown on the drawings. In the longitudinal direction the variations from a 3 meter straight edge placed parallel to the centre line of the road shall not exceed 12mm.

(b) **Base**

The camber or crossfall shall not vary more than 12mm from that shown on the drawings. The variation on the longitudinal section shall be as above for sub-grade

Sub-Grade

A. The sub-grade shall be shaped to the required falls and cambers and any depressions filled with approved materials having a minimum C.B.R. of 8 percent. This value shall be obtained at optimum moisture content and compacted to 100 percent of the maximum dry density as determined by B.S x1377. The Contractor shall carry out standard compacting tests on the sub-grade in accordance with Test Nr 10 of B.S. 1377. Such tests shall be taken at 30metre intervals. The standard of compaction required shall be 98 percent of the maximum dry density as determined by Test No. 9 of B.S. 1377.

B. The sub-grade shall be approved by the Architect before any materials to be used in construction of the carriageway are deposited or laid.

Sub-Base Course

C. The sub-base shall consist of a layer of crusher dust finishing to the thickness specified after compaction. The bed shall be watered as necessary and rolled to produce a smooth and uniform surface with no irregularities.

Base Course

D. The base course shall consist of a layer of stone in which the interstices shall be filled by application of crusher fines after the stone is in place, to finish to the thickness specified after compaction. The base course shall not be blinded with crusher fines, but with 4mm gauge stone chippings to provide a clean hard surface. If any irregularities develop, they should be corrected by loosening the material at these places and adding or removing material and recompaction until the surface is smooth and uniform with no irregularities.

Application of Bitumen

E. The plant used by the Contractor for transporting, heating and spraying bitumen shall be in suitable rubber-tyred units and shall ensure adequate and uniform heating without the introduction of steam or moisture, and giving rise to the cooking or burning of the bitumen, and shall be fitted with a thermometer and heating control. Distributors shall be equipped to provide a constant rate of application per square meter of surface and there shall be visible speedometer indicating the speed of the vehicle in meters per minute.

A. Spray bars shall be capable of spreading the bitumen evenly to the full width of the work. The bitumen shall be heated to the temperature specified below and sprayed on the clean surface of the base at the rates specified.

B. Application temperatures shall be in accordance with those recommended by the manufacturer, or where this information is not available, they shall be as follows:-

Bitumen Grade	Sprayed Temperature (Degree Celcius)
N.C.I	54-80
500/700	124-149

Prime Coat

C. Prior to the application of the prime coat, the surface of the base shall be swept clean of dust and foreign materials to the satisfaction of the Architect. Approximately 30 minutes before applying the bitumen the surface of the base shall be lightly sprayed with water.

D. The prime coat shall be applied at the rate of 0.70 litres per square meter.

Wearing Course

E. After the application of the priming coat, and where directed and approved by the Architect, the Contractor shall lay bitumen type 500/700 spread at the rate of 3 square meters per 5 litres immediately followed by spreading dry, clean approved 12mm chippings at the rate of 130 square meters per cubic meter, rolled six to eight passes of a six to eight tonne roller. A second and similar surfacing layer shall be laid at the end of the defects liability period.

F. Alternatively, where specified, the wearing course shall consist of a premix macadam carpet of 500/700 grade bitumen and approved quality aggregate graded and mixed together prior to laying in the proportions and by the methods given in B.S. 1621 table 4, laid to finish to the thicknesses shown after compaction. The compaction shall be achieved with six to eight passes of a six to eight tonne roller.

Wet Weather

G. No bitumen spraying shall be carried out when either the carriageway surface of the aggregate are wet, without the prior approval, in writing, of the Architect who may allow such work to proceed by the use of an approved adhesive agent at the Contractor's expense

Murram Roads

H. Murram roads shall be laid in layers not exceeding 150mm compacted thickness, to finish compacted to the thicknesses shown on the drawings.

J. Each layer shall be watered, rolled and compacted as previously described herein to produce a smooth dense surface free of all irregularities.

Laying Precast Paving Slabs

A. Precast paving slabs shall be bedded on a sandbed compacted to the thickness specified with 6mm wide joints, filled and pointed with cement mortar coloured to match the colour of the slabs and recessed 5mm deep. The paving shall be finished true and even to the falls shown on the drawings with no surface irregularities.

Grassing

B. Grassing shall be carried out by a Specialist using approved local grass. Prices for grass shall include for tending, watering, cutting and keeping weed free for a period of twelve months, to produce a dense and healthy weed free grass carpet.

Note:
The Contractor shall include here for any cost they may consider necessary and over and above costs which they believe they cannot recover in any other section of these Bills of Quantities.

PRELIMINARIES

ITEM	DESCRIPTION	AMOUNT
	BILL NO. 1	
	PARTICULAR PRELIMINARIES	
A	**PARTIES**	
	The **Employer** is: Principal Secretary, Ministry of Lands, Public works,Housing and Urban Development, State Department of Housing and Urban Development P.O Box 30119 -00100 NAIROBI, KENYA	
	The **Engineer** is: The term "PM" wherever used in these Bills of Quantities shall be deemed to imply the Engineer as defined in Condition 1 of the Conditions of Contract or such person or persons as may be duly authorised to represent him on behalf of the Government .	
	The Architect is: Ministry of Lands, Public works,Housing and Urban Development, State Department of Housing and Urban Development P.O Box 30119 -00100 NAIROBI, KENYA	
	The Quantity Surveyors is: Ministry of Lands, Public works,Housing and Urban Development, State Department of Housing and Urban Development P.O Box 30119 -00100 NAIROBI, KENYA	
	The Structural/ Civil Engineers is: Ministry of Lands, Public works,Housing and Urban Development, State Department of Housing and Urban Development P.O Box 30119 -00100 NAIROBI, KENYA	
	The Electrical / Mechanical Engineers is: Ministry of Lands, Public works,Housing and Urban Development, State Department of Housing and Urban Development P.O Box 30119 -00100 NAIROBI, KENYA	

ITEM	DESCRIPTION	AMOUNT
A	**LOCATION OF SITE**	
	The site of the proposed works is located in Kikuyu Constituency, Kiambu County	
	The Contractor shall be deemed to have visited the site and satisfied himself as to:-	
	a) The nature, position, topography and access of the site **b)** The amount of the rubbish or debris to be cleared away before commencement.	
	c) The nature, current usage, proximity and size of adjoining property and buildings **d)** The availability of land for the erection and positioning of all temporary structures, plant and materials necessary for the execution of the works.	
	The Contractor shall obtain approval from the relevant Local Authority in adherence to site access and erection of temporary structures and must ensure all matters relating to the requirements of these authorities.	
	No claim will be allowed for travelling or other expenses which may be incurred by the Contractor in visiting the site or preparing the tender for the works.	
B	**EXISTING SITE CONDITIONS**	
	The site of the proposed works is located in Kikuyu Constituency, Kiambu County	
	The Contractor is advised that the site is in a predominantly market area and all measures should be taken to avoid nuisance to neighbours.	
	All occupation health and safety requirements must be met as required by law.	
	This includes prevention and or minimizing noise, dust, fumes e.t.c.	
	Notices should be given prior to disruption of services	
C	**SCOPE OF CONTRACT**	
	The Works under this contract comprises of the following;	
i	Construction of 13 No Type B Blocks composed of AHP units (Studio and 2-Bedroom) and Markets units (2- Bedroom and 3-Bedrooms) in (G+9) ground floor + nine storeys per block.	
ii.	Construction of 8 No. Type C Blocks composed of Social units (1-Room, 2-Room and 3-Room) and AHP units (Studio and 2-Bedroom) and in (G+9) ie. ground floor + nine storeys per block and shops on the ground floor.	
iii.	External works and all associated civil works, foul drainage, storm water drainage, a boundary wall, swimming pool, 2No. waste receptacles, 2No. gate houses	
iv.	A Community Center and a Club House	
v.	A Kindergarten	
vi.	Electromechanical works.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**DESCRIPTION OF THE WORKS**	
	The construction comprises reinforced concrete foundations, masonry walling, reinforced concrete beams, column , staircases and suspended solid slabs, roof construction.	
	The exterior facade consists of steel casement windows, steel and timber doors , render and paint finish, clay and stone facing finish to walls	
	The interior works includes timber doors and finishes which are generally plaster and paint to walls, ceramic and non slip ceramic tiles to floors and walls.	
	External works generally comprise of foul water drainage, storm water drainage, pathway, dryline area, septic tank, underground water tank.	
	All mechanical / electrical services and other specialist works associated with the above works shall be executed by domestic/nominated sub contractors approved by the Engineer	
	CONTRACT PARTICULARS	
B	**FORM OF CONTRACT**	
	The Contractor will be required to enter into a contract with the Employer under the **Terms and Conditions of Contract as "Standard Tender Document for Procurement of Works (Building and Associated Civil Engineering Works) Issued by the Public Procument Regulatory Authority in February 2021 (updated 2022)** and in association with the latest applicable version of the Public Procurement and Asset Disposal Act.	
	The Contractor's attention is called to the appendix of the conditions of Contract and additions and amendments thereto, which shall be read as incorporated herein and he shall allow any sums which he considers necessary for the observance of such conditions, together with sub clauses used in application.	
	The prioirity of such documents shall be as stated in the conditions of agreement.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**LIABILITY AGAINST INJURY TO PERSONS AND PROPERTY** Insurance against injury to persons and property NOTES In addition to the conditions of the contract and the requirement contained herein the contractor's all risk policy shall cover the full value of the following and allow for all costs thereof:- i) The works and temporary works erected in performance of this contract. ii) The materials on site, plant and tools iii) The cost and expense of removing debris of the property insured, destroyed or damaged by any peril insured. iv) Professional fees (to be allowed at 15% of the contract sum) v) Employer's liability (workman's compensation) ii) Third party (Public liability for an indemnity of not less than shs..... for any accident or series of accidents arising from the same event (unlimited in aggregate) The contractor shall ensure that all sub-contractors effect and maintain such insurances as are necessary to cover their liabilities in respect of injury to persons and property and workman,s compensation. Should the contractor already hold annual insurances covering the whole of his activities, and the indemnity required under the existing policy/ies then further insurances shall be effected and maintained to cover such excess, the policies of insurances being suitably endorsed to cover this project	
B	**Insurance of the works (contractors liability)** The Contractor shall insure as required in the Conditions of Contract. No payment on account of the work executed will be made to the Contractor until he has satisfied the Engineer either by production of an Insurance Policy or and Insurance Certificate that the provision of the foregoing Insurance Clauses have been complied with in all respects. Thereafter the Engineer shall from time to time ascertain that premiums are duly paid up by the Contractor who shall if called upon to do so, produce the receipted premium renewals for the Engineer's inspection.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
	PERFORMANCE BOND	
A	**Performance bond for the works**	
	The Contractor shall find and submit on the Form of Tender an approved bank or approved (By PPRA) Insurance Company and who will be willing to be bound to the Employer in an amount equal to **five percent (5%)** of the Contract amount for the due performances of the Contract up to the date of completion as certified by the Engineer and who will when and if called upon, sign a Bond to that effect on the relevant standard form as seen in the CONTRACT STANDARD FORMS (without the addition of anv limitations)	
	And should the surety fail to be approved, the Contractor shall furnish within seven days another Surety to the approval of the Employer.	
	Note that no payments on account of works executed will be made to the Contractor until he has submitted the Performance bond, duly stamped signed and sealed by an approved bank or insurance company.	
B	**POSSESSION AND COMMENCEMENT**	
	The Contractor shall take possession of the site on the date indicated in the acceptance letter. The date of commencement of the works shall also be communicated to the Contractor and the contract period shall run from the commencement date.	
	The Contractor is expected to utilize the period between possession and commencement to mobilise his resources to ensure smooth running of the works from the commencement date.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
	PROJECT SUPERVISION	
A	The said works shall be executed under the direction and to the entire satisfaction of the Engineer and Clerk of works who shall have the Engineer's specifically delegated authority and shall at all times have access to the works, to the yards and workshops of the contractor or other places where goods are being prepared for the building.	
	LABOUR CAMPS	
B	The contractor will generally not be permitted to house labour on site	
	DOWNTAKINGS	
C	All materials arising from demolitions and downtakings are deemed to be the property of the employer. No claim will be entertained on account of employer excising this right to retain the materials All downtakings shall be carefully removed, taken down, dismantled and stored on site until instructed by the Engineer to remove from the site. Such materials shall only be incorporated in the new works if required by the Engineer in which case appropriate adjustments will be made in the final account for the cost of labour, screws etc for fixing such downtakings in the new works.	
	DAMAGES	
D	Damages for delay in completion shall be levied at the rate of Kshs	
	OTHER PRELIMINARIES	
E	Allow for any other item necessary to execute the works and state them below;	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
	BILL NO. 1	
	PARTICULAR PRELIMINARIES	
	COLLECTION	
	Carried from page 1/1	
	Carried from page 1/2	
	Carried from page 1/3	
	Carried from page 1/4	
	Carried from page 1/5	
	Carried from page 1/6	
	Particular Preliminaries Carried to Summary of Bill No. 1	

ITEM	DESCRIPTION	AMOUNT
	BILL NO. 2	
	GENERAL PRELIMINARIES	
	PRICING OF ITEMS OF PRELIMINARIES AND PREAMBLES	
A	Whenever in the Contractor's priced Bills of Quantities no price appears against an item of Preliminaries or Preambles or work items , the value of such item shall be deemed to be included in his prices for other items in the Bills of Quantities.	
	SUFFICIENCY OF TENDER	
B	The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices stated in the priced Bills of Quantities. Rates and prices quoted shall cover all his obligations under the contract and all the matters and maintenance of the works	
	RECORDS	
C	The Contractor shall ensure proper records are kept and maintained for : Daily Reports on Personnel and Machinery; tracked programme; weather charts/reports; site instruction book and query book,a digital camera shall be provided for taking progress photos The contractor shall be required to provide equipment for taking ground and aerial photos or videos in relation to the progress of works when called upon to do so.	
	DEFINITIONS AND ABBREVIATIONS	
D	Throughout these Bills, units of measurements and terms are abbreviated and shall be interpreted as follows: mm shall mean millimeter lm shall mean linear meter sm shall mean square meter m^2 shall mean square meter cm shall mean cubic meter kg shall mean kilogramme N shall mean Newton KN shall mean KiloNewton	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
	in/" shall mean inches L f shall mean linear foot s f shall mean square foot c f shall mean cubic foot L b shall mean pound avoirdupois No. shall mean number B.S. shall mean the current British Standard Specification published by the British Standard Institution, 2 Park Street, LONDON W.I, England. B.S.M shall mean both sides measured K.S. shall mean current Kenya Standard specification published by the Kenya Bureau of Standard, P.O. Box 54974. NAIROBI, Kenya. 'As described' shall mean as described in these Bills of Quantities. 'As before described' shall mean the whole of the previous description except as qualified in the current one. **Carried to collection**	

ITEM	DESCRIPTION	AMOUNT
	SITE LEVELS	
A	Before commencing work the Contractor must arrange for and agree with the Architect, Engineer and Quantity Surveyor the existing site levels and similarly establish and agree on a bench mark. The Contractor shall provide a surveyor to ensure all levels are achieved as per the drawings and Architects/Structural Engineer's instructions	
	SETTING OUT	
B	The contractor shall set out works in accordance with the dimensions and levels shown on the drawings and shall be responsible for the correctness of all dimensions and levels set out by him and he will be required to amend all errors arising from inaccurate setting out at his own cost and expenses. In the event of any error or discrepancy in the dimensions or levels marked on the drawings being discovered, such errors or discrepancies must be reported by the Contractor to the Engineer for his immediate attention. No work shall be commenced by the Contractor until he has received written instructions from the Engineer to adjust such discrepancies which may be proved, upon receipt of such instructions and no claim for extra expenses or relief from the provisions of Clause 5 of the Conditions of the Contract , any discrepancy or error in the dimensions or levels shown on the drawings may be made thereafter. The Contractor shall give the Engineer reasonable notice of the intention to set out or take levels for any part of the Works so that arrangements may be made for checking the work. The accuracy of setting out and leveling shall be within the tolerances specified in the Specifications or on the Drawings. The checking of setting out or leveling by the Engineer shall not relieve the Contractor of his duties or responsibilities under the Contract.	
	MEASUREMENTS	
C	Measurements are based on **Standard Methods of Measurement of Building Works and Associated Civil Works For Eastern Africa (SMM) Second Edition 2008.** In the event of any discrepancies arising between the Bills of Quantities and the actual works, the site measurements shall generally take precedence.	
D	**GENERAL SPECIFICATIONS** All works to be carried out in accordance with the Ministry of Roads, public Works and Housing **General Specifications for Building Works issued in 1976** or as qualified and amended.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
	SAMPLES	
A	The contractor shall furnish at the earliest possible opportunity before work commences and at his own cost any samples of materials or workmanship that may be called for by the Engineer for his approval or rejection until such samples are approved to be the acceptable standard for the work to which they apply. The samples shall be maintained and displayed on a designated section within the site for the duration of the project where practical and possible.	
	PROTECTION OF EXISTING PROPERTY	
B	The contractor shall take every precaution to avoid damage to all existing property including boundary wall, carpark, roads, cables, drains,staircases, lift etc including other services and he will be held responsible for all damages hereto arising from the execution of his contract and he shall make good all such damages when directed at his own expense. Any damage or disturbances caused to any element shall be reported immediately to the Engineer and the relevant Authority and shall be made good to their satisfaction at the Contractor's expense.	
C	**PROTECTION / RELOCATION OF EXISTING SERVICES** Prior to commencement of any work the Contractor is to ascertain from the relevant Authorities the exact position, depth and level of all existing electric cables, water pipes and all other services in the area and he shall make whatever provisions may be required by the authorities concerned for the support and protection and/or relocation of such services as will be necessitated. The contractor is also expected to generate a utility management plan to the approval of the Engineer . Any damage or disturbances caused to any service shall be reported immediately to the Engineer and the relevant Authority and shall be made good to their satisfaction at the Contractor's expense.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**MATERIALS, TOOLS, PLANT AND SCAFFOLDINGS** All materials and workmanship used in the execution of the works shall be of the best quality and description. Any materials for the works condemned by the Engineer shall immediately be removed from the site at the Contractor's expense. The Contractor shall be responsible for the provision of all materials, scaffolding, tools, plant, transport and workmen required for the works except in so far as may be stated otherwise herein and he shall allow for the provision of the foregoing except for such items specifically and only required for the use of Nominated Sub-contractors as described herein. No timber used for scaffolding, formwork or similar purpose shall be used afterwards in the permanent works. All such plant, tools and scaffolding shall comply with all regulations whether general or local in force including Environmental,Social, Health and Safety (ESHS) policies throughout the period of the contract and shall be required as may be necessary to comply with any amendments in or additions to such regulations The Contractor shall keep on the site and maintain in good condition one dumpy or quickset level, metric leveling staff and one 30 metre steel tape for the use of the Architect, Surveyor and Engineer. The contractor may be required to provide an appropriate tower crane as required during the project life. Where a crane is provided, it should meet all regulatory and technical standards, all licences in connection with erection, usage shall be at the Contractors expense. The contractor may be required to provide an appropriate tower crane as required during the project life. Where a crane is provided, it should meet all regulatory and technical standards, all licences in connection with erection, usage shall be at the contractors expense.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**LOCAL REGULATIONS AND BY-LAWS** The contractor is to comply with all local regulations and by-laws of the Local Authority including serving notices and paying of fees where applicable. These include, but not limited to: National Environmental Management Authority (NEMA), National Contruction Authority (NCA), Water Resources Management Authority (WARMA) The Contractor will be held responsible for serving on the Chief Inspector of Factories a written notice not later than seven days after the beginning of the building operations included in this contract stating the particulars required.	
B	**TRANSPORT TO AND FROM THE SITE** The Contractor shall include in his prices for the transport of materials, workmen etc to and from the site of the proposed works at such hours and by such routes as are permitted by the Authorities. All unit rates for local or imported goods are to include freight, insurance, handling and delivery costs to the project site together with import duties, sale tax, port charges etc and all other charges of whatever nature.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**FAIR WAGES** The Contractor shall pay rates of wages and observe hours and conditions of labour not less favourable than the minimum conditions of employment applicable in the area in which the work is carried out. The relevant notice must be posted up and kept posted upon the site where it can be conveniently read by the employees concerned in languages they can understand. The Contractor is to comply with the regulations of Wages and Conditions of Employment Act, Building and Construction Industry Wages Council and is to be responsible for compliance of the sub-contractors employed in the execution of the contract. If required he is to notify the Engineer of the names and addresses of all such Sub-contractors. Any Contractor or Sub-contractors not complying will not be permitted to tender for other work for such a period as the Engineer may determine Should a claim be made to the Engineer alleging the Contractor's default in payment of fair wages to any workman employed on the contract and if proof thereof satisfactory to the Engineer, may failing payment by the Contractor, pay the claim out of any monies due or which may become due to the contractor under this contract. The Contractor is to furnish to the Engineer, if called upon to do so, such particulars of the rates of wages, hours and conditions of labour referred to above as the Engineer may direct	
B	**SECURITY OF WORKS** The Contractor shall be entirely responsible and shall pay security of all works, stores, materials, plant, personnel etc both his own and sub-contractors and shall also provide all necessary watching, lighting, and other precautions as necessary to ensure the security, the safety and protection of the public. He is to ensure that there is no informal business settlement near the establishment.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**OCUPATIONAL HEALTH AND SAFETY MEASURES** The Engineer expects the Contractor to adhere to strict safety measures. In this regard the Contractor should ensure that all his workers, the Consultants and his sub-Contractors workmen are wearing Personal Protective Equipment (PPE) before commencement of any work where applicable including overalls with the company name clearly printed on the back each with clearly marked Identification Numbers stitched or imprinted on. The Contractor shall allow for providing all watching, lighting, barriers, signs, covering open trenches and protection of the works, including Sub-Contract works, as may be necessary for the safety of the works and for the protection of the public and his own and Sub-Contractors' employees. He shall also ensure provision of a certified and qualified safety, health and environmental officer, access to ambulance services at all worksites and arrangement to access a local hospital/dispensary with qualified medical staff. The contractor shall take cognisance and shall fullay adhrere to the regulations of the **Occupational Safety and Health Act of 2007** including all the associated revisions The Engineer shall expect full compliance to this regulation and no excuses will be entertained for non-compliance which may lead to suspension of works until the issue is addressed satisfactorily.	
B	**PUBLIC, PRIVATE ROADS AND PAVEMENTS ETC** The contractor will be required to make good at his own expense any damages he may cause to the present approach and surrounding road surfaces during the period of the works	
C	**POLICE REGULATIONS** The contractor is to allow for complying with all Government Acts, orders or regulations in connection with employment of labour and other matters related to the execution of the works. The Contractor must acquit himself duly with current acts and regulations, including police regulations regarding the movement, housing, security and control of labour, labour camps, passes for transport, etc.. Particular attention is drawn to the rules published in Legal Notice 179 dated 2nd June 1978 (Building Operations and Work of Engineering Construction)	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**AREA TO BE OCCUPIED BY CONTRACTOR** The area of the site which may be occupied by the Contractor for use as storage and for the purpose of erecting workshops etc shall be defined on the site by the Engineer	
B	**PROGRESS SCHEDULE** Immediately after signing the contract the Contractor is to prepare a Time Progress Chart showing the time and order in which he proposes to carry out the works within the total construction time stated in the contract. The chart will show in detail the construction time and order in which each section of the work is to be carried out and be sub-divided into trades and tasks. If the contractor proposes sectional completion of the project he must plan this in detail including access roads, and services and this shall be reflected on the chart Upon the letting of the Sub-Contractors work the Contractor is to incorporate times and details of each separate Sub-Contractor work which information is to be agreed by the Sub-Contractor and the chart will be so designed to accommodate this infantine. At the end of each week the Contractor is to mark on the chart in a different colour the actual time taken to complete the respective stages and sections of the work. The contractor shall obtain the Engineer's approval on the chart and then shall supply copies to the Engineer and Quantity Surveyor If at any time it should appear to the Engineer that the actual progress of the works does not conform to the approved programme progress schedule the Contractor shall produce at the request of the Engineer a revised programme showing the modifications and accelerations to the approved programme necessary to ensure completion of the works within the agreed contract period. The submission of and approval by the Engineer of such revisions and accelerations shall not entitle the Contractor to any extra payment or extension of time and shall not relieve the Contractor of any duties or obligations or responsibilities under the contract	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**OVERTIME** The Contractor shall be responsible for any extra costs for overtime working he considers will be necessary in order to complete the works within the contract period or time for completion apart from overtime working which may be authorised by the Engineer If overtime is worked out in accordance with a written instruction issued by the Engineer the contractor will be reimbursed in respect of such overtime to the unproductive time payable over and above the basic hourly rates as laid down by the Regulation of wages and Conditions of employment Act, Building and Construction Industry Wages Council and excluding any bonuses, profits and overheads.	
B	**WATER** The contractor shall provide at his own risk and cost all water for use in connection with the works including the work of sub-contractors make arrangements with the local authority for the installation of a separate meter where applicable and possible for all water used by him throughout the contract and pay all costs and fees in connection therewith. He shall also provide temporary storage tanks and tubing etc as he may consider necessary and clear away at completion. The contractor is to provide clean drinking water at the construction site for his workers at all times. All water shall be fresh, clean and pure, free from earthly vegetable or organic matter, acid or alkaline substance in solution or suspension.	
C	**TELEPHONE** The contractor shall provide in the office, from the commencement to the completion of the works, a wireless or mobile phone and shall pay all charges or airtime necessary for its use	
D	**LIGHTING AND POWER** The contractor shall provide at his own risk and cost all temporary artificial lighting and power for use on the works including all sub-contractors and specialists requirements and including all temporary connections, wiring, fittings etc and clearing away on completion. The Contractor shall pay all fees and obtain all permits in connection therewith.	
	Carried to Collection	

ITEM	DESCRIPTION	AMOUNT
A	**TESTING** Allow for all expenses in connection with the testing of materials as specified hereunder including the supply and preparation of materials to be tested, the cost of materials and their packing and conveyance to the nearest approved Testing Laboratory, laboratory charges, etc. The following items of tests will be measured according to the number of tests actually called for by the Engineer but unsuccessful tests will not be included in the remeasurement. Allow for executing the following tests as detailed in the Appendices to these Bills of Quantities (PROVISIONAL)) Water Test .....(litres) Sand Test .....(m3) Aggregate Test .....(m3) Reinforcement test (1m of mild steel rod or high tensile steel bar of various sizes) ..... Concrete Test (each test comprising ..... cubes as described hereinafter) ..... Testing of concrete or stone blocks of various strengths in accordance with Kenya Standard Specification (one test comprising ..... blocks)	
B	**PRICING RATES** The tenderer shall include for all costs in executing the whole of the works, including transport, replacing damaged items, fixing, all to comply with the said Conditions of Contract.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**TEMPORARY STRUCTURES** a) The Contractor shall allow for providing and clearing away on completion of the works such temporary hoarding , rubbish chutes, gates, planked walkways, guard rails etc. as may be necessary for the protection of the workers, the general public, and for the proper execution of the works. b) As such, temporary structures shall be constructed with the approval of the Engineer and to his full satisfaction and in such a manner as to cause minimum intrisiveness and disturbance to occupants of adjacent developments and users of the adjacent roads. c) All such temporary structures shall comply in all aspects with the national laws, rules, and regulations currently in force and applicable to such structures. d) All temporary structures shall be erected in a manner so that the unloading of materials causes minimum obstruction to the use of adjacent roads and other facilities e) All temporary structures shall be kept properly lighted throughout the periods of darkness and any corners or projections shall be painted white. g) Temporary structures shall not be used or permitted to be used for advertisement purposes except with the written consent of the Engineer h) All temporary structures shall be maintained at all times in good order and good condition to the satisfaction of the Engineer. i) All temporary structures shall be removed when so required by the Engineer or at the end of the period for which it is required. j) The Contractor shall indemnify and shall keep the employer idemnified against any expenses, loss, claim or suits arising out of or in connection with the temporary structures.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
	SITE OFFICE	
A	The contractor shall supply, maintain, service, clean and light a fully furnished, suitable office having an approximate floor area of not less than **80sqm.**The office shall have a sample room suitable dimensions with clean running water and electricity connected to the approval of the Engineer. The Contractor shall provide offices, messrooms and all other buildings required by the Contractor for his own use and the use of by Clerk of Works and Nominated SubContractors as required by the items or attendance The site office shall be equipped with a table and chairs of sufficient size and number for site meetings and plan chests for drawings shall also be provided by the contractor The Contractor shall allow for the cost of providing light refreshment for the consultants at site meetings.	
	TEMPORARY DISPOSAL OF RAIN WATER	
B	The Contractor shall provide and maintain all necessary temporary gutters, downpipes, chutes, drains etc. for conveying rainwater from the buildings and storage tanks for rainwater harvesting. The Contractor shall allow for temporary drainage plumbing and piping for keeping the premises and site free from accumulation of water. He shall also allow for construction and maintaining any necessary storm water drainage structures as directed.	
	CLEARING AWAY	
C	The Contractor shall remove all temporary works, rubbish, debris and surplus materials from the site as they accumulate, on intervals as intructed by the Engineer and upon completion of the works, remove and clear away all plant, equipment, rubbish, unused materials and stains and leave in a clean and tidy state to the reasonable satisfaction of the Engineer. The whole of the works shall be delivered up clean, complete and in perfect condition in every respect to the satisfaction of the Engineer.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**SITE ACCOMODATION & STORAGE** The Contractor shall provide sheds for storage accommodation for all goods and materials liable to suffer damage from exposure to sunlight or inclement weather. The Contractor shall provide offices, mess rooms and all the buildings required by the Contractor for his own use and the use of Nominated Sub-Contractors as required by the items of attendance only. The Contractor shall provide at his own risk and cost where directed on the site weather proof lock-up sheds and make good damaged or disturbed surfaces upon completion to proof lock-up sheds and make good damaged or disturbed surfaces upon completion to the satisfaction of the Engineer Upon completion all temporary buildings are to be removed and cleared away	
B	**SANITATION OF THE WORKS** The sanitation of the works shall be provided, maintained and removed on completion by the Contractor to the satisfaction of the Engineers and local Authorities. The sanitary facilities shall be of generally acceptable standard regardless of the material being used to ensure ease of cleaning and maintain general well being of the users. Their location shall be agreed with the Engineers and the works shall not be commenced before the sanitary accommodation has been approved by the above mentioned authorities. The Contractor will be required to pay all conservancy charges and shall ensure clean daily maintenance and disinfecting of the sanitary facilities, and not less than once per week, the whole area shall be sprayed with disinfectant and insecticides and any temporary drains shall be removed and all works and surfaces disturbed made good and then the whole area disinfected and left clean and free from pollution to the satisfaction of the Engineer and local authorities.	
C	**HOARDINGS** The Contractor shall provide, erect and maintain throughout the course of the Contract and thereafter clear away and make good disturbed areas, temporary hoarding; **approximate length of 362metres:** 3000mm high above ground consisting of: 100x50mm timber posts at 1200mm centres firmly founded and secured, 75x50mm horizontal timber rails at 900mm centres, painted GCI sheets, proper timber gates with suitable locks to Engineers approval.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**DEMOLITIONS AND DOWNTAKINGS** The Contractor is to allow for all temporary protection required during the works including ordinary and special dust screens, hoardings, barriers, warning signs etc. as directed by the Engineer and as necessary for the adequate protection of adjacent property and finishes, workmen employed upon the site and the public. Any damage or loss incurred due to the insufficiency of such protection must be made good by the Contractor. All protective devices are to be removed on completion of the work and any necessary making good consequent upon this is to be executed to the satisfaction of the Engineer All materials arising from demolitions and downtakings are deemed to be the property of the employer. No claim will be entertained on account of employer excising this right to retain the materials unless otherwise stated. The Contractor shall allow in his rates the cost of handling and disposal of debris arising out of the demolition works All downtakings shall be carefully removed, taken down, dismantled and stored on site until instructed by the Engineer to remove from the site. Such materials shall only be incorporated in the new works if required by the Engineer in which case appropriate adjustments will be made in the final account for the cost of labour, screws etc for fixing such downtakings in the new works. The Contractor shall be entirely responsible for any breakage or damage which may occur to materials required for re-use, during their removal, unless it is certified by the Engineer that such damage or breakage was inevitable as a result of the condition of the item concerned.	
B	**ACCESS TO SITE AND TEMPORARY ROADS** Means of access to the site shall be agreed with the Engineer prior to commencement of the works and the Contractor must allow for building and maintaining any temporary access roads for the transport of materials, plant and workmen as may be required for the complete execution of the works including the provision of temporary culverts, crossings, bridges or any other means of gaining access. Upon the completion the works the Contractor shall remove such temporary roads, temporary culverts bridges etc and make good and reinstate all works and services disturbed to the satisfaction of the Engineer.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**SIGN BOARD** The Contractor shall provide and erect where directed and maintain during the whole period of the building operation and remove at completion, one approved sign board of **approximately 3000x3000mm and approximately 5800mm overall height** to the Architect's later design giving a brief description of the works, a 3D perspective image of the project, and showing the names of the employer and the consultants, with sufficient space to append the names of the sub-contractors and suppliers when known. The lettering concerning the Architect, Quantity Surveyor and Engineer is not to be more than 50mm high.	
B	**PRIME COST SUMS** i) The words "Prime Cost" (or the initials "P.C") appearing in the contract documents shall mean net costs exclusive of any trade, cash or other discount whatsoever but inclusive of the costs of the packing, carriage and delivery. Such costs shall be the same due to the sub-contract or supplier after adjustments where applicable in respect of measurements of rates. ii) Any increase or decrease in the prime costs sums resulting from the adjustments and properly paid by the contractor shall be added or deducted from the contract sum in the final account. In substantiation the contractor will require to produce to the Quantity Surveyor all quotations, invoices and receipted accounts as shall be necessary to show the details of the sums actually paid. iii) Any sum added by the contractor in these Bills of Quantities in respect of profits upon any prime costs will be deducted at the final settlement of accounts and the sum will be added to the amount of which will bear the same proportion to the sum added as the net amount properly expended to the original P.C sum. The profit is a management fee for arranging and taking responsibility of the sub-contract works or arranging for and checking the supply of materials and goods from nominated suppliers.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	NOMINATED SUB-CONTRACTORS The contractor shall accept responsibility for providing the following services for nominated sub-contractors. i) GENERAL ATTENDANCE: The following services are described as "allow for general attendance" . This shall mean: a) Use for the purpose of the sub-contract works of any scaffolding belonging to or provided by the contractor while it remains so erected upon site, provided that no warranty or other liability on the part of the contractor or of his other sub-contractors shall be created or implied in regard to the fitness, condition or suitability of the said scaffolding b) Provision of water, lighting, watching and attendance for the purpose of the sub-contract works. c) Use of sanitary accommodation, mess rooms and welfare facilities. d) Provision of space for erecting of offices or stores or space for storage of plant and materials. ii) SPECIAL ATTENDANCE: The following services are described as "allow for special attendance" . This shall mean: a) Taking delivery and including the provision of unskilled labour necessary to attend upon the sub-contractors workmen for the purpose of unloading plants/equipment and materials of significant weight and/or size, when received upon the site and placing in position within the sub-contractor's storage space or store. b) Special Scaffolding, scaffolding additional to the Contractors scaffolding or Reassembling of contractor's scaffolding. c) Facilitating special power requirements during the course of the works. **Carried to collection**	

ITEM	DESCRIPTION	AMOUNT
	CLAIMS	
A	It shall be a condition of this contract that upon it becoming reasonably apparent to the Contractor that he has incurred losses and / or expenses due to any of the contract conditions, or by any other reason whatsoever, he shall present such a claim or intent to claim notice to the Engineer within the contract period. No claim shall be entertained upon the expiry of the said contract period.	
	PAYMENTS	
B	The tenderer's attention is drawn to the fact that the payments shall be made in accordance with Clause 14 of the Conditions of Contract Agreement. In order to facilitate this, a list of the general component elements for the works is given at the summary page of these specifications and the tenderer is requested to break down his tender sum commensurate to the said elements.	
	PREVENTION OF ACCIDENT, DAMAGE OR LOSS	
C	The Contractor is thus instructed to take reasonable care in the execution of the works as to prevent accidents, damage or loss and disruption of activities being carried out. The Contractor shall allow in his rates any expense he deemed necessary by taking such care within the site.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
A	**NOMINATED SUPPLIERS** The contractor shall take delivery all materials or goods supplied by the Nominated suppliers and shall sign a receipt as having received them in good order and condition. He shall offload, transport to site, unload, hoist, provide safe storage and thereafter be responsible for any loss or damage or replacement of any such lost or damaged articles at his own expense and shall return case if so required. Provision is made herein following each appropriate P.C sums for the costs of the foregoing services against items reading "take delivery of and fix only" Fix Only:- "Fix Only" shall mean take delivery within a radius/ distance of 20 Km from the site (Unless otherwise stated), pay all demurrage charges, load and transport to site where necessary, unload, store, unpack, assemble as necessary, distribute to position, hoist and fix only.	
B	**DIRECT CONTRACTS** Notwithstanding the foregoing conditions, the Government reserves the right to place a "Direct Contract" for any goods or services required in the works which are covered by a P.C. Sum in the Bills of Quantities and to pay for the same direct. In any such instances, profit relative to the P.C. Sum in the priced Bills of Quantities will be adjusted as described for P.C. Sums is allowed.	
C	**PROTECTION OF THE WORK** The Contractor shall cover up and protect all finished work liable to damage including provision of temporary roof, gutters, drains etc until the completion of the works. In the event of any damages occurring to the works, materials, sewers, drains, gullies, paths or other works on site in temporary possession of the contractor for the purpose of this contract either from weather, want of proper protection, defects, or insufficiency of the works or any other causes or whatsoever during the progress of the works, the contractor shall be responsible and without extra charge, make good all damage and pay all costs which may be levied.	
D	**BLASTING OPERATIONS** Blasting will only be allowed with the express permission of the Engineer in writing. All blasting operations shall be carried out at the Contractor's sole risk and cost in accordance with any Government regulations in force for the time being, and any special regulations laid down by the Engineer governing the use and storage of explosives.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
	PREVENTION OF NUISANCE	
A	The works and such sections of the site necessary thereafter shall be under the entire care and control of the contractor during the whole period of the contract and shall take all possible precautions to prevent any nuisance, inconvenience or injury to the holder or occupiers of the existing or surrounding properties and to the public generally, and shall at all times keep all paths and roads affected by the works in a safe and clear state, and shall use proper precautions to ensure the safety of all wheeled traffic and pedestrians. The contractor shall provide appropriate screens to seal off the working area.	
	REMOVAL OF PLANT AND RUBBISH ETC	
B	The Contractor shall upon completion of the works remove and clear away all temporary buildings, plant, rubbish and unused materials, and shall leave the whole of the site of the works in a clean and tidy state to the satisfaction of the Engineer. He shall also remove all rubbish and dirt from the site at intervals or as directed by the Engineer. Particular care shall be taken in leaving windows, floors and fittings clean and the removal of all paint and cement stains therefrom. The contractor is expected to have established a well planned method of solid disposal of debris/garbage on and off the camp site	
	CONTRACTOR'S SUPERINTENDENCE/SITE AGENT	
C	The Contractor shall constantly keep on the works a literate English speaking Agent or Representative, competent and experienced in the kind of work involved who shall give his whole experience in the kind of work involved and shall give his whole time to the superintendence of the works. Such Agent or Representative shall receive on behalf of the Contractor all directions and instructions from the Engineer and such directions shall be deemed to have been given to the Contractor in accordance with the Conditions of Contract.	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
	TRAINING LEVY	
A	The Contractor's attention is drawn to legal notice No. 237 of 2007 which requires payment by the Contractor for a training levy and the contractor shall allow in the preliminaries of this contract (basic rates column) for all costs arising or resulting therefrom. Proof of payment of this Levy should be provided at the request of the Engineer	
	STANDARDS LEVY	
B	The Contractor is required to make payments to the Kenya Bureau of Standards as Standard Levy inline with the current current and prevailing regulations. The Contractor shall allow in the Preliminaries of this Contract for all costs arising or resulting therefrom.	
	VALUE ADDED TAX (V.A.T.)	
C	The Contractor's attention is drawn to V.A.T PUBLIC NOTICE NO. 6 of 5th August, 1993 regarding the Finance Bill 1993 which expanded the V.A.T base to cover construction services amongst other items. The Contractor's attention is also drawn to all other notices issued by the government in relation to taxation. The Contractor shall familiarise himself with the said notices and allow in all his Bills of Quantities rates (Excluding P.C and Provisional Sums) for the net tax. (i.e less input tax where applicable) as required by law. Please note that allowing a lump sum tax either in preliminaries or in summary page shall not be acceptable. Any additional information and assistance concerning the application of the said notice should be directed to the office of the Commissioner of Value Added Tax	
	Carried to collection	

ITEM	DESCRIPTION	AMOUNT
	BILL NO. 1	
	GENERAL PRELIMINARIES	
	COLLECTION	
	Carried from page 1/9	
	Carried from page 1/10	
	Carried from page 1/11	
	Carried from page 1/12	
	Carried from page 1/13	
	Carried from page 1/14	
	Carried from page 1/15	
	Carried from page 1/16	
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	Carried from page 1/25	
	Carried from page 1/26	
	Carried from page 1/27	
	Carried from page 1/28	
	Carried from page 1/29	
	Total for General Preliminaries Carried to Summary of Bill No. 1	

ITEM	DESCRIPTION	UNIT	AMOUNT
	BILL NO. 3 **PROJECT EXPENSES** **Disclaimer: The following items are provisional sums provided by the Engineer. They are to be expended at the written instruction of the Engineer.** **Note: Tenderers should not attach, revise or add any conditions or specifications to the project supervisor's expenses**		
A	Provide and maintain equipment for the Engineer's site office for the duration of the project	Lump Sum	
B	Provide for supervision as follows: 1 No. Clerks of works, (Building and services) for the duration of project and 1 no. Work Inspectors, and 1 No Surveyor to be engaged on need basis.	Lump Sum	
C	Allow a provisional sum of Kshs. Eight Million (8,000,000) for Project Management Team and other stakeholders facilitation allowances during project implementation, as and whenever it is necessary.	Lump Sum	
D	Allow a P.C. Sum of KShs. 8,500,000 for supply of 1 Nr. (one)4WD station wagon SUV zero mileage vehicles of 2500 cc, or approved equivalent, including road licenses, number plates, insurances, etc. The vehicles to revert to Employer after completion of Contract. Minimum specifications include but not limited to the following: • Engine - 2.5 litres Turbo Diesel • Rear Differential Gear Lock • Braking System to include ABS (Anti-Lock Brake System) • Power Steering with adjustable Steering Column • Electronic Fuel Injection System. • 5 Speed Semi-Auto Transmission • Power Windows • Immobilizer and Alarm System • Fuel tank capacity between 80 litres and 100 litres	Item	
E	Allow for the Contractor's overheads and profits on items A,B, and C above.		
F	Provide for the driver, fuels, maintenance, lubricants and servicing of the vehicle for kilometrage over 1,500 km per vehicle month.		

PROPOSED AFFORDABLE HOUSING PROJECT IN .....
(WITH ASSOCIATED AMENITIES AND INFRASTRUCTURE)

ITEM	DESCRIPTION	UNIT	AMOUNT
A	Provide a Prime-cost sum of Kshs five Hundred Thousand, (500,000.00) only for carrying out environmental impact assessment before the commencemennt of works and and undertaking environmental mitigation measures as the work progresses.		
B	Provide a Prime-cost sum of Kshs one million, (1000,000.00) only for carrying out Geotechnical survey before the commencemennt of works and preparation of the reports		
C	Allow a provisional sum of Kshs. Two Hundred and Fifty Thousand (250,000.00) for stationery, documentation, model making, review and preparation of as built drawings Manager.		
D	Allow a provisional sum of Kshs. Three Hundred and Fifty Thousand (350,000.00) for provision of Laptop Computer for the Engineer's Team.		
	Contractor's profits and overheads		
E	Allow for the Contractor's overheads and profits on items F, G, H, J & K above.		
	Total for Project Expenses Carried to Summary of Bill No. 1		

BLOCK TYPE B

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (TYPE B G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 1 - SUBSTRUCTURES (ALL PROVISIONAL)				
	Site Clearance				
A	Clear site of all grass, hedges, shrubs, bushes grub up roots, load and remove from site and dispose at designated local authority areas.	SM	639		
B	Bulk excavation to reduce levels depth not exceeding 1.5m commencing from existing ground level	Cm	959		
C	Ditto but exceeding 1.5 metres but not 3 metres deep	Cm	639		
D	Extra over all type of excavation for excavating in soft rock	Cm	80		
E	Ditto excavation in hard rock class I	Cm	80		
	Disposal of water				
F	Allow for keeping the whole of the excavation free from all spring and running water by pumping or any other such means as may be necessary	Item	1		
	Planking and strutting				
G	Allow for maintaining and upholding the sides of excavations and keeping excavations clear of all fallen materials, rubbish etc	Item	1		
	Carried to collection				

Item	Description	Unit	QTY	Rate	Amount
	Disposal of excavated material				
A	Load,wheel and cart away surplus excavated material to a Local Authority designated dumping site or fill soil heaps as away from site instructed by the Project Engineer.	CM	1019		
B	Return, fill and ram selected excavated material around sides of foundations.	CM	579		
	Fillings				
C	Make up levels using approved imported materials: compacted in layers not exceeding 300mm thick with a roller: to the satisfaction of the Structural Engineer.	CM	818		
D	300mm thick hardcore bed: hand packed : compacted in layers not exceeding 150mm thick: to the satisfaction of the Structural Engineer	SM	545		
E	50 mm Stone dust/ Murrum blinding to surfaces of hardcore	SM	545		
	Anti - termite to treatment				
F	Approved anti-termite treatment, with ten-year guarantee, sprayed to surfaces of hardcore strictly in accordance with manufacturer's instructions.	SM	639		
	Damp-proof membrane				
G	1000 gauge polythene or other equal and approved damp-proof membrane, laid over blinded hardcore (measured separately) with 300mm side and end laps (measured nett-allow for laps); 1 No. layer: bedded in and including cement and sand (1:3) mortar	SM	639		
	Concrete Blinding				
	Insitu concrete Class 15MPa: vibrated:				
H	50 mm thick blinding under column bases	SM	456		
I	Ditto; under ground beams	SM	94		
	In- situ vibrated reinforced concrete Class 25MPa: in:				
I	Column bases	CM	305		
J	Ground Beams	CM	19		
K	100mm thick surface bed	SM	626		
	In- situ vibrated reinforced concrete Class 30MPa: in:				
L	Columns	CM	17		
M	200mm thick Lift pit shaft wall	SM	29		
	Carried to collection				

Item	Description	Unit	QTY	Rate	Amount
	Ribbed reinforcement steel bars to BS4449: 2005: Grade 500 high tensile strengthincluding bends, hooks, tying wire and distance blocks; to S.E's detail (Provisional)				
A	Assorted reinforcement	KGS	26893		
	Mesh fabric reinforcement to BS 4483 BRC A142;200 x 200mm, weighing 2.22kg/m² (measured net - no allowance) for laps; in two layers - top & bottom; including bends, tying wire and spacer blocks)				
B	In ground floor slab	SM	626		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to:				
C	Sides of column bases	SM	452		
D	Sides of ground beam	SM	188		
E	Vertical sides to columns	SM	203		
F	Vertical sides to lift shaft walls	SM	59		
G	Edge of slab not exceeding 150mm girth	LM	185		
	Foundation Walling				
	Natural quarry stones rough dressed; bedded in and including cement and sand (1:3) mortar; reinforced with and including 45 mm wide hoop iron gauge in alternate courses: in:				
H	200mm thick walls in foundations	SM	100		
	Pavings				
I	Supply and lay 600 x 600mm medium duty paving blocks round the building including laying, spreading and compacting 100mm thick approved sand bed blinding, with and including excavation, 150mm thick compacted hardcore and 50mm thick quarry dust blinding to approval.	SM	111		
	Plinth				
	25mm Thick cement and sand (1:3) rendering on concrete or masonry ; wood float finished; to				
J	Plinths externally	SM	56		
	Two coats black bitumastic paint on:				
K	Rendered surfaces	SM	56		
	Carried to collection				

Item	Description	Unit	QTY	Rate	Amount
	Cement/sand (1:3) screed with XYPEX C-100 or other equal and approved admixture, steel trowelled hard and smooth to receive waterproofing (m/s)				
A	20mm thick water proof cement/sand (1:3) screed to lift pit floor prepared to receive masterseal water proofing	m^2	9		
B	12mm thick water proof cement/sand (1:3) render to wall prepared to receive "Masterseal"water proofing	m^2	26		
	Waterproofing				
	MASTERSEAL® 501/502 SYSTEM CRYSTALLINE WATERPROOFING				
	All areas indicated shall be waterproofed by the MASTERSEAL® 501/502 system as manufactured by BASF, or equal and approved, provide 10 year guarantee, all to manufacturer's specifications and instructions as described:				
	Two coat slurry application: MASTERSEAL® 501: 1kg per m2 per coat, minimum 2 coats to seal all expansion joints, holes, repaired areas and angle fillet				
	Application of render coat: MASTERSEAL® 502: 1kg per m2 at 4.5mm thick on slabs. Rate shall allow for hacking and preparing all concrete surfaces				
C	Horizontal surfaces of lift base	m^2	9		
D	Vertical surfaces of Lift shaft walls	m^2	26		
	Carried to collection				
	COLLECTION				
	Total brought forward from page no:				
	Total brought forward from page no:				
	Total brought forward from page no:				
	Total brought forward from above				
	ELEMENT NO. 1 Carried to				
	SUBSTRUCTURES Main summary				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (TYPE B G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT No 2 - R.C FRAME				
	Insitu concrete class 30MPa: vibrated: reinforced				
A	Columns	CM	270		
B	Lift shaft wall	SM	415		
	Insitu concrete class 25MPa: vibrated: reinforced				
C	Beams	CM	300		
D	Upper Roof Beams	CM	2		
E	130mm thick suspended slabs	SM	5062		
F	Ditto but 150mm thick	SM	890		
G	150mm thick Tank Slab over stairwell	SM	48		
H	150 mm thick landing	SM	101		
I	Staircases	CM	40		
	Ribbed reinforcement steel bars to BS4449: 2005:Grade 500 high tensile strength including bends, hooks, tying wire and distance blocks to S.E's detail (All provisional)				
J	Assorted reinforcement	Kg	175023		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to				
K	Sides of columns	Sm	3240		
L	Sides and soffites of beams	Sm	3026		
M	Soffits of suspended slabs	Sm	5999		
N	Edges of slab over 150mm but not exceeding 225mm girth	Lm	2250		
O	To sloping soffites of staircases	SM	154		
P	Soffits of landings	SM	101		
Q	Riser of steps over 150 mm but not exceeding 225 mm girth	LM	480		
R	Staircase string 300mm extreme girth and cut to profile of steps	LM	268		
S	Edges of landing over 150 but ot exceeding 225mm high	Lm	96		
T	Edges of lift shaft openings 150-225mm high	LM	114		
U	Sides of lift walls	SM	829		
	ELEMENT NO. 2 **Carried to**				
	R.C FRAME **Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (TYPE B G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT No 3-WALLING				
	WALLING				
	External Walling				
	Machine cut quarry stone walling with a minimum of 7.0 N/mm2 average compressive strength to B.S 5390;bedded and jointed in cement and sand (1:4) mortar, reinforced with and including 25 x 3 mm thick hoop iron strips at every alternate course as described in;				
A	200mm thick walling Externally	Sm	3440		
B	150mm thick parapet walling	Sm	193		
	Internal Walling				
	Machine cut quarry stone walling with a minimum of 7.0 N/mm2 average compressive strength to B.S 5390;bedded and jointed in cement and sand (1:4) mortar, reinforced with and including 25 x 3 mm thick hoop iron strips at every alternate course as described in;				
C	200mm thick walling Internally	Sm	2377		
D	150mm thick walling Internally	Sm	2973		
E	Approved hessian based damp proof course to 200mm thick walling in cement/sand mortar	Lm	282		
F	Approved hessian based damp proof course to 150mm thick walling in cement/sand mortar	Lm	179		
	Precast Concrete Breeze Ventilation Blocks				
G	150 x 150mm wide x 50mm thick Pre Cast Concrete flower 3D breeze ventilation blocks bedded and jointed in cement and sand (1:4) mortar	Sm	405		
	COPING				
H	Ditto 200 x 50mm concrete coping to walls twice weathered and throated;	LM	209		
	Lintols				
I	200mm x 200mm Deep lintols in reinforced concrete class 20MPa with and including 4No T10 and T8 stirups at 200mm centres; complete with formwork	LM	798		
	ELEMENT NO. 3 **Carried to**				
	WALLING **Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (TYPE B G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 4-WINDOWS				
	MILD STEEL WINDOWS				
	Supply, fabricate and fix the following purpose made small pane mild steel casement windows to be fabricated from approved mild steel sections (atleast 14g 2mm thick) comprising of frame and casement incorporating permanent hooded high level ventilation panels infilled with mosquito gauze : window supplied complete with and including 12mm solid square burglar proofing bars fixed at 200mm centres both ways and metal fixing lugs including building into wall and making good, and all necessary iron mongery viz hinges, fasteners, and hasp including shop priming window with red oxide primer before delivery to site:-				
A	Window, overall size 1500 X 1200mm high to Architects Details (Lounge)	NO	80		
B	Ditto Size 1500 x 1200mm high (bedroom)	NO	200		
C	Ditto Size 1200 x 1200mm high (Kitchen)	NO	80		
D	Ditto Size 900 x 600mm high (WC/SH)	NO	200		
	Glazing				
E	5mm Thick clear sheet glass panes over 0.1 but not exceeding 0.5 square meters; fixing with premium putty	SM	619		
	Ditto; obscure	SM	108		
	Painting and Decorations				
	On Metal work				
	Prepare and apply aerosol spray painting in two finishing coats of first grade Crown Solo or other equal and approved to: -				
F	General window and grille surfaces; over 300mm girth internal	SM	1454		
	Carried to Collection				

Item	Description	Unit	QTY	Rate	Amount
	Bull-nosed precast concrete , finishing fair on all exposed surfaces and hoisting and placing in position, bedding, jointing and pointing in pigmented cement and sand (1:3) mortar				
A	150 x 25mm thick precast concrete window sill	LM	808		
	Curtain rods;				
B	20mm diameter heavy duty twin brass rod complete accessories to approval	LM	624		
	Carried to collection				
	COLLECTION				
	Total brought forward from page no:				
	Total brought forward from page no:				
	ELEMENT NO. 4 WINDOWS **Carried to the Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (TYPE B G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 5-DOORS				
	External Doors				
	Hardwood Panelled Doors				
	50mm thick approved hardwood PANEL doors with 12.5mm hardwood lipping to Architect's details, specifications and approval				
A	Door size 1500 x 2400mm high (D.01)	NO	3		
B	Ditto Size 1000 x 2400mm high (D.02)	NO	80		
	Frames and frame finishes in hardwood timber:				
C	25 x 25mm quadrant beading	LM	483		
D	25 x 50mm architrave with two labours, plugged	LM	483		
E	150mm x 50mm frame with three labours; chamfered edges; plugged	LM	483		
	Internal Doors				
	Flush timber doors				
	50 mm thick Semi Solid cored flush doors with plywood facing to receive painting (m.s) all to Architects details, specifications and approval				
F	Door size 900mm x 2400mm High comprising of 1 No Opennable leaf size 800 x 2100mm high including fixed fanlight size 900 x 300mm high in 4mm clear glass (measured separetely)	NO	260		
G	Ditto 800 x 2100mm high (D.04) comprising of 1No. Opennable leaf size 700 x 2100mm high	NO	200		
	4mm Thick clear sheet glass fixing with timber glazing beads to timber casements.				
H	In panes exceeding 0.1 sqm but not exceeding 0.5 square metres.	SM	70		
	Frames and frame finishes in soft wood Timber				
I	25 x 25mm quadrant	LM	2482		
J	25 x 50mm architrave with two labours, plugged	LM	2482		
K	150mm x 50mm transome with three labours; chamfered edges; plugged	LM	234		
L	150mm x 50mm frame with three labours; chamfered edges; plugged	LM	2482		
	Carried to collection				

Item	Description	Unit	QTY	Rate	Amount
	Painting and decorating				
	Priming back of frame with an aluminium or equivalent and approved wood primer				
A	Surfaces not exceeding 100mm girth	LM	5930		
B	Surfaces over 100mm but not exceeding 200mm girth	LM	3199		
	Prepare Knot, prime, stop and apply one undercoat and one coats first grade qaulity gloss oil paint to wood surfaces				
C	General timber surfaces	SM	1867		
D	Surfaces over 200mm but not exceeding 300mm girth	LM	3199		
E	Architraves: not exceeding 100 mm girth	LM	2965		
F	Quadrant beading : not exceeding 100 mm girth	LM	2965		
	Ironmongery				
	Supply and fix the following ironmongery to timber complete with matching screws and keys to the approval of the Architect				
G	100mm pressed steel Butt Hinges	PRS	815		
H	Stainless steel 3 Lever Mortice Door Lock with handle furniture set;(keyhole escutcheons, cylinder and latch)	NO	343		
I	Ditto: but 2 Lever Door Lock with handle	NO	200		
J	Door fixing cramps	NO	543		
K	Stainless steel door sign with door numbers as per Architect detail	NO	80		
L	Stainless block sign with block type, name and number as per Architect detail	NO	1		
	Carried to Collection				
	COLLECTION				
	Total brought forward from page no:				
	Total brought forward from page no:				
	ELEMENT NO. 5 **Carried to**				
	DOORS **Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (TYPE B G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 6 - EXTERNAL FINISHES				
	EXTERNAL WALL FINISHES				
	External Render				
	Cement and sand (1:3) render:wood floated: on concrete or blockwork: to				
A	15mm thick to beams, Columns, Slab Moulds and walling externally	SM	5,339.00		
B	Extra over horizontal and vertical pointing in 10mm thick rod in cement and sand mix (1:3) mortar including one coat Bituminous paint	SM	10		
	External Painting *Allow for skimming coat, Prepare and apply three coats interior quality eggshell paint as "Crown Paints" or other equal and approved paint to:-*				
C	Concrete/masonry surfaces externally-Beam, Column and Slab Moulds	SM	5339		
	ROOF FINISHES **Cement and sand (1:3) screeded beds: on concrete: complete with coloured pigmentation additives and hardener to:**				
D	50mm average waterproofed lightweight screed laid to falls and crossfalls to roof slabs -upper roof including gutter bases	SM	599		
	Prepare and apply to vertical/horizontal surfaces 4mm thick APP/EPDM water proofing or other equal and approved membrane with surface finish weighing 4kg/sm; laid on primer with torch-on process ;by an approved specialist all in accordance with the manufacturers instructions including provision of a written ten (10) year anti leak quarantee.				
E	4mm thick APP membrane applied to roof slabs	SM	599		
F	Ditto to skirting 200mm high	LM	220		
G	Dress membrane around 100mm rainwater outlet	No.	12		
	The Following Flat roof concrete tiles fixed with approved adhesive, laid and jointed with waterproofing bituminous compound				
H	20mm thick interlocking Concrete tiles of size 225 x 225mm	SM	599		
	ELEMENT NO. 6 **Carried to** **EXTERNAL FINISHES** **Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (TYPE B G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 7 - INTERNAL FINISHES				
	Internal Wall Finishes				
	Cement and sand (1:3) backings				
A	12mm thick to receive Wall tiles	SM	2,647.00		
B	To receive porcelain wall tiles (m.s.) (Lift Lobby)	SM	141.00		
	Ceramic wall tiles				
	Allow a Prime Cost supply rate of Ksh. 1000 per SM				
C	Supply and Fix 200x200x6mm thick ceramic wall tiles, as manufactured by Saj Ceramics or equal and approved on prepared backings(m.s) with proprietary adhesive; jointed and pointed in matching coloured proprietary grouting: including pvc spacers and expansion joint as necessary: all to Architect's approval. - Wall Surfaces	SM	2647		
	Porcelain wall tiles *Allow a Prime Cost supply rate of Ksh. 1500 per SM*				
D	Supply and Fix porcelain wall tiles as manufactured by Saj Ceramics or equal and approved on prepared backings(m.s) with proprietary adhesive; jointed and pointed in matching coloured proprietary grouting: including pvc spacers and expansion joint as necessary: all to Architect's approval. - Wall Surfaces	SM	141.00		
	12mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
E	Concrete/masonry surfaces	SM	12855		
	Painting and Decoration				
	Allow for skimming coat, Prepare and apply three coats interior quality eggshell paint as "Crown Paints" or other equal and approved paint to:-				
F	Plastered concrete/masonry surfaces internally	SM	12855		
	Carried to Collection				

Item	Description	Unit	QTY	Rate	Amount
	Floor Finishes				
	Cement and sand (1:3) screeds, backings, beds etc				
A	32mm bed finished to receive Floor Tiles (m.s)	SM	5015		
	Ceramic Floor tiles				
	Allow a Prime Cost supply rate of Ksh. 700 per SM				
B	Supply and Fix 300 x 300x 10mm thick Ceramic tiles, as manufactured by Saj Ceramics, or equal and approved; on prepared bed(m.s) with proprietary adhesive; jointed and pointed in matching coloured proprietary grouting: including pvc spacers and expansion joint as necessary: all to Architect's approval.	SM	4072		
C	Ditto Non Slip Ceramic Tiles	SM	943		
D	Ditto 100mm wide Wall Skirtings	LM	7535		
	Staircase floor finishes				
	Cement and sand (1:3) backings etc				
E	32mm bed finished to receive ceramic tiles to surfaces of Landings (m.s)	SM	101		
F	25 x 300 mm wide treads to receive ceramic tiles (m.s)	LM	437		
G	20 x 150mm risers to receive ceramic tiles (m.s)	LM	460		
	Staircase floor finishes				
H	Non Slip Ceramic Tiles to surfaces of Landings	SM	101		
I	Non Slip Ceramic Tiles to 300 mm wide treads	LM	437		
J	Non Slip Ceramic Tiles to 150mm risers	LM	460		
	Staircase soffit finishes				
	12mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
K	Soffits of staircase landing	SM	101		
L	Ditto to sloping soffites exceeding 15˚ from horizontal	SM	154		
M	Staircase string 300mm extreme girth and cut to profile of steps	LM	268		
	Paint works				
N	Soffits of staircase landing	SM	101		
O	Ditto to sloping soffites exceeding 15˚ from horizontal	SM	154		
P	Staircase string 300mm extreme girth and cut to profile of steps	LM	268		
	Carried to Collection				

Item	Description	Unit	QTY	Rate	Amount
	Ceiling finishes				
	12mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
A	Soffits of Concrete surfaces	SM	5999		
	Painting and Decoration				
	Allow for skimming coat, Prepare and apply three coats interior quality eggshell paint as "Crown Paints" or other equal and approved paint to:-				
B	Plastered ceilings	SM	5999		
	Carried to Collection				

Item	Description	Unit	QTY	Rate	Amount
	COLLECTION				
	Total brought forward from page no:				
	Total brought forward from page no:				
	Total brought forward from page no:				
	ELEMENT NO. 7 **Carried to** **INTERNAL FINISHES**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (TYPE B G+9) **BILL NO.1-BUILDERS WORKS** **ELEMENT NO 8- BALUSTRADING AND RAILING** *Balustrades and staircase railings*				
A	1200mm high mild Steel balustrade; comprising 60 x 10mm mild Steel balusters at 900mm centres; bolted to base plate and tread (m.s), with 7No. 25mm diameter horinzontal bars, and 75x4mm diameter CHS mild Steel handrail part welded into 60x10mm balustrades; to Architects drawings	LM	82		
B	50mm diameter x 3mm CHS handrail supported by 50 x 50 x 3mm thick SHS balusters anchored to slab with and including w/steel bolts and plates at 1800mm centres smooth welded 100mm high (Staircase)	LM	92		
	Prepare, prime and apply one undercoat and two finishing coats first quality gloss oil paint on				
C	General metal surfaces of balustrading (both sides measured overall)	SM	117		
	ELEMENT NO. 8 BALUSTRADE AND RAILING **Carried to the Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (TYPE B G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 9 - JOINERY FITTINGS				
	Allow for providing materials, labour and construct fixtures and fittings as per Architects drawings of the following JOINERY FITTINGS AND FIXTURES complete with associated iron mongery;				
	NOTE: All blockboard, MDF boards,etc in joinery works shall be lipped with hardwood lipping all round before fixing.				
	High level cupboards				
	300mm Wide high level kitchen cupboards in 18mm laminated mdf sides & shelves complete with doors, top, bottom & divisions with and including all necessary ironmongery; to Architect's details				
A	High level storage cupboard units 2000mm long x 600mm high x 300mm deep	LM	140		
B	Ditto 1400mm long x 600mm high x 300mm deep	LM	14		
	Low level kitchen cupboards				
	Low level kitchen worktops with 600x600x8mm porcelain tiles top on and including 20mm thick blockboard: 100mm plastered mass concrete plinths in concrete class 15MPa: 18mm laminated mdf sides & shelves complete with doors, shelves, drawers, cutting tiles for kitchen sink (m.s) & all necessary ironmongery; to Architect's details and approval				
C	Low level kitchen cupboards below concrete worktop total girth grouped together 2400mm long x 850mm high x 550mm deep	LM	168		
D	Ditto 1850mm long x 850mm high x 550mm deep	LM	19		
	Bedroom Wardrobes				
	600mm Wide x 2200mm high wardrobes in 18mm laminated mdf sides, divisions, drawers, shelves ; ; complete with sliding/ side hung doors, shelves, divisions, shoe racks, hanging rails, drawers, & all necessary ironmongery; 100mm plastered mass concrete plinths in concrete class 15MPa ; to Architect's details				
E	Bedroom wardrobes size 1500mm wide x 2200mm high x 600mm deep in bedrooms	LM	240		
F	Ditto size 1200mm wide x 2200mm high x 600mm deep in bedrooms	LM	48		
	Duct doors				
	50mm thick laminated MDF duct doors; complete with frames, ironmongery and all necessary paintwork to:				
G	Duct doors size 650mm wide x 2200mm high	NO.	44		
H	Duct doors size 400mm wide x 2200mm high	NO.	88		
	ELEMENT NO. 9 JOINERY & FITTINGS **Carried to the Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (TYPE B G+9)				
	ELEMENT NO 10 - BUILDERS WORKS IN CONNECTION WITH SERVICES (BWICWS)				
	Plumbing, Drainage and Mechanical Installations				
A	Inspect all drawings and Bills of Quantities for Plumbing, Drainage and Mechanical Installations and allow for all Builder's work associated with the installations; including cutting away and making good after installing a concealed drainage system; including cutting or leaving all holes notches, mortices, sinkings and chases in both the structure and its coverings; including but not limited to forming recess in masonry	Item			
	Electrical Services Installations				
B	Inspect all drawings and Bills of Quantities for Electrical Installations and allow for all Builder's work associated with the Electrical installations, including cutting away for and making good after Electrician installing a concealed conduit system including cutting or leaving all holes notches, mortices, sinkings and chases in both the structure and its coverings; including but not limited to forming recess in masonry	Item			
	ELEMENT NO. 10 Carried to the BUILDERS WORKS IN CONNECTION WITH SERVICES (BWICWS) Main summary				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
1.0	**Internal Plumbing Installations**				
	Supply, deliver install, Test and Commission:				
	PP-R (Polypropylene Random Co-polymer) pipes **PN 20** and fittings to DIN 8078 and DIN 16962 with polyfusion welded joints to DVS 2207 of approved manufacturer. Rates must allow for all Metal/plastic threaded adaptors where required for the connection of sanitary fixtures, valves, sockets, sliding and fixed joints etc. as required in the running lengths of pipework. The pipes shall run in floors and wall chase. The pipes will be pressure tested before the plastering of wall commences and as per the manufacturers recommended testing pressures.				
(i)	3 BR AHP				
	Pipe Works				
A	32mm Ø PPR Pipe	2	LM		
B	Ditto 25mm Ø	20	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	32mm Ø Elbows/ Bends	2	No.		
D	Ditto 25mm Ø	14	No.		
	Equal/Unequal Tees				
E	32 x 32 x 32mm	1	No.		
F	25 x 25 x 25mm	7	No.		
	Reducers				
G	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
J	25 x 20mm male/female threaded adaptor	2	No.		
K	25 x 15mm ditto	4	LM		
L	25 x 15mm male threaded bend	14	LM		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total from Previous Page				
	Isolating valves				
M	25mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
	Shut off Angle Valve				
N	Brass plated 1/2" angle valve	7	No.		
	Check Meter				
O	25mm diameter water check meter	1	No.		
	Testing and Commissioning				
P	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Sub Total for 1 Units				
	TOTAL FOR 1 No. 3BR AHP (Per Floor)	1		x 1	
Total Cost of Plumbing Installation for 3BR AHP per Floor					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
(ii)	3 BR Market				
	Pipe Works				
A	32mm Ø PPR Pipe	2	LM		
B	Ditto 25mm Ø	20	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	32mm Ø Elbows/ Bends	2	No.		
D	Ditto 25mm Ø	14	No.		
	Equal/Unequal Tees				
E	32 x 32 x 32mm	1	No.		
F	25 x 25 x 25mm	7	No.		
	Reducers				
G	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
J	25 x 20mm male/female threaded adaptor	2	No.		
K	25 x 15mm ditto	4	LM		
L	25 x 15mm male threaded bend	14	LM		
	Isolating valves				
M	25mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
	Shut off Angle Valve				
N	Brass plated 1/2" angle valve	7	No.		
	Check Meter				
O	25mm diameter water check meter	1	No.		
	Testing and Commissioning				
P	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Sub Total for 1 Units				
	TOTAL FOR 3 No. 3BR Market (Per Floor)	3		x 3	
Total Cost of Plumbing Installation for 3BR Market per Floor					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
(iii)	2 BR AHP				
	Pipe Works				
A	32mm Ø PPR Pipe	2	LM		
B	Ditto 25mm Ø	15	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	32mm Ø Elbows/ Bends	2	No.		
D	Ditto 25mm Ø	8	No.		
	Equal/Unequal Tees				
E	32 x 32 x 32mm	1	No.		
F	25 x 25 x 25mm	4	No.		
	Reducers				
G	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
J	25 x 20mm male/female threaded adaptor	2	No.		
K	25 x 15mm ditto	4	LM		
L	25 x 15mm male threaded bend	8	LM		
	Isolating valves				
M	25mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
	Shut off Angle Valve				
N	Brass plated 1/2" angle valve	4	No.		
	Check Meter				
O	25mm diameter water check meter	1	No.		
	Testing and Commissioning				
P	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Sub Total for 1 Units				
	TOTAL FOR 1 No. 2BR AHP (Per Floor)	1		x 1	
Total Cost of Plumbing Installation for 2BR AHP per Floor					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
(iv)	2 BR Market				
	Pipe Works				
A	32mm Ø PPR Pipe	2	LM		
B	Ditto 25mm Ø	20	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	32mm Ø Elbows/ Bends	2	No.		
D	Ditto 25mm Ø	14	No.		
	Equal/Unequal Tees				
E	32 x 32 x 32mm	1	No.		
F	25 x 25 x 25mm	7	No.		
	Reducers				
G	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
J	25 x 20mm male/female threaded adaptor	2	No.		
K	25 x 15mm ditto	4	LM		
L	25 x 15mm male threaded bend	14	LM		
	Isolating valves				
M	25mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
	Shut off Angle Valve				
N	Brass plated 1/2" angle valve	7	No.		
	Check Meter				
O	25mm diameter water check meter	1	No.		
	Testing and Commissioning				
P	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Sub Total for 1 Units				
	TOTAL FOR 3 No. 3BR Market (Per Floor)	3		x 3	
Total Cost of Plumbing Installation for 3BR Market per Floor					

ITEM	DESCRIPTION	AMOUNT (KES)
	Typical Floor Collection Page	
1	Total Cost For Plumbing Installation for 3BR AHP	
2	Total Cost For Plumbing Installation for 3Room Social	
3	Total Cost For Plumbing Installation for 2BR AHP	
4	Total Cost For Plumbing Installation for 2Room Social	
	Total Plumbing Cost Per Floor	
	Total Plumbing Cost for G + 9 Levels (x 10 Floors)	
	Total for All Floor Carried forward to Plumbing Collection Page	

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
2	**Risers and Roof Levels**				
	Pipe Works				
A	75mm Ø PPR pipe	50	LM		
B	Ditto 63mm Ø	50	LM		
B	Ditto 50mm Ø	50	LM		
C	Ditto 40mm Ø	40	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
D	75mm Ø Elbows/ Bends	12	No.		
E	Ditto 63mm Ø	25	No.		
F	Ditto 50mm Ø	8	No.		
G	Ditto 40mm Ø	16	No.		
H	Ditto 32mm Ø	16	No.		
I	Ditto 25mm Ø	8	No.		
	Equal/Unequal Tees				
J	63 x 63 x 63mm	10	No.		
K	40 x 40 x 40mm	8	No.		
L	40 x 40 x 32mm	16	No.		
M	32 x 32 x 32mm	4	No.		
N	32 x 32 x 25mm	4	No.		
O	25 x 25 x 25mm	12	No.		
	Reducers				
P	63 x 50mm reducer	6	No.		
Q	50 x 40mm reducer	6	No.		
R	40 x 32mm reducer	6	No.		
S	40 x 32mm reducer	6	No.		
T	32 x 25mm reducer	8	No.		
	Male/Female brass threaded adaptor				
U	40 x 32mm male/female threaded adaptor	5	No.		
V	32 x 25mm male/female threaded adaptor	7	No.		
	Total Carried to the Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total from Previous Page				
	Isolating valves				
W	65mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
X	40mm Ø Ditto	1	No.		
	Testing and Commissioning				
Y	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Sub Total for 1 Riser				
	TOTAL FOR 4 No. Risers	4		x 4	
	Total Cost of Riser & Roof Level Plumbing				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
3	**SANITARY FITTINGS AND ACCESSORIES**				
A	**Water Closet (WC) Pan** Close Coupled dual flush Floor Standing Close Coupled WC Bowl complete with seat cover and cistern, WC connector relevant fittings & accessories ***(Quote Install Only)***	15	No.		
B	**Wash Basin** WHB basin Full pedestal Wash Basin 450x485x230m White Complte with bottle traps, flexible connection hoses and other accessories with cws only tap ***(Quote Install Only)***	15	No.		
C	**Shower Fittings** Shower fitting c/w 15mm diameter chrome plated stop cork, Instant shower fitting and 1/2" Cobra 211- 15 Star Pillar tap or equal and equivalent ***(Quote Install Only)***	15	No.		
D	**Bathroom Accessories** Medium Washroom bathroom set Consisitng of Toilet roll holder, soap dish holder, brush holder and Coat Hooke ***(Quote Install Only)***	15	No.		
E	**Kitchen Sink** Stainless steel kitchen sink single drain, single bowl complete overflow and 40mm diameter plastic tubular p-trap PVC Bottle Trap and waste 1.5in x 40, Long Neck Wall type Bib Tap ***(Quote Install Only)***	15	Set		
	Sub Total for 1 Floor				
	TOTAL FOR 10 Floors	10		x 10	
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	FIRE PROTECTION				
	Hose Reel and Associated Pipework				
A	Supply and Install automatic 30 meters long, 25 mm diameter hosereel and nozzle	5	No.		
	Associated Pipework				
	Galvanised Mild Steel Class 'B' tubing to B.S. 1387 with screwed and socketed joints to BS 21 including all range piping, fittings, hanagers, supports, brackets, and supports				
B	50mm diameter	65	LM		
C	25mm ditto	13	LM		
	Extra Over Piping For Fittings:-				
	Elbows/Various Bends				
D	50mm bend/elbow	7	No.		
E	25mm ditto	20	No.		
	Equal/Unequal tees				
F	50 x 50 x 50mm tee	10	No.		
G	50 x 50 x 25mm ditto	19	No.		
	Reducers				
H	50 x 25mm reducer	10	No.		
	Unions				
I	50mm diameter union	2	No.		
J	25mm ditto	20	No.		
	Valves				
K	25mm diameter quarter Turn hose reel isolation valve to be as PEGLER or approved equivalent.	5	No.		
	Painting				
L	Allow for Wire brushing , cleaning and painting of the complete fire fighting pipework installation with one coat of red oxide primer, undercoat, and gloss coat to specifications	1	Item		
Total Cost Carried For hose reel and associated pipework Installations					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Portable Fire Protection Equipment				
	Supply, deliver, install, test and commission portable fire protection equipment with initial fill complete with all the necessary mounting accessories.				
A	9 litres, carbon dioxide gas extinguisher	10	No.		
B	4.5kg ABC dry powder extinguisher	10	No.		
C	Supply and fix signs indicating the words "FIRE POINT" in 80mm high letters	10	No.		
	Testing and Commissioning				
D	Allow for testing and commissioning of the fire pump installation to the satisfaction of the Engineer.	1	Item		
	Total Cost For Portable fire Extinguishers				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Foul Drainage (Ground Floor) Supply, deliver and install the following in key "Terrain" or equal and approved uPVC Heavy gauge soil and waste system. Allow for all the various sizes of adaptor, connectors, sockets, holderbats, clips etc not measured but required for the satisfactory functioning of the system.				
	Piping				
A	32mm diameter heavy duty grey uPVC pipe	24	LM		
B	40mm ditto	36	LM		
C	50mm ditto	72	LM		
D	75mm ditto	90	LM		
E	100mm ditto	90	LM		
F	100mm diameter heavy duty pipe	120	LM		
G	150mm diameter heavy duty pipe	300	LM		
	Extra over uPVC Pipeworks				
H	32mm sweep bend	13	No.		
I	40mm sweep bend	60	No.		
J	50mm sweep bend	13	No.		
K	75mm sweep bend	6	No.		
L	100mm sweep bend	15	No.		
M	150mm sweep bend	6	No.		
N	40mm 45° bend	20	No.		
O	50mm Ditto	15	No.		
P	75mm Ditto	65	No.		
Q	150mm Ditto	60	No.		
R	40mm sweep tee	20	No.		
S	50mm sweep tee	18	No.		
T	75mm ditto	15	No.		
U	40 x 32mm reducer	60	No.		
V	75 x 40mm ditto	20	No.		
W	150 x 40mm reducer	6	No.		
X	40mm access plug	20	No.		
Y	50mm access plug	13	No.		
Z	75mm access plug	13	No.		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total From Previous Page				
AA	100 x 50mm floor trap set complete with polycarbonate flush grating	25	No.		
BB	100mm WC bend connector	13	No.		
CC	32mm bottle 'p' trap	15	No.		
DD	40mm bottle 'p' trap	13	No.		
EE	150MM vent cowl	15	No.		
	Gulley Trap				
FF	Gully trap comprising of 100mm diameter golden brown uPVC gully piece, 100mm diameter uPVC trap spigot outlet with screws and washers, and 300 x 300mm masonry gully trap chamber with mild steel plate and a heavy	25	No.		
	Manholes				
GG	Construct manhole/ inspection chamber size 450 x 600 x 750mm deep internally in 200mm stone walls, 150mm concrete bed, water proof plaster, forming drain channels, medium duty cover frame in cast iron with recessed cover with concrete infill and all necessary formwork, excavation and soil disposal.	32	No.		
	Excavations				
HH	Excavate trench for pipe not exceeding 100mm diameter and not exceeding 1.5m deep (average 600mm deep) and make good as before.	120	LM		
II	Allow for hydrostatic pressure testing of drainage installation including provision of pipe plugs and other required fittings.	1	Item		
	Total Cost For Ground Floor Foul Drainage Installation				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Foul Drainage (1St Floor to 10th Floor)				
	Supply and fix uPVC soil system to BS 4660 and BS 4515 and mU PVC waste systems to BS 5255 with screwed and socketed joints to BS 21. solvent welded joints shall be as per the system's manufacturer's written instruction. Tenderer must allow in their pipework prices for all the couplings, connectors, joints etc as required in the running lengths of the pipework and also where necessary for fixing clips, holder bats plugged and screwed.				
	Piping				
A	32mm diameter heavy duty grey uPVC pipe	18	LM		
B	40mm ditto	60	LM		
C	50mm ditto	36	LM		
D	100mm ditto	30	LM		
E	150mm ditto	120	LM		
	Extra over uPVC Pipings				
F	32mm sweep bend	13	No.		
G	40mm sweep bend	80	No.		
H	50mm sweep bend	13	No.		
I	40mm 450sweep bend	24	No.		
J	50mm 450sweep bend	13	No.		
K	50mm y-connector	6	No.		
L	50mm sweep tee	2	No.		
M	40mm sweep tee	30	No.		
N	40 x 32mm reducer	13	No.		
O	150 x 40mm reducer	6	No.		
P	150 x 50mm reducer	6	No.		
Q	150 x 100mm reducer	20	No.		
R	40mm access plug	23	No.		
S	100mm access plug	13	No.		
T	100mm single branch	1	No.		
U	150mm single branch	15	No.		
V	100mm WC bend/ horizontal connector	13	No.		
W	32mm bottle 'p' trap	15	No.		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total From Previous Page				
X	40mm bottle 'p' trap	13	No.		
Y	100 x 50mm floor trap set complete with polycarbonate flush grating	15	No.		
Z	Allow for hydrostatic pressure testing of drainage installation including provision of pipe plugs and other required fittings.	1	Item		
	Sub Total for 1 Floor				
	TOTAL FOR 9 Floors	9		x 9	
	Total Cost For 1st to 10th floor Foul Drainage Installation				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Rain Water Drainage				
	Supply, deliver and install UPVC rainwater pipes and PPR pipework. Allow for all flanges, couplings, nipples, connector joints, fixing clips holder bats etc as required in running length of pipework but not measured.				
	Piping				
A	100mm ditto	400	LM		
	Extra over piping for fittings:-				
B	100mm ditto	16	No.		
C	100mm sweep bend	2	No.		
D	100mm single branch	13	No.		
E	100mm double branch	7	No.		
F	100mm flat roof rain water outlets	10	No.		
	Testing and Commissioning				
G	Allow for testing and commissioning of the rain water drainage installation to the satisfaction of the engineer.	1	Item		
	Total Cost For Rain Water Drainage Installation				

ITEM	DESCRIPTION	AMOUNT (KES)
	SUMMARY PAGE	
1.0	**Total Cost for Internal Plumbing**	
2.0	**Total Cost for Roof + Riser**	
3.0	**Total Cost for Sanitary Fittings**	
4.0	**Total Cost Carried For hose reel and associated pipework Installations**	
6.0	**Total Cost For Portable fire Extinguishers**	
6.0	**Total Cost For Ground Floor Foul Drainage Installation**	
7.0	**Total Cost For 1st to 10th floor Foul Drainage Installation**	
8.0	**Total Cost For Rain Water Drainage Installation**	
	Total carried to Mechanical Works Main Summary Page	

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	BILL NO. 2				
	PROPOSED TYPICAL AFFORDABLE & MARKET UNITS BLOCK TYPE B				
(i)	**GROUND FLOOR**				
A.	**2 BEDROOM AHP UNITS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
2.01	i) Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	3		
	ii) Ditto as in item No. 2.01 but for two way switching	No.	6		
2.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	3		
	ii) 10A one gang two way switch	No.	6		
	iii) 10A two gang two way switch	No.	2		
2.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	6		
	b) Spherical screwneck luminaire with opal glass and 16W compact lamp as Astra, Micromark, Thorn or approved equivalent. "**Type BF"**	No.	2		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
2.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	8		
2.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or approved equivalent.	No.	8		
2.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories,but excluding the 40A DP connection unit	No.	1		
2.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	1		
2.08	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories, but excluding the 45A Cooker connection unit	No.	1		
2.09	45A Moulded plate Cooker Control Unit complete with 13A fused Socket outlet as MK/Crabtree or approved equivalent.	No.	1		
2.10	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
2.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
2.12	240V/12V Ding dong domestic door bell as Oxford or approved equivalent	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
2.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the Data socket outlet.	No.	1		
2.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the DTV socket outlet.	No.	1		
2.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
2.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	Lm.	20		
	Total Carried Forward to Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
2.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator, but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
2.18	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	2		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	2		
2.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the LV switchboard below the staircase.	LM	20		
	Total Carried Forward to Ground Floor Collection Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
B.	**3 BEDROOM AHP UNITS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
2.01	i) Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	4		
	ii) Ditto as in item No. 2.01 but for two way switching	No.	8		
2.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	5		
	ii) 10A one gang two way switch	No.	8		
	iii) 10A two gang two way switch	No.	2		
2.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	9		
	b) Spherical screwneck luminaire with opal glass and 16W compact lamp as Astra, Micromark, Thorn or approved equivalent. "**Type BF"**	No.	2		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
2.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	11		
2.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	11		
2.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories, but excluding the 40A DP connection unit	No.	2		
2.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	2		
2.08	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories, but excluding the 45A DP connection unit	No.	1		
2.09	45A Moulded plate Cooker Control Unit complete with 13A fused socket outlet as MK/Crabtree or approved equivalent.	No.	1		
2.10	45A Moulded plate Cooker Control Unit complete with 13A fused Socket outlet as MK/Crabtree or approved equivalent.	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
2.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
2.12	240V/12V Ding dong domestic door bell as Oxfrod or approved equivalent	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
2.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the telephone socket outlet.	No.	1		
2.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the DTV socket outlet.	No.	1		
2.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
2.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	Lm.	20		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
2.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator ,but excluding the MCBs, and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
2.18	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	3		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	1		
2.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the Lv switchboard below the staircase.	LM	45		
	Total Carried Forward to Ground Floor Collection Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
C.	**2 BEDROOM MARKET UNITS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
2.01	i) Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	5		
	ii) Ditto as in item No. 2.01 but for two way switching	No.	5		
2.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	4		
	ii) 10A two gang one way switch	No.	1		
	iii) 10A one gang two way switch	No.	6		
	iv) 10A two gang two way switch	No.	2		
2.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	7		
	b) Spherical screwneck luminaire with opal glass and 16W compact lamp as Astra, Micromark, Thorn or approved equivalent. "**Type BF"**	No.	2		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
2.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	9		
2.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	9		
2.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 40A DP connection unit	No.	2		
2.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	2		
2.08	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 45A DP connection unit	No.	1		
2.09	45A Moulded plate Cooker Control Unit complete with 13A fused Socket outlet as MK/Crabtree or approved equivalent.	No.	1		
2.10	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
2.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
2.12	240V/12V Ding dong domestic door bell	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
2.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking plate but excluding the telephone socket outlet.	No.	1		
2.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories but excluding the DTV socket outlet.	No.	1		
2.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
2.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	Lm.	40		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
2.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
2.18	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	3		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	1		
2.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the LV switchboard below the staircase.	LM	40		
	Total Carried Forward to Ground Floor Collection Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
D.	**3 BEDROOM MARKET UNITS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
2.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	5		
	ii) Ditto as in item No. 2.01 but for two way switching	No.	7		
2.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	5		
	ii) 10A one gang two way switch	No.	6		
	iii) 10A two gang two way switch	No.	4		
2.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	8		
	b) Spherical screwneck luminaire with opal glass and 16W compact fluorescent lamp as Astra, Micromark, Thorn or approved equivalent. "**Type BF"**	No.	3		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
2.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	12		
2.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	12		
2.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories, but excluding the 40A DP connection unit	No.	2		
2.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	2		
2.08	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 45A DP connection unit	No.	1		
2.09	45A Moulded plate Cooker Control Unit complete with 13A fused socket outlet as MK/Crabtree or approved equivalent.	No.	1		
2.10	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
2.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
2.12	240V/12V Ding dong domestic door bell as Oxford or approved equivalent	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
2.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking plate but excluding the data socket outlet.	No.	1		
2.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories but excluding the DTV socket outlet.	No.	1		
2.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
2.16	32mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	Lm.	40		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
2.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator, but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
2.18	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	3		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	1		
2.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the LVswitchboard below the staircase.	LM	40		
	Total Carried Forward to Ground Floor Collection Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
E.	**CORRIDOR/ LIFTS LOBBY AREA**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
2.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for two way switching, but excluding the switch and luminaire.	No.	32		
2.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang two way switch	No.	4		
	ii) 10A two gang two way switch	No.	4		
2.03	**LIGHTING FITTINGS**				
	a) Circular shaped surface mounted led luminaire as Phillips Coreline Cat No. WL131V LED12S/840 PSED EL3 WH **"Type N"**	No.	15		
	b) Emergency Maintained Circular shaped surface mounted led luminaire as Phillips Coreline Cat No. WL131V LED12S/840 PSED EL3 WH **"Type Ne"**	No.	3		
	c) 8W bulkbead luminaire ,polycarbonate base, and clear diffuser and installed inside the lift shaft As Thorn EWB/ETB bulkhead. "**Type G"**	No.	2		
	d) Bulkhead fitting with moulded glass diffuser & Die Cast Aluminium base c/w 16W PL Lamp as Massive Sunderland Cat. No. 71410/01/31 for security lights. **"Type B"**	No.	14		
	Total Carried Forward to Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
2.04	CCTV points in designtaed locations for survailance, comprising of 25mm diameter HG PVC conduits complete with draw wire and the blanking plate. Allow for draw boxes where all the conduits from each security point converge.	No.	6		
2.05	300x 300x 100mm deep 16 G galvanized adaptable box.	No.	2		
	LIGHTING CONTROL				
2.06	Presence sensor complete with assocaited wiring (light and motion sensor) as Osram Duo with the following characteristics: Operation voltage 220 - 240V 50Hz, detection area-12m dia minimum, settable light value, switch-off delay (if no motion detected), installation height - 5m minimum	No.	3		
2.07	24A, 240V, 2P DB/CU mounted silent operation contactor for Switching External lights complete with all accessories and as CRABTREE CIK24 or an approved equivalent	No.	2		
2.08	Photocell control unit and wired to energize the contactors complete with a D.P override switch as THORN QPK or approved equivalent	No.	2		
2.09	Water booster power points completely wired in 5 x 6mm^2 single core PVC insulated copper cables drawn in 38mm diameter heavy gauge PVC conduits including all accessories ,but excluding the the 40A TPN isolator	No.	1		
	Total Carried Forward to Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
2.10	40A TPN isolator as MK or approved equivalent	No.	1		
2.11	Lifts isolators power points completely wired in 5 x 6mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories ,but excluding the the 63A TPN isolator	No.	2		
2.12	63A TPN isolator as MK or approved equivalent	No.	2		
2.13	8 ways 100A TPN distribution boards 'T' complete with 100A TPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
2.14	4 ways 100A SPN Consumer Unit `C' complete with 100A SPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent for common services.	No.	5		
2.15	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	6		
	ii) 32 A SP MCB	No.	4		
	iii) 40 A SP MCB	No.	5		
	iv) 32 A TP MCB	No.	3		
	v) Blanking plates	No.	8		
2.16	Sub-mains circuits for DB 'T' above comprising of 4 core 25mm^2 PVC/SWA/PVC cable drawn in cable tray/ 50mm diameter heavy gauge conduits and running from the Lv switchboard	LM	30		
	Total Carried Forward to Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
2.17	Sub-mains circuits for CU 'C ' above comprising of 3 x 10mm2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from common distribution board.	LM	60		
2.18	200mm x 50mm galvanised metallic cable tray (Telecom, DTV, Internet Cables) gauge 14 (riser duct) c/w all mounting accessories bends, rawl bolts, threaded bolts, brackets,	LM.	40		
2.19	300mm x 50mm galvanised metallic cable tray (Power Cables) gauge 14 (riser duct) c/w all mounting accessories bends, rawl bolts, threaded bolts, brackets,	LM.	40		
	Total Carried Forward to Ground Floor Collection Page				

ITEM	DESCRIPTION	QTY	RATE (KSH)	AMOUNT (KSH)
	GROUND FLOOR SUMMARY			
1	Total Amount for 2 Bedroom AHP Unit	1		
2	Total Amount for 3 Bedroom AHP Unit	1		
3	Total Amount for 2 Bedroom Market Unit	3		
4	Total Amount for 3 Bedroom Market Unit	3		
5	Total Amount for Ground Floor Lobby	1		
	Total Carried Forwad to Main Summary Page			

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE KShs	AMOUNT KShs
	BILL NO. 2				
(ii)	**TYPICAL 1ST - 9TH FLOOR**				
A.	**2 BEDROOM AHP UNITS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
2.01	i) Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	3		
	ii) Ditto as in item No. 2.01 but for two way switching	No.	6		
2.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	3		
	ii) 10A one gang two way switch	No.	6		
	iii) 10A two gang two way switch	No.	2		
2.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	6		
	b) Spherical screwneck luminaire with opal glass and 16W compact lamp as Astra, Micromark, Thornor equal & approved equivalent. "Type BF"	No.	2		
	Total Carried Forward to Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
2.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	8		
2.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	8		
2.06	Instant shower water heater power points completely wired in 3 x 4mm2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 40A DP connection unit	No.	1		
2.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	1		
2.08	Cooker outlet power points completely wired in 3 x 6.0mm2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 45A DP connection unit	No.	1		
2.09	45A Moulded plate Cooker Control Unit complete with 13A fused socket outlet as MK/Crabtree or approved equivalent.	No.	1		
2.10	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	1		
	Total Carried Forward to Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
2.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
2.12	240V/12V Ding dong domestic door bell	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
2.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking plate but excluding the data socket outlet.	No.	1		
2.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories but excluding the DTV socket outlet.	No.	1		
2.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
2.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	Lm.	20		
	Total Carried Forward to Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
2.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
2.18	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	2		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	2		
2.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the Lv switchboard below the staircase.	LM	40		
	Total Carried Forward to First Floor Collection Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
B.	**3 BEDROOM AHP UNITS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
2.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	4		
	ii) Ditto as in item No. 2.01 but for two way switching	No.	8		
2.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	5		
	ii) 10A one gang two way switch	No.	8		
	iii) 10A two gang two way switch	No.	2		
2.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	9		
	b) Spherical screwneck luminaire with opal glass and 16W compact fluorescent lamp as Astra, Micromark, Thornor equal & approved equivalent. "Type BF"	No.	2		
	Total Carried Forward to Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
2.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	11		
2.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	11		
2.06	Instant shower water heater power points completely wired in 3 x 4mm2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 40A DP connection unit	No.	2		
2.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	2		
2.08	Cooker outlet power points completely wired in 3 x 6.0mm2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 45A DP connection unit	No.	1		
2.09	45A Moulded plate Cooker Control Unit complete with 13A fused socket outlet as MK/Crabtree or approved equivalent.	No.	1		
2.10	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	1		
	Total Carried Forward to Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
2.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
2.12	240V/12V Ding dong domestic door bell as Oxford or approved equivalent	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
2.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking plate but excluding the data socket outlet.	No.	1		
2.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories but excluding the DTV socket outlet.	No.	1		
2.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
2.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	Lm.	20		
	Total Carried Forward to Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
2.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
2.18	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	3		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	1		
2.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the Lv switchboard below the staircase.	LM	65		
	Total Carried Forward to First Floor Collection Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
C.	**2 BEDROOM MARKET UNITS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
2.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	5		
	ii) Ditto as in item No. 2.01 but for two way switching	No.	5		
2.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	4		
	ii) 10A two gang one way switch	No.	1		
	iii) 10A one gang two way switch	No.	6		
	iv) 10A two gang two way switch	No.	2		
2.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	7		
	b) Spherical screwneck luminaire with opal glass and 16W compact lamp as Astra, Micromark, Thornor equal & approved equivalent. "Type BF"	No.	2		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
2.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	9		
2.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	9		
2.06	Instant shower water heater power points completely wired in 3 x 4mm2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 40A DP connection unit	No.	2		
2.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	2		
2.08	Cooker outlet power points completely wired in 3 x 6.0mm2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 45A DP connection unit	No.	1		
2.09	45A Moulded plate Cooker Control Unit complete with 13A fused socket outlet as MK/Crabtree or approved equivalent.	No.	1		
2.10	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	1		
	Total Carried Forward to Next Page				0.00

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
2.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
2.12	240V/12V Ding dong domestic door bell as Oxford or approved equivalent	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
2.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking plate but excluding the data socket outlet.	No.	1		
2.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories but excluding the DTV socket outlet.	No.	1		
2.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
2.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	Lm.	40		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
2.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
2.18	**MCBs for item above as Schneider Electric Acti 9 or approved equivalent**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	3		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	1		
2.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the Lv switchboard below the staircase.	LM	60		
	Total Carried Forward to First Floor Collection Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
D.	**3 BEDROOM MARKET UNITS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
2.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	5		
	ii) Ditto as in item No. 2.01 but for two way switching	No.	7		
2.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	5		
	ii) 10A one gang two way switch	No.	6		
	iii) 10A two gang two way switch	No.	4		
2.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	8		
	b) Spherical screwneck luminaire with opal glass and 16W compact fluorescent lamp as Astra, Micromark, Thornor equal & approved equivalent. "Type BF"	No.	3		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
2.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	12		
2.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	12		
2.06	Instant shower water heater power points completely wired in 3 x 4mm2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 40A DP connection unit	No.	2		
2.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	2		
2.08	Cooker outlet power points completely wired in 3 x 6.0mm2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 45A DP connection unit	No.	1		
2.09	45A Moulded plate Cooker Control Unit complete with 13A fused socket outlet as MK/Crabtree or approved equivalent.	No.	1		
2.10	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	1		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
2.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
2.12	240V/12V Ding dong domestic door bell as Oxford or approved equivalent	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
2.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking plate but excluding the data socket outlet.	No.	1		
2.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories but excluding the DTV socket outlet.	No.	1		
2.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
2.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	Lm.	40		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
2.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
2.18	**MCBs for item above as Schneider Electric Acti 9 or approved equivalent**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	3		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	1		
2.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the Lv switchboard below the staircase.	LM	60		
	Total Carried Forward to First Floor Collection Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
E.	**CORRIDOR/ LIFTS LOBBY AREA**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
2.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for two way switching, but excluding the switch and luminaire.	No.	18		
2.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang two way switch	No.	4		
	ii) 10A two gang two way switch	No.	4		
2.03	**LIGHTING FITTINGS**				
	a) Circular shaped surface mounted led luminaire as Phillips Coreline Cat No. WL131V LED12S/840 PSED EL3 WH **"Type N"**	No.	15		
	b) Emergency Maintained Circular shaped surface mounted led luminaire as Phillips Coreline Cat No. WL131V LED12S/840 PSED EL3 WH **"Type Ne"**	No.	3		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
2.04	CCTV points in designtaed locations for survailance, comprising of 25mm diameter HG PVC conduits complete with draw wire and the blanking plate. Allow for draw boxes where all the conduits from each security point converge.	No.	6		
2.05	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
	LIGHTING CONTROL				
2.06	Presence sensor complete with assocaited wiring (light and motion sensor) as Osram Duo with the following characteristics: Operation voltage 220 - 240V 50Hz, detection area-12m dia minimum, settable light value, switch-off delay (if no motion detected), installation height - 5m minimum	No.	3		
	Total Carried Forward to First Floor Collection Page				

ITEM	DESCRIPTION	QTY	RATE (KSH)	AMOUNT (KSH)
	TYPICAL FLOOR SUMMARY			
1	Total Amount for 2 Bedroom AHP Unit	9		
2	Total Amount for 3 Bedroom AHP Unit	9		
3	Total Amount for 2 Bedroom Market Unit	27		
4	Total Amount for 3 Bedroom Market Unit	27		
5	Total Amount for Lift Lobby Summary	1		
	Total for 9No. Typical Floors Carried Forward to Main Summary Page			

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
(iii)	**EARTHING AND LIGHTNING PROTECTION** SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	Air Termination				
2.01	2000mm x15mmØ multiple point pure copper AirRods/ Termination with spikes as Furse Part No. RA240 or approved equivalent	No.	3		
2.02	Copper Air Rod Base as Furse Part No. SD105-H or approved equivalent	No.	3		
2.03	Copper Junction Clamps for copper tape as Furse Part No. CN105-H or approved equivalent	No.	3		
2.04	25mm x 3mm Tinned Copper Tape as Furse TC230 or approved equivalent	Lm.	130		
	Down Conductor				
2.05	25mm x 3mm Tinned Copper Tape as Furse TC230 or approved equivalent	Lm.	200		
2.06	Screwdown copper test clamp as Furse CT305 or approved equivalent	No.	3		
2.07	38mm Ø HG PVC conduits for drawing the down conductor above.	Lm.	10		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	Earth Termination				
2.08	15mm Ø, 1500mm long solid copper earth rod c/w driving stud, coupling, and spike as Furse RC011 or approved equivalent	No	3		
2.09	Earth rod to tape clamp type A as Furse CR108 or approved equivalent	No.	3		
2.10	Concrete inspection earth pit Cat. No. PT 005 with 5 hole earth bar as Furse Cat. No. PT 006.	No.	2		
2.11	600mm x 600mm copper earth mat made from 25mm x 3mm copper tape at 300mm spacing, buried to permanent moisture level and complete with all clamps and 6m long 25mm x 3mm copper tape clamped to the down conductor, soil conditioning agents (marconite or bentonite) as necessary to achieve earthing resistance value below 10-Ohms	Lot	1		
2.12	Allow for earthing tests for the above and submission of the report to the engineer to BS7671 & BS62305 standards	No.	1		
	Bonding				
2.13	Bonding and clamping to all metal work including water pipes, gas pipes, hand-rails, smatv system, window frames, cladding, metal roof etc. and the main earth for the building.	Item	1		
	Total Carried Forward to Main Summary Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
(iv)	**LV SWITCHBOARD**				
	DELIVER, STORE, INSTALL AND COMMISSION THE FOLLOWING:-				
2.01	Supply and install purpose made Free-standing, fully wired front access metal clad main switchboard cubicle suitable for floor / wall mounting and manufactured in 14SWG galvanised mild steel sheet, to be finished in cream (or appropriate colour) powder coating. Wiring as shown on the schematic (the other details as per Particular Specification), complete with the following:-	No.	2		
(i)	320Amps TP/N copper busbars - KPLC supply (Sealable)				
(ii)	320Amps MCCB as mains incomer adjustable				
(iii)	Space for 1No. 3-phase KPLC Common Services meter (kW, kWH, kVA, V, I etc), 63A TP MCB				
(iv)	40No. 63A DP MCBs for the sub-main cables				
(v)	1No. 100A DP MCBs for the sub-main cables				
(vi)	Space for KPLC cut-outs including studs for mounting KPLC seals				
(vii)	Sealable studs for all cover plate screws and all necessary accessories				
(viii)	6mm perspex viewing window for each section				
(ix)	Heavy duty rubber lining for all the perspex viewing windows				
(x)	4 No. Spare ways				
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
2.02	Earthing for the switch-board under this section comprising 25x3mm copper tape lead, 1800mm long x 15mm diameter copper earth electrode as Furse or approved equivalent complete with driving stud and tape to rod clamp, 300mm x 300mm x 300mm deep concrete inspection earth pit with removable waterproof cover, 600mm x 600mm copper earth mat, soil conditioning agents (marconite and bentonite etc) necessary to achieve earthing value below 5-Ohms and all other necessary accessories	No.	1		
	Total Carried Forward to Main Summary Page				

ITEM	DESCRIPTION	AMOUNT
	BLOCK TYPE B SUMMARY PAGE	
1	Total Amount for Ground Floor B/F Page D-21	
2	Total Amount for Typical 1st - 9th Floor B/F Page D-40	
3	Total Amount for Lightning Protection B/F Page D-42	
4	Total Amount for LV Switchboard B/F Page D-45	
TOTAL AMOUNT FOR BILL No. 2: TYPICAL 1NO. BLOCK TYPE B CARRIED FORWARD TO PRICE COLLECTION PAGE		

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (TYPE B G+9)				
	BILL NO.1-BUILDERS WORKS				
	MAIN SUMMARY		Page No.		
1	**Substructures**		**B/4**		
2	**Reinforced Concrete Frame**		**B/5**		
3	**Walling**		**B/6**		
4	**Windows**		**B/8**		
5	**Doors**		**B/10**		
6	**External Finishes**		**B/11**		
7	**Internal Finishes**		**B/15**		
8	**Balustrade and Railing**		**B/16**		
9	**Joinery and Fittings**		**B/17**		
10	**Builders works in connection with services**		**B/18**		
11	**Mechanical Works**				
12	**Electrical Works**				
	TOTAL FOR 1NO. TYPE B (G+9) BLOCK				
	MULTIPLY BY **13.NO** OF BLOCKS	**X 13**			13
	TOTAL FOR 13NO. TYPE B (G+9) BLOCK(S) CARRIED TO GRAND SUMMARY				

BLOCK TYPE C

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED SOCIAL + AFFORDABLE UNITS BLOCK (TYPE C G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 1 - SUBSTRUCTURES (ALL PROVISIONAL)				
	Site Clearance				
A	Clear site of all grass, hedges, shrubs, bushes grub up roots, load and remove from site and dispose at designated local authority areas.	SM	524		
B	Bulk excavation to reduce levels depth not exceeding 1.5m commencing from existing ground level	CM	786		
C	Ditto but exceeding 1.5 metres but not 3 metres deep	CM	524		
D	Extra over all type of excavation for excavating in soft rock	CM	65		
E	Ditto excavation in hard rock class I	CM	65		
	Disposal of water				
F	Allow for keeping the whole of the excavation free from all spring and running water by pumping or any other such means as may be necessary	Item			
	Planking and strutting				
G	Allow for maintaining and upholding the sides of excavations and keeping excavations clear of all fallen materials, rubbish etc	Item			
	Carried to collection				

Item	Description	Unit	QTY	Rate	Amount
	Disposal of excavated material				
A	Load,wheel and cart away surplus excavated material to a Local Authority designated dumping site or fill soil heaps as away from site instructed by the Project Engineer.	CM	542		
B	Return, fill and ram selected excavated material around sides of foundations.	CM	768		
	Fillings				
C	Make up levels using approved imported materials: compacted in layers not exceeding 300mm thick with a roller: to the satisfaction of the Structural Engineer.	CM	1291		
D	300mm thick hardcore bed: hand packed : compacted in layers not exceeding 150mm thick: to the satisfaction of the Structural Engineer	SM	456		
E	50 mm Stone dust/ Murrum blinding to surfaces of hardcore	SM	456		
	Anti - termite to treatment				
F	Approved anti-termite treatment, with ten-year guarantee, sprayed to surfaces of hardcore strictly in accordance with manufacturer's instructions.	SM	524		
	Damp-proof membrane				
G	1000 gauge polythene or other equal and approved damp-proof membrane, laid over blinded hardcore (measured separately) with 300mm side and end laps (measured nett-allow for laps); 1 No. layer: bedded in and including cement and sand (1:3) mortar	SM	524		
	Concrete Blinding				
	Insitu concrete class 15/20 mm aggregates: vibrated:				
H	50 mm thick blinding under column bases	SM	549		
I	50 mm thick blinding under ground beams	SM	68		
	In- situ vibrated reinforced concrete Class 25 MPa: in:				
J	Column bases	CM	415		
K	Ground Beams	CM	14		
L	100mm thick surface bed	SM	524		
M	Steps	CM	1		
	In- situ vibrated reinforced concrete Class 30 MPa: in:				
N	Columns	CM	14		
O	200mm thick Lift shaft wall	SM	29		
	Carried to collection				

Item	Description	Unit	QTY	Rate	Amount
	Ribbed reinforcement steel bars to BS4449: 2005: Grade 500 high tensile strengthincluding bends, hooks, tying wire and distance blocks; to S.E's detail (Provisional)				
A	Assorted reinforcement	KGS	33183		
	Mesh fabric reinforcement to BS 4483 BRC A142;200 x 200mm, weighing 2.22kg/m² (measured net - no allowance) for laps; in two layers - top & bottom; including bends, tying wire and spacer blocks)				
B	In ground floor slab	SM	524		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to:				
C	Sides of column bases	SM	284		
D	Sides of ground beams	SM	137		
E	Vertical sides to columns	SM	167		
F	Vertical sides to lift shaft walls	SM	59		
G	Edge of slab not exceeding 150mm girth	LM	139		
H	Edges of risers 75 - 150mm high	LM	12		
	Foundation Walling				
	Natural quarry stones rough dressed; bedded in and including cement and sand (1:4) mortar; reinforced with and including 45 mm wide hoop iron gauge in alternate courses: in:				
I	200mm thick walls in foundations	SM	100		
	Pavings				
J	Supply and lay 600 x 600mm medium duty paving blocks round the building including laying, spreading and compacting 100mm thick approved sand bed blinding, with and including excavation, 150mm thick compacted hardcore and 50mm thick quarry dust blinding to approval.	SM	83		
	Plinth				
	25mm Thick cement and sand (1:4) rendering on concrete or masonry ; wood float finished; to				
K	Plinths externally	SM	42		
	Two coats black bitumastic paint on:				
L	Rendered surfaces	SM	42		
	Cement/sand (1:3) screed with XYPEX C-100 or other equal and approved admixture, steel trowelled hard and smooth to receive waterproofing (m/s)				
M	20mm thick water proof cement/sand (1:4) screed to lift pit floor prepared to receive masterseal water proofing	SM	7		
N	12mm thick water proof cement/sand (1:4) render to wall prepared to receive "Masterseal"water proofing	SM	29		
	Carried to collection				

Item	Description	Unit	QTY	Rate	Amount
	Waterproofing				
	MASTERSEAL® 501/502 SYSTEM CRYSTALLINE WATERPROOFING				
	All areas indicated shall be waterproofed by the MASTERSEAL® 501/502 system as manufactured by BASF, or equal and approved, provide 10 year guarantee, all to manufacturer's specifications and instructions as described:				
	Two coat slurry application: MASTERSEAL® 501: 1kg per m2 per coat, minimum 2 coats to seal all expansion joints, holes, repaired areas and angle fillet				
	Application of render coat: MASTERSEAL® 502: 1kg per m2 at 4.5mm thick on slabs. Rate shall allow for hacking and preparing all concrete surfaces				
A	Horizontal surfaces of lift base	SM	7		
B	Vertical surfaces of Lift shaft walls	SM	29		
	Carried to collection				
	COLLECTION				
	Total brought forward from page no:				
	Total brought forward from page no:				
	Total brought forward from page no:				
	Total brought forward from page no:				
	ELEMENT NO. 1 **Carried to** **SUBSTRUCTURES** **Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED SOCIAL + AFFORDABLE UNITS BLOCK (TYPE C G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT No 2 - R.C FRAME				
	In- situ vibrated reinforced concrete Class 30 MPa: in:				
A	Columns	CM	228		
B	Lift shaft wall	CM	419		
	In- situ vibrated reinforced concrete Class 25 MPa: in:				
C	Beams	CM	262		
D	Upper Roof Beams	CM	3		
E	130mm thick suspended slabs	SM	4075		
F	150mm thick suspended slabs	SM	867		
G	150mm thick Roof Slab	SM	0		
H	150mm thick Tank Slab over stairwell	SM	56		
I	150 mm thick landing	SM	103		
J	Staircases	CM	40		
	Ribbed reinforcement steel bars to BS4449: 2005:Grade 500 high tensile strength including bends, hooks, tying wire and distance blocks to S.E's detail (All provisional)				
K	Assorted reinforcement	Kg	150910		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to				
L	Sides of columns	SM	2683		
M	Sides and soffites of beams	SM	2646		
N	Soffits of suspended slabs	SM	4997		
O	Edges of slab over 150mm but not exceeding 225mm girth	LM	1776		
P	To sloping soffites of staircases	SM	148		
Q	Soffits of landings	SM	103		
R	Riser of steps over 150 mm but not exceeding 225 mm girth	LM	480		
S	Staircase string 300mm extreme girth and cut to profile of steps	LM	247		
T	Edges of landing over 150 but ot exceeding 225mm high	LM	80		
U	Sides of lift walls	SM	839		
V	Edges of lift shaft openings 150 - 225mm high	LM	114		
	ELEMENT NO. 2 **Carried to**				
	R.C FRAME **Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED SOCIAL + AFFORDABLE UNITS BLOCK (TYPE C G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT No 3-WALLING				
	WALLING				
	External Walling				
	Machine cut quarry stone walling with a minimum of 7.0 N/mm2 average compressive strength to B.S 5390;bedded and jointed in cement and sand (1:4) mortar, reinforced with and including 25 x 3 mm thick hoop iron strips at every alternate course as described in;				
A	200mm thick walling Externally	SM	2828		
B	150mm thick parapet walling	SM	170		
	Internal Walling				
	Machine cut quarry stone walling with a minimum of 7.0 N/mm2 average compressive strength to B.S 5390;bedded and jointed in cement and sand (1:4) mortar, reinforced with and including 25 x 3 mm thick hoop iron strips at every alternate course as described in;				
C	200mm thick walling Internally	SM	2274		
D	150mm thick walling Internally	SM	3015		
E	Approved hessian based damp proof course to 200mm thick walling in cement/sand mortar	LM	255		
F	Approved hessian based damp proof course to 150mm thick walling in cement/sand mortar	LM	124		
	Precast Concrete Breeze Ventilation Blocks				
G	150 x 150mm wide x 50mm thick Pre Cast Concrete flower 3D breeze ventilation blocks bedded and jointed in cement and sand (1:4) mortar	SM	275		
	COPING				
H	Ditto 200 x 50mm concrete coping to walls twice weathered and throated;	LM	200		
	Lintols				
I	200mm x 200mm Deep lintols in reinforced concrete class 20MPa with and including 4No T10 and T8 stirups at 200mm centres; complete with formwork	LM	752		
	ELEMENT NO. 3 WALLING **Carried to Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED SOCIAL + AFFORDABLE UNITS BLOCK (TYPE C G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 4-WINDOWS				
	MILD STEEL WINDOWS				
	Supply, fabricate and fix the following purpose made small pane mild steel casement windows to be fabricated from approved mild steel sections (atleast 14g 2mm thick) comprising of frame and casement incorporating permanent hooded high level ventilation panels infilled with mosquito gauze : window supplied complete with and including 12mm solid square burglar proofing bars fixed at 200mm centres both ways and metal fixing lugs including building into wall and making good, and all necessary iron mongery viz hinges, fasteners, and hasp including shop priming window with red oxide primer before delivery to site:-				
A	Window, overall size 1200 X 1500mm high to Architects Details (Lounge)	NO	108		
B	Ditto Size 1200 x 1500mm high (bedroom)	NO	142		
C	Ditto Size 1000 x 1350mm high (Kitchen)	NO	75		
D	Ditto Size 600 x 900mm high (WC/SH)	NO	173		
E	Ditto Size 800 x 1500mm high (Shops)	NO	5		
F	Ditto Size 600 x 1500mm high (Shops)	NO	5		
G	Ditto Size 2250 x 1500mm high (Shops)	NO	4		
H	Ditto Size 700 x 1500mm high (Shops)	NO	4		
	Glazing				
I	4mm Thick clear sheet glass panes over 0.1 but not exceeding 0.5 square meters; fixing with premium putty	SM	579		
J	Ditto; obscure	SM	93		
	Painting and Decorations				
	On Metal work				
	Prepare and apply aerosol spray painting in one finishing coats of approved first grade to: -				
K	General window and grille surfaces; over 300mm girth internal	SM	1346		
	Carried to Collection				

Item	Description	Unit	QTY	Rate	Amount
	Bull-nosed precast concrete , finishing fair on all exposed surfaces and hoisting and placing in position, bedding, jointing and pointing in pigmented cement and sand (1:3) mortar				
A	150 x 25mm thick precast concrete window sill	LM	601		
	Curtain rods;				
B	1.5mm thick, 20mm thick diameter twin powdercoated mild steel rod complete accessories to approval	LM	497		
	Carried to collection				
	COLLECTION				
	Total brought forward from page no:				
	Total brought forward from page no:				
	ELEMENT NO. 4 WINDOWS **Carried to the Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED SOCIAL + AFFORDABLE UNITS BLOCK (TYPE C G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 5-DOORS				
	External Doors				
	Hardwood Panelled Doors				
	50mm thick approved hardwood PANEL doors with 12.5mm thick mahogany hardwood lipping to Architect's details, specifications and approval				
A	Double leaf door size 1500 x 2400mm high (D.01)	NO	3		
B	Single leaf Size 1000 x 2400mm high (D.02)	NO	106		
	Frames and frame finishes in hardwood timber:				
C	25 x 25mm quadrant beading	LM	634		
D	25 x 50mm architrave with two labours, plugged	LM	634		
E	150mm x 50mm frame with three labours; chamfered edges; plugged	LM	634		
	Internal Doors				
	Flush timber doors				
	50 mm thick Semi Solid cored flush doors with plywood facing to receive painting (m.s) all to Architects details, specifications and approval				
F	Door size 900mm x 2400mm High comprising of 1 No Opennable leaf size 800 x 2100mm high including fixed fanlight size 900 x 300mm high in 4mm clear glass (measured separetely)	NO	142		
G	Ditto 800 x 2100mm high (D.04) comprising of 1No. Opennable leaf size 700 x 2100mm high	NO	173		
	4mm Thick clear sheet glass fixing with timber glazing beads to timber casements.				
H	In panes exceeding 0.1 sqm but not exceeding 0.5 square metres.	SM	38		
	Frames and frame finishes in soft wood Timber				
I	25 x 25mm quadrant	LM	1674		
J	25 x 50mm architrave with two labours, plugged	LM	1674		
K	150mm x 50mm transome with three labours; chamfered edges; plugged	LM	128		
L	150mm x 50mm frame with three labours; chamfered edges; plugged	LM	1674		
	Carried to collection				

Item	Description	Unit	QTY	Rate	Amount
	Mild steel casement doors.				
	Supply and fix mild steel casement doors, comprising of 25mm x 3mm thick SHS mullions and stiles, 3mm thick mild steel plate infills and 50mm x 3mm angle line framing, complete with 50 x 50 x 3 mm thick mild steel RHS frame with & including ; 4mm thick clear laminated sheet glass and glazing in putty ; building in lugs to jambs, plugging to head or cill, bedded all round in cement and sand (1:3) mortar and pointing one side in mastic, and complete with heavy duty hinges, peg stays, and oiling, easing and adjusting and fixing to concrete or masonry ; grinding all welds to smooth finish; door latch, one coat red oxide primer; all necessary approved ironmongery to Architect's details & schedule:-				
A	Double Door overall size 1500 x 2400mm high (Main Entrance)	NO	9		
	Painting and decorating				
	Priming back of frame with an aluminium or equivalent and approved wood primer				
B	Surfaces not exceeding 100mm girth	LM	4616		
C	Surfaces over 100mm but not exceeding 200mm girth	LM	2308		
	Prepare Knot, prime, stop and apply one undercoat and one coats first grade gaulity gloss oil paint to wood surfaces				
D	General timber surfaces	SM	1700		
E	Surfaces over 200mm but not exceeding 300mm girth	LM	2308		
F	Architraves: not exceeding 100 mm girth	LM	2308		
G	Quadrant beading : not exceeding 100 mm girth	LM	2308		
	Prepare and apply three coats gloss oil paint as "Crown Paints" or other equal and approved paint to:-				
H	General surfaces of metal doors	SM	65		
	Ironmongery				
	Supply and fix the following ironmongery to timber complete with matching screws and keys to the approval of the Architect				
I	100mm pressed steel Butt Hinges	PRS	641		
J	Stainless steel 3 Lever Mortice Door Lock with handle furniture set;(keyhole escutcheons, cylinder and latch)	NO	109		
K	Ditto: but 2 Lever Door Lock with handle	NO	315		
L	Door fixing cramps	NO	424		
M	Bronze door sign with door numbers as per Architect detail	NO	106		
N	Block sign with block type, name and number Iin exterior quality paint as per Architect detail	NO	1		
	Carried to Collection				
	COLLECTION				
	Total brought forward from page no:				
	Total brought forward from page no:				
	ELEMENT NO. 5 **Carried to**				
	DOORS **Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED SOCIAL + AFFORDABLE UNITS BLOCK (TYPE C G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 6 - EXTERNAL FINISHES				
	EXTERNAL WALL FINISHES				
	External Render				
	Cement and sand (1:3) render:wood floated: on concrete or blockwork: to				
A	15mm thick to beams, Columns, Slab Moulds and walling externally	SM	4,403.00		
B	Extra over horizontal and vertical pointing in 10mm thick rod in cement and sand mix (1:3) mortar including one coat Bituminous paint	LM	10		
	External Painting				
	Allow for skimming coat, Prepare and apply three coats interior quality eggshell paint as "Crown Paints" or other equal and approved paint to:-				
C	Concrete/masonry surfaces externally-Beam, Column and Slab Moulds	SM	4403		
	ROOF FINISHES **Cement and sand (1:4) screeded beds: on concrete: complete with coloured pigmentation additives and hardener to:**				
D	50mm average waterproofed lightweight screed laid to falls and crossfalls to roof slabs -upper roof including gutter bases	SM	554		
	Prepare and apply to vertical/horizontal surfaces 4mm thick APP/EPDM water proofing or other equal and approved membrane with surface finish weighing 4kg/sm; laid on primer with torch-on process ;by an approved specialist all in accordance with the manufacturers instructions including provision of a written ten (10) year anti leak quarantee.				
E	4mm thick APP membrane applied to roof slabs	SM	554		
F	Ditto to skirting 200mm high	LM	186		
G	Dress membrane around 100mm rainwater outlet	No.	12		
	The Following Flat roof concrete tiles fixed with approved adhesive, laid and jointed with waterproofing bituminous compound				
H	20mm thick interlocking Concrete tiles of size 225 x 225mm	SM	509		
	ELEMENT NO. 6 Carried to **EXTERNAL FINISHES Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED SOCIAL + AFFORDABLE UNITS BLOCK (TYPE C G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 7 - INTERNAL FINISHES				
	Internal Wall Finishes				
	Cement and sand (1:4) backings				
A	12mm thick to receive Ceramic Wall tiles	SM	2698		
B	To receive porcelain wall tiles (m.s.) (Lift Lobby)	SM	141		
	Ceramic wall tiles				
	Allow a Prime Cost rate of Ksh. 700 per SM for supply of tiles only				
C	Supply and Fix 300x300x6mm thick ceramic wall tiles as manufactured by Saj Ceramics or equal and approved on prepared backings(m.s) with proprietary adhesive; jointed and pointed in matching coloured proprietary grouting: including pvc spacers and expansion joint as necessary: all to Architect's approval. - Wall Surfaces	SM	2698		
	Porcelain wall tiles *Allow a Prime Cost supply rate of Ksh. 1500 per SM*				
D	Supply and Fix porcelain wall tiles as manufactured by Saj Ceramics or equal and approved on prepared backings(m.s) with proprietary adhesive; jointed and pointed in matching coloured proprietary grouting: including pvc spacers and expansion joint as necessary: all to Architect's approval. - Wall Surfaces	SM	141		
	12mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
E	Concrete/masonry surfaces	SM	12991		
	Painting and Decoration				
	Allow for skimming coat, Prepare and apply three coats interior quality eggshell paint as "Crown Paints" or other equal and approved paint to:-				
F	Plastered concrete/masonry surfaces internally	SM	12991		
	Carried to Collection				

Item	Description	Unit	QTY	Rate	Amount
	Floor Finishes				
	Cement and sand (1:3) screeds, backings, beds etc				
A	32mm bed finished to receive floor Tiles (m.s)	SM	2950		
B	32mm Thick coloured cement sand screed mix 1:3 finished with red oxide to approval	SM	973		
C	32mm bed finished to be finshed by tenants (shops) (m.s)	SM	171		
	Ceramic Floor tiles				
	Allow a Prime Cost supply rate of Ksh. 700 per SM				
D	Supply and Fix 300 x 300x 10mm thick Ceramic tiles as manufactured by Saj Ceramics or equal and approved; on prepared bed(m.s) with proprietary adhesive; jointed and pointed in matching coloured proprietary grouting: including pvc spacers and expansion joint as necessary: all to Architect's approval.	SM	1372		
E	Ditto Non Slip Ceramic Tiles	SM	1577		
F	Ditto 100mm wide Wall Skirtings	LM	4153		
	Staircase floor finishes				
	Cement and sand (1:4) backings etc				
G	32mm bed finished to receive ceramic tiles to surfaces of Landings (m.s)	SM	103		
H	25 x 300 mm wide treads to receive ceramic tiles (m.s)	LM	432		
I	20 x 150mm risers to receive ceramic tiles (m.s)	LM	480		
	Staircase floor finishes				
J	Non Slip Ceramic Tiles to surfaces of Landings	SM	103		
K	Non Slip Ceramic Tiles to 300 mm wide treads	LM	432		
L	Non Slip Ceramic Tiles to 150mm risers	LM	480		
	Staircase soffit finishes				
	12mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
M	Soffits of staircase landing	SM	103		
N	Ditto to sloping soffites exceeding 15˚ from horizontal	SM	148		
O	Staircase string 300mm extreme girth and cut to profile of steps	LM	247		
	Paint works				
P	Soffits of staircase landing	SM	103		
Q	Ditto to sloping soffites exceeding 15˚ from horizontal	SM	148		
R	Staircase string 300mm extreme girth and cut to profile of steps	LM	247		
	Carried to Collection				

Item	Description	Unit	QTY	Rate	Amount
	Ceiling finishes				
	12mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
A	Soffits of Concrete surfaces	SM	4997		
	Painting and Decoration				
	Allow for skimming coat, Prepare and apply three coats interior quality eggshell paint as "Crown Paints" or other equal and approved paint to:-				
B	Plastered ceilings	SM	4997		
	Carried to Collection				

Item	Description	Unit	QTY	Rate	Amount
	COLLECTION Total brought forward from page no: Total brought forward from page no: Total brought forward from page no:				
	<u>ELEMENT NO. 7</u> **Carried to** **INTERNAL FINISHES Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED SOCIAL + AFFORDABLE UNITS BLOCK (TYPE C G+9) **BILL NO.1-BUILDERS WORKS** **ELEMENT NO 8- BALUSTRADING AND RAILING** *Balustrades and staircase railings*				
A	900mm high mild Steel balustrade; comprising 60 x 10mm mild Steel balusters at 900mm centres; bolted to base plate and tread (m.s), with 7No. 25mm diameter horinzontal bars, and 75x4mm diameter CHS mild Steel handrail part welded into 60x10mm balustrades; to Architects drawings	LM	213		
B	50mm diameter x 3mm CHS handrail supported by 50 x 50 x 3mm thick SHS balusters anchored to slab with and including w/steel bolts and plates at 1800mm centres smooth welded 100mm high (Staircase)	LM	90		
	Prepare, prime and apply one undercoat and two finishing coats first quality gloss oil paint on				
C	General metal surfaces of balustrading (both sides measured overall)	SM	530		
	ELEMENT NO. 8 Carried to the **BALUSTRADE AND RAILING Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED SOCIAL + AFFORDABLE UNITS BLOCK (TYPE C G+9)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 9 - JOINERY FITTINGS				
	Allow for providing materials, labour and construct fixtures and fittings as per Architects drawings of the following JOINERY FITTINGS AND FIXTURES complete with associated iron mongery;				
	NOTE: All blockboard, MDF boards,etc in joinery works shall be lipped with hardwood lipping all round before fixing.				
	300mm Wide high level kitchen cupboards in 18mm laminated mdf sides & shelves complete with doors, top, bottom & divisions with and including all necessary ironmongery; to Architect's details				
A	High level storage cupboard units 2000mm long x 600mm high x 300mm deep	LM	138		
B	Ditto 1200mm long x 600mm high x 300mm deep	LM	47		
	Low level kitchen worktops with 600x600x8mm porcelain tiles top on and including 20mm thick blockboard: 100mm plastered mass concrete plinths in concrete class 15MPa: 18mm laminated mdf sides & shelves complete with doors, shelves, drawers, cutting tiles for kitchen sink (m.s) & all necessary ironmongery; to Architect's details and approval				
C	Low level kitchen cupboards below concrete worktop total girth grouped together 1800mm long x 850mm high x 550mm deep	LM	65		
D	Ditto 1925mm long x 850mm high x 550mm deep	LM	35		
E	Ditto 1200mm long x 850mm high x 550mm deep	LM	36		
F	Ditto 2650mm long x 850mm high x 550mm deep	LM	50		
G	Ditto 3420mm long x 850mm high x 550mm deep	LM	3		
H	Ditto 2240mm long x 850mm high x 550mm deep	LM	2		
	600mm Wide x 2200mm high wardrobes in 18mm laminated mdf sides, divisions, drawers, shelves ; ; complete with sliding/ side hung doors, shelves, divisions, shoe racks, hanging rails, drawers, & all necessary ironmongery; 100mm plastered mass concrete plinths in concrete class 15MPa ; to Architect's details				
I	Bedroom wardrobes size 1200mm wide x 2200mm high x 600mm deep in bedrooms	LM	217		
	Duct doors 50mm thick laminated MDF duct doors; complete with frames, ironmongery and all necessary paintwork				
J	Duct doors size 300mm wide x 2200mm high	NO.	78		
K	Duct doors size 900mm wide x 2200mm high	NO.	10		
L	Duct doors size 600mm wide x 2200mm high	NO.	23		
M	Duct doors size 450mm wide x 2200mm high	NO.	3		
	ELEMENT NO. 9 JOINERY & FITTINGS **Carried to the Main summary**				

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED SOCIAL + AFFORDABLE UNITS BLOCK (TYPE C G+9)				
	ELEMENT NO 10 - BUILDERS WORKS IN CONNECTION WITH SERVICES (BWICWS)				
	Plumbing, Drainage and Mechanical Installations				
A	Inspect all drawings and Bills of Quantities for Plumbing, Drainage and Mechanical Installations and allow for all Builder's work associated with the installations; including cutting away and making good after installing a concealed drainage system; including cutting or leaving all holes notches, mortices, sinkings and chases in both the structure and its coverings; including but not limited to forming recess in masonry	Item			
	Electrical Services Installations				
B	Inspect all drawings and Bills of Quantities for Electrical Installations and allow for all Builder's work associated with the Electrical installations, including cutting away for and making good after Electrician installing a concealed conduit system including cutting or leaving all holes notches, mortices, sinkings and chases in both the structure and its coverings; including but not limited to forming recess in masonry	Item			
	ELEMENT NO. 10 Carried to the BUILDERS WORKS IN CONNECTION WITH SERVICES (BWICWS) Main summary				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
1.0	**Internal Plumbing Installations**				
	Supply, deliver install, Test and Commission:				
	PP-R (Polypropylene Random Co-polymer) pipes **PN 20** and fittings to DIN 8078 and DIN 16962 with polyfusion welded joints to DVS 2207 of approved manufacturer. Rates must allow for all Metal/plastic threaded adaptors where required for the connection of sanitary fixtures, valves, sockets, sliding and fixed joints etc. as required in the running lengths of pipework. The pipes shall run in floors and wall chase. The pipes will be pressure tested before the plastering of wall commences and as per the manufacturers recommended testing pressures.				
(i)	3 BR AHP				
	Pipe Works				
A	32mm Ø PPR Pipe	2	LM		
B	Ditto 25mm Ø	20	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	32mm Ø Elbows/ Bends	2	No.		
D	Ditto 25mm Ø	14	No.		
	Equal/Unequal Tees				
E	32 x 32 x 32mm	1	No.		
F	25 x 25 x 25mm	7	No.		
	Reducers				
G	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
J	25 x 20mm male/female threaded adaptor	2	No.		
K	25 x 15mm ditto	4	LM		
L	25 x 15mm male threaded bend	14	LM		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total from Previous Page				
	Isolating valves				
M	25mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
	Shut off Angle Valve				
N	Brass plated 1/2" angle valve	7	No.		
	Check Meter				
O	25mm diameter water check meter	1	No.		
	Testing and Commissioning				
P	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Sub Total for 1 Units				
	TOTAL FOR 1 No. 3BR AHP (Per Floor)	1		x 1	
Total Cost of Plumbing Installation for 3BR AHP per Floor					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
(ii)	3 Room Social				
	Pipe Works				
A	32mm Ø PPR Pipe	2	LM		
B	Ditto 25mm Ø	15	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	32mm Ø Elbows/ Bends	2	No.		
D	Ditto 25mm Ø	8	No.		
	Equal/Unequal Tees				
E	32 x 32 x 32mm	1	No.		
F	25 x 25 x 25mm	4	No.		
	Reducers				
G	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
J	25 x 20mm male/female threaded adaptor	2	No.		
K	25 x 15mm ditto	4	LM		
L	25 x 15mm male threaded bend	8	LM		
	Isolating valves				
M	25mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
	Shut off Angle Valve				
N	Brass plated 1/2" angle valve	4	No.		
	Check Meter				
O	25mm diameter water check meter	1	No.		
	Testing and Commissioning				
P	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Sub Total for 1 Units				
	TOTAL FOR 1 No. 3Room Social (Per Floor)	1		x 1	
Total Cost of Plumbing Installation for 3Room Social per Floor					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
(iii)	2 BR AHP				
	Pipe Works				
A	32mm Ø PPR Pipe	2	LM		
B	Ditto 25mm Ø	15	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	32mm Ø Elbows/ Bends	2	No.		
D	Ditto 25mm Ø	8	No.		
	Equal/Unequal Tees				
E	32 x 32 x 32mm	1	No.		
F	25 x 25 x 25mm	4	No.		
	Reducers				
G	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
J	25 x 20mm male/female threaded adaptor	2	No.		
K	25 x 15mm ditto	4	LM		
L	25 x 15mm male threaded bend	8	LM		
	Isolating valves				
M	25mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
	Shut off Angle Valve				
N	Brass plated 1/2" angle valve	4	No.		
	Check Meter				
O	25mm diameter water check meter	1	No.		
	Testing and Commissioning				
P	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Sub Total for 1 Units				
	TOTAL FOR 4 No. 2BR AHP (Per Floor)	4		x 4	
Total Cost of Plumbing Installation for 2BR AHP per Floor					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
(iv)	2 Room Social				
	Pipe Works				
A	32mm Ø PPR Pipe	2	LM		
B	Ditto 25mm Ø	15	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	32mm Ø Elbows/ Bends	2	No.		
D	Ditto 25mm Ø	8	No.		
	Equal/Unequal Tees				
E	32 x 32 x 32mm	1	No.		
F	25 x 25 x 25mm	4	No.		
	Reducers				
G	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
J	25 x 20mm male/female threaded adaptor	2	No.		
K	25 x 15mm ditto	4	LM		
L	25 x 15mm male threaded bend	8	LM		
	Isolating valves				
M	25mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
	Shut off Angle Valve				
N	Brass plated 1/2" angle valve	4	No.		
	Check Meter				
O	25mm diameter water check meter	1	No.		
	Testing and Commissioning				
P	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Sub Total for 1 Units				
	TOTAL FOR 2 No. 2 Room Social (Per Floor)	2		x 2	
Total Cost of Plumbing Installation for 2Room Social per Floor					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
(v)	1 Room Social				
	Pipe Works				
A	32mm Ø PPR Pipe	2	LM		
B	Ditto 25mm Ø	15	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	32mm Ø Elbows/ Bends	2	No.		
D	Ditto 25mm Ø	8	No.		
	Equal/Unequal Tees				
E	32 x 32 x 32mm	1	No.		
F	25 x 25 x 25mm	4	No.		
	Reducers				
G	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
J	25 x 20mm male/female threaded adaptor	2	No.		
K	25 x 15mm ditto	4	LM		
L	25 x 15mm male threaded bend	8	LM		
	Isolating valves				
M	25mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
	Shut off Angle Valve				
N	Brass plated 1/2" angle valve	4	No.		
	Check Meter				
O	25mm diameter water check meter	1	No.		
	Testing and Commissioning				
P	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Sub Total for 1 Units				
	TOTAL FOR 1 No. 1Room Social (Per Floor)	1		x 1	
Total Cost of Plumbing Installation for 1Room Social per Floor					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
(vi)	Studio Apartment				
	Pipe Works				
A	32mm Ø PPR Pipe	2	LM		
B	Ditto 25mm Ø	15	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	32mm Ø Elbows/ Bends	2	No.		
D	Ditto 25mm Ø	8	No.		
	Equal/Unequal Tees				
E	32 x 32 x 32mm	1	No.		
F	25 x 25 x 25mm	4	No.		
	Reducers				
G	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
J	25 x 20mm male/female threaded adaptor	2	No.		
K	25 x 15mm ditto	4	LM		
L	25 x 15mm male threaded bend	8	LM		
	Isolating valves				
M	25mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
	Shut off Angle Valve				
N	Brass plated 1/2" angle valve	4	No.		
	Check Meter				
O	25mm diameter water check meter	1	No.		
	Testing and Commissioning				
P	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Sub Total for 1 Units				
	TOTAL FOR 2 No. Sudios (Per Floor)	2		x 2	
Total Cost of Plumbing Installation for 2Room Social per Floor					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
(vii)	Apartments on Ground Floor				
	Pipe Works				
A	32mm Ø PPR Pipe	14	LM		
B	Ditto 25mm Ø	105	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	32mm Ø Elbows/ Bends	14	No.		
D	Ditto 25mm Ø	56	No.		
	Equal/Unequal Tees				
E	32 x 32 x 32mm	7	No.		
F	25 x 25 x 25mm	28	No.		
	Reducers				
G	32 x 25mm reducer	7	No.		
	Male/Female brass threaded adaptor				
J	25 x 20mm male/female threaded adaptor	14	No.		
K	25 x 15mm ditto	28	LM		
L	25 x 15mm male threaded bend	56	LM		
	Isolating valves				
M	25mm Ø Gate Valve as "Pegler" or Equivalent	7	No.		
	Shut off Angle Valve				
N	Brass plated 1/2" angle valve	28	No.		
	Check Meter				
O	25mm diameter water check meter	7	No.		
	Testing and Commissioning				
P	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Sub Total for 1 Units				
	TOTAL FOR GROUND FLOOR	1		x1	
Total Cost of Plumbing Installation for the Extra Studio					

ITEM	DESCRIPTION	AMOUNT (KES)
	Typical Floor Collection Page	
1	Total Cost For Plumbing Installation for 3BR AHP	
2	Total Cost For Plumbing Installation for 3Room Social	
3	Total Cost For Plumbing Installation for 2BR AHP	
4	Total Cost For Plumbing Installation for 2Room Social	
5	Total Cost For Plumbing Installation for 1Room Social	
6	Total Cost For Plumbing Installation for Studio Apartment	
7	Total Plumbing Cost Per Floor	
8	**Total Plumbing Cost for 1st to 1oth Flors (Item 7 x 9 Floors)**	
9	**Add Total Cost of Ground Floor Apartments**	
	Total Cost (Item 8 +7) of Plumbing Carried to Summary Page	

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
2	**Risers and Roof Levels**				
	Pipe Works				
A	75mm Ø PPR pipe	50	LM		
B	Ditto 63mm Ø	50	LM		
B	Ditto 50mm Ø	50	LM		
C	Ditto 40mm Ø	40	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
D	75mm Ø Elbows/ Bends	12	No.		
E	Ditto 63mm Ø	25	No.		
F	Ditto 50mm Ø	8	No.		
G	Ditto 40mm Ø	16	No.		
H	Ditto 32mm Ø	16	No.		
I	Ditto 25mm Ø	8	No.		
	Equal/Unequal Tees				
J	63 x 63 x 63mm	10	No.		
K	40 x 40 x 40mm	8	No.		
L	40 x 40 x 32mm	16	No.		
M	32 x 32 x 32mm	4	No.		
N	32 x 32 x 25mm	4	No.		
O	25 x 25 x 25mm	12	No.		
	Reducers				
P	63 x 50mm reducer	6	No.		
Q	50 x 40mm reducer	6	No.		
R	40 x 32mm reducer	6	No.		
S	40 x 32mm reducer	6	No.		
T	32 x 25mm reducer	8	No.		
	Male/Female brass threaded adaptor				
U	40 x 32mm male/female threaded adaptor	5	No.		
V	32 x 25mm male/female threaded adaptor	7	No.		
	Total Carried to the Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total from Previous Page				
	Isolating valves				
W	65mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
X	40mm Ø Ditto	1	No.		
	Testing and Commissioning				
Y	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Sub Total for 1 Riser				
	TOTAL FOR 4 No. Risers	4		x 4	
	Total Cost of Riser & Roof Level Plumbing				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
3	**SANITARY FITTINGS AND ACCESSORIES**				
A	**Water Closet (WC) Pan** Close Coupled dual flush Floor Standing Close Coupled WC Bowl complete with seat cover and cistern, WC connector relevant fittings & accessories ***(Quote Install Only)***	115	No.		
B	**Wash Basin** WHB basin Full pedestal Wash Basin 450x485x230m White Complte with bottle traps, flexible connection hoses and other accessories with cws only tap ***(Quote Install Only)***	115	No.		
C	**Shower Fittings** Shower fitting c/w 15mm diameter chrome plated stop cork, Instant shower fitting and 1/2" Cobra 211- 15 Star Pillar tap or equal and equivalent ***(Quote Install Only)***	115	No.		
D	**Bathroom Accessories** Medium Washroom bathroom set Consisitng of Toilet roll holder, soap dish holder, brush holder and Coat Hooke ***(Quote Install Only)***	115	No.		
E	**Kitchen Sink** Stainless steel kitchen sink single drain, single bowl complete overflow and 40mm diameter plastic tubular p-trap PVC Bottle Trap and waste 1.5in x 40, Long Neck Wall type Bib Tap ***(Quote Install Only)***	115	Set		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	FIRE PROTECTION				
	Hose Reel and Associated Pipework				
A	Supply and Install automatic 30 meters long, 25 mm diameter hosereel and nozzle	5	No.		
	Associated Pipework				
	Galvanised Mild Steel Class 'B' tubing to B.S. 1387 with screwed and socketed joints to BS 21 including all range piping, fittings, hanagers, supports, brackets, and supports				
B	50mm diameter	65	LM		
C	25mm ditto	13	LM		
	Extra Over Piping For Fittings:-				
	Elbows/Various Bends				
D	50mm bend/elbow	7	No.		
E	25mm ditto	20	No.		
	Equal/Unequal tees				
F	50 x 50 x 50mm tee	10	No.		
G	50 x 50 x 25mm ditto	19	No.		
	Reducers				
H	50 x 25mm reducer	10	No.		
	Unions				
I	50mm diameter union	2	No.		
J	25mm ditto	20	No.		
	Valves				
K	25mm diameter quarter Turn hose reel isolation valve to be as PEGLER or approved equivalent.	5	No.		
	Painting				
L	Allow for Wire brushing , cleaning and painting of the complete fire fighting pipework installation with one coat of red oxide primer, undercoat, and gloss coat to specifications	1	Item		
Total Cost Carried For hose reel and associated pipework Installations					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Portable Fire Protection Equipment				
	Supply, deliver, install, test and commission portable fire protection equipment with initial fill complete with all the necessary mounting accessories.				
A	9 litres, carbon dioxide gas extinguisher	10	No.		
B	4.5kg ABC dry powder extinguisher	10	No.		
C	Supply and fix signs indicating the words "FIRE POINT" in 80mm high letters	10	No.		
	Testing and Commissioning				
D	Allow for testing and commissioning of the fire pump installation to the satisfaction of the Engineer.	1	Item		
Total Cost For Portable fire Extinguishers + Hose Reel Pump Installation					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Foul Drainage (Ground Floor) Supply, deliver and install the following in key "Terrain" or equal and approved uPVC Heavy gauge soil and waste system. Allow for all the various sizes of adaptor, connectors, sockets, holderbats, clips etc not measured but required for the satisfactory functioning of the system.				
	Piping				
A	32mm diameter heavy duty grey uPVC pipe	60	LM		
B	40mm ditto	60	LM		
C	50mm ditto	120	LM		
D	75mm ditto	80	LM		
E	100mm ditto	80	LM		
F	100mm diameter heavy duty golden brown	155	LM		
G	150mm diameter heavy duty golden brown	300	LM		
	Extra over uPVC Pipeworks				
H	32mm sweep bend	15	No.		
I	40mm sweep bend	60	No.		
J	50mm sweep bend	15	No.		
K	75mm sweep bend	8	No.		
L	100mm sweep bend	22	No.		
M	150mm sweep bend	16	No.		
N	40mm 450 bend	22	No.		
O	50mm 450 bend	15	No.		
P	40mm sweep tee	25	No.		
Q	40 x 32mm reducer	15	No.		
R	75 x 40mm ditto	15	No.		
S	150 x 40mm ditto	8	No.		
T	40mm access plug	22	No.		
U	100mm bend WC connector	13	No.		
V	32mm bottle 'p' trap	15	No.		
X	40mm bottle 'p' trap	15	No.		
Y	150MM vent cowl	15	No.		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total From Previous Page				
Z	100 x 50mm floor trap set complete with polycarbonate flush grating	17	No.		
AA	**Gulley Trap** Gully trap comprising of 100mm diameter golden brown uPVC gully piece, 100mm diameter uPVC trap spigot outlet with screws and washers, and 300 x 300mm masonry gully trap chamber with mild steel plate and a heavy	25	No.		
BB	**Manholes** Construct manhole/ inspection chamber size 450 x 600 x 750mm deep internally in 200mm stone walls, 150mm concrete bed, water proof plaster, forming drain channels, medium duty cover frame in cast iron with recessed cover with concrete infill and all necessary formwork, excavation and soil disposal.	32	No.		
CC	**Excavations** Excavate trench for pipe not exceeding 100mm diameter and not exceeding 1.5m deep (average 600mm deep) and make good as before.	120	LM		
DD	Allow for hydrostatic pressure testing of drainage installation including provision of pipe plugs and other required fittings.	1	Item		
	Total Cost For Ground Floor Foul Drainage Installation				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Foul Drainage (1St Floor to 10th Floor)				
	Supply and fix uPVC soil system to BS 4660 and BS 4515 and mU PVC waste systems to BS 5255 with screwed and socketed joints to BS 21. solvent welded joints shall be as per the system's manufacturer's written instruction. Tenderer must allow in their pipework prices for all the couplings, connectors, joints etc as required in the running lengths of the pipework and also where necessary for fixing clips, holder bats plugged and screwed.				
	Piping				
A	32mm diameter heavy duty grey uPVC pipe	20	LM		
B	40mm ditto	70	LM		
C	50mm ditto	40	LM		
D	100mm ditto	40	LM		
E	150mm ditto	120	LM		
	Extra over uPVC Pipings				
F	32mm sweep bend	15	No.		
G	40mm sweep bend	82	No.		
H	50mm sweep bend	15	No.		
I	40mm 450sweep bend	25	No.		
J	50mm 450sweep bend	15	No.		
K	50mm y-connector	8	No.		
L	50mm sweep tee	4	No.		
M	40mm sweep tee	32	No.		
N	40 x 32mm reducer	14	No.		
O	150 x 40mm reducer	8	No.		
P	150 x 50mm reducer	8	No.		
Q	150 x 100mm reducer	22	No.		
R	40mm access plug	25	No.		
S	100mm access plug	15	No.		
T	100mm single branch	2	No.		
U	150mm single branch	17	No.		
V	100mm WC bend/ horizontal connector	15	No.		
W	32mm bottle 'p' trap	17	No.		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total From Previous Page				
X	100 x 50mm floor trap set complete with polycarbonate flush grating	17	No.		
Y	Allow for hydrostatic pressure testing of drainage installation including provision of pipe plugs and other required fittings.	1	Item		
	Sub Total for 1 Floor				
	TOTAL FOR 9 Floors	9		x 9	
	Total Cost For 1st to 10th floor Foul Drainage Installation				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Rain Water Drainage				
	Supply, deliver and install UPVC rainwater pipes and PPR pipework. Allow for all flanges, couplings, nipples, connector joints, fixing clips holder bats etc as required in running length of pipework but not measured.				
	Piping				
A	100mm ditto	400	LM		
	Extra over piping for fittings:-				
B	100mm ditto	16	No.		
C	100mm sweep bend	2	No.		
D	100mm single branch	13	No.		
E	100mm double branch	7	No.		
F	100mm flat roof rain water outlets	10	No.		
	Testing and Commissioning				
G	Allow for testing and commissioning of the rain water drainage installation to the satisfaction of the engineer.	1	Item		
	Total Cost For Rain Water Drainage Installation				

ITEM	DESCRIPTION	AMOUNT (KES)
	SUMMARY PAGE	
1.0	**Total Cost for Internal Plumbing**	
2.0	**Total Cost for Roof + Riser**	
3.0	**Total Cost for Sanitary Fittings**	
4.0	**Total Cost Carried For hose reel and associated pipework Installations**	
5.0	**Total Cost For Portable fire Extinguishers**	
6.0	**Total Cost For Ground Floor Foul Drainage Installation**	
7.0	**Total Cost For 1st to 10th floor Foul Drainage Installation**	
8.0	**Total Cost For Rain Water Drainage Installation**	
9.0	**Allow Ksh. 100,000/- PC for installing Provisions for Ground Floor Shops**	
	Total carried to Mechanical Works Main Summary Page	

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	BILL NO. 1				
	PROPOSED TYPICAL SOCIAL & AFFORDABLE UNITS BLOCK TYPE C				
(i)	**GROUND FLOOR**				
A.	**2 BEDROOM AHP UNITS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	6		
	ii) Ditto as in item No. 1.01 but for two way switching	No.	4		
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	3		
	ii) 10A one gang two way switch	No.	5		
	iii) 10A two gang two way switch	No.	2		
1.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	6		
	b) Spherical screwneck luminaire with opal glass and 16W compact fluorescent lamp as Astra, Micromark, Thorn or approved equivalent. "**Type BF"**	No.	2		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
1.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	7		
1.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or approved equivalent.	No.	7		
1.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories,but excluding the 40A DP connection unit	No.	1		
1.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	1		
1.08	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories, but excluding the 45A Cooker connection unit	No.	1		
1.09	45A Moulded plate Cooker Control Unit complete with 13A fused Socket outlet as MK/Crabtree or approved equivalent.	No.	1		
1.10	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
1.12	240V/12V Ding dong domestic door bell	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
1.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the Data socket outlet.	No.	1		
1.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the DTV socket outlet.	No.	1		
1.15	300x 300x 100mm deep 16G galvanized adaptable	No.	2		
1.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	LM	45		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
1.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator, but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
1.18	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	2		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	2		
1.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm^2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the LV switchboard below the staircase.	LM	45		
	Total Carried Forward to Ground Floor Collection Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
B.	**3 BEDROOM AHP UNIT** SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	4		
	ii) Ditto as in item No. 1.01 but for two way switching	No.	6		
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	4		
	ii) 10A one gang two way switch	No.	8		
	iii) 10A two gang two way switch	No.	1		
1.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	7		
	b) Spherical screwneck luminaire with opal glass and 16W compact fluorescent lamp as Astra, Micromark, Thorn or approved equivalent. "**Type BF"**	No.	3		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
1.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	8		
1.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	8		
1.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories, but excluding the 40A DP connection unit	No.	2		
1.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	2		
1.08	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories, but excluding the 45A DP connection unit	No.	1		
1.09	45A Moulded plate Cooker Control Unit complete with 13A fused socket outlet as MK/Crabtree or approved equivalent.	No.	1		
1.10	45A Moulded plate Cooker Control Unit complete with 13A fused Socket outlet as MK/Crabtree or approved equivalent.	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
1.12	240V/12V Ding dong domestic door bell	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
1.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the telephone socket outlet.	No.	1		
1.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the DTV socket outlet.	No.	1		
1.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
1.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	LM	45		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
1.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator ,but excluding the MCBs, and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
1.18	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	3		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	1		
1.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm^2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the Lv switchboard below the staircase.	LM	45		
	Total Carried Forward to the Ground Floor Collection Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
C.	**STUDIO/ 1 ROOM UNITS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	1		
	ii) Ditto as in item No. 1.01 but for two way switching	No.	2		
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	1		
	ii) 10A one gang two way switch	No.	2		
	iii) 10A two gang two way switch	No.	1		
1.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	2		
	b) Spherical screwneck luminaire with opal glass and 16W compact fluorescent lamp as Astra, Micromark, Thorn or approved equivalent. "**Type BF"**	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
1.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	4		
1.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	4		
1.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 40A DP connection unit	No.	1		
1.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	1		
1.08	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 45A DP connection unit	No.	1		
1.09	45A Moulded plate Cooker Control Unit complete with 13A fused Socket outlet as MK/Crabtree or approved equivalent.	No.	1		
1.10	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
1.12	240V/12V Ding dong domestic door bell	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
1.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking plate but excluding the telephone socket outlet.	No.	1		
1.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories but excluding the DTV socket outlet.	No.	1		
1.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
1.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	LM	30		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
1.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
1.18	**MCBs for item above as Schneider Electric Acti 9 or approved equivalent**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	3		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	1		
1.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm^2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the LV switchboard below the staircase.	LM	30		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
D.	**RETAIL SHOPS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	5		
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	3		
1.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	3		
	b) Spherical screwneck luminaire with opal glass and 16W compact fluorescent lamp as Astra, Micromark, Thorn or approved equivalent. "**Type BF"**	No.	2		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
1.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	2		
1.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	2		
1.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories, but excluding the 40A DP connection unit	No.	1		
1.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
1.08	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking plate but excluding the data socket outlet.	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
1.09	4 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator, but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
1.10	**MCBs for item above as Schneider Electric Acti 9 or approved equivalent**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	2		
	iv) Blanking plates	No.	1		
1.11	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm^2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the LVswitchboard below the staircase.	LM	20		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
E.	**3 ROOM SOCIAL UNIT**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	2		
	ii) Ditto as in item No. 1.01 but for two way switching	No.	5		
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	1		
	ii) 10A one gang two way switch	No.	4		
	iii) 10A two gang two way switch	No.	3		
1.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	6		
	b) Spherical screwneck luminaire with opal glass	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
1.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	7		
1.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	7		
1.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories, but excluding the 40A DP connection unit	No.	1		
1.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	1		
1.08	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories, but excluding the 45A DP connection unit	No.	1		
1.09	45A Moulded plate Cooker Control Unit complete with 13A fused socket outlet as MK/Crabtree or approved equivalent.	No.	1		
1.10	45A Moulded plate Cooker Control Unit complete with 13A fused Socket outlet as MK/Crabtree or approved equivalent.	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
1.12	240V/12V Ding dong domestic door bell	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
1.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the telephone socket outlet.	No.	1		
1.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the DTV socket outlet.	No.	1		
1.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
1.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	Lm.	20		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
1.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator ,but excluding the MCBs, and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
1.18	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	3		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	1		
1.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm^2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the Lv switchboard below the staircase.	LM	20		
	Total Carried Forward to Ground Floor Collection Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
F.	**CORRIDOR/ LIFTS LOBBY AREA**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for two way switching, but excluding the switch and luminaire.	No.	31		
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang two way switch	No.	4		
	ii) 10A two gang two way switch	No.	4		
1.03	**LIGHTING FITTINGS**				
	a) Circular shaped surface mounted led luminaire	No.	12		
	b) Emergency Maintained Circular shaped surface	No.	3		
	c) 8W bulkbead luminaire ,polycarbonate base, and clear diffuser and installed inside the lift shaft As Thorn EWB/ETB bulkhead. "**Type G"**	No.	2		
	d) Bulkhead fitting with moulded glass diffuser &	No.	14		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.04	CCTV points in designtaed locations for survailance, comprising of 25mm diameter HG PVC conduits complete with draw wire and the blanking plate. Allow for draw boxes where all the conduits from each security point converge.	No.	6		
1.05	300x 300x 100mm deep 16 G galvanized adaptable box.	No.	2		
	LIGHTING CONTROL				
1.06	Presence sensor complete with assocaited wiring (light and motion sensor) as Osram Duo with the following characteristics: Operation voltage 220 - 240V 50Hz, detection area-12m dia minimum, settable light value, switch-off delay (if no motion detected), installation height - 5m minimum	No.	3		
1.07	24A, 240V, 2P DB/CU mounted silent operation contactor for Switching External lights complete with all accessories and as CRABTREE CIK24 or an approved equivalent	No.	2		
1.08	Photocell control unit and wired to energize the contactors complete with a D.P override switch as THORN QPK or approved equivalent	No.	2		
1.09	Water booster power points completely wired in 5 x 6mm^2 single core PVC insulated copper cables drawn in 38mm diameter heavy gauge PVC conduits including all accessories ,but excluding the the 40A TPN isolator	No.	1		
1.10	40A TPN isolator as MK or approved equivalent	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.11	Lifts isolators power points completely wired in 5 x 6mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories ,but excluding the the 63A TPN isolator	No.	2		
1.12	63A TPN isolator as MK or approved equivalent	No.	2		
1.13	8 ways 100A TPN distribution boards 'T' complete with 100A TPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
1.14	4 ways 100A SPN Consumer Unit `C' complete with 100A SPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent for common services.	No.	5		
1.15	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	6		
	ii) 32 A SP MCB	No.	4		
	iii) 40 A SP MCB	No.	5		
	iv) 32 A TP MCB	No.	3		
	v) Blanking plates	No.	8		
1.16	Sub-mains circuits for DB 'T' above comprising of 4 core 25mm^2 PVC/SWA/PVC cable drawn in cable tray/ 50mm diameter heavy gauge conduits and running from the Lv switchboard	LM	10		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.17	Sub-mains circuits for CU 'C ' above comprising of 3 x 10mm2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from common distribution board.	LM	30		
1.18	200mm x 50mm galvanised metallic cable tray (Telecom, DTV, Internet Cables) gauge 14 (riser duct) c/w all mounting accessories bends, rawl bolts, threaded bolts, brackets,	LM.	60		
1.19	200mm x 50mm galvanised metallic cable tray (Power Cables) gauge 14 (riser duct) c/w all mounting accessories bends, rawl bolts, threaded bolts, brackets,	LM.	40		
	Total Carried Forward to Ground Floor Collection Pg.				

ITEM	DESCRIPTION	QTY	RATE (KSH)	AMOUNT (KSH)
	GROUND FLOOR SUMMARY PAGE			
1	Total Amount for 2 Bedroom AHP Unit	1		
2	Total Amount for 3 Bedroom AHP Unit	1		
3	Total Amount for Studio/1 Room AHP Unit	3		
4	Total Amount for Retail Shops	9		
5	Total Amount for 3 Room Social Unit	1		
6	Total Amount for Common Area	1		
	Total Carried Forward to Ground Floor Collection Pg.			

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
(ii)	**TYPICAL 1ST - 9TH FLOOR**				
A.	**2 BEDROOM AHP UNITS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	6		
	ii) Ditto as in item No. 1.01 but for two way switching	No.	4		
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	3		
	ii) 10A one gang two way switch	No.	5		
	iii) 10A two gang two way switch	No.	2		
1.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	6		
	b) Spherical screwneck luminaire with opal glass and 16W compact fluorescent lamp as Astra, Micromark, Thorn or approved equivalent. "**Type BF"**	No.	2		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
1.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	7		
1.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or approved equivalent.	No.	7		
1.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories,but excluding the 40A DP connection unit	No.	1		
1.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	1		
1.08	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories, but excluding the 45A Cooker connection unit	No.	1		
1.09	45A Moulded plate Cooker Control Unit complete with 13A fused Socket outlet as MK/Crabtree or approved equivalent.	No.	1		
1.10	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
1.12	240V/12V Ding dong domestic door bell	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
1.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the Data socket outlet.	No.	1		
1.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the DTV socket outlet.	No.	1		
1.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
1.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	LM	45		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
1.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator, but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
1.18	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	2		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	2		
1.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm^2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the LV switchboard below the staircase.	LM	65		
	Total Carried Forward to Typical Floor Collection Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
B.	**3 BEDROOM AHP UNIT** SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	4		
	ii) Ditto as in item No. 1.01 but for two way switching	No.	6		
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	4		
	ii) 10A one gang two way switch	No.	8		
	iii) 10A two gang two way switch	No.	1		
1.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	7		
	b) Spherical screwneck luminaire with opal glass and 16W compact fluorescent lamp as Astra, Micromark, Thorn or approved equivalent. "**Type BF"**	No.	3		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
1.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	8		
1.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	8		
1.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories, but excluding the 40A DP connection unit	No.	2		
1.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	2		
1.08	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories, but excluding the 45A DP connection unit	No.	1		
1.09	45A Moulded plate Cooker Control Unit complete with 13A fused socket outlet as MK/Crabtree or approved equivalent.	No.	1		
1.10	45A Moulded plate Cooker Control Unit complete with 13A fused Socket outlet as MK/Crabtree or approved equivalent.	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
1.12	240V/12V Ding dong domestic door bell	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
1.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the telephone socket outlet.	No.	1		
1.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the DTV socket outlet.	No.	1		
1.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
1.16	25 mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	LM	45		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
1.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator ,but excluding the MCBs, and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
1.18	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	3		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	1		
1.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm^2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the Lv switchboard below the staircase.	LM	65		
	Total Carried Forward to Typical Floor Collection Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
C.	**STUDIO/ 1 ROOM UNITS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	1		
	ii) Ditto as in item No. 1.01 but for two way switching	No.	2		
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	1		
	ii) 10A one gang two way switch	No.	2		
	iii) 10A two gang two way switch	No.	1		
1.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	2		
	b) Spherical screwneck luminaire with opal glass and 16W compact fluorescent lamp as Astra, Micromark, Thorn or approved equivalent. "**Type BF"**	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
1.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	4		
1.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	4		
1.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 40A DP connection unit	No.	1		
1.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	1		
1.08	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 45A DP connection unit	No.	1		
1.09	45A Moulded plate Cooker Control Unit complete with 13A fused Socket outlet as MK/Crabtree or approved equivalent.	No.	1		
1.10	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
1.12	240V/12V Ding dong domestic door bell	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
1.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking plate but excluding the telephone socket outlet.	No.	1		
1.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories but excluding the DTV socket outlet.	No.	1		
1.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
1.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	LM	30		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
1.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
1.18	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	3		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	1		
1.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm^2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the LV switchboard below the staircase.	LM	50		
	Total Carried Forward to Typical Floor Collection Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
D.	**2 ROOM SOCIAL UNITS**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	2		
	ii) Ditto as in item No. 1.01 but for two way switching	No.	3		
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A two gang one way switch	No.	1		
	ii) 10A one gang two way switch	No.	3		
	iii) 10A two gang two way switch	No.	1		
1.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	4		
	b) Spherical screwneck luminaire with opal glass and 16W compact fluorescent lamp as Astra, Micromark, Thorn or approved equivalent. "**Type BF"**	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
1.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	6		
1.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	6		
1.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories, but excluding the 40A DP connection unit	No.	1		
1.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	1		
1.08	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 45A DP connection unit	No.	1		
1.09	45A Moulded plate Cooker Control Unit complete with 13A fused socket outlet as MK/Crabtree or approved equivalent.	No.	1		
1.10	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
1.12	240V/12V Ding dong domestic door bell	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
1.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking plate but excluding the data socket outlet.	No.	1		
1.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories but excluding the DTV socket outlet.	No.	1		
1.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
1.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	LM	20		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
1.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator, but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
1.18	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	3		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	1		
1.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm^2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the LVswitchboard below the staircase.	LM	30		
	Total Carried Forward to Typical Floor Collection Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
E.	**3 ROOM SOCIAL UNIT**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	2		
	ii) Ditto as in item No. 1.01 but for two way switching	No.	5		
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	1		
	ii) 10A one gang two way switch	No.	4		
	iii) 10A two gang two way switch	No.	3		
1.03	**LIGHTING FITTINGS**				
	a) Ceiling rose complete with 3 core flex cable, lamp holder and 11W led lamp as crabtree or approved equivalent **Type 'CR'**	No.	6		
	b) Spherical screwneck luminaire with opal glass and 16W compact fluorescent lamp as Astra, Micromark, Thorn or approved equivalent. "**Type BF"**	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
1.04	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	7		
1.05	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	7		
1.06	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories, but excluding the 40A DP connection unit	No.	1		
1.07	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	1		
1.08	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories, but excluding the 45A DP connection unit	No.	1		
1.09	45A Moulded plate Cooker Control Unit complete with 13A fused socket outlet as MK/Crabtree or approved equivalent.	No.	1		
1.10	45A Moulded plate Cooker Control Unit complete with 13A fused Socket outlet as MK/Crabtree or approved equivalent.	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.11	Domestic door bell point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories but excluding the bell.	No.	1		
1.12	240V/12V Ding dong domestic door bell	No.	1		
	TELEPHONE, DATA AND TV POINTS POINTS				
1.13	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the telephone socket outlet.	No.	1		
1.14	DTV Socket point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking cover but excluding the DTV socket outlet.	No.	1		
1.15	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
1.16	25mm diameter PVC HG conduit for ICT services and linking the Draw Boxes to the ICT ducts	Lm.	20		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER RETICULATION AND DISTRIBUTION BOARDS				
1.17	6 ways 100A SPN Consumer Unit `A' complete with 100A SPN integral isolator ,but excluding the MCBs, and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
1.18	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	1		
	ii)32 A SP MCB	No.	3		
	iii) 45 A SP MCB	No.	1		
	iv) Blanking plates	No.	1		
1.19	Sub-mains circuits for CU 'A ' above comprising of 3 x 10mm^2 single core PVC insulated copper cables drawn in 32mm heavy gauge conduits and running from the Lv switchboard below the staircase.	LM	45		
	Total Carried Forward to Typical Floor Collection Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
F.	**CORRIDOR/ LIFTS LOBBY AREA**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
1.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for two way switching, but excluding the switch and luminaire.	No.	17		
1.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang two way switch	No.	4		
	ii) 10A two gang two way switch	No.	4		
1.03	**LIGHTING FITTINGS**				
	a) Circular shaped surface mounted led luminaire	No.	12		
	b) Emergency Maintained Circular shaped surface	No.	3		
	c) 8W bulkbead luminaire ,polycarbonate base, and clear diffuser and installed inside the lift shaft As Thorn EWB/ETB bulkhead. "**Type G"**	No.	2		
	Total Carried Forward to Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.04	CCTV points in designtaed locations for survailance, comprising of 25mm diameter HG PVC conduits complete with draw wire and the blanking plate. Allow for draw boxes where all the conduits from each security point converge.	No.	6		
1.05	300x 300x 100mm deep 16G galvanized adaptable box.	No.	2		
	LIGHTING CONTROL				
1.06	Presence sensor complete with assocaited wiring (light and motion sensor) as Osram Duo with the following characteristics: Operation voltage 220 - 240V 50Hz, detection area-12m dia minimum, settable light value, switch-off delay (if no motion detected), installation height - 5m minimum	No.	3		
	Total Carried Forward to Next Pg.				

ITEM	DESCRIPTION	QTY	RATE (KSH)	AMOUNT (KSH)
	TYPICAL FLOOR SUMMARY			
1	Total Amount for 2 Bedroom AHP Unit	36		
2	Total Amount for 3 Bedroom AHP Unit	9		
3	Total Amount for Studio AHP Unit	27		
4	Total Amount for 1 Room Social Unit	9		
5	Total Amount for 2 Room Social Unit	18		
6	Total Amount for 3 Room Social Unit	9		
7	Total Amount for Common Area	9		
	Total for 9No.Typical Floor Carried Forward to Main Summary Page			

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
(iii)	**EARTHING AND LIGHTNING PROTECTION** SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	Air Termination				
1.01	2000mm x15mmØ multiple point pure copper AirRods/ Termination with spikes as Furse Part No. RA240 or approved equivalent	No.	3		
1.02	Copper Air Rod Base as Furse Part No. SD105-H or approved equivalent	No.	3		
1.03	Copper Junction Clamps for copper tape as Furse Part No. CN105-H or approved equivalent	No.	3		
1.04	25mm x 3mm Tinned Copper Tape as Furse TC230 or approved equivalent	Lm.	130		
	Down Conductor				
1.05	25mm x 3mm Tinned Copper Tape as Furse TC230 or approved equivalent	Lm.	200		
1.06	Screwdown copper test clamp as Furse CT305 or approved equivalent	No.	3		
1.07	38mm Ø HG PVC conduits for drawing the down conductor above.	Lm.	10		
	Total Carried Forward to Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	Earth Termination				
1.08	15mm Ø, 1500mm long solid copper earth rod c/w driving stud, coupling, and spike as Furse RC011 or approved equivalent	No	3		
1.09	Earth rod to tape clamp type A as Furse CR108 or approved equivalent	No.	3		
1.10	Concrete inspection earth pit Cat. No. PT 005 with 5 hole earth bar as Furse Cat. No. PT 006.	No.	2		
1.11	600mm x 600mm copper earth mat made from 25mm x 3mm copper tape at 300mm spacing, buried to permanent moisture level and complete with all clamps and 6m long 25mm x 3mm copper tape clamped to the down conductor, soil conditioning agents (marconite or bentonite) as necessary to achieve earthing resistance value below 10-Ohms	Lot	1		
1.12	Allow for earthing tests for the above and submission of the report to the engineer to BS7671 & BS62305 standards	No.	1		
	Bonding				
1.13	Bonding and clamping to all metal work including water pipes, gas pipes, hand-rails, smatv system, window frames, cladding, metal roof etc. and the main earth for the building.	Item	1		
	Total Carried Forward to Main Summary Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
(iv)	**LV SWITCHBOARD**				
	DELIVERY, STORE, INSTALL AND COMMISSION THE FOLLOWING:-				
1.01	Supply and install purpose made Free-standing, fully wired front access metal clad main switchboard cubicle suitable for floor / wall mounting and manufactured in 14SWG galvanised mild steel sheet, to be finished in cream (or appropriate colour) powder coating. Wiring as shown on the schematic (the other details as per Particular Specification), complete with the following:-	No.	2		
(i)	400Amps TP/N copper busbars - KPLC supply (Sealable)				
(ii)	400Amps MCCB as mains incomer adjustable				
(iii)	Space for 1No. 3-phase KPLC Common Services meter (kW, kWH, kVA, V, I etc), 63A TP MCB				
(iv)	62No. 63A DP MCBs for the sub-main cables				
(v)	1No. 100A DP MCBs for the sub-main cables				
(vi)	Space for KPLC cut-outs including studs for mounting KPLC seals				
(vii)	Sealable studs for all cover plate screws and all necessary accessories				
(viii)	6mm perspex viewing window for each section				
(ix)	Heavy duty rubber lining for all the perspex viewing windows				
(x)	4 No. Spare ways				
	Total Carried Forward to Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.02	Earthing for the switch-board under this section comprising 25x3mm copper tape lead, 1800mm long x 15mm diameter copper earth electrode as Furse or approved equivalent complete with driving stud and tape to rod clamp, 300mm x 300mm x 300mm deep concrete inspection earth pit with removable waterproof cover, 600mm x 600mm copper earth mat, soil conditioning agents (marconite and bentonite etc) necessary to achieve earthing value below 5-Ohms and all other necessary accessories	No.	1		
	Total Carried Forward to Main Summary Pg.				

ITEM	DESCRIPTION	AMOUNT (KSH)
	BLOCK TYPE A SUMMARY PAGE	
1	Total Amount for Ground Floor B/F Page D-25	
2	Total Amount for Typical 1st - 9th Floor B/F Page D-48	
3	Total Amount for Lightning Protection B/F Page D-50	
4	Total Amount for LV Switchboard B/F Page D-52	
TOTAL AMOUNT FOR BILL No. 1: TYPICAL 1NO. BLOCK TYPE C CARRIED FORWARD TO PRICE COLLECTION PAGE		

Item	Description	Unit	QTY	Rate	Amount
	PROPOSED SOCIAL + AFFORDABLE UNITS BLOCK (TYPE C G+9)				
	BILL NO.1-BUILDERS WORKS				
	MAIN SUMMARY		Page No.		
1	**Substructures**		**C/4**		
2	**Reinforced Concrete Frame**		**C/5**		
3	**Walling**		**C/6**		
4	**Windows**		**C/8**		
5	**Doors**		**C/10**		
6	**External Finishes**		**C/11**		
7	**Internal Finishes**		**C/15**		
8	**Balustrade and Railing**		**C/16**		
9	**Joinery and Fittings**		**C/17**		
10	**Builders works in connection with services**		**C/18**		
11	**Mechanical Works**				
12	**Electrical Works**				
	TOTAL FOR 1NO. TYPE C (G+9) BLOCK				
	NO. OF BLOCKS				
	MULTIPLY BY **8.NO** OF BLOCKS	**X 8**			8
	TOTAL FOR 8NO. TYPE C (G+9) BLOCK(S) CARRIED TO GRAND SUMMARY				

GARBAGE RECEPTACLE

ITEM	DESCRIPTION	UNIT	QTY	RATE	
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (GARBAGE RECEPTACLE) **BILL NO.1-BUILDERS WORKS** **ELEMENT NO 1 - SUBSTRUCTURES (ALL PROVISIONAL)** *Site Clearance*				
A	Clear site of all grass, hedges, shrubs, bushes grub up roots, load and remove from site and dispose at designated local authority areas.	SM	103		
B	Excavate average 200mm deep to remove top vegetable soil, load, remove from site and dump in designated local authority dump site.	SM	99		
C	Excavate to reduced levels in varying depths not exceeding 1.5m deep from existing ground levels.	CM	79		
D	Excavate for Strip foundations depth not exceeding 1.50 metres starting from Reduced ground levels.	CM	33		
E	Excavate for column bases depth not exceeding 1.50 metres starting from Reduced ground levels.	CM	10		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	
	Disposal of excavated material				
A	Return, fill and ram selected excavated material around foundations.	CM	84		
B	Load,wheel and cart away surplus excavated material to a Local Authority designated dumping site or fill soil heaps as away from site instructed by the Project Engineer.	CM	39		
	Fillings				
C	Make up levels using approved imported materials: compacted in layers not exceeding 300mm thick with a roller: to the satisfaction of the Structural Engineer.	CM	71		
D	300mm thick hardcore bed: hand packed : compacted in layers not exceeding 150mm thick: to the satisfaction of the Structural Engineer	SM	89		
E	50 mm Thick Murram Blinding to surfaces of hadcore	SM	89		
	Anti - termite to treatment				
F	Approved anti-termite treatment, with ten-year guarantee, sprayed to surfaces of hardcore strictly in accordance with manufacturer's instructions.	SM	103		
	Damp-proof membrane				
G	1000 gauge polythene or other equal and approved damp-proof membrane, laid over blinded hardcore (measured separately) with 300mm side and end laps (measured nett-allow for laps); 1 No. layer: bedded in and including cement and sand (1:3) mortar	SM	103		
	Concrete Blinding				
	Insitu concrete class 15/20 mm aggregates: vibrated:				
H	50 mm Thick under strip foundation	SM	37		
I	50 mm Thick under column bases	SM	13		
	In- situ vibrated reinforced concrete Class 25 (20mm aggregates): in:				
J	Strip foundation	CM	7		
K	100mm thick surface bed	SM	103		
L	Column bases	CM	5		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	
	Ribbed reinforcement steel bars to BS4449: 2005: Grade 500 high tensile strengthincluding bends, hooks, tying wire and distance blocks; to S.E's detail (Provisional)				
A	Assorted reinforcement	Kg	491		
	Mesh fabric reinforcement to BS 4483 BRC A142;200 x 200mm, weighing 2.22kg/m² (measured net - no allowance) for laps; in two layers - top & bottom; including bends, tying wire and spacer blocks)				
B	In floor beds	SM	103		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to:				
C	Sides of Strip footing	SM	24		
D	Sides of column bases	SM	21		
E	Edge of slab not exceeding 150mm girth	LM	41		
	Foundation Walling				
	Natural quarry stones rough dressed; bedded in and including cement and sand (1:4) mortar; reinforced with and including 45 mm wide hoop iron gauge in alternate courses: in:				
F	200mm thick walls in foundations	SM	103		
	Plinth				
	25mm Thick cement and sand (1:4) rendering on concrete or masonry ; wood float finished; to				
G	Plinths externally	SM	12		
	Two coats black bitumastic paint on:				
H	Rendered surfaces	SM	12		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	
	COLLECTION				
	Total brought forward from page no: 1				
	Total brought forward from page no: 2				
	Total brought forward from page no: 3				
	ELEMENT NO. 1 **Carried to**				
	SUBSTRUCTURES **Main summary**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	
	BILL NO.1-BUILDERS WORKS				
	ELEMENT No 2 - R.C FRAME				
	Reinforcement to BS 4449:1997 , Grade 460B high strength type 2 ribbed bars with proof stress of 460 N/mm2				
	Insitu concrete class 25 (20 mm aggregate): vibrated: reinforced				
A	Columns	CM	1		
B	Ring beam	CM	4		
C	Ramp	SM	4		
D	Steps	CM	1		
	Ribbed reinforcement steel bars to BS4449: 2005:Grade 500 high tensile strength including bends, hooks, tying wire and distance blocks to S.E's detail (All provisional)				
E	Assorted reinforcement	Kg	890		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to				
F	Sides and soffites of beams	Sm	57		
G	Sides of columns	Sm	25		
H	Edges of steps not exceeding 150mm girth	Lm	3		
	ELEMENT NO. 2 **Carried to**				
	R.C FRAME **Main summary**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (GARBAGE RECEPTACLE) **BILL NO.1-BUILDERS WORKS**				
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (GARBAGE RECEPTACLE) **BILL NO.1-BUILDERS WORKS**				
	ELEMENT No 3-WALLING **WALLING** **External Walling** *Machine cut quarry stone walling with a minimum of 7.0 N/mm2 average compressive strength to B.S 5390;bedded and jointed in cement and sand (1:4) mortar, reinforced with and including 25 x 3 mm thick hoop iron strips at every alternate course as described in:*				
A	200mm thick walling Externally	Sm	119		
B	200mm thick walling Internally	Sm	24		
C	Approved hessian based damp proof course to 200mm thick walling in cement/sand mortar	Lm	69		
	ELEMENT NO. 2 **Carried to** **WALLING** **Main summary**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	
	BILL NO.1-BUILDERS WORKS				
	ELEMENT No 4 - ROOFING				
	ROOF STRUCTURE, COVERING & RAINWATER GOODS				
	The following in nailed sawn celcured cypress roof trusses 3800mm clear span 1200mm high including hoisting approximately 3000mm above the ground				
	Sawn celcured second grade cypress in:				
A	150x50mm wall plate complete with J-bolts	Lm	65		
B	150x50mm rafters	Lm	61		
C	100x50mm common rafters	Lm	50		
D	150x50mm tie beam/ceiling joist	Lm	59		
	100x50mm purlins	Lm	174		
E	100x50mm ties and struts	Lm	66		
	Roof covering **28** gauge **IT5 Roofing sheets**; laid on timber structure and including fixing clips and brackets and fixing to timber rafters at 600mm centres(m/s)				
F	Sheet covering to pitched roof	Sm	97		
	Wrot softwood Fascia board				
G	250mm x 25mm Fascia/ barge boards nailed to end of rafters	Lm	25		
	Painting Wood				
	Knot, prime, stop and paint three coats of gloss oil paint as Crown or other equal and approved to:				
H	Fascia or verge; girth 225mm - 300mm	Lm	25		
	Flashing				
I	600mm girth mild steel flushing twice bent and fixed in approved means	Lm	40		
	Rain water goods				
	Supply and fix the following in UPVC: to BS 4515 with fittings fixed to manufacturer's instruction and BS 5572: manufactured by "Doshi Kenya Ltd" or other equal and approved: tenderer must allow in the pipework for pipe fixing clips or holderbats, plugged and screwed				
J	110mm Diameter ***down pipe:*** Grey uPVC with and including swan neck offset and shoes: holder bats at 1500mm centres: including water-tight connections to mild steel gutters	Lm	18		
K	Extra over ditto for swan neck	no	6		
L	Ditto horse shoe	no	6		
	Heavy duty UPVC ***gutter***				
M	150mm diameter half round gutter fixed to fascia board with and including mild steel brackets at 600 centers	Lm	25		
N	Extra over rainwater gutter for 100mm diameter downpipe outlet	no	6		
O	Ditto stopped end	no	6		
P	Ditto bend	no	6		
	ELEMENT NO. 4 **Carried to**				
	ROOFING **Main summary**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	
	ELEMENT NO 5 - DOORS AND OPENINGS				
	Steel Casement Door				
	Supply, fabricate and fix the following purpose made heavy gauge double steel casement door comprising 40 x 25 x3mm stiles, top and bottom stiles, 4 No Intermediate rails, 1.5mm steel sheet both sideswelded in place and 5mm thick clear glazing, all primed with red oxide spray painted with two finishing coats of first quality gloss oil paint on ; complete with all necessary ironmongery fasteners and necessary seremetals assembled and fixed to opening including cutting and pinning lugs to concrete or block work sorround and bedding frame in cement and sand mortar (1:3).				
A	Door size 1200 x 2100mm high	NO	4		
B	Door size 1600 x 2100mm high	NO	2		
C	Approved gauge 22 mild steel mesh in 16mm diameter roind bars	SM	12		
	Painting and Decorations				
	On Metal work				
	Prepare and apply aerosol spray painting in two finishing coats of first grade Crown Solo or other equal and approved to: -				
D	General window and grille surfaces; over 300mm girth internal	SM	59		
	ELEMENT NO. 5 Carried to				
	DOORS Main summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	
	ELEMENT NO 6 - EXTERNAL FINISHES				
	EXTERNAL WALL FINISHES				
A	Extra over horizontal and vertical pointing in 10mm thick rod in cement and sand mix (1:3) mortar including one coat Bituminous paint	SM	119		
	COPING				
B	300 wide x 50mm thick concrete, coping, throated and weathered, bedding and jointing to walls with cement sand 1:4 mortar	LM	40		
	ELEMENT NO. 6 **Carried to** **EXTERNAL FINISHES** **Main summary**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	
	ELEMENT NO 7 - INTERNAL FINISHES				
	Internal Wall Finishes				
	Cement and sand (1:4) backing				
A	12mm thick internal walls	SM	166		
	Floor Finishes				
	Cement and sand (1:3) screeds, backings, beds etc				
B	32mm Thick coloured cement sand screed mix 1:3 finished to approval	SM	91		
	ELEMENT NO. 7 Carried to INTERNAL FINISHES				

ITEM	DESCRIPTION	UNIT	QTY	RATE	
	ELEMENT NO 8 - BUILDERS WORKS IN CONNECTION WITH SERVICES (BWICWS)				
	Plumbing, Drainage and Mechanical Installations				
A	Inspect all drawings and Bills of Quantities for Plumbing, Drainage and Mechanical Installations and allow for all Builder's work associated with the installations; including cutting away and making good after installing a concealed drainage system; including cutting or leaving all holes notches, mortices, sinkings and chases in both the structure and its coverings; including but not limited to forming recess in masonry	Item			
	Electrical Services Installations				
B	Inspect all drawings and Bills of Quantities for Electrical Installations and allow for all Builder's work associated with the Electrical installations, including cutting away for and making good after Electrician installing a concealed conduit system including cutting or leaving all holes notches, mortices, sinkings and chases in both the structure and its coverings; including but not limited to forming recess in masonry	Item			
	ELEMENT NO. 8 **Carried to the BUILDERS WORKS IN CONNECTION WITH SERVICES (BWICWS) Main summary**				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
1.0	**Internal Plumbing Installations**				
	Supply, deliver install, Test and Commission:				
	PP-R (Polypropylene Random Co-polymer) pipes **PN 20** and fittings to DIN 8078 and DIN 16962 with polyfusion welded joints to DVS 2207 of approved manufacturer. Rates must allow for all Metal/plastic threaded adaptors where required for the connection of sanitary fixtures, valves, sockets, sliding and fixed joints etc. as required in the running lengths of pipework. The pipes shall run in floors and wall chase. The pipes will be pressure tested before the plastering of wall commences and as per the manufacturers recommended testing pressures.				
	Pipe Works				
A	25mm Ø PPR Pipe	2	LM		
B	Ditto 20mm Ø	2	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	25mm Ø Elbows/ Bends	3	No.		
D	Ditto 20mm Ø	2	No.		
	Equal/Unequal Tees				
E	25 x 20 x 25mm	1	No.		
	Reducers				
F	25 x 20mm reducer	2	No.		
	Male/Female brass threaded adaptor				
G	25 x 20mm male/female threaded adaptor	2	No.		
H	25 x 15mm ditto	1	LM		
I	25 x 15mm male threaded bend	1	LM		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total from Previous Page				
	Isolating valves				
J	25mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
	Testing and Commissioning				
L	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Sub Total				
	TOTAL	1		x 1	
Total Cost of Plumbing Installation Guard House					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Foul Drainage				
	Supply, deliver and install the following in key "Terrain" or equal and approved uPVC Heavy gauge soil and waste system. Allow for all the various sizes of adaptor, connectors, sockets, holderbats, clips etc not measured but required for the satisfactory functioning of the system.				
	Piping				
A	50mm ditto	6	LM		
B	100mm ditto	4	LM		
C	100mm diameter heavy duty pipe	4	LM		
	Extra over uPVC Pipeworks				
D	50mm sweep bend	2	No.		
E	100mm sweep bend	1	No.		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total From Previous Page				
F	**Gulley Trap** Gully trap comprising of 100mm diameter golden brown uPVC gully piece, 100mm diameter uPVC trap spigot outlet with screws and washers, and 300 x 300mm masonry gully trap chamber with mild steel plate and a heavy	1	No.		
G	**Manholes** Construct manhole/ inspection chamber size 450 x 600 x 750mm deep internally in 200mm stone walls, 150mm concrete bed, water proof plaster, forming drain channels, medium duty cover frame in cast iron with recessed cover with concrete infill and all necessary formwork, excavation and soil disposal.	1	No.		
H	**Excavations** Excavate trench for pipe not exceeding 100mm diameter and not exceeding 1.5m deep (average 600mm deep) and make good as before.	4	LM		
	Total Cost For Ground Floor Foul Drainage Installation				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Rain Water Drainage				
	Supply, deliver and install UPVC rainwater pipes and PPR pipework. Allow for all flanges, couplings, nipples, connector joints, fixing clips holder bats etc as required in running length of pipework but not measured.				
	Piping				
A	100mm ditto	6	LM		
	Extra over piping for fittings:-				
B	100mm ditto	2	No.		
C	100mm sweep bend	2	No.		
D	100mm single branch	2	No.		
E	100mm double branch	2	No.		
F	100mm flat roof rain water outlets	1	No.		
	Total Cost For Rain Water Drainage Installation				

ITEM	DESCRIPTION	AMOUNT (KES)
	SUMMARY PAGE	
1.0	**Total Cost for Internal Plumbing**	
2.0	**Total Cost For Ground Floor Foul Drainage Installation**	
3.0	**Total Cost For Rain Water Drainage Installation**	
	Total carried to Mechanical Works Main Summary Page	

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	BILL NO. 6				
	GARBAGE RECEPTACLE				
A.	**GUARD HOUSE**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
7.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	8.00		
	ii) Ditto as in item No. 5.01 but for two way switching	No.	8.00		
7.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	6.00		
	ii) 10A one gang two way switch	No.	4.00		
7.03	**LIGHTING FITTINGS**				
	a) Circular shaped surface mounted led luminaire as Phillips Coreline Cat No. WL131V LED12S/840 PSED EL3 WH **"Type N"**	No.	12.00		
	b) Bulkhead fitting with moulded glass diffuser & Die Cast Aluminium base c/w 16W PL Lamp as Massive Sunderland Cat. No. 71410/01/31 for security lights. **"Type B"**	No.	4.00		
7.04	CCTV points in designtaed locations for survailance, comprising of 25mm diameter HG PVC conduits complete with draw wire and the blanking plate. Allow for draw boxes where all the conduits from each security point converge.	No.	6.00		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
7.05	300x 300x 100mm deep 16 G galvanized adaptable box.	No.	1.00		
7.06	24A, 240V, 2P DB/CU mounted silent operation contactor for Switching External lights complete with all accessories and as CRABTREE CIK24 or an approved equivalent	No.	1.00		
7.07	Photocell control unit and wired to energize the contactors complete with a D.P override switch as THORN QPK or approved equivalent	No.	1.00		
	POWER AND SOCKET OUTLET POINTS				
7.08	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	1.00		
7.09	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	1.00		
	TELEPHONE, DATA AND TV POINTS POINTS				
7.10	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking plate but excluding the data socket outlet.	No.	1.00		
7.11	6 ways 100A SPN Consumer Unit `G' complete with 100A SPN integral isolator, but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1.00		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
7.12	**MCBs for item above as Schneider Electric Acti 9 or approved equivalent**				
	i)10 A SP MCB	No.	1.00		
	ii)32 A SP MCB	No.	1.00		
	iii) Blanking plates	No.	4.00		
7.13	Sub-mains circuits for CU 'G' above comprising of 2 core 6mm2 PVC/SWA/PVC cable drawn in 32mm diameter heavy gauge conduits for gate house	LM	35.00		
TOTAL AMOUNT FOR BILL No. 6 GARBAGE RECEPTACLE CARRIED FORWARD TO GRAND SUMMARY PAGE					

ITEM	DESCRIPTION	UNIT	QTY	RATE	
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (GARBAGE RECEPTACLE)				
	MAIN SUMMARY		**PAGE**		
1	**Substructures**		**GR/4**		
2	**Walling**		**GR/5**		
3	**RC Frame**		**GR/6**		
4	**Roofing**		**GR/7**		
5	**Doors**		**GR/8**		
6	**External Finishes**		**GR/9**		
7	**Internal Finishes**		**GR/10**		
8	**Builders works in connection with services**		**GR/11**		
9	**Mechanical Works**		**GR/12**		
10	**Electrical Works**		**GR/13**		
	TOTAL FOR 1NO. GARBAGE RECEPTACLE				
	NO. OF RECEPTACLE				**2**
	TOTAL FOR 3NO. GARABAGE RECEPTACLES CARRIED TO GRAND SUMMARY				

GUARD HOUSE

Item	Description	Unit		RATE	AMOUNT
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (GUARD HOUSE)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 1 - SUBSTRUCTURES (ALL PROVISIONAL)				
	Site Clearance				
A	Clear site of all grass, hedges, shrubs, bushes grub up roots, load and remove from site and dispose at designated local authority areas.	SM	14		
B	Bulk excavation to reduce levels depth not exceeding 1.5m commencing from existing ground level	CM	22		
C	Excavate for column bases depth not exceeding 1.50 metres starting from Reduced ground levels.	CM	3		
D	Excavate for Strip foundations depth not exceeding 1.50 metres starting from Reduced ground levels.	CM	4		
E	Extra over excavation for excavating in all classes of rock	CM	0.2		
	Disposal of water				
F	Allow for keeping all excavation free from water by pumping, bailing or by other means necessary	Item			
	Planking and Strutting				
G	Allow provision and subsequent removal of planking and strutting to uphold and maintain all faces of excavations	Item			
	Carried to collection				

Item	Description	Unit		RATE	AMOUNT
	Disposal of excavated material				
A	Return, fill and ram selected excavated material around foundations.	CM	24		
B	Load,wheel and cart away surplus excavated material to a Local Authority designated dumping site or fill soil heaps as away from site instructed by the Project Engineer.	CM	5		
	Fillings				
C	Make up levels using approved imported materials: compacted in layers not exceeding 300mm thick with a roller: to the satisfaction of the Structural Engineer.	CM	32		
D	300mm thick hardcore bed: hand packed : compacted in layers not exceeding 150mm thick: to the satisfaction of the Structural Engineer	SM	10		
E	50 mm Thick Murram Blinding to surfaces of hadcore	SM	10		
	Anti - termite to treatment				
F	Approved anti-termite treatment, with ten-year guarantee, sprayed to surfaces of hardcore strictly in accordance with manufacturer's instructions.	SM	14		
	Damp-proof membrane				
G	1000 gauge polythene or other equal and approved damp-proof membrane, laid over blinded hardcore (measured separately) with 300mm side and end laps (measured nett-allow for laps); 1 No. layer: bedded in and including cement and sand (1:3) mortar	SM	14		
	Concrete Blinding				
	Insitu concrete class 15/20 mm aggregates: vibrated:				
H	50 mm thick blinding under footings	SM	8.00		
I	50 mm thick blinding under bases	SM	6		
	In- situ vibrated reinforced concrete Class 25 (20mm aggregates): in:				
J	Strip footing	CM	2		
K	100mm thick surface bed	SM	14		
	Carried to collection				

Item	Description	Unit		RATE	AMOUNT
	In- situ vibrated reinforced concrete Class 25 (20mm aggregates): in:				
A	Bases	CM	2		
B	Sub columns	CM	1		
	Ribbed reinforcement steel bars to BS4449: 2005: Grade 500 high tensile strengthincluding bends, hooks, tying wire and distance blocks; to S.E's detail (Provisional)				
C	Assorted reinforcement	Kg	443		
	Mesh fabric reinforcement to BS 4483 BRC A142;200 x 200mm, weighing 2.22kg/m² (measured net - no allowance) for laps; in two layers - top & bottom; including bends, tying wire and spacer blocks)				
D	In surface bed	SM	14		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to:				
E	Sides of Column Bases	SM	7		
F	Sides of sub columns	SM	14		
G	Sides of strip footing	SM	5		
H	Edge of slab not exceeding 150mm girth	LM	15		
	Foundation Walling				
	Natural quarry stones rough dressed; bedded in and including cement and sand (1:4) mortar; reinforced with and including 45 mm wide hoop iron gauge in alternate courses: in:				
I	200mm thick walls in foundations	SM	36		
	Plinth				
	25mm Thick cement and sand (1:4) rendering on concrete or masonry ; wood float finished; to				
J	Plinths externally	SM	5		
	Two coats black bitumastic paint on:				
K	Rendered surfaces	SM	5		
	Carried to collection				

Item	Description	Unit		RATE	AMOUNT
	COLLECTION				
	Total brought forward from Page No:1				
	Total brought forward from Page No:2				
	Total brought forward from Page No:3				
	ELEMENT NO. 1 Carried to **SUBSTRUCTURES Main summary**				

Item	Description	Unit		RATE	AMOUNT
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (GUARD HOUSE)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT No 2 - R.C FRAME				
	Insitu concrete class 25 (20 mm aggregate): vibrated: reinforced				
A	Columns	CM	2		
B	Beams	CM	1		
C	150mm thick roof slab	SM	14		
D	100 mm thick reinforced concrete benches reinforced with BRC mesh A142 complete with formwork and all necessary plasterworks/screed work	SM	0.4		
	Ribbed reinforcement steel bars to BS4449: 2005:Grade 500 high tensile strength including bends, hooks, tying wire and distance blocks to S.E's detail (All provisional)				
E	Assorted reinforcement	KGS	702		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to				
F	Sides and soffites of beams	SM	12		
G	Vertical sides of columns	SM	27		
H	Edges of slab over 150mm but not exceeding 225mm girth	LM	15		
	ELEMENT NO. 2 R.C FRAME **Carried to Main summary**				

Item	Description	Unit		RATE	AMOUNT
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (GUARD HOUSE)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT No 3-WALLING				
	WALLING				
	External Walling				
	Machine cut quarry stone walling with a minimum of 7.0 N/mm2 average compressive strength to B.S 5390;bedded and jointed in cement and sand (1:4) mortar, reinforced with and including 25 x 3 mm thick hoop iron strips at every alternate course as described in;				
A	200mm thick walling	Sm	29		
B	200mmm parapet walling	Sm	29		
	Machine cut quarry stone walling with a minimum of 7.0 N/mm2 average compressive strength to B.S 5390;bedded and jointed in cement and sand (1:4) mortar, reinforced with and including 25 x 3 mm thick hoop iron strips at every alternate course as described in;				
C	200mm thick walling Internally	Sm	5		
D	Approved hessian based damp proof course to 200mm thick walling in cement/sand mortar	Lm	13		
	COPING				
E	Ditto 200 x 50mm concrete coping to walls twice weathered and throated;	LM	11		
	Lintols				
F	200mm x 200mm Deep lintols in reinforced concrete class 20MPa with and including 4No T10 and T8 stirups at 200mm centres; complete with formwork	LM	3		
	ELEMENT NO. 3 WALLING **Carried to Main summary**				

Item	Description	Unit		RATE	AMOUNT
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (GUARD HOUSE)				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 4-WINDOWS				
	MILD STEEL WINDOWS				
	Supply, fabricate and fix the following purpose made mild steel casement windows to be fabricated from approved mild steel sections (atleast 14g 2mm thick) comprising of frame and casement incorporating permanent hooded high level ventilation panels infilled with mosquito gauze : window supplied complete with and including 12mm solid square burglar proofing bars fixed at 200mm centres both ways and metal fixing lugs including building into wall and making good, and all necessary iron mongery viz hinges, fasteners, and hasp including shop priming window with red oxide primer before delivery to site:-				
A	Window, overall size 1200 X 1500mm high to Architects Details (Guard Room)	NO	1		
B	Window, overall size 900 X 1500mm high to Architects Details (Guard Room)	NO	1		
C	Ditto Size 600 x 600mm high (WC/SH)	NO	2		
	Glazing				
D	4mm Thick clear sheet glass panes over 0.1 but not exceeding 0.5 square meters; fixing with putty	SM	3		
E	Ditto; obscure	SM	1		
	Painting and Decorations				
	On Metal work				
	Prepare and apply aerosol spray painting in two finishing coats of first grade approved paint as described in				
F	General window and grille surfaces; over 300mm girth internal	SM	6		
	Carried to Collection				

Item	Description	Unit		RATE	AMOUNT
	Bull-nosed precast concrete, finishing fair on all exposed surfaces and hoisting and placing in position, bedding, jointing and pointing in pigmented cement and sand (1:3) mortar				
A	150 x 25mm thick precast concrete window sill	LM	4		
	Curtain rods;				
B	20mm diameter heavy duty twin brass rod complete accessories to approval	LM	3		
	Carried to collection				
	COLLECTION				
	Total brought forward from Page No:7				
	Total brought forward from Page No:8				
	ELEMENT NO. 4 WINDOWS **Carried to the Main summary**				

Item	Description	Unit		RATE	AMOUNT
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (GUARD HOUSE)				
	ELEMENT NO 5-DOORS				
	Steel Casement Door				
	Heavy gauge steel casement doors size 900 x 2100mm high comprising 40 x 25 x3mm stiles, top and bottom stiles, 4 No Intermediate rails, 1.5mm steel sheet both sideswelded in place and 5mm thick clear glazing, all primed with red oxide and spray painted 2 coats eggshell gloss paint; complete with all necessary ironmongery fasteners and necessary seremetals assembled and fixed to opening including cutting and pinning lugs to concrete or block work sorroung and bedding frame in cement and sand mortar (1:3). (D.01)				
A	Door size 900x 2100 mm high (D.01)	NO	1		
	Flush timber doors				
	50 mm thick Semi Solid cored flush doors with plywood facing to receive painting (m.s) all to Architects details, specifications and approval				
B	Door size 900mm x 2100mm (D.02)	NO	1		
	Frames and frame finishes in soft wood Timber				
C	25 x 25mm quadrant	LM	5		
D	25 x 50mm architrave with two labours, plugged	LM	5		
E	150mm x 50mm frame with three labours; chamfered edges; plugged	LM	5		
	Carried to collection				

Item	Description	Unit		RATE	AMOUNT
	Priming back of frame with an aluminium or equivalent and approved wood primer				
A	Surfaces not exceeding 100mm girth	LM	10		
B	Surfaces over 100mm but not exceeding 200mm girth	LM	5		
	Prepare Knot, prime, stop and apply one undercoat and two coats first grade quality gloss oil paint to wood surfaces				
C	General timber surfaces	SM	4		
D	Surfaces over 100mm but not exceeding 200mm girth	LM	5		
E	Architraves: not exceeding 100 mm girth	LM	5		
F	Quadrant beading : not exceeding 100 mm girth	LM	5		
	Ironmongery				
	Supply and fix the following ironmongery to timber complete with matching screws and keys to the approval of the Architect				
G	100mm pressed steel Butt Hinges	Pairs	2		
H	Stainless steel 3 Lever Door Lock with handle	NO	1		
I	Stainless steel 2 Lever Door Lock with handle	NO	1		
J	Door fixing cramps	NO	1		
K	Rubber Door Stops	NO	2		
	Carried to Collection				
	COLLECTION				
	Total brought forward from Page No:9				
	Total brought forward from Page No:10				
	ELEMENT NO. 5 DOORS **Carried to Main summary**				

Item	Description	Unit		RATE	AMOUNT
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (GUARD HOUSE)				
	ELEMENT NO 6 - EXTERNAL AND INTERNAL FINISHES				
	EXTERNAL WALL FINISHES				
	External Render				
	Cement and sand (1:3) render:wood floated: on concrete or blockwork: to				
A	15mm thick to beams, Columns, Slab Moulds and walling externally	SM	100		
B	Extra over horizontal and vertical pointing in 10mm thick rod in cement and sand mix (1:3) mortar including one coat Bituminous paint	SM	1		
	External Painting				
	Allow for skimming coat, Prepare and apply three coats interior quality eggshell paint as "Crown Paints" or other equal and approved paint to:-				
C	Plastered surfaces of beams, Columns, and walling externally	SM	100		
	INTERNAL FINISHES				
	Internal Wall Finishes				
	Cement and sand (1:4) backings				
B	12mm thick to receive Wall tiles - Wet areas	SM	12		
	Ceramic wall tiles				
	Allow a Prime Cost supply rate of Ksh. 700 per SM				
E	Supply and Fix 300x300x6mm thick ceramic wall tiles as manufactured by Saj Ceramics, or equal and approved on prepared backings(m.s) with proprietary adhesive; jointed and pointed in matching coloured proprietary grouting: including pvc spacers and expansion joint as necessary: all to Architect's approval. - Wall Surfaces	SM	12		
	Carried to Collection				

Item	Description	Unit		RATE	AMOUNT
	12mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
A	Concrete/masonry surfaces Internally	SM	10		
	Painting and Decoration				
	Allow for skimming coat, Prepare and apply three coats interior quality eggshell paint as "Crown Paints" or other equal and approved paint to:-				
B	Plastered concrete/masonry surfaces internally	SM	10		
	Floor Finishes				
	Cement and sand (1:3) screeds, backings, beds etc				
C	32mm bed finished to receive Floor Tiles (m.s)	SM	12		
	Ceramic Floor tiles *Allow a Prime Cost supply rate of Ksh. 700 per SM*				
D	Supply and Fix 300 x 300x 10mm thick Ceramic tiles as manufactured by Saj Ceramics, or equal and approved; on prepared bed(m.s) with proprietary adhesive; jointed and pointed in matching coloured proprietary grouting: including pvc spacers and expansion joint as necessary: all to Architect's approval.	SM	4		
E	Ditto Non Slip Ceramic Tiles	SM	3		
F	Ditto 100mm wide Wall Skirtings	LM	15		
	The following in cement concrete tiles, jointed with neat cement slurry with pigment to match the shade of the tiles including rubbing and polishing;				
G	20mm thick concrete tiles size 300 x 300mm	SM	5		
	Carried to Collection				
	COLLECTION				
	Total brought forward from page no:11				
	Total brought forward from page no:12				
	ELEMENT NO 6: TOTAL FOR FINISHES				

Item	Description	Unit		RATE	AMOUNT
	ELEMENT NO. 7				
	ROOF FINISHES **Cement and sand (1:4) screeded beds: on concrete: complete with coloured pigmentation additives and hardener to:**				
A	50mm average waterproofed lightweight screed laid to falls and crossfalls to roof slabs -upper roof including gutter bases	SM	14		
	Prepare and apply to vertical/horizontal surfaces 4mm thick APP/EPDM water proofing or other equal and approved membrane with surface finish weighing 4kg/sm; laid on primer with torch-on process ;by an approved specialist all in accordance with the manufacturers instructions including provision of a written ten (10) year anti leak guarantee.				
B	4mm thick APP membrane applied to roof slabs	SM	14		
C	Ditto to skirting 200mm high	LM	15		
D	Dress membrane around 100mm rainwater outlet	No.	2		
	The Following Flat roof concrete tiles fixed with approved adhesive, laid and jointed with waterproofing bituminous compound				
E	20mm thick interlocking Concrete tiles of size 225 x 225mm	SM	14		
	Ceiling finishes				
	12mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
F	Soffits of Concrete surfaces	SM	14		
	Painting and Decoration				
	Prepare and apply one undercoat and one finishing coat first quality plastic emulsion paint on:-				
G	Plastered ceilings	SM	14		
	ELEMENT NO. 7 **ROOF CONSTRUCTION AND FINISHES**				

Item	Description	Unit		RATE	AMOUNT
	ELEMENT NO 8 - JOINERY FITTINGS Allow for providing materials, labour and construct fixtures and fittings as per Architects drawings of the following JOINERY FITTINGS AND FIXTURES complete with associated iron mongery; NOTE: All blockboard, MDF boards,etc in joinery works shall be lipped with hardwood lipping all round before fixing. Low level worktops with 600x600x8mm porcelain tiles top on and including 20mm thick blockboard: 100mm plastered mass concrete plinths in concrete class 15MPa: 18mm laminated mdf sides & shelves complete with doors, shelves, drawers & all necessary ironmongery; to Architect's details and approval				
A	Low level cupboards below concrete worktop total girth grouped together 1250mm long x 850mm high x 600mm deep	LM	1		
	ELEMENT NO. 8 JOINERY & FITTINGS **Carried to the Main summary**				

Item	Description	Unit		RATE	AMOUNT
	ELEMENT NO 9 - BUILDERS WORKS IN CONNECTION WITH SERVICES (BWICWS)				
	Plumbing, Drainage and Mechanical Installations				
A	Inspect all drawings and Bills of Quantities for Plumbing, Drainage and Mechanical Installations and allow for all Builder's work associated with the installations; including cutting away and making good after installing a concealed drainage system; including cutting or leaving all holes notches, mortices, sinkings and chases in both the structure and its coverings; including but not limited to forming recess in masonry	Item			
	Electrical Services Installations				
B	Inspect all drawings and Bills of Quantities for Electrical Installations and allow for all Builder's work associated with the Electrical installations, including cutting away for and making good after Electrician installing a concealed conduit system including cutting or leaving all holes notches, mortices, sinkings and chases in both the structure and its coverings; including but not limited to forming recess in masonry	Item			
	ELEMENT NO. 9 Carried to the BUILDERS WORKS IN CONNECTION WITH SERVICES (BWICWS) Main summary				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
1.0	**Internal Plumbing Installations**				
	Supply, deliver install, Test and Commission:				
	PP-R (Polypropylene Random Co-polymer) pipes **PN 20** and fittings to DIN 8078 and DIN 16962 with polyfusion welded joints to DVS 2207 of approved manufacturer. Rates must allow for all Metal/plastic threaded adaptors where required for the connection of sanitary fixtures, valves, sockets, sliding and fixed joints etc. as required in the running lengths of pipework. The pipes shall run in floors and wall chase. The pipes will be pressure tested before the plastering of wall commences and as per the manufacturers recommended testing pressures.				
(i)	Guard House				
	Pipe Works				
A	25mm Ø PPR Pipe	6	LM		
B	Ditto 20mm Ø	4	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	25mm Ø Elbows/ Bends	3	No.		
D	Ditto 20mm Ø	2	No.		
	Equal/Unequal Tees				
E	25 x 20 x 25mm	1	No.		
	Reducers				
F	25 x 20mm reducer	2	No.		
	Male/Female brass threaded adaptor				
G	25 x 20mm male/female threaded adaptor	2	No.		
H	25 x 15mm ditto	1	LM		
I	25 x 15mm male threaded bend	1	LM		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total from Previous Page				
	Isolating valves				
J	25mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
	Shut off Angle Valve				
K	Brass plated 1/2" angle valve	3	No.		
	Check Meter				
L	25mm diameter water check meter	1	No.		
	Testing and Commissioning				
M	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Sub Total for 1				
	TOTAL	1		x 1	
Total Cost of Plumbing Installation Guard House					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
2.0	**SANITARY FITTINGS AND ACCESSORIES**				
A	**Water Closet (WC) Pan** Close Coupled dual flush Floor Standing Close Coupled WC Bowl complete with seat cover and cistern, WC connector relevant fittings & accessories ***(Quote Install Only)***	1	No.		
B	**Wash Basin** WHB basin Full pedestal Wash Basin 450x485x230m White Complte with bottle traps, flexible connection hoses and other accessories with cws only tap ***(Quote Install Only)***	1	No.		
D	**Shower Fittings** Shower fitting c/w 15mm diameter chrome plated stop cork, Instant shower fitting and 1/2" Cobra 211- 15 Star Pillar tap as Pegler or equal and equivalent ***(Quote Install Only)***	1	No.		
	Sub Total for 1				
	TOTAL	1		x 1	
Total Carried to Next Page					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Foul Drainage				
	Supply, deliver and install the following in key "Terrain" or equal and approved uPVC Heavy gauge soil and waste system. Allow for all the various sizes of adaptor, connectors, sockets, holderbats, clips etc not measured but required for the satisfactory functioning of the system.				
	Piping				
A	32mm diameter heavy duty grey uPVC pipe	2	LM		
B	40mm ditto	3	LM		
C	50mm ditto	6	LM		
D	100mm ditto	4	LM		
E	100mm diameter heavy duty pipe	8	LM		
	Extra over uPVC Pipeworks				
F	32mm sweep bend	1	No.		
G	40mm sweep bend	1	No.		
H	50mm sweep bend	2	No.		
I	100mm sweep bend	1	No.		
J	40mm 45° bend	1	No.		
K	50mm Ditto	1	No.		
L	50mm sweep tee	2	No.		
M	40 x 32mm reducer	1	No.		
N	40mm access plug	1	No.		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total From Previous Page				
A	100 x 50mm floor trap set complete with polycarbonate flush grating	2	No.		
B	100mm WC bend connector	1	No.		
C	32mm bottle 'p' trap	1	No.		
	Gulley Trap				
D	Gully trap comprising of 100mm diameter golden brown uPVC gully piece, 100mm diameter uPVC trap spigot outlet with screws and washers, and 300 x 300mm masonry gully trap chamber with mild steel plate and a heavy	1	No.		
	Manholes				
E	Construct manhole/ inspection chamber size 450 x 600 x 750mm deep internally in 200mm stone walls, 150mm concrete bed, water proof plaster, forming drain channels, medium duty cover frame in cast iron with recessed cover with concrete infill and all necessary formwork, excavation and soil disposal.	1	No.		
	Excavations				
F	Excavate trench for pipe not exceeding 100mm diameter and not exceeding 1.5m deep (average 600mm deep) and make good as before.	8	LM		
G	Allow for hydrostatic pressure testing of drainage installation including provision of pipe plugs and other required fittings.	1	Item		
	Total Cost For Ground Floor Foul Drainage Installation				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Rain Water Drainage				
	Supply, deliver and install UPVC rainwater pipes and PPR pipework. Allow for all flanges, couplings, nipples, connector joints, fixing clips holder bats etc as required in running length of pipework but not measured.				
	Piping				
A	100mm ditto	6	LM		
	Extra over piping for fittings:-				
B	100mm ditto	2	No.		
C	100mm sweep bend	2	No.		
D	100mm single branch	2	No.		
E	100mm double branch	2	No.		
F	100mm flat roof rain water outlets	1	No.		
	Total Cost For Rain Water Drainage Installation				

ITEM	DESCRIPTION	AMOUNT (KES)
	SUMMARY PAGE	
1.0	**Total Cost for Internal Plumbing**	
2.0	**Total Cost for Sanitary Fittings**	
3.0	**Total Cost For Ground Floor Foul Drainage Installation**	
4.0	**Total Cost For Rain Water Drainage Installation**	
	Total carried to Mechanical Works Main Summary Page	

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	BILL NO. 6				
	GATE HOUSE				
A.	**GUARD HOUSE**				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
7.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	8.00		
	ii) Ditto as in item No. 5.01 but for two way switching	No.	8.00		
7.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	6.00		
	ii) 10A one gang two way switch	No.	4.00		
7.03	**LIGHTING FITTINGS**				
	a) Circular shaped surface mounted led luminaire as Phillips Coreline Cat No. WL131V LED12S/840 PSED EL3 WH **"Type N"**	No.	12.00		
	b) Bulkhead fitting with moulded glass diffuser & Die Cast Aluminium base c/w 16W PL Lamp as Massive Sunderland Cat. No. 71410/01/31 for security lights. **"Type B"**	No.	4.00		
7.04	CCTV points in designtaed locations for survailance, comprising of 25mm diameter HG PVC conduits complete with draw wire and the blanking plate. Allow for draw boxes where all the conduits from each security point converge.	No.	6.00		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
7.05	300x 300x 100mm deep 16 G galvanized adaptable box.	No.	1.00		
7.06	24A, 240V, 2P DB/CU mounted silent operation contactor for Switching External lights complete with all accessories and as CRABTREE CIK24 or an approved equivalent	No.	1.00		
7.07	Photocell control unit and wired to energize the contactors complete with a D.P override switch as THORN QPK or approved equivalent	No.	1.00		
	POWER AND SOCKET OUTLET POINTS				
7.08	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	1.00		
7.09	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	1.00		
	TELEPHONE, DATA AND TV POINTS POINTS				
7.10	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking plate but excluding the data socket outlet.	No.	1.00		
7.11	6 ways 100A SPN Consumer Unit `G' complete with 100A SPN integral isolator, but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1.00		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
7.12	**MCBs for item above as Schneider Electric Acti 9 or approved equivalent**				
	i)10 A SP MCB	No.	1.00		
	ii)32 A SP MCB	No.	1.00		
	iii) Blanking plates	No.	4.00		
7.13	Sub-mains circuits for CU 'G' above comprising of 2 core 6mm2 PVC/SWA/PVC cable drawn in 32mm diameter heavy gauge conduits for gate house	LM	35.00		
TOTAL AMOUNT FOR BILL No. 6 GATE HOUSE CARRIED FORWARD TO GRAND SUMMARY PAGE					

Item	Description	Unit		RATE	AMOUNT
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (GUARD HOUSE)				
	BILL NO.1-BUILDERS WORKS				
	MAIN SUMMARY		**PAGE**		
1	**Substructures**		**GH/4**		
2	**Reinforced Concrete Frame**		**GH/5**		
3	**Walling**		**GH/6**		
4	**Windows**		**GH/8**		
5	**Doors**		**GH/10**		
6	**External and Internal Finishes**		**GH/12**		
7	**Roof construction and finishes**		**GH/13**		
8	**Joinery Fittings**		**GH/14**		
9	**Builders works in connection with services**		**GH/15**		
10	**Mechanical Works**		**GH/16**		
11	**Electrical Works**		**GH/17**		
	TOTAL FOR 1NO. GUARD HOUSE				
	NO. OF GUARD HOUSES				**2**
	TOTAL FOR 3NO.GUARD HOUSES CARRIED TO GRAND SUMMARY	**KSHS**			

COMMUNITY CENTRE

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED COMMUNITY CENTRE				
	BILL NO.1 BUILDERS WORKS				
	ELEMENT NO 1 - SUBSTRUCTURES (ALL PROVISIONAL)				
	Excavations including trimming sides and bottoms of excavations; maintaining and supporting sides; and keeping free from water, mud and fallen material; with and including destruction of termites nests within site of works,take out and destroy queens, imp				
	Site Clearance				
A	Clear site of all grass, hedges, shrubs, bushes grub up roots, load and remove from site and dispose at designated local authority areas.	SM	395		
B	Bulk excavation to reduce levels depth not exceeding 1.5m commencing from existing ground level	CM	593		
C	Excavate for Strip foundations depth not exceeding 1.50 metres starting from Stripped level	CM	55		
D	Excavate for column bases depth not exceeding 1.5m starting from reduced Levels	CM	41		
E	Extra over all type of excavation for excavating in soft rock	CM	5		
F	Ditto excavation in hard rock class I	CM	5		
	Disposal of water				
G	Allow for keeping the whole of the excavation free rom all spring and running water by pumping or any other such means as may be necessary	Item			
	Planking and strutting				
H	Allow for maintaining and upholding the sides of excavations and keeping excavations clear of all fallen materials, rubbish etc	Item			
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Disposal of excavated material				
A	Return, fill and ram selected excavated material around foundations.	CM	611		
B	Load,wheel and cart away surplus excavated material away from site	CM	78		
	Fillings				
C	Make up levels using approved imported materials: compacted in layers not exceeding 300mm thick with a 15ton roller: to the satisfaction of the Structural Engineer.	CM	593		
D	300mm thick hardcore bed: hand packed : compacted in layers not exceeding 150mm thick: to the satisfaction of the Structural Engineer: including 50mm Thick murram or "equal and approved" blinding to surfaces of hardcore	SM	395		
E	50 mm Thick Murram Blinding to surfaces of hadcore	SM	395		
	Anti - termite to treatment				
F	Approved anti-termite treatment, with ten-year guarantee, sprayed to surfaces of hardcore strictly in accordance with manufacturer's instructions.	SM	395		
	Damp-proof membrane				
G	1000 gauge polythene or other equal and approved damp-proof membrane, laid over blinded hardcore (measured separately) with 300mm side and end laps (measured nett-allow for laps); 1 No. layer: bedded in and including cement and sand (1:3) mortar	SM	395		
	Concrete Blinding				
	Insitu concrete class 15/20 mm aggregates: vibrated:				
H	50 mm Thick under column bases	SM	83		
I	Ditto strip foundation	SM	110		
	In- situ vibrated reinforced concrete Class 25 (20mm aggregates): in:				
J	Column bases	CM	35		
K	Columns	CM	5		
L	Strip foundation	CM	22		
M	100mm thick surface bed	SM	379		
N	Ground beams	CM	6		
O	Concrete steps & Staircase footing	CM	3		
P	150mm thick ramp on grade	SM	16		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Ribbed reinforcement steel bars to BS4449: 2005: Grade 500 high tensile strengthincluding bends, hooks, tying wire and distance blocks; to S.E's detail (Provisional)				
A	Assorted reinforcement	Kg	5503		
	Mesh fabric reinforcement to BS 4483 BRC A142;200 x 200mm, weighing 2.22kg/m² (measured net - no allowance) for laps; in two layers - top & bottom; including bends, tying wire and spacer blocks)				
B	Mesh reference A142 weighing 2.22 kilogrammes per square metre in floor beds.	SM	379		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to:				
C	Sides of column bases	SM	82		
D	Ditto strip footing	SM	73		
E	Vertical sides of columns	SM	136		
F	Edge of slab and ramp, over 150mm but not exceeding 225mm girth	LM	110		
G	Ditto; but to edges of risers	LM	28		
H	Vertical sides to ground beams	SM	73		
	Foundation Walling				
	Natural quarry stones rough dressed; bedded in and including cement and sand (1:4) mortar; reinforced with and including 45 mm wide hoop iron gauge in alternate courses: in:				
I	200mm thick walls in foundations	SM	348		
	Pavings				
J	Supply and lay 600 x 600mm medium duty paving blocks round the building including laying, spreading and compacting 100mm thick approved sand bed blinding, with and including excavation, 150mm thick compacted hardcore and 50mm thick quarry dust blinding to approval.	SM	66		
	Plinth				
	25mm Thick cement and sand (1:4) rendering on concrete or masonry ; wood float finished; to				
K	Plinths externally	SM	50		
	Two coats black bitumastic paint on:				
L	Rendered surfaces	SM	50		
	Planters				
M	200mm thick masonry planter walls complete with foundations	LM	63		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	COLLECTION				
	Total brought forward from page no: 1				
	Total brought forward from page no: 2				
	Total brought forward from page no: 3				
	ELEMENT NO. 1 **Carried to** **SUBSTRUCTURES** **Main summary**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED COMMUNITY CENTRE				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT No 2 - R.C FRAME				
	Insitu concrete class 25 (20 mm maxium aggregate sizes): vibrated: reinforced				
A	Columns	CM	41		
B	Ring beam	CM	23		
C	150mm Thick suspended horizontal slab	SM	697		
D	150 mm thick landing	SM	11		
E	Staircases	CM	4		
F	350 x 50mm thick precast concrete molding jointed and pointed in (1:3) cement and sand mortar fixed to maosonry decorative concrete/plaster moulds with approved reinforcement mesh/bars	LM	288		
	Ribbed reinforcement steel bars to BS4449: 2005:Grade 500 high tensile strength including bends, hooks, tying wire and distance blocks to S.E's detail (All provisional)				
G	Assorted reinforcement bars	Kg	21172		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to				
H	Sides and soffites of beams	Sm	233		
I	To vertical sides of columns	SM	578		
J	Soffits of suspended slabs	SM	697		
K	Edges of slab over 150mm but not exceeding 225mm girth	LM	288		
L	To sloping soffites of staircases	SM	15		
M	Soffits of landings	SM	11		
N	Riser of steps over 150 mm but not exceeding 225 mm girth	LM	49		
O	Staircase string 300mm extreme girth and cut to profile of steps	LM	23		
P	Edges of landing over 150 but ot exceeding 225mm high	LM	13		
	ELEMENT NO. 2 **Carried to**				
	R.C FRAME **Main summary**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED COMMUNITY CENTRE				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT No 3-WALLING				
	WALLING				
	External Walling				
	Machine cut quarry stone walling with a minimum of 7.0 N/mm2 average compressive strength to B.S 5390;bedded and jointed in cement and sand (1:4) mortar, reinforced with and including 25 x 3 mm thick hoop iron strips at every alternate course as described in;				
A	200mm thick walling Externally	Sm	287		
B	200mm thick parapet walling	Sm	96		
	Internal Walling				
	Machine cut quarry stone walling with a minimum of 7.0 N/mm2 average compressive strength to B.S 5390;bedded and jointed in cement and sand (1:4) mortar, reinforced with and including 25 x 3 mm thick hoop iron strips at every alternate course as described in;				
C	200mm thick walling	Sm	221		
D	150mm thick walling	Sm	40		
E	Approved hessian based damp proof course to 200mm thick walling in cement/sand mortar	Lm	160		
F	Approved hessian based damp proof course to 150mm thick walling in cement/sand mortar	Lm	23		
	Lintols				
G	100mm x 200mm Deep lintols in reinforced concrete class 20MPa with and including 4No T10 and T8 stirups at 200mm centres; complete with formwork	Lm	55		
	Coping				
H	Approved Precast concrete coping; bedded jointed and pointed in (1:3) cement and sand mortar; overall size 300 x 50mm once weathered and twice throated	Lm	98		
	ELEMENT NO. 3 **Carried to**				
	WALLING **Main summary**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED COMMUNITY CENTRE				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 4-WINDOWS				
	METAL WORK				
	PURPOSE - MADE UNITS				
	Supply, fabricate and fix the following purpose made small pane mild steel casement windows to be fabricated from approved mild steel sections (atleast 14g 2mm thick) comprising of frame and casement incorporating permanent hooded high level ventilation panels infilled with mosquito gauze : window supplied complete with and including 12mm solid square burglar proofing bars fixed at 200mm centres both ways and metal fixing lugs including building into wall and making good, and all necessary iron mongery viz hinges, fasteners, and hasp including shop priming window with red oxide primer before delivery to site:-				
A	Window, overall size 600 X 900mm high to Architects Details	NO	9		
B	Ditto Size 3500 x1500mm high	NO	1		
C	Ditto Size 1500 x 1500mm high	NO	1		
D	Ditto Size 150 x 1500mm high	NO	25		
E	Ditto Size 150 x 600mm high	NO	25		
F	Ditto Size 1100 x 1500mm high	NO	1		
G	Ditto Size 3000 x 1500mm high	NO	3		
H	Ditto Size 13600 x 1500mm high	NO	1		
I	Ditto Size 3500 x 1500mm high	NO	1		
J	Ditto Size 5500 x 1500mm high	NO	1		
	Glazing				
K	5mm Thick clear sheet glass panes over 0.1 but not exceeding 0.5 square meters; fixing with putty	SM	64		
L	Ditto; obscure	SM	5		
	Painting and Decorations				
	On Metal work				
	Prepare and apply aerosol spray painting in two finishing coats of first grade approved paint as described in				
M	General window and grille surfaces	SM	139		
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Bull-nosed precast concrete , finishing fair on all exposed surfaces and hoisting and placing in position, bedding, jointing and pointing in pigmented cement and sand (1:3) mortar				
A	150 x 25mm thick precast concrete window sill	LM	62		
	Window board				
B	150mm wide x 25mm thick window board in softwood timber plugged to the wall	LM	45		
	Prepare and apply one coat first quality aluminium wood primer before fixing: on wood: to				
C	Surfaces exceeding 100mm but not exceeding 200 mm girth	LM	45		
	Prepare and apply three coats of first quality polyurethane clear varnish: on wood: to				
D	Window board: surfaces exceeding 100mm but not exceeding 200 mm girth	LM	45		
	Curtain rods;				
E	20mm diameter heavy duty twin brass rod complete accessories to approval	LM	63		
	Carried to collection				
	COLLECTION				
	Total brought forward from page no: 7				
	Total brought forward from above				
	ELEMENT NO. 4 **Carried to the** **WINDOWS** **Main summary**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED COMMUNITY CENTRE				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 5-DOORS				
	External Doors				
	Glazed mild steel casement doors				
	Heavy gauge purpose made mild steel door comprising 40 x 25 x3mm stiles, top and bottom stiles, 4 No Intermediate rails, 1.5mm steel sheet both sides welded in place and 5mm thick clear glazing, all primed with red oxide and spray painted with 2 coats of first quality gloss oil paint; complete with hinges, stays, 5lever locks, fasteners and necessary seremetals assembled and fixed to opening including cutting and pinning lugs to concrete or block work surround and bedding frame in cement and sand mortar (1:3).				
A	Double Door overall size 2000 x 2400mm high	NO	21		
B	Double Door overall size 900 x 2400mm high	NO	1		
	Internal Doors				
	Flush timber doors				
	50 mm thick Solid cored flush doors with plywood facing to receive painting (m.s) all to Architects details, specifications and approval				
C	Door size 1000mm x 2100mm high comprising of 1 No opennable leaf size 800 x 2100mm high	NO	4		
D	Double door size 1200mm x 2100mm high comprising of 1 No opennable leaf size 800 x 2100mm high	NO	5		
E	Semi solid door Size 1000 x 2100mm high comprising of 1 No opennable leaf size 700 x 2100mm high	NO	2		
F	Ditto Size 800 x 2100mm high comprising of 1 No opennable leaf size 900 x 2100mm high	NO	7		
	Frames and frame finishes in mahogany hardwood timber:				
G	25 x 25mm quadrant	LM	96		
H	25 x 50mm architrave with two labours, plugged	LM	96		
I	150mm x 50mm transome with three labours; chamfered edges; plugged	LM	10		
J	150mm x 50mm frame with three labours; chamfered edges; plugged	LM	96		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Painting and decorating				
	Prepare and apply one coat aluminium wood primer to:-				
A	Surfaces not exceeding 100mm girth	LM	191		
B	Surfaces over 100mm but not exceeding 200mm girth	LM	106		
	Prepare Knot, prime, stop and apply one undercoat and two coats first grade qaulity gloss oil paint to wood surfaces				
C	General timber surfaces	SM	49		
D	Surfaces not exceeding 100mm girth	LM	191		
E	Surfaces over 100mm but not exceeding 200mm girth	LM	106		
	Prepare and apply three coats gloss oil paint as "Crown Paints" or other equal and approved paint to:-				
F	General surfaces of metal doors	SM	206		
	Ironmongery				
	Supply and fix the following ironmongery to timber complete with matching screws and keys to the approval of the Architect				
G	100mm pressed heavy duty steel Butt Hinges	Pairs	27		
H	3 Lever Door Lock with handles as per Union	NO	18		
I	Door fixing cramps	NO	108		
J	Approved male/female signage	NO	2		
	Carried to Collection				
	COLLECTION				
	Total brought forward from page no: 9				
	Total brought forward from above				
	ELEMENT NO. 5 **Carried to**				
	DOORS **Main summary**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED COMMUNITY CENTRE				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 6 - EXTERNAL FINISHES				
	EXTERNAL WALL FINISHES				
	External Render				
	Cement and sand (1:3) render:wood floated: on concrete or blockwork: to				
A	15mm thick to walling externally	SM	480		
B	Ditto to surfaces of beams and columns	SM	419		
	External Painting *Prepare and apply one coat undercoat and one finishing coats permaplast long lasting exterior/ weatherguard as manufactured by Crown Solo Paints or equal and approved to rendered surfaces as described in:-*				
C	Masonry surfaces externally-Beam, Column and Slab Moulds	SM	383		
D	Ditto to surfaces of beams and columns	SM	167		
	Natural Stone Cladding				
E	25mm thick natural stone cladding complete with cement/sand (1:3) backing	SM	348		
	FLAT ROOF FINISHES				
	Cement and sand (1:4) screeded beds: on concrete:				
	complete with coloured pigmentation additives and hardener to:				
F	50mm average waterproofed lightweight screed laid to falls and crossfalls to roof slabs -upper roof including gutter bases	SM	427		
	Prepare and apply to vertical/horizontal surfaces 4mm thick APP/EPDM water proofing or other equal and approved membrane with surface finish weighing 4kg/sm; laid on primer with torch-on process ;by an approved specialist all in accordance with the manufacturers instructions including provision of a written ten (10) year anti leak guarantee.				
G	4mm thick APP membrane applied to roof slabs	SM	427		
H	Ditto to skirting 200mm high	LM	134		
I	Dress membrane around 100mm rainwater outlet	No.	6		
	The Following Flat roof concrete tiles fixed with approved adhesive, laid and jointed with waterproofing bituminous compound				
J	20mm thick interlocking Concrete tiles of size 225 x 225mm	SM	427		
	Pitched Roof				
K	Supply and fix pitched roof in timber trusses: complete with and including "IT5" roofing sheets complete with and including matching ridge cap, hip cover and valley gutter : fixed to and including sisalation; complete with 38 x 380mm timber purlins; 150 x 50mm wall plate fixed to ring beam : 225mm prime grade timber fascia board fixed to trusses painted to approval: 150 x 150mm steel gutter; roof pitch 25^0 ; all to Architect's/ Engineer's details and approval	SM	278		
	ELEMENT NO. 6 Carried to				
	EXTERNAL FINISHES Main summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED COMMUNITY CENTRE				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 7 - INTERNAL FINISHES				
	Internal Wall Finishes				
	15 mm thick Cement and sand (1:4) backings on blockwork to receive ceramic wall tiles:to:				
A	Internal wall surfaces- Wet areas	SM	178		
	Ceramic wall tiles				
	Allow a Prime Cost supply rate of Ksh. 1000 per SM				
B	Supply and Fix 300x300x6mm thick ceramic wall tiles as manufactured by Saj Ceramics or equal and approved on prepared backings(m.s) with proprietary adhesive; jointed and pointed in matching coloured proprietary grouting: including pvc spacers and expansion joint as necessary: all to Architect's approval. - Wall Surfaces	SM	178		
	15mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
C	Concrete/masonry surfaces **Internally**	SM	632		
D	Ditto to window cills, door Jambs Externally and Surfaces not exceeding 200mm girth	LM	186		
	Painting and Decoration				
	Allow for skimming coat, Prepare and apply three coats interior quality eggshell paint as "Crown Paints" or other equal and approved paint to:-				
E	Plastered concrete/masonry surface	SM	632		
F	Ditto to window cills, door Jambs Externally and Surfaces not exceeding 200mm girth	LM	186		
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Floor Finishes				
	32 mm thick Cement and sand (1:3) backing on concrete surfaces,prepared to receive approved floor finish to:				
A	Receive ceramic floor tiles	SM	622		
	Ceramic Floor tiles				
	Supply and Fix 300 x 300x 8mm thick Ceramic floor tiles or equal and approved; as manufactured by Saj ceramic or equal and approved; bedded and jointed in matching coloured proprietary grout on prepared on prepared backings(m.s); : including pvc spacers and expansion joint as necessary: all to Architect's approval:to:				
B	Floor Surfaces	SM	622		
C	Ditto 100mm wide Wall Skirtings	LM	251		
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Staircase finishes				
	32 mm thick Cement and sand (1:3) backing on concrete surfaces,prepared to receive ceramic floor tiles to:				
A	25 x 300 mm wide treads to receive ceramic tiles (m.s)	LM	63		
B	20 x 150mm risers to receive ceramic tiles (m.s)	LM	77		
C	32mm bed finished to receive ceramic tiles to surfaces of Landings (m.s)	SM	11		
	Ceramic staircase tiles Supply and Fix 300 x 300x 8mm thick non-slip Ceramic floor tiles or equal and approved; as manufactured by Saj ceramic or equal and approved; bedded and jointed in matching coloured proprietary grout on prepared on prepared backings(m.s); : including pvc spacers and expansion joint as necessary: all to Architect's approval:to:				
D	300 mm wide treads of steps	LM	63		
E	150mm high risers of steps	LM	77		
F	Landing	SM	11		
	15mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
G	Soffits of staircase landing	SM	11		
H	Ditto to sloping soffites exceeding 15˚ from horizontal	SM	15		
I	Staircase string 300mm extreme girth and cut to profile of steps	LM	23		
	Paint works				
	Allow for skimming coat, Prepare and apply three coats interior quality eggshell paint as "Crown Paints" or other equal and approved paint to:-				
J	Soffits of staircase landing	SM	11		
K	Ditto to sloping soffites exceeding 15˚ from horizontal	SM	15		
L	Staircase string 300mm extreme girth and cut to profile of steps	LM	23		
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Ceiling finishes				
	12mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
A	Soffits of Concrete surfaces	SM	697		
	Painting and Decoration				
	Allow for skimming coat, Prepare and apply three coats interior quality eggshell paint as "Crown Paints" or other equal and approved paint to:-				
B	Plastered ceilings	SM	697		
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	COLLECTION Total brought forward from page no: 12 Total brought forward from page no: 13 Total brought forward from page no: 14 Total brought forward from page no: 15				
	<u>ELEMENT NO. 7</u> **Carried to** **INTERNAL FINISHES**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED COMMUNITY CENTRE **BILL NO.1-BUILDERS WORKS** **ELEMENT NO 8- BALUSTRADING AND RAILING**				
	Balustrades and staircase railings				
A	900mm high mild Steel balustrade; comprising 60 x 10mm mild Steel balusters at 900mm centres; bolted to base plate and tread (m.s), with 7No. 25mm diameter horinzontal bars, and 75x4mm diameter CHS mild Steel handrail part welded into 60x10mm balustrades; to Architects drawings	LM	15		
	Prepare, prime and apply one undercoat and two finishing coats first quality gloss oil paint on				
B	General metal surfaces of balustrading (both sides measured overall)	SM	35		
	ELEMENT NO. 8 BALUSTRADING AND RAILING Carried to the Main summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED COMMUNITY CENTRE **BILL NO.1-BUILDERS WORKS** **ELEMENT NO 9 - JOINERY FITTINGS** Allow for providing materials, labour and construct fixtures and fittings as per Architects drawings of the following JOINERY FITTINGS AND FIXTURES complete with associated iron mongery; NOTE: All blockboard, MDF boards,etc in joinery works shall be lipped with hardwood lipping all round before fixing. **Vanity tops** 600mm wide vanity tops with 600x600x8mm porcelain tiles top on 75mm thick reinforced concrete class 20MPa slab, 100mm plastered mass concrete plinths in concrete class 15MPa: cutting tiles for sink (m.s) ; to Architect's details				
A	2200mm long	LM	2		
B	4700mm long	LM	5		
	ELEMENT NO. 9 JOINERY & FITTINGS **Carried to the Main summary**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED COMMUNITY CENTRE **Allow for providing materials, labour and construct fixtures and fittings as per Architects drawings of the following JOINERY FITTINGS AND FIXTURES complete with associated iron mongery;** **ELEMENT NO 10 - BUILDERS WORKS IN CONNECTION WITH SERVICES (BWICWS)**				
	<u>Plumbing, Drainage and Mechanical Installations</u>				
A	Inspect all drawings and Bills of Quantities for Plumbing, Drainage and Mechanical Installations and allow for all Builder's work associated with the installations; including cutting away and making good after installing a concealed drainage system; including cutting or leaving all holes notches, mortices, sinkings and chases in both the structure and its coverings; including but not limited to forming recess in masonry	Item			
	<u>Electrical Services Installations</u>				
B	Inspect all drawings and Bills of Quantities for Electrical Installations and allow for all Builder's work associated with the Electrical installations, including cutting away for and making good after Electrician installing a concealed conduit system including cutting or leaving all holes notches, mortices, sinkings and chases in both the structure and its coverings; including but not limited to forming recess in masonry	Item			
	<u>ELEMENT NO. 10</u> Carried to the BUILDERS WORKS IN CONNECTION WITH SERVICES (BWICWS) Main summary				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
1.0	**Internal Plumbing Installations** Supply, deliver install, Test and Commission: **PP-R (Polypropylene Random Co-polymer)** pipes **PN 20** and fittings to DIN 8078 and DIN 16962 with polyfusion welded joints to DVS 2207 of approved manufacturer. Rates must allow for all Metal/plastic threaded adaptors where required for the connection of sanitary fixtures, valves, sockets, sliding and fixed joints etc. as required in the running lengths of pipework. The pipes shall run in floors and wall chase. The pipes will be pressure tested before the plastering of wall commences and as per the manufacturers recommended testing pressures.				
	Pipe Works				
A	32mm Ø PPR Pipe	40	LM		
B	Ditto 25mm Ø	33	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	32mm Ø Elbows/ Bends	20	No.		
D	Ditto 25mm Ø	18	No.		
	Equal/Unequal Tees				
E	32 x 32 x 32mm	21	No.		
F	25 x 25 x 25mm	14	No.		
	Reducers				
G	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
J	25 x 20mm male/female threaded adaptor	12	No.		
K	25 x 15mm ditto	10	LM		
L	25 x 15mm male threaded bend	13	LM		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total from Previous Page				
	Isolating valves				
M	32mm Ø Gate Valve as "Pegler" or Equivalent	2	No.		
	Shut off Angle Valve				
N	Brass plated 1/2" angle valve	16	No.		
	Check Meter				
O	50 mm diameter water check meter	1	No.		
	Testing and Commissioning				
P	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	TOTAL Internal Plumbing				
	Total Cost of Plumbing Installation				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
2	**Risers and Roof Levels**				
	Pipe Works				
A	50 mm Ø PPR pipe	28	LM		
B	Ditto 40mm Ø	12	LM		
C	Ditto 32mm Ø	13	LM		
D	Ditto 25mm Ø	6	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
E	50mm Ø Elbows/ Bends	4	No.		
F	Ditto 40mm Ø	3	No.		
G	Ditto 32mm Ø	3	No.		
H	Ditto 25mm Ø	2	No.		
	Equal/Unequal Tees				
I	50 x 40 x 50mm	4	No.		
J	40 x 40 x 32mm	3	No.		
K	32 x 32 x 32mm	4	No.		
L	32 x 32 x 25mm	4	No.		
M	25 x 25 x 25mm	2	No.		
	Reducers				
O	50 x 40mm reducer	2	No.		
P	40 x 32mm reducer	2	No.		
Q	40 x 32mm reducer	2	No.		
R	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
S	40 x 32mm male/female threaded adaptor	2	No.		
T	32 x 25mm male/female threaded adaptor	2	No.		
	Total Carried to the Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total from Previous Page				
	Isolating valves				
U	50 mm Ø Gate Valve as "Pegler" or Equivalent	2	No.		
	Testing and Commissioning				
V	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Total Cost of Riser & Roof Level Plumbing				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
3	**SANITARY FITTINGS AND ACCESSORIES**				
A	**Water Closet (WC) Pan** Close Coupled dual flush Floor Standing Close Coupled WC Bowl complete with seat cover and cistern, WC connector relevant fittings & accessories ***(Quote Install Only)***	6	No.		
B	**Wash Basin** WHB basin Full pedestal Wash Basin 450x485x230m White Complte with bottle traps, flexible connection hoses and other accessories with cws only tap ***(Quote Install Only)***	8	No.		
C	**Disabled Water Closet (WC) Pan** Physically challenges set as Armitage Shanks Doc M Contour 21+ close coupled right hand corner pack, WC pan, Wash basin, water saving delay fill cistern with spatula lever, grab rails, hinged support rail with toilet roll holder, seat no cover with retaining buffers, copper tails on TMV3 mixer tap or equal & approved**(Quote Install Only)**	8	No.		
D	**Urinal** Urinal bowl in white colour of size 450 x 685mm with built in spreader and concealed waste trap complete with stainless steel fixing bolts and caps. Complete with exposed Flash Valve ***(Quote Install Only)***	1	No.		
E	**Flushing and Sterilization** Allow for flushing and sterilization of the entire system to the satisfaction of the Engineer.	1	Item		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	FIRE PROTECTION				
	Hose Reel and Associated Pipework				
A	Supply and Install automatic 30 meters long, 25 mm diameter hosereel and nozzle	2	No.		
	Associated Pipework				
	Galvanised Mild Steel Class 'B' tubing to B.S. 1387 with screwed and socketed joints to BS 21 including all range piping, fittings, hanagers, supports, brackets, and supports				
B	50mm diameter	25	LM		
C	25mm ditto	4	LM		
	Extra Over Piping For Fittings:-				
	Elbows/Various Bends				
D	50mm bend/elbow	6	No.		
E	25mm ditto	5	No.		
	Equal/Unequal tees				
F	50 x 50 x 50mm tee	3	No.		
G	50 x 50 x 25mm ditto	3	No.		
	Reducers				
H	50 x 25mm reducer	3	No.		
	Unions				
I	50mm diameter union	2	No.		
J	25mm ditto	8	No.		
	Valves				
K	25mm diameter quarter Turn hose reel isolation valve to be as PEGLER or approved equivalent.	2	No.		
Total Cost Carried For hose reel and associated pipework Installations					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Portable Fire Protection Equipment				
	Supply, deliver, install, test and commission portable fire protection equipment with initial fill complete with all the necessary mounting accessories.				
A	9 litres, water/carbon dioxide gas extinguisher	4	No.		
B	4.5kg carbon dioxide gas extinguisher	4	No.		
C	4.5 kg dry powder extinguisher	4	No.		
	Testing and Commissioning				
D	Allow for testing and commissioning of the fire pump installation to the satisfaction of the Engineer.	1	Item		
	Total Cost For Portable fire Extinguishers				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Foul Drainage Supply, deliver and install the following in key "Terrain" or equal and approved uPVC Heavy gauge soil and waste system. Allow for all the various sizes of adaptor, connectors, sockets, holderbats, clips etc not measured but required for the satisfactory functioning of the system.				
	Piping				
A	32mm diameter heavy duty grey uPVC pipe	32	LM		
B	40mm ditto	50	LM		
C	50mm ditto	56	LM		
D	75mm ditto	12	LM		
E	100mm ditto	32	LM		
F	100mm diameter heavy duty golden brown	80	LM		
G	150mm diameter heavy duty golden brown	44	LM		
	Extra over uPVC Pipeworks				
H	32mm sweep bend	15	No.		
I	40mm sweep bend	60	No.		
J	50mm sweep bend	15	No.		
K	75mm sweep bend	8	No.		
L	100mm sweep bend	22	No.		
M	150mm sweep bend	16	No.		
N	40mm 450 bend	22	No.		
O	50mm 450 bend	15	No.		
P	40mm sweep tee	25	No.		
Q	40 x 32mm reducer	15	No.		
R	75 x 40mm ditto	15	No.		
S	150 x 40mm ditto	8	No.		
T	40mm access plug	22	No.		
U	100mm bend WC connector	13	No.		
V	40mm bottle 'p' trap	15	No.		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total From Previous Page				
Z	100 x 50mm floor trap set complete with polycarbonate flush grating	17	No.		
AA	**Gulley Trap** Gully trap comprising of 100mm diameter golden brown uPVC gully piece, 100mm diameter uPVC trap spigot outlet with screws and washers, and 300 x 300mm masonry gully trap chamber with mild steel plate and a heavy	4	No.		
BB	**Manholes** Construct manhole/ inspection chamber size 450 x 600 x 750mm deep internally in 200mm stone walls, 150mm concrete bed, water proof plaster, forming drain channels, medium duty cover frame in cast iron with recessed cover with concrete infill and all necessary formwork, excavation and soil disposal.	10	No.		
CC	**Excavations** Excavate trench for pipe not exceeding 100mm diameter and not exceeding 1.5m deep (average 600mm deep) and make good as before.	120	LM		
DD	Allow for hydrostatic pressure testing of drainage installation including provision of pipe plugs and other required fittings.	1	Item		
	Total Cost For Ground Floor Foul Drainage Installation				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Rain Water Drainage				
	Supply, deliver and install UPVC rainwater pipes and PPR pipework. Allow for all flanges, couplings, nipples, connector joints, fixing clips holder bats etc as required in running length of pipework but not measured.				
	Piping				
A	100mm ditto	200	LM		
	Extra over piping for fittings:-				
B	100mm ditto	16	No.		
C	100mm sweep bend	2	No.		
D	100mm single branch	13	No.		
E	100mm double branch	7	No.		
F	100mm flat roof rain water outlets	10	No.		
	Testing and Commissioning				
G	Allow for testing and commissioning of the rain water drainage installation to the satisfaction of the engineer.	1	Item		
	Total Cost For Rain Water Drainage Installation				

ITEM	DESCRIPTION	AMOUNT (KES)
	SUMMARY PAGE	
1.0	**Total Cost for Internal Plumbing**	
2.0	**Total Cost for Roof + Riser**	
3.0	**Total Cost for Sanitary Fittings**	
4.0	**Total Cost Carried For hose reel and associated pipework Installations**	
5.0	**Total Cost For Portable fire Extinguishers**	
6.0	**Total Cost For Ground Floor Foul Drainage Installation**	
7.0	**Total Cost For Rain Water Drainage Installation**	
	Total carried to Mechanical Works Main Summary Page	

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	BILL NO. 9				
1.00	**COMMUNITY CENTRE**				
	LIGHTING POINTS, FITTINGS & ACCESSORIES				
	Supply, Install, Connect, Test and Set to work the following:-				
1.01	Lighting points wired in 3x1.5mm2 PVC insulated single core (SC) copper cables drawn in 20mm diameter HG PVC conduit concealed in walls and or floor slabs with all accessories but excluding switch and fitting for one way switching.	No.	124		
1.02	Ditto but for two way switching.	No.	8		
1.03	Ditto but for Emergency Switching.	No.	12		
	Supply, Install, Connect, Test and Set to work the following as marked on drawings and described in the schedule of Fittings:- ***10A white moulded wide rocker switch plates:-***				
1.04	10A 1 gang 1 way switch	No.	12		
1.05	10A 2 gang 2 way switch	No.	4		
	Light fittings, complete with lamps of specified wattage and appropriate colour rendering:-				
1.06	Type P 1200 X 300MM 220/240V x 30 watt Warm White, 6500K Ceiling Mount. (Two LED Tubes)	No.	64		
1.07	Type D - Round Light with LED lamp	No.	60		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.08	Spherical screwneck luminaire with opal glass and 16W compact lamp as Astra, Micromark, Thorn or approved equivalent. "**Type BF"**	No.	20		
1.09	Type Exit	No.	20		
1.10	d) Bulkhead fitting with moulded glass diffuser & Die Cast Aluminium base c/w 16W PL Lamp as Massive Sunderland Cat. No. 71410/01/31 for security lights. **"Type S"**	No.	20		
1.11	Presence sensor complete with assocaited wiring (light and motion sensor) as Osram Duo with the following characteristics: Operation voltage 220 - 240V 50Hz, detection area-12m dia minimum, settable light value, switch-off delay (if no motion detected), installation height - 5m minimum	No.	6		
1.12	24A, 240V, 2P DB/CU mounted silent operation contactor for Switching External lights complete with all accessories and as CRABTREE CIK24 or an approved equivalent	No.	2		
1.13	Photocell control unit and wired to energize the contactors complete with a D.P override switch as THORN QPK or approved equivalent	No.	2		
	<u>POWER POINTS & ACCESSORIES</u> **Supply, Install, connect and set to work the following:-**				
1.14	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	60		
	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	60		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.15	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 45A DP connection unit	No.	1		
1.16	45A Moulded plate Cooker Control Unit complete with 13A fused socket outlet as MK/Crabtree or approved equivalent.	No.	1		
1.17	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	1		
1.18	300x 300x 100mm deep 16 G galvanized adaptable box.	No.	4		
1.19	Water booster power points completely wired in 5 x 6mm^2 single core PVC insulated copper cables drawn in 38mm diameter heavy gauge PVC conduits including all accessories ,but excluding the the 40A TPN isolator	No.	1		
1.20	40A TPN isolator as MK or approved equivalent	No.	1		
	ELV CABLE WAYS				
	ICT Points				
1.21	Supply, install and connect data outlet point consisting of average 20 meters of 25 mm diameter concealed heavy gauge PVC conduit inclusive of conduit, couplers, draw boxes, switch boxes, draw wire and other necessary accessories but excluding face plates.	No.	20		
	CCTV Points				
1.22	Supply, install and connect CCTV outlet point consisting of average 20 meters of 25 mm diameter concealed heavy gauge PVC conduit inclusive of conduit, couplers, draw boxes, switch boxes, draw wire and other necessary accessories.	No.	10		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	Fire Alarm Points				
1.23	Outlets for fire Alarm points drawn in 25mm diameter heavy gauge PVC conduits concealed in wall and floor slabs including all conduit accessories and draw wire but excluding cabling and detectors	No.	10		
	<u>POWER DISTRIBUTION</u>				
	Supply, Install, connect and set to work the following:-				
1.24	8 ways 100A TPN distribution boards 'T' complete with 100A TPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
	i)10 A SP MCB	No.	10		
	ii) 32 A SP MCB	No.	10		
	iii) 40 A SP MCB	No.	1		
	iv) 32 A TP MCB	No.	1		
	v) Blanking plates	No.	4		
	vi)Earthing of the Distribution Board above	Item.	4		
1.25	Sub-mains circuits for DB 'T' above comprising of 4 core 25mm^2 PVC/SWA/PVC cable drawn in cable tray/ 50mm diameter heavy gauge conduits and running from the Lv switchboard	LM	50		
	200mm x 50mm galvanised metallic cable tray (Telecom, DTV, Internet Cables) gauge 14 c/w all mounting accessories bends, rawl bolts, threaded bolts, brackets,	LM.	200		
	200mm x 50mm galvanised metallic cable tray (Power Cables) gauge 14 c/w all mounting accessories bends, rawl bolts, threaded bolts, brackets,	LM.	200		
TOTAL AMOUNT FOR BILL No. 9 COMMUNITY CENTRE CARRIED FORWARD TO GRAND SUMMARY PAGE					

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED COMMUNITY CENTRE				
	BILL NO.1-BUILDERS WORKS				
	MAIN SUMMARY		Page No.		
1	**Substructures**		**CC/4**		
2	**Reinforced Concrete Frame**		**CC/5**		
3	**Walling**		**CC/6**		
4	**Windows**		**CC/8**		
5	**Doors**		**CC/10**		
6	**External Finishes**		**CC/11**		
7	**Internal Finishes**		**CC/16**		
8	**Balustrading and Railing**		**CC/17**		
9	**Joinery fittings**		**CC/18**		
10	**Builders works in connection with services**		**CC/19**		
11	**MechanicaL Works**				
12	**Electrical Works**				
	TOTAL FOR COMMUNITY CENTRE CARRIED TO GRAND SUMMARY				

BOUNDARY WALL

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	BOUNDARY WALL-356m				
	ELEMENT NO.1				
	SUBSTRUCTURES				
	(ALL PROVISIONAL)				
	Siteworks and Excavations				
A	Clear site of all grass, hedges, shrubs, bushes including grubbing up of roots, cart away arising debris and burn them.	SM	857		
	Excavations				
B	Excavate for Strip foundations depth not exceeding 1.50 metres starting groundlevel	CM	410		
C	Ditto to column base	CM	245		
E	Extra over excavation for excavating in soft rock	CM	13		
F	Extra over excavation for excavating in Hard rock class type 1	CM	7		
	Disposal of water				
G	Allow an item for keeping all excavations free from all spring and running water by pumping or any other such means.	ITEM			
	Planking and strutting				
H	Allow an item for maintaining and upholding the sides of excavations and keeping excavations clear of all fallen materials.	ITEM			
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	SUBSTRUCTURES-(CONTINUED)				
	Disposal of excavated materials				
A	Return, fill and ram selected excavated material around foundations.	CM	120		
B	Load,wheel and cart away surplus excavated material away from site	CM	392		
	Insitu class 15 / 20 mm aggregates as described in:				
C	50mm Thick blinding to strip foundation	SM	342		
D	Ditto to column bases	SM	205		
	Insitu concrete class 20 (20mm maximum aggregate size):vibrated and reinforced:				
E	Strip footing	CM	68		
F	Ditto to column bases	CM	51		
G	Columns	CM	22		
H	Ground Beam	CM	69		
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	SUBSTRUCTURES-(CONTINUED)				
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to:				
A	Sides of strip footing	SM	228		
B	Ditto colum bases	SM	241		
C	Ditto ground beam	SM	693		
D	Ditto columns	SM	345		
	Ribbed reinforcement bars to BS 4449:2005 , Grade 500 high tensile strength, Including all necessary bends, hooks, tying wires and distance blocks (Provisional):				
D	8mm diameter	KG	3645		
E	10 mm ditto	KG	3645		
F	12 mm ditto	KG	7291		
G	16 mm Ditto	KG	3645		
	Foundation Wall				
	Natural quarry stones rough dressed with a minimum compressive strength of 7.0N/mm2 average compressive strength to BS 5390;bedded and jointed in cement and sand(1:4) mortar;reinforcced with 25 x 3mm thick iron strips at alternate courses.				
H	200mm Thick walling	SM	771		
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	COLLECTION				
	FROM PAGE BW/1				
	FROM PAGE BW/2				
	FROM PAGE BW/3				
	TOTAL FOR ELEMENT NO. 1 CARRIED TO				
	(SUBSTRUCTURES) SUMMARY	**KSHS**			

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ELEMENT NO. 2				
	REINFORCED CONCRETE SUPERSTRUCTURE				
	Insitu concrete class 20 (20mm maximum aggregate size):vibrated and reinforced:				
A	Columns	CM	52		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to:				
B	Vertical sides of columns	SM	725		
	Steel reinforcement as described including cutting to length, bending, hoisting and fixing including all necessary tying wires and spacing blocks (all provisional)				
C	12mm diameter ditto	KG	4528		
D	8mm diameter ditto	KG	4528		
	TOTAL FOR ELEMENT NO. 2 CARRIED TO				
	(REINFORCED CONCRETE) SUMMARY				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ELEMENT NO. 3				
	WALLING				
	Smooth chisel dressed natural stone walling in cement and sand (1:4) mortar reinforced with and including 25 x 3mm thick hoop iron in every alternate course				
A	200mm Thick walling	SM	1849		
	Precast concrete class 20/20 coping as described in;				
B	450 x 450 x 50 mm thick column capping, four times weathered and throated, bedded and jointed in cement and sand(1:4) mortar	NO	345		
C	300mm wide x 50 mm thick wall coping twice weathered and throated, bedded and jointed in cement and sand morter (1:4) on stone walling (m.s.)	LM	771		
	Expansion Joints				
D	250mm wide styropore or equal and approved joint filler	LM	197		
E	Flexcell or equal and approved joint sealant	LM	394		
	TOTAL FOR ELEMENT NO. 3 (WALLING) CARRIED TO SUMMARY				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ELEMENT NO. 4				
	EXTERNAL FINISHES				
A	Extra over walling for smooth chisel dressing with flush pointed vertical joints and recessed horizontal joints 10 mm rod in cement and sand mix (1:3) mortar including one coat of Bituminous paint	SM	3698		
	12mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
B	Columns	SM	435		
C	Ground beam	SM	693		
	GATES				
	Mild steel sections as described in;				
D	6000mm wide x 2100mm high sliding gate comprising of 50x50x3mm RHS framing and middle rail 50x25x3mm RHS Vertical infill members at 225mm centres;priming with red oxide primer; purpose made ironmongery; all necessary lugs and grouting as per details (all with roller at the ground)	NO	2		
E	Ditto pedestrian gate size 900x1800 ditto	NO	2		
	Prepare surfaces and apply two coats of first grade quality of gloss oil paint as manufactured by Crown Solo Paints or equal and approved on;				
F	General surfaces of metal	SM	28		
	TOTAL FOR ELEMENT NO. 4 CARRIED TO (EXTERNAL FINISHES) SUMMARY				

ITEM	DESCRIPTION				
	SECTION SUMMARY - BOUNDARY WALL				
1	**SUBSTRUCTURES FROM PAGE.....**	BW/4			
2	**R.C. SUPERSTRUCTURE**				
	FROM PAGE.....	BW/5			
3	**WALLING FROM PAGE.....**	BW/6			
4	**EXTERNAL FINISHES FROM PAGE.....**	BW/7			
	TOTAL FOR BOUNDARY WALL CARRIED TO GRAND SUMMARY				

BASKET BALL PITCH

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (BASKET BALL PITCH)				
	BILL NO.8 BUILDERS WORKS				
	Oversite Excavation				
A	Clear site of all grass, hedges, shrubs, bushes grub up roots, load and remove from site and dispose at designated local authority areas.	SM	628		
B	Excavate average 200mm deep to remove top vegetable soil, load, remove from site and dump in designated local authority dump site.	SM	628		
C	Excavate to reduced levels in varying depths not exceeding 1.5m deep from existing ground levels.	CM	377		
D	Load and cart away excess excavated materials as directed on site.	CM	377		
	TOTAL FOR EXCAVATIONS CARRIED TO SUMMARY				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ELEMENT NO. 2 - BASKET BALL COURT (All provisional)				
	Sub-Grade				
A	Roll and compact subgrade formation to achieve 98% modified proctors MDD including grading to falls and crossfalls	SM	628		
B	Imported and approved murram backfill materials to make up levels, well watered, rolled and compacted to 98% MDD at optimum moisture content in layers not exceeding 150mm Thick to Engineer's approval	CM	377		
	Sub-Base				
C	150mm thick Compacted gravel 3.5mm in sub-base laid at a slope of 1%well watered and compacted to 98% MDD at optimum moisture content in layers each of 150mm Thick to Engineer's approval	SM	628		
	FINISHINGS				
D	**ASPHALT FINISH**				
	Prepare surface and spray MC-30 as a prime coat cutback bitumen at a rate of 0.8 -1.0 lt/m2 as prime coat.	SM	628		
E	Prepare primed surfaces, provide and spray K1-60 bitumen emulsion as tack coat at a spray rate of 0.8 - 1.0 lt/m2 as directed by Engineer.	SM	628		
F	75mm thick Asphalt concrete for surfacing	SM	628		
	Channels				
G	Provide, lay and joint Channel, 125x150mm flush channel block, laid on and including 450x100mm concrete (1:3:6) bed and 100x200mm haunching behind ancluding any necessary formwork and disposal of surplus material as directed.	LM	104		
	TOTAL FOR BASKET BALL COURTS CARRIED TO SUMMARY				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ELEMENT NO. 3 - WATER DRAINAGE AROUND THE PITCH				
	FRENCH DRAIN				
	Oversite Excavation (All excavations Measured Net)				
	Excavate for French Drain average depth not exceeding 1500mm Deep, uphold the sides of excavation, keep excavations free from water, trim and compact the bottom of excavation to level and cart away the resultant excavated materials as directed on site as described in:				
A	Main-drain	CM	94		
B	Ditto to Sub-drain	CM	91		
	Mass concrete (class 15/20) in;				
	50mm Thick Class 15/20 mass concrete blinding to bottom of trenches to receive drain pipe as described in:				
C	Main-drain	SM	30		
	Underground Drain Pipe.				
D	Supply, lay including necessary jointing and connections approved HDPE Perforated Pipe all to approval as decribed in:				
E	200mm Diameter main drain.	LM	34		
	Hesian Filter Fabric				
F	Supply and lay approved hesian Filter Fabric to french drains girth 600mm wide.	LM	34		
G	Ditto girth 300mm wide.	LM	20		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Drain Fillings.				
A	Approved imported hardcore fillings over perforated underground pipe in main drain.	CM	9		
B	Ditto above formation level on subdrains.	CM	5		
C	Supply and place approved 200mm graded aggregates ballast fillings over perforated underground pipe in main drain.	CM	9		
D	Ditto above formation level on subdrains.	CM	5		
E	Supply and place approved sand fillings over perforated underground pipe in main drain.	CM	9		
F	Ditto above formation level on subdrains.	CM	5		
G	**Inspection chambers** Construct 600 wide x 600 mm long x 1500 mm deep (internal dimensions) storm water manhole, comprising 150 mm thick concrete class 20 bed, 200 mm thick natural stonewalling in cement and sand (1:3) mortar, 150 mm thick concrete class 20 cover slab with requisite reinforcement, 450x 600 mm heavy duty cast iron cover and frame bedded in cement and sand (1:3) mortar; internally plastered & screeded in 15 mm thick lime plaster; 100 mm thick concrete class 20 benching; complete with necessary excavation, formwork and2 No. connections to pipes not exceeding 200 mm diameter(pipe m/s)	NO.	1		
	Carried to Collection				
	Collection: Brought forward from page BP/3 Brought forward from page Above				
	TOTAL FOR WATER DRAINAGE AROUND THE PITCH CARRIED TO SUMMARY				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (BASKET BALL PITCH)				
	ELEMENT NO. 4 - TERRACES (All provisional)				
	Excavations.				
	Oversite Excavations.				
A	Excavate oversite average 200mm thick and collect the soil and cart away from site as directed.	SM	200		
	Excavation for foundations.				
B	Excavate for strip foundation starting from reduced level and not exceeding 1.50m deep	CM	90		
C	Ditto exceeding 1.5m deep but not exceeding 3.0m deep.	CM	90		
D	Extra over for excavation in soft rock.	CM	18		
	Disposal of excavated materials				
E	Return fill and ram selected excavated materials around foundations.	CM	148		
F	Load,wheel and cart away surplus excavated material to a Local Authority designated dumping site or fill soil heaps as away from site instructed by the Project Engineer.	CM	32		
	Planking and Water exclusion				
G	Allow for planking and strutting to uphold sides of excavations	ITEM			
H	Ditto but keeping all excavations free from running or underground water by pumping or pailing	ITEM			
	Concrete works				
	Insitu concrete class 15/20 mm aggregates: vibrated:				
I	50mm thick blinding under strip footing and column bases	SM	100		
	In- situ vibrated reinforced concrete Class 25 (20mm aggregates): in:				
J	Strip footing	CM	20		
K	Columns	CM	7		
L	Steps	CM	1		
M	Cast insitu coping	Lm	100		
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (BASKET BALL PITCH)				
	Ribbed reinforcement steel bars to BS4449: 2005: Grade 500 high tensile strengthincluding bends, hooks, tying wire and distance blocks; to S.E's detail (Provisional)				
A	Assorted Reinforcement	KG	3,120		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to:				
B	Sides of strip foundation.	Sm	40		
C	Sides of columns.	Sm	48		
D	Sides and soffits of Coping beams	SM	80		
	Foundation Walling.				
E	***Natural quarry stones rough dressed; bedded in and including cement and sand (1:4) mortar; reinforced with and including 45 mm wide hoop iron gauge in alternate courses: in:***				
F	200mm thick walling	SM	200		
	TERRACE WALLING				
	Machine cut quarry stone walling with a minimum of 7.0 N/mm2 average compressive strength to B.S 5390;bedded and jointed in cement and sand (1:4) mortar, reinforced with and including 25 x 3 mm thick hoop iron strips at every alternate course as described in;				
G	200mm thick walling	SM	108		
	Keying Finish to exposed wall surfaces.				
H	Extra over horizontal and vertical pointing in 10mm thick rod in cement and sand mix (1:3) mortar including one coat Bituminous paint	SM	216		
	Weep Holes.				
J	Supply and fix 150mm UPVC pipe 250mm long as weep holes across 200mm thick wall with and including all necessary chasing and finish all around them.	NO	10		
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED APARTMENTS FOR AFFORDABLE HOUSING PROGRAM (BASKET BALL PITCH)				
	Fillings				
A	Imported and approved murram backfill materials as infill to terraces walls, well watered, rolled and compacted to 98% MDD at optimum moisture content in 1 layers not exceeding 150mm Thick to Engineer's approval	CM	100		
B	Ditto but Pick and use selected excavated materials to make up levels, well watered, rolled and compacted to 98% MDD at optimum moisture content in 1 layer of 150mm Thick to Engineer's approval	CM	50		
	300mm thick ammended planting top soil.				
C	Pick from excavation and use selected excavated vegetable soil and lay to 300mm Thick to be ploughed, disked, graded and chain harrowed for a smooth surface with even falls and a fine tilth for seeding including removal of weeds. Ameliorants (cow manure mixed at 1:2 of top soil) and fertilizer (11:6:9 N:P2O5:K2O applied at a rate of circa 500Kg/ha or approved equal to manufacturer's printed instructions and specifications) to be mixed into the top soil to receive natural lawn (Pennisetum clandestinum) (m.s)	SM	200		
	FINISHIINGS				
	Natural Grass finish				
D	Natural Paspalum Grass (or equivalent) on 150mm deep amended top soil media (m.s) on 100mm well compacted fine sand (m.s) to receive fertilizer 4:1:3 N:P2O5:K2O applied at a rate of circa 500Kg/ha or approved equal to manufacturer's printed instructions and specifications) 9-12 months after lawn seeding, and annualy thereafter to specialist specifications . Contractor to allow for watering and maintenance for six months till fully established.	SM	200		
	Channels				
E	Provide, lay and joint Channel, 125x150mm flush channel block, laid on and including 450x100mm concrete (1:3:6) bed and 100x200mm haunching behind ancluding any necessary formwork and disposal of surplus material as directed.	LM	100		
	Approved plant hedging behind top terrace.				
F	Supply and plant (duranta) approved size plantings to act as hedging behind top terrace with and including watering and maintenance for six months until fully established.	NO	500		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Collection:				
	Brought forward from page BC/5				
	Brought forward from page BC/6				
	Brought forward from page BC/7				
	TOTAL FOR TERRACES CARRIED TO SUMMARY				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ELEMENT NO. 5 - BASKET BALL GOAL POSTS				
	Excavation				
A	Excavation for Goal post sockets diameter 150mm wide average depth not exceeding 1500 mm from formed level.	CM	2		
	Load cart away				
B	Load,wheel and cart away surplus excavated material to a Local Authority designated dumping site or fill soil heaps as away from site instructed by the Project Engineer.	CM	2		
	In- situ vibrated reinforced concrete Class 25 (20mm aggregates): in:				
C	Socket - bases & stud columns	CM	2		
	Ribbed reinforcement steel bars to BS4449: 2005: Grade 500 high tensile strengthincluding bends, hooks, tying wire and distance blocks; to S.E's detail (Provisional)				
D	Assorted reinforcement	KG	500		
	Formwork				
E	Sawn formwork with one coat of an approved retarding agent to vertical sides of socket bases	SM	3		
	Mild steel work in:-				
F	Achoring system anchoring in concrete including neoprene caps all as per manufacturer's instructions.	NO	2		
G	150mm Diamater x 4mm thick CHS sockets all removable.	LM	20		
	Prime stop and apply one undercoat and two finishing coats of gloss paint to CROWN PAINTS first quality or other equal and approved to metal surfaces of:				
H	General metal surfaces	LM	20		
	Goal net and ring				
I	Standard goal net and ring all to approval welded to steel post.	NO.	2		
J	25mm thick fibre glass block board all fixee to approval	SM	10		
K	Supply and fix 100mm thick polytheylene foam padding	SM	10		
L	Supply and fix 25mm thick rubber tubing all around 150mm diameter vertical posts	LM	20		
	TOTAL FOR GOAL POSTS CARRIED TO SUMMARY				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	SUMMARY FOR BILL NO. 08 BASKET BALL PITCH				
	ELEMENT			Page No.	
1	**EXCAVATIONS**			BC/1	
2	**BASKET BALL COURT**			BC/2	
3	**WATER DRAINAGE AROUND PITCH**			BC/4	
4	**TERRACES**			BC/8	
5	**BASKET GOAL POSTS**			BC/9	
	TOTAL FOR 1NO. BASKETBALL PITCH				
	NO. OF BASKETBALL PITCH				
	TOTAL FOR BASKET BALL PITCH CARRIED FORWARD TO GRAND SUMMARY				

CLUB HOUSE

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED CLUB HOUSE				
	BILL NO.1 BUILDERS WORKS				
	ELEMENT NO 1 - SUBSTRUCTURES (ALL PROVISIONAL)				
	Excavations including trimming sides and bottoms of excavations; maintaining and supporting sides; and keeping free from water, mud and fallen material; with and including destruction of termites nests within site of works,take out and destroy queens, imp				
	Site Clearance				
A	Clear site of all grass, hedges, shrubs, bushes grub up roots, load and remove from site and dispose at designated local authority areas.	SM	418		
B	Bulk excavation to reduce levels depth not exceeding 1.5m commencing from existing ground level	CM	627		
C	Excavate for Strip foundations depth not exceeding 1.50 metres starting from Stripped level	CM	67		
D	Excavate for column bases depth not exceeding 1.5m starting from reduced Levels	CM	41		
E	Extra over all type of excavation for excavating in soft rock	CM	5		
F	Ditto excavation in hard rock class I	CM	5		
	Disposal of water				
G	Allow for keeping the whole of the excavation free rom all spring and running water by pumping or any other such means as may be necessary	Item			
	Planking and strutting				
H	Allow for maintaining and upholding the sides of excavations and keeping excavations clear of all fallen materials, rubbish etc	Item			
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Disposal of excavated material				
A	Return, fill and ram selected excavated material around foundations.	CM	589		
B	Load,wheel and cart away surplus excavated material away from site	CM	147		
	Fillings				
C	Make up levels using approved imported materials: compacted in layers not exceeding 300mm thick with a 15ton roller: to the satisfaction of the Structural Engineer.	CM	373		
D	300mm thick hardcore bed: hand packed : compacted in layers not exceeding 150mm thick: to the satisfaction of the Structural Engineer: including 50mm Thick murram or "equal and approved" blinding to surfaces of hardcore	SM	418		
E	50 mm Thick Murram Blinding to surfaces of hadcore	SM	418		
	Anti - termite to treatment				
F	Approved anti-termite treatment, with ten-year guarantee, sprayed to surfaces of hardcore strictly in accordance with manufacturer's instructions.	SM	418		
	Damp-proof membrane				
G	1000 gauge polythene or other equal and approved damp-proof membrane, laid over blinded hardcore (measured separately) with 300mm side and end laps (measured nett-allow for laps); 1 No. layer: bedded in and including cement and sand (1:3) mortar	SM	418		
	Concrete Blinding				
	Insitu concrete class 15/20 mm aggregates: vibrated:				
H	50 mm Thick under column bases	SM	83		
I	Ditto strip foundation	SM	57		
	In- situ vibrated reinforced concrete Class 25 (20mm aggregates): in:				
J	Column bases	CM	35		
K	Columns	CM	5		
L	Strip foundation	CM	11		
M	100mm thick surface bed	SM	418		
N	Ground beams	CM	7		
O	Concrete steps & Staircase footing	CM	7		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Ribbed reinforcement steel bars to BS4449: 2005: Grade 500 high tensile strengthincluding bends, hooks, tying wire and distance blocks; to S.E's detail (Provisional)				
A	Assorted reinforcement	Kg	5540		
	Mesh fabric reinforcement to BS 4483 BRC A142;200 x 200mm, weighing 2.22kg/m² (measured net - no allowance) for laps; in two layers - top & bottom; including bends, tying wire and spacer blocks)				
B	Mesh reference A142 weighing 2.22 kilogrammes per square metre in floor beds.	SM	418		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to:				
C	Sides of column bases	SM	82		
D	Ditto strip footing	SM	38		
E	Vertical sides of columns	SM	136		
F	Edge of slab, over 150mm but not exceeding 225mm girth	LM	137		
G	Ditto; but to edges of risers	LM	98		
H	Vertical sides to ground beams	SM	65		
	Foundation Walling				
	Natural quarry stones rough dressed; bedded in and including cement and sand (1:4) mortar; reinforced with and including 45 mm wide hoop iron gauge in alternate courses: in:				
I	200mm thick walls in foundations	SM	296		
	Pavings				
J	Supply and lay 600 x 600mm medium duty paving blocks round the building including laying, spreading and compacting 100mm thick approved sand bed blinding, with and including excavation, 150mm thick compacted hardcore and 50mm thick quarry dust blinding to approval.	SM	82		
	Plinth				
	25mm Thick cement and sand (1:4) rendering on concrete or masonry ; wood float finished; to				
K	Plinths externally	SM	62		
	Two coats black bitumastic paint on:				
L	Rendered surfaces	SM	62		
	Planters				
M	200mm thick masonry planter walls complete with foundations	LM	44		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	COLLECTION				
	Total brought forward from page no:1				
	Total brought forward from page no:2				
	Total brought forward from page no:3				
	ELEMENT NO. 1 **Carried to** **SUBSTRUCTURES** **Main summary**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED CLUB HOUSE				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT No 2 - R.C FRAME				
	Insitu concrete class 25 (20 mm maxium aggregate sizes): vibrated: reinforced				
A	Columns	CM	20		
B	Ring beam	CM	27		
C	150mm thick Ramp	SM	20		
D	150mm Thick suspended horizontal slab	SM	518		
E	175mm Thick suspended horizontal slab	SM	108		
F	150 mm thick landing	SM	8		
G	Staircases	CM	5		
H	200 x 200 x 225mm decorative concrete/plaster moulds with approved reinforcement mesh/bars	LM	242		
	Ribbed reinforcement steel bars to BS4449: 2005:Grade 500 high tensile strength including bends, hooks, tying wire and distance blocks to S.E's detail (All provisional)				
I	Assorted reinforcement bars	Kg	15856		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to				
J	Sides and soffites of beams	Sm	270		
K	To vertical sides of columns	SM	294		
L	Edges of steps not exceeding 150mm girth	LM	1		
M	Soffits of suspended slabs	SM	627		
N	Edges of slab over 150mm but not exceeding 225mm girth	LM	242		
O	To sloping soffites of staircases	SM	19		
P	Soffits of landings	SM	8		
Q	Riser of steps over 150 mm but not exceeding 225 mm girth	LM	64		
R	Staircase string 300mm extreme girth and cut to profile of steps	LM	28		
S	Edges of landing over 150 but ot exceeding 225mm high	LM	11		
	ELEMENT NO. 2 **Carried to**				
	R.C FRAME **Main summary**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED CLUB HOUSE				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT No 3-WALLING				
	WALLING				
	External Walling				
	Machine cut quarry stone walling with a minimum of 7.0 N/mm2 average compressive strength to B.S 5390;bedded and jointed in cement and sand (1:4) mortar, reinforced with and including 25 x 3 mm thick hoop iron strips at every alternate course as described in;				
A	200mm thick walling Externally	Sm	307		
B	200mm thick parapet walling	Sm	104		
C	400mm thick walling Externally	Sm	344		
D	Leave 150 x 600mm high openings in parapet walls and make good edges and reveals to Architect's approval	No	100		
E	200 x 200 x 225mm wide façade features / moulds to Architect's approval	No	100		
	Internal Walling				
	Machine cut quarry stone walling with a minimum of 7.0 N/mm2 average compressive strength to B.S 5390;bedded and jointed in cement and sand (1:4) mortar, reinforced with and including 25 x 3 mm thick hoop iron strips at every alternate course as described in;				
F	200mm thick walling	Sm	348		
G	150mm thick walling	Sm	262		
H	Approved hessian based damp proof course to 200mm thick walling in cement/sand mortar	Lm	28		
I	Ditto to 400mm thick walling	Lm	81		
J	Ditto to 150mm thick walling	Lm	47		
	Lintols				
K	100mm x 200mm Deep lintols in reinforced concrete class 20MPa with and including 4No T10 and T8 stirups at 200mm centres; complete with formwork	Lm	105		
	Coping				
L	Approved Precast concrete coping; bedded jointed and pointed in (1:3) cement and sand mortar; overall size 300 x 50mm once weathered and twice throated	Lm	122		
	Pergola				
M	Supply and fix Pergolla in 150x50x4mm thick RHS members spaced at 200mm c/c complete with 100x100x5mm thick SHS posts bolted to concrete foundations to details; apply 3coats of paint to steel members	SM	22		
	ELEMENT NO. 3 **Carried to**				
	WALLING **Main summary**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED CLUB HOUSE				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 4-WINDOWS				
	METAL WORK				
	PURPOSE - MADE UNITS				
	Supply, fabricate and fix the following purpose made small pane mild steel casement windows to be fabricated from approved mild steel sections (atleast 14g 2mm thick) comprising of frame and casement incorporating permanent hooded high level ventilation panels infilled with mosquito gauze : window supplied complete with and including 12mm solid square burglar proofing bars fixed at 200mm centres both ways and metal fixing lugs including building into wall and making good, and all necessary iron mongery viz hinges, fasteners, and hasp including shop priming window with red oxide primer before delivery to site:-				
A	Window, overall size 1800 X 2300mm high to Architects Details	NO	23		
B	Ditto Size 900 x 2300mm high	NO	4		
C	Ditto Size 800 x 2300mm high	NO	3		
	Glazing				
D	5mm Thick clear sheet glass panes over 0.1 but not exceeding 0.5 square meters; fixing with putty	SM	101		
E	Ditto; obscure	SM	8		
	Painting and Decorations				
	On Metal work				
	Prepare and apply aerosol spray painting in two finishing coats of first grade approved paint as described in				
F	General window and grille surfaces	SM	218		
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Bull-nosed precast concrete , finishing fair on all exposed surfaces and hoisting and placing in position, bedding, jointing and pointing in pigmented cement and sand (1:3) mortar				
A	150 x 25mm thick precast concrete window sill	LM	49		
	Window board				
B	150mm wide x 25mm thick window board in softwood timber plugged to the wall	LM	49		
	Prepare and apply one coat first quality aluminium wood primer before fixing: on wood: to				
C	Surfaces exceeding 100mm but not exceeding 200 mm girth	LM	49		
	Prepare and apply three coats of first quality polyurethane clear varnish: on wood: to				
D	Window board: surfaces exceeding 100mm but not exceeding 200 mm girth	LM	49		
	Curtain rods;				
B	20mm diameter heavy duty twin brass rod complete accessories to approval	LM	80		
	Carried to collection				
	COLLECTION				
	Total brought forward from page no: 7				
	Total brought forward from above				
	ELEMENT NO. 4 Carried to the				
	WINDOWS Main summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED CLUB HOUSE				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 5-DOORS				
	External Doors				
	Glazed mild steel casement sliding doors				
	Heavy gauge purpose made mild steel door comprising 40 x 25 x3mm stiles, top and bottom stiles, 4 No Intermediate rails, 1.5mm steel sheet both sides welded in place and 5mm thick clear glazing, all primed with red oxide and spray painted with 2 coats of first quality gloss oil paint; complete with hinges, stays, 5lever locks, sliding gear, fasteners and necessary seremetals assembled and fixed to opening including cutting and pinning lugs to concrete or block work surround and bedding frame in cement and sand mortar (1:3).				
A	Double Sliding Door overall size 1800 x 2850mm high	NO	10		
B	Bifold door Size 3000 x 2850mm high	NO	1		
	Internal Doors				
	Flush timber doors				
	50 mm thick Solid cored flush doors with plywood facing to receive painting (m.s) all to Architects details, specifications and approval				
C	Door size 900mm x 2100mm high comprising of 1 No opennable leaf size 800 x 2100mm high	NO	13		
D	Ditto Size 800 x 2100mm high comprising of 1 No opennable leaf size 700 x 2100mm high	NO	12		
E	Ditto Size 1000 x 2100mm high comprising of 1 No opennable leaf size 900 x 2100mm high	NO	4		
	50mm thick approved hardwood PANEL doors with 12.5mm thick Mahogany hardwood lipping to Architect's details, specifications and approval				
	Door size 1800 x 2400mm high (D16 T4)	NO	2		
	Frames and frame finishes in mahogany hardwood timber:				
F	25 x 25mm quadrant	LM	172		
G	25 x 50mm architrave with two labours, plugged	LM	172		
H	150mm x 50mm frame with three labours; chamfered edges; plugged	LM	172		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Painting and decorating				
	Prepare and apply one coat aluminium wood primer to:-				
A	Surfaces not exceeding 100mm girth	LM	343		
B	Surfaces over 100mm but not exceeding 200mm girth	LM	172		
	Prepare Knot, prime, stop and apply one undercoat and two coats first grade qaulity gloss oil paint to wood surfaces				
C	General timber surfaces	SM	124		
D	Surfaces not exceeding 100mm girth	LM	343		
E	Surfaces over 100mm but not exceeding 200mm girth	LM	172		
	Prepare and apply three coats gloss oil paint as "Crown Paints" or other equal and approved paint to:-				
F	General surfaces of metal doors	SM	120		
	Ironmongery				
	Supply and fix the following ironmongery to timber complete with matching screws and keys to the approval of the Architect				
G	100mm pressed heavy duty steel Butt Hinges	Pairs	50		
H	3 Lever Door Lock with handles as per Union	NO	31		
I	Door fixing cramps	NO	198		
J	Approved male/female signage	NO	4		
	Carried to Collection				
	COLLECTION				
	Total brought forward from page no: 9				
	Total brought forward from above				
	ELEMENT NO. 5 **Carried to**				
	DOORS **Main summary**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED CLUB HOUSE				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 6 - EXTERNAL FINISHES				
	EXTERNAL WALL FINISHES				
	External Render				
	Cement and sand (1:3) render:wood floated: on concrete or blockwork: to				
A	15mm thick to parapet walling externally	SM	754		
B	Ditto to surfaces of beams and columns	SM	256		
C	Extra over vertical and horizonatal key pointing in10 mm rod in cement and sand mix (1:3) mortar including one coat of Bituminous paint	SM	50		
	External Painting				
	Prepare and apply one coat undercoat and one finishing coats permaplast long lasting exterior/ weatherguard as manufactured by Crown Solo Paints or equal and approved to rendered surfaces as described in:-				
D	Masonry surfaces externally-Beam, Column and Slab Moulds	SM	754		
E	Ditto to surfaces of beams and columns	SM	256		
	FLAT ROOF FINISHES				
	Cement and sand (1:4) screeded beds: on concrete:				
	complete with coloured pigmentation additives and hardener to:				
F	50mm average waterproofed lightweight screed laid to falls and crossfalls to roof slabs -upper roof including gutter bases	SM	246		
	Prepare and apply to vertical/horizontal surfaces 4mm thick APP/EPDM water proofing or other equal and approved membrane with surface finish weighing 4kg/sm; laid on primer with torch-on process ;by an approved specialist all in accordance with the manufacturers instructions including provision of a written ten (10) year anti leak guarantee.				
G	4mm thick APP membrane applied to roof slabs	SM	246		
H	Ditto to skirting 200mm high	LM	166		
I	Dress membrane around 100mm rainwater outlet	No.	18		
	The Following Flat roof concrete tiles fixed with approved adhesive, laid and jointed with waterproofing bituminous compound				
J	20mm thick interlocking Concrete tiles of size 225 x 225mm	SM	275		
	ELEMENT NO. 6 Carried to				
	EXTERNAL FINISHES Main summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED CLUB HOUSE				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 7 - INTERNAL FINISHES				
	Internal Wall Finishes				
	15 mm thick Cement and sand (1:4) backings on blockwork to receive ceramic wall tiles:to:				
A	Internal wall surfaces- Wet areas	SM	289		
	Ceramic wall tiles				
	Allow a Prime Cost supply rate of Ksh. 700 per SM				
B	Supply and Fix 300x300x6mm thick ceramic wall tiles as manufactured by Saj Ceramics or equal and approved on prepared backings(m.s) with proprietary adhesive; jointed and pointed in matching coloured proprietary grouting: including pvc spacers and expansion joint as necessary: all to Architect's approval. - Wall Surfaces	SM	289		
	15mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
C	Concrete/masonry surfaces **Internally**	SM	1684		
D	Ditto to window cills, door Jambs Externally and Surfaces not exceeding 200mm girth	LM	147		
	Painting and Decoration				
	Allow for skimming coat, Prepare and apply three coats interior quality eggshell paint as "Crown Paints" or other equal and approved paint to:-				
E	Plastered concrete/masonry surface	SM	1684		
F	Ditto to window cills, door Jambs Externally and Surfaces not exceeding 200mm girth	LM	147		
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Floor Finishes				
	32 mm thick Cement and sand (1:3) backing on concrete surfaces,prepared to receive approved floor finish to:				
A	Receive ceramic floor tiles	SM	44		
B	Receive porcelain floor tiles	SM	574		
C	300 mm wide treads of steps	LM	97		
D	150mm high risers of steps	LM	98		
E	Receive rubber flooring	SM	86		
F	Receive timber flooring	SM	32		
	Ceramic Floor tiles				
	Supply and Fix 300 x 300x 8mm thick Ceramic floor tiles or equal and approved; as manufactured by Saj ceramic or equal and approved; bedded and jointed in matching coloured proprietary grout on prepared on prepared backings(m.s); : including pvc spacers and expansion joint as necessary: all to Architect's approval:to:				
G	Floor Surfaces	SM	44		
H	Ditto 100mm wide Wall Skirtings	LM	80		
	Porcelain Floor tiles				
	Supply and Fix 600 x 600x 10mm thick Porcelain floor tiles or equal and approved; as manufactured by Saj ceramic or equal and approved; bedded and jointed in matching coloured proprietary grout on prepared on prepared backings(m.s); : including pvc spacers and expansion joint as necessary: all to Architect's approval:to:				
I	Floor Surfaces	SM	574		
J	Ditto 100mm wide Wall Skirtings	LM	566		
	Timber Floor Finish				
	Supply and Fix approved mahogany timber flooring; with approved glue ; varnish to approval ; secret nailing : on backing screeds with timber strips (m.s.) :- all to Architect's approval:to:				
K	Floor Surfaces	SM	32		
L	Ditto 100mm wide Wall Skirtings	LM	25		
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Rubber Floor Tiles				
	Supply and Fix approved Rubber Floor Tiles; bedded and jointed in matching coloured proprietary grout on prepared on prepared backings(m.s); : including pvc spacers and expansion joint as necessary: all to Architect's approval:to:				
A	Floor Surfaces	SM	86		
B	Ditto 100mm wide Wall Skirtings	LM	38		
	Staircase finishes				
	32 mm thick Cement and sand (1:3) backing on concrete surfaces,prepared to receive ceramic floor tiles to:				
C	300 mm wide treads of steps	LM	59		
D	150mm high risers of steps	LM	64		
E	Landing	SM	8		
	Ceramic staircase tiles Supply and Fix 300 x 300x 8mm thick non-slip Ceramic floor tiles or equal and approved; as manufactured by Saj ceramic or equal and approved; bedded and jointed in matching coloured proprietary grout on prepared on prepared backings(m.s); : including pvc spacers and expansion joint as necessary: all to Architect's approval:to:				
F	300 mm wide treads of steps	LM	59		
G	150mm high risers of steps	LM	64		
E	Landing	SM	8		
	15mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
H	Soffits of staircase landing	SM	8		
I	Ditto to sloping soffites exceeding 15˚ from horizontal	SM	19		
J	Staircase string 300mm extreme girth and cut to profile of steps	LM	28		
	Paint works				
	Allow for skimming coat, Prepare and apply three coats interior quality eggshell paint as "Crown Paints" or other equal and approved paint to:-				
K	Soffits of staircase landing	SM	8		
L	Ditto to sloping soffites exceeding 15˚ from horizontal	SM	19		
M	Staircase string 300mm extreme girth and cut to profile of steps	LM	28		
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Ceiling finishes				
	12mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
A	Soffits of Concrete surfaces	SM	627		
	Painting and Decoration				
	Allow for skimming coat, Prepare and apply three coats interior quality eggshell paint as "Crown Paints" or other equal and approved paint to:-				
B	Plastered ceilings	SM	627		
	Gypsum boards				
C	12.5mm approved Moisture resistant Suspended gypsum plasterboard ceiling : on and including pressed 50 x 50mm aluminium suspended brandering system at 600mm centres both ways with brandering end trims as specified : allow for all necessary timber stiffener or bearers where directed: allow end trims as directed including all cutting and trimming to light fittings, or other equipments as required (all quantities measured flat overall over light fittings): allow for all vertical and horizontal trims: allow where necessary for welded mild steel supports complete with bolts and welded connections :fixing with self tapping screws; taped and filled joints : complete with Modified pre-formed polyurethane decorative mouldings and cornices : including 50 x 50mm shadow gap between wall and gypsum ceiling and; 15 x 15mm shadow gap between grid and gypsum ceiling; all to Architect's details and patterns	SM	350		
D	100 x 20mm gypsum cornice with two labours	LM	189		
	Allow for skimming coat, Prepare and apply three coats interior quality eggshell paint as "Crown Paints" or other equal and approved paint to:-				
E	Gypsum ceilings	SM	350		
F	Ditto cornice	LM	189		
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	COLLECTION Total brought forward from page no: 12 Total brought forward from page no: 13 Total brought forward from page no: 14 Total brought forward from page no: 15				
	ELEMENT NO. 7 **Carried to** **INTERNAL FINISHES**				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED CLUB HOUSE **BILL NO.1-BUILDERS WORKS** **ELEMENT NO 8- BALUSTRADING AND RAILING**				
	Balustrades and staircase railings				
A	900mm high mild Steel balustrade; comprising 60 x 10mm mild Steel balusters at 900mm centres; bolted to base plate and tread (m.s), with 7No. 25mm diameter horinzontal bars, and 75x4mm diameter CHS mild Steel handrail part welded into 60x10mm balustrades; to Architects drawings	LM	20		
	Prepare, prime and apply one undercoat and two finishing coats first quality gloss oil paint on				
B	General metal surfaces of balustrading (both sides measured overall)	SM	49		
	ELEMENT NO. 8 BALUSTRADING AND RAILING Carried to the Main summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED CLUB HOUSE				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 9 - ROOFING				
A	**28** gauge **IT5 Roofing sheets**; laid on timber structure and including fixing clips and brackets and fixing to timber rafters at 600mm centres(m/s)	SM	120		
B	Gauge 28 galvanized 450 mm Ridge cap and hip cap to match roof covering	LM	10		
C	Gauge 28 galvanized iron Ditto hip cap	LM	18		
	STRUCTURAL STEEL CONSTRUCTION				
	1. Prices shall include for unloading, hoisting and fixing in position including requisite staging for erection.				
	2. Allow for factory priming in lead oxide and touching up the priming on site later				
	3. Prices should allow for fillet weld and welded connections				
	The following in Steel Trusses including hoisting and fixing in position 2.8m above ground floor				
D	50 x 50 x 3mm Thick SHS purlins	Kg	463		
E	50 x 50 x 3mm. Thick SHS external members	Kg	638		
F	50 x 25 x 3mm. Thick RHS internal members	Kg	765		
G	26-gauge prepainted G.I/Aluzinc box roof gutters with 100mmx75mm cross-section	LM	45		
N	Extra over rainwater gutter for 100mm diameter downpipe outlet	no	6		
O	Ditto stopped end	no	6		
P	Ditto bend	no	6		
	Wrot softwood Fascia board				
G	250mm x 25mm Fascia/ barge boards nailed to end of rafters	LM	45		
	Painting Wood				
	Knot, prime, stop and paint three coats of gloss oil paint as Crown or other equal and approved to:				
H	Fascia or verge; girth 225mm - 300mm	LM	45		
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Rain water goods				
	Supply and fix the following in UPVC: to BS 4515 with fittings fixed to manufacturer's instruction and BS 5572: manufactured by "Doshi Kenya Ltd" or other equal and approved: tenderer must allow in the pipework for pipe fixing clips or holderbats, plugged and screwed				
A	110mm Diameter ***down pipe:*** Grey uPVC with and including swan neck offset and shoes: holder bats at 1500mm centres: including water-tight connections to mild steel gutters	LM	18		
B	Extra over ditto for swan neck	no	6		
C	Ditto horse shoe	no	6		
	Carried to collection				
	COLLECTION				
	Total brought forward from page no: 18				
	Total brought forward from above				
	ELEMENT NO. 9 ROOFING Carried to the Main summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED CLUB HOUSE				
	ELEMENT NO 10 - JOINERY FITTINGS				
	Allow for providing materials, labour and construct fixtures and fittings as per Architects drawings of the following JOINERY FITTINGS AND FIXTURES complete with associated iron mongery;				
	NOTE: All blockboard, MDF boards,etc in joinery works shall be lipped with hardwood lipping all round before fixing.				
	High level cupboards				
	400mm Wide high level kitchen cupboards in 18mm laminated mdf sides & shelves complete with doors, top, bottom & divisions with and including all necessary ironmongery; to Architect's details				
A	High level storage cupboard units 8000mm long x 600mm high x 300mm deep	LM	8		
	Low level kitchen cupboards				
	Low level kitchen worktops with 600x600x8mm porcelain tiles top on and including 75mm thick reinforced concrete class 20MPa slab: 100mm plastered mass concrete plinths in concrete class 15MPa: 18mm laminated mdf sides & shelves complete with doors, shelves, drawers, cutting tiles for kitchen sink (m.s) & all necessary ironmongery; to Architect's details and approval				
B	Low level kitchen cupboards below concrete worktop total girth grouped together 2850mm long x 850mm high x 550mm deep	LM	8		
	Vanity tops				
	600mm wide vanity tops with 600x600x8mm porcelain tiles top on 75mm thick reinforced concrete class 20MPa slab, 100mm plastered mass concrete plinths in concrete class 15MPa: cutting tiles for sink (m.s) ; to Architect's details				
C	11000mm long	LM	8		
	Lockers				
	400mm wide shelves in 18mm thick laminated MDF boards sides & shelves complete with doors, shelves, divisions, drawers, frames, bearers, malpa hinges, aluminium D-handles & all necessary ironmongery; to Architect's details				
D	12000mm long x 2100mm high-Lockers	LM	12		
	Reception desk				
	800mm wide reception desk tops with 20mm granite top on 20mm thick blockboard, 25x25x3mm thick mild steel framework & 18mm thick laminated MDF sides & shelves complete with doors, shelves, drawers & all necessary ironmongery; to Architect's details				
E	3000mm long	LM	3		
	ELEMENT NO. 10 Carried to the				
	JOINERY & FITTINGS Main summary				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED CLUB HOUSE				
	ELEMENT NO 11 - BUILDERS WORKS IN CONNECTION WITH SERVICES (BWICWS)				
	Plumbing, Drainage and Mechanical Installations				
A	Inspect all drawings and Bills of Quantities for Plumbing, Drainage and Mechanical Installations and allow for all Builder's work associated with the installations; including cutting away and making good after installing a concealed drainage system; including cutting or leaving all holes notches, mortices, sinkings and chases in both the structure and its coverings; including but not limited to forming recess in masonry	Item			
	Electrical Services Installations				
B	Inspect all drawings and Bills of Quantities for Electrical Installations and allow for all Builder's work associated with the Electrical installations, including cutting away for and making good after Electrician installing a concealed conduit system including cutting or leaving all holes notches, mortices, sinkings and chases in both the structure and its coverings; including but not limited to forming recess in masonry	Item			
	ELEMENT NO. 11 Carried to the BUILDERS WORKS IN CONNECTION WITH SERVICES (BWICWS) Main summary				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
1.0	**Internal Plumbing Installations**				
	Supply, deliver install, Test and Commission: **PP-R (Polypropylene Random Co-polymer)** pipes **PN 20** and fittings to DIN 8078 and DIN 16962 with polyfusion welded joints to DVS 2207 of approved manufacturer. Rates must allow for all Metal/plastic threaded adaptors where required for the connection of sanitary fixtures, valves, sockets, sliding and fixed joints etc. as required in the running lengths of pipework. The pipes shall run in floors and wall chase. The pipes will be pressure tested before the plastering of wall commences and as per the manufacturers recommended testing pressures.				
(i)	Club House				
	Pipe Works				
A	32mm Ø PPR Pipe	2	LM		
B	Ditto 25mm Ø	20	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	32mm Ø Elbows/ Bends	2	No.		
D	Ditto 25mm Ø	14	No.		
	Equal/Unequal Tees				
E	32 x 32 x 32mm	1	No.		
F	25 x 25 x 25mm	7	No.		
	Reducers				
G	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
J	25 x 20mm male/female threaded adaptor	2	No.		
K	25 x 15mm ditto	4	LM		
L	25 x 15mm male threaded bend	14	LM		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total from Previous Page				
	Isolating valves				
M	25mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
	Shut off Angle Valve				
N	Brass plated 1/2" angle valve	13	No.		
	Check Meter				
O	50 mm diameter water check meter	1	No.		
	Testing and Commissioning				
P	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Total Cost of Plumbing Installation				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
2	**Risers and Roof Levels**				
	Pipe Works				
A	50 mm Ø PPR pipe	10	LM		
B	Ditto 40mm Ø	12	LM		
C	Ditto 32mm Ø	13	LM		
D	Ditto 25mm Ø	6	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
E	50mm Ø Elbows/ Bends	4	No.		
F	Ditto 40mm Ø	3	No.		
G	Ditto 32mm Ø	3	No.		
H	Ditto 25mm Ø	2	No.		
	Equal/Unequal Tees				
I	50 x 40 x 50mm	4	No.		
J	40 x 40 x 32mm	3	No.		
K	32 x 32 x 32mm	4	No.		
L	32 x 32 x 25mm	4	No.		
M	25 x 25 x 25mm	2	No.		
	Reducers				
O	50 x 40mm reducer	2	No.		
P	40 x 32mm reducer	2	No.		
Q	40 x 32mm reducer	2	No.		
R	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
S	40 x 32mm male/female threaded adaptor	2	No.		
T	32 x 25mm male/female threaded adaptor	2	No.		
	Total Carried to the Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total from Previous Page				
	Isolating valves				
U	50 mm Ø Gate Valve as "Pegler" or Equivalent	1	No.		
	Testing and Commissioning				
V	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Total Cost of Riser & Roof Level Plumbing				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
3	**SANITARY FITTINGS AND ACCESSORIES INSTALL ONLY**				
A	**Water Closet (WC) Pan** Close Coupled dual flush Floor Standing Close Coupled WC Bowl complete with seat cover and cistern, WC connector relevant fittings & accessories ***(Quote Install Only)***	4	No.		
B	**Wash Basin** WHB basin Full pedestal Wash Basin 450x485x230m White Complte with bottle traps, flexible connection hoses and other accessories with cws only tap ***(Quote Install Only)***	12	No.		
C	**Disabled Water Closet (WC) Pan** Physically challenges set as Armitage Shanks Doc M Contour 21+ close coupled right hand corner pack, WC pan, Wash basin, water saving delay fill cistern with spatula lever, grab rails, hinged support rail with toilet roll holder, seat no cover with retaining buffers, copper tails on TMV3 mixer tap or equal & approved ***(Quote Install Only)***	1	No.		
D	**Urinal** Urinal bowl in white colour of size 450 x 685mm with built in spreader and concealed waste trap complete with stainless steel fixing bolts and caps. Complete with exposed Flash Valve ***(Quote Install Only)***	4	No.		
E	**Flushing and Sterilization** Allow for flushing and sterilization of the entire system to the satisfaction of the Engineer.	1	Item		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	FIRE PROTECTION				
	Hose Reel and Associated Pipework				
A	Supply and Install automatic 30 meters long, 25 mm diameter hosereel and nozzle	3	No.		
	Associated Pipework				
	Galvanised Mild Steel Class 'B' tubing to B.S. 1387 with screwed and socketed joints to BS 21 including all range piping, fittings, hanagers, supports, brackets, and supports				
B	50mm diameter	34	LM		
C	25mm ditto	12	LM		
	Extra Over Piping For Fittings:-				
	Elbows/Various Bends				
D	50mm bend/elbow	7	No.		
E	25mm ditto	20	No.		
	Equal/Unequal tees				
F	50 x 50 x 50mm tee	10	No.		
G	50 x 50 x 25mm ditto	19	No.		
	Reducers				
H	50 x 25mm reducer	10	No.		
	Unions				
I	50mm diameter union	2	No.		
J	25mm ditto	20	No.		
	Valves				
K	25mm diameter quarter Turn hose reel isolation valve to be as PEGLER or approved equivalent.	3	No.		
Total Cost Carried For hose reel and associated pipework Installations					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Portable Fire Protection Equipment				
	Supply, deliver, install, test and commission portable fire protection equipment with initial fill complete with all the necessary mounting accessories.				
A	9 litres, water/carbon dioxide gas extinguisher	4	No.		
B	4.5kg carbon dioxide gas extinguisher	4	No.		
C	4.5 kg dry powder extinguisher	4	No.		
	Testing and Commissioning				
D	Allow for testing and commissioning of the fire pump installation to the satisfaction of the Engineer.	1	Item		
Total Cost For Portable fire Extinguishers					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Foul Drainage Supply, deliver and install the following in key "Terrain" or equal and approved uPVC Heavy gauge soil and waste system. Allow for all the various sizes of adaptor, connectors, sockets, holderbats, clips etc not measured but required for the satisfactory functioning of the system.				
	Piping				
A	32mm diameter heavy duty grey uPVC pipe	60	LM		
B	40mm ditto	60	LM		
C	50mm ditto	120	LM		
D	75mm ditto	80	LM		
E	100mm ditto	80	LM		
F	100mm diameter heavy duty golden brown	24	LM		
G	150mm diameter heavy duty golden brown	30	LM		
	Extra over uPVC Pipeworks				
H	32mm sweep bend	15	No.		
I	40mm sweep bend	60	No.		
J	50mm sweep bend	15	No.		
K	75mm sweep bend	8	No.		
L	100mm sweep bend	22	No.		
M	150mm sweep bend	16	No.		
N	40mm 450 bend	22	No.		
O	50mm 450 bend	15	No.		
P	40mm sweep tee	25	No.		
Q	40 x 32mm reducer	15	No.		
R	75 x 40mm ditto	15	No.		
S	150 x 40mm ditto	8	No.		
T	40mm access plug	22	No.		
U	100mm bend WC connector	6	No.		
V	40mm bottle 'p' trap	12	No.		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total From Previous Page				
Z	100 x 50mm floor trap set complete with polycarbonate flush grating	17	No.		
AA	**Gulley Trap** Gully trap comprising of 100mm diameter golden brown uPVC gully piece, 100mm diameter uPVC trap spigot outlet with screws and washers, and 300 x 300mm masonry gully trap chamber with mild steel plate and a heavy	3	No.		
BB	**Manholes** Construct manhole/ inspection chamber size 450 x 600 x 750mm deep internally in 200mm stone walls, 150mm concrete bed, water proof plaster, forming drain channels, medium duty cover frame in cast iron with recessed cover with concrete infill and all necessary formwork, excavation and soil disposal.	4	No.		
CC	**Excavations** Excavate trench for pipe not exceeding 100mm diameter and not exceeding 1.5m deep (average 600mm deep) and make good as before.	30	LM		
DD	Allow for hydrostatic pressure testing of drainage installation including provision of pipe plugs and other required fittings.	1	Item		
	Total Cost For Ground Floor Foul Drainage Installation				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Rain Water Drainage				
	Supply, deliver and install UPVC rainwater pipes and PPR pipework. Allow for all flanges, couplings, nipples, connector joints, fixing clips holder bats etc as required in running length of pipework but not measured.				
	Piping				
A	100mm ditto	70	LM		
	Extra over piping for fittings:-				
B	100mm ditto	6	No.		
C	100mm sweep bend	2	No.		
D	100mm single branch	4	No.		
E	100mm double branch	3	No.		
F	100mm flat roof rain water outlets	6	No.		
	Testing and Commissioning				
G	Allow for testing and commissioning of the rain water drainage installation to the satisfaction of the engineer.	1	Item		
	Total Cost For Rain Water Drainage Installation				

ITEM	DESCRIPTION	AMOUNT (KES)
	SUMMARY PAGE	
1.0	**Total Cost for Internal Plumbing**	
2.0	**Total Cost for Roof + Riser**	
3.0	**Total Cost for Sanitary Fittings**	
4.0	**Total Cost Carried For hose reel and associated pipework Installations**	
5.0	**Total Cost For Portable fire Extinguishers**	
6.0	**Total Cost For Ground Floor Foul Drainage Installation**	
7.0	**Total Cost For Rain Water Drainage Installation**	
	Total carried to Mechanical Works Main Summary Page	

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	BILL NO. 5				
	CLUB HOUSE				
	SUPPLY, DELIVER , INSTALL ,SET TO WORK AND COMMISSION THE FOLLOWING:-				
	LIGHTING POINTS				
4.01	Lighting point completely wired in 3 x 1.5mm^2 single core PVC insulated copper cables drawn in 20mm diameter heavy gauge PVC conduits including all accessories for one way switching, but excluding the switch and luminaire.	No.	34		
	ii) Ditto as in item No. 4.01 but for two way switching	No.	24		
4.02	10A white moulded switch plate as Crabtree, MK Logic, Clipsal E- Series or approved equivalent as follows:-				
	i) 10A one gang one way switch	No.	14		
	ii) 10A one gang two way switch	No.	4		
	iii) 10A two gang two way switch	No.	4		
4.03	**LIGHTING FITTINGS**				
	a) Circular shaped surface mounted led luminaire as Phillips Coreline Cat No. WL131V LED12S/840 PSED EL3 WH **"Type N"**	No.	24		
	b) Bulkhead fitting with moulded glass diffuser & Die Cast Aluminium base c/w 16W PL Lamp as Massive Sunderland Cat. No. 71410/01/31 for security lights. **"Type B"**	No.	10		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	c) 600mm x 600mm, 33 watts LED panel light fitting as Phillips CoreLine Cat. No. RC132V LED36S/840 PSU W 60L60 OC complete with Phillips LED internal driver	No.	3		
	d) 1 x 36W, 1200mm Surface mounted mirror strip HPF water proof 1P65 fluorescent fitting with diffuser as Thorn or equal and approved equivalent **type "4M**"	No.	4		
	e) Large decorative highbay pendant with metal die cast aluminium housing on single steel wire suspension for 70w lamps complete with prismatic polycarbonate, lamps & aluminium reflector as Thorn Glacier II or equal and approved equivalent type "B".	No.	12		
	f) 36W Suspended/Wall mounted LED linear luminaire complete with LEDs mounted on steel plate, base made of plastic polycarbonate, Diffuser "Type 4C"	No.	3		
4.04	CCTV points in designtaed locations for survailance, comprising of 25mm diameter HG PVC conduits complete with draw wire and the blanking plate. Allow for draw boxes where all the conduits from each security point converge.	No.	4		
4.05	300x 300x 100mm deep 16 G galvanized adaptable box.	No.	2		
4.06	24A, 240V, 2P DB/CU mounted silent operation contactor for Switching External lights complete with all accessories and as CRABTREE CIK24 or an approved equivalent	No.	1		
4.07	Photocell control unit and wired to energize the contactors complete with a D.P override switch as THORN QPK or approved equivalent	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	POWER AND SOCKET OUTLET POINTS				
4.08	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	8		
4.09	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	8		
4.10	Instant shower water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories, but excluding the 40A DP connection unit	No.	2		
4.11	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	2		
4.12	Under sink water heater power points completely wired in 3 x 4mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories, but excluding the 40A DP connection unit	No.	1		
4.13	40A DP switched connection unit with neon indicator as MK or approved equivalent	No.	1		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
4.14	Hand drier power points completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories, but excluding the 20A DP connection unit	No.	2		
4.15	20A DP switched connection unit with neon indicator as MK or approved equivalent	No.	2		
4.16	Kitchen hood power points completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories, but excluding the 20A DP connection unit	No.	1		
4.17	20A DP switched connection unit with neon indicator as MK or approved equivalent	No.	1		
4.18	Deep fat fryer power points completely wired in 5 x 6mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories ,but excluding the the 63A TPN isolator	No.	2		
4.19	Electric 4 burner power points completely wired in 5 x 6mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories ,but excluding the the 63A TPN isolator	No.	2		
4.20	63A TPN isolator as MK or approved equivalent	No.	4		
	Total Carried Forward to the Next Pg.				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	TELEPHONE, DATA AND TV POINTS POINTS				
4.21	Data point comprising of draw wire in 25mm diameter Heavy Gauge PVC conduits including all accessories and blanking plate but excluding the data socket outlet.	No.	2		
4.22	6 ways 100A TPN distribution boards 'T' complete with 100A TPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	1		
4.23	**MCBs for item above as Schneider Electric Acti 9**				
	i)10 A SP MCB	No.	3		
	ii)32 A SP MCB	No.	2		
	iii)32 A TP MCB	No.	4		
	iv) Blanking plates	No.	4		
4.24	Sub-mains circuits for DB 'T' above comprising of 4 core 16mm2 PVC/SWA/PVC cable drawn in 32mm diameter heavy gauge conduits for club house	LM	90		
TOTAL AMOUNT FOR BILL No. 5: CLUB HOUSE CARRIED FORWARD TO GRAND SUMMARY PAGE					

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROPOSED CLUB HOUSE				
	BILL NO.1-BUILDERS WORKS				
	MAIN SUMMARY				
1	**Substructures**		**CH/4**		
2	**Reinforced Concrete Frame**		**CH/5**		
3	**Walling**		**CH/6**		
4	**Windows**		**CH/8**		
5	**Doors**		**CH/10**		
6	**External Finishes**		**CH/11**		
7	**Internal Finishes**		**CH/16**		
8	**Balustrading and Railing**		**CH/17**		
9	**Roofing**		**CH/19**		
10	**Joinery fittings**		**CH/20**		
11	**Builders works in connection with services**		**CH/21**		
12	**Mechanical Works**				
13	**Electrical Works**				
	TOTAL FOR CLUB HOUSE CARRIED TO GRAND SUMMARY				

KINDERGARTEN

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	PROPOSED KINDERGARTEN				
	BILL NO.6-BUILDERS WORKS				
	ELEMENT NO 1 - SUBSTRUCTURES (ALL PROVISIONAL)				
	Site Clearance				
A	Clear site of all grass, hedges, shrubs, bushes grub up roots, load and remove from site and dispose at designated local authority areas.	SM	1,104		
B	Excavate average 200mm deep to remove top vegetable soil, load, remove from site and dump in designated local authority dump site.	SM	1,104		
C	Excavate to reduced levels in varying depths not exceeding 1.5m deep from existing ground levels.	Cm	1,656		
D	Ditto exceeding 1.5m deep but not exceeding 3.0m from existing reduced levels.	Cm	552		
E	Excavate for column bases foundations depth starting from Reduced ground levels.	Cm	12		
F	Excavate for Strip foundations depth starting from Reduced ground levels.	Cm	112		
G	Extra over all type of excavation for excavating in soft rock	Cm	5		
H	Ditto excavation in hard rock class I	Cm	5		
	Disposal of water				
I	Allow for keeping the whole of the excavation free from all spring and running water by pumping or any other such means as may be necessary	Item			
	Planking and strutting				
J	Allow for maintaining and upholding the sides of excavations and keeping excavations clear of all fallen materials, rubbish etc	Item			
	Carried to collection				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	Disposal of excavated material				
A	Return, fill and ram selected excavated material around foundations.	CM	403		
B	Load,wheel and cart away surplus excavated material to a Local Authority designated dumping site or fill soil heaps as away from site instructed by the Project Engineer.	CM	2,262		
	Fillings				
C	Make up levels using approved imported materials: compacted in layers not exceeding 300mm thick with a roller: to the satisfaction of the Structural Engineer.	CM	1,578		
D	300mm thick hardcore bed: hand packed : compacted in layers not exceeding 150mm thick: to the satisfaction of the Structural Engineer	SM	1052		
E	Labour to form sinking in hardcore; 350mm average x 200 mm deep	LM	18		
F	50 mm Thick Murram Blinding to surfaces of hadcore	SM	1,052		
	Anti - termite to treatment				
G	Approved anti-termite treatment, with ten-year guarantee, sprayed to surfaces of hardcore strictly in accordance with manufacturer's instructions.	SM	1,104		
	Damp-proof membrane				
H	1000 gauge polythene or other equal and approved damp-proof membrane, laid over blinded hardcore (measured separately) with 300mm side and end laps (measured nett-allow for laps); 1 No. layer: bedded in and including cement and sand (1:3) mortar	SM	1,104		
	Concrete Blinding				
	Insitu concrete class 15/20 mm aggregates: vibrated:				
I	50 mm Thick under strip foundation	SM	225		
J	50 mm Thick under column bases	SM	40		
	In- situ vibrated reinforced concrete Class 25 (20mm aggregates): in:				
K	Column bases	CM	12		
L	Columns	CM	4		
M	Ground beams	CM	15		
N	Strip foundation	CM	45		
O	Steps	CM	4		
P	100mm thick surface bed	SM	1,104		
Q	Slab thicknessing 200x300mm thick	LM	18		
	Carried to collection				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	Ribbed reinforcement steel bars to BS4449: 2005: Grade 500 high tensile strengthincluding bends, hooks, tying wire and distance blocks; to S.E's detail (Provisional)				
A	Assorted reinforcement	KG	5028		
	Mesh fabric reinforcement to BS 4483 BRC A142;200 x 200mm, weighing 2.22kg/m² (measured net - no allowance) for laps; in two layers - top & bottom; including bends, tying wire and spacer blocks)				
B	In floor beds	SM	1104		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to:				
C	Vertical sides to columns	SM	80		
D	Vertical sides to column bases	SM	48		
E	Vertical sides to strip footing	SM	150		
F	Vertical sides to ground beams	SM	150		
G	Edge of slab not exceeding 150mm girth	LM	160		
H	Edge of risers not exceeding 150mm girth	LM	161		
	Foundation Walling				
	Natural quarry stones rough dressed; bedded in and including cement and sand (1:4) mortar; reinforced with and including 45 mm wide hoop iron gauge in alternate courses: in:				
I	200mm thick walls in foundations	SM	664		
	Pavings				
J	Supply and lay 600 x 600mm medium duty paving blocks round the Building including laying, spreading and compacting 100mm thick approved sand bed blinding to approval.	SM	96		
	Plinth				
	25mm Thick cement and sand (1:4) rendering on concrete or masonry ; wood float finished; to				
K	Plinths externally	SM	72		
	Two coats black bitumastic paint on:				
L	Rendered surfaces	SM	72		
	Carried to collection				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	COLLECTION				
	Total brought forward from page no: 1				
	Total brought forward from page no: 2				
	Total brought forward from page no: 3				
	ELEMENT NO. 1 **Carried to** **SUBSTRUCTURES** **Main summary**				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	PROPOSED KINDERGARTEN				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT No 2 - R.C FRAME				
	Reinforcement to BS 4449:1997 , Grade 460B high strength type 2 ribbed bars with proof stress of 460 N/mm2				
	Insitu concrete class 25 (20 mm aggregate): vibrated: reinforced				
A	Columns	CM	4		
B	Ring beam	CM	45		
C	Ramp	SM	10		
	Ribbed reinforcement steel bars to BS4449: 2005:Grade 500 high tensile strength including bends, hooks, tying wire and distance blocks to S.E's detail (All provisional)				
D	Assorted reinforcement	Kg	7552		
	Modular steel frame with 5mm thick steel plates covering formwork and/or marine board formwork: to				
E	Sides and soffites of beams	Sm	299		
F	Sides of columns	Sm	82		
	ELEMENT NO. 2 **Carried to**				
	R.C FRAME **Main summary**				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	PROPOSED KINDERGARTEN				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT No 3-WALLING				
	WALLING				
	External Walling				
	Machine cut quarry stone walling with a minimum of 7.0 N/mm2 average compressive strength to B.S 5390;bedded and jointed in cement and sand (1:4) mortar, reinforced with and including 25 x 3 mm thick hoop iron strips at every alternate course as described in;				
A	200mm thick walling Externally	Sm	420		
B	200mm thick Gable walling	Sm	147		
	Internal Walling				
	Machine cut quarry stone walling with a minimum of 7.0 N/mm2 average compressive strength to B.S 5390;bedded and jointed in cement and sand (1:4) mortar, reinforced with and including 25 x 3 mm thick hoop iron strips at every alternate course as described in;				
C	200mm thick walling Internally	Sm	161		
D	150mm thick walling Internally	Sm	40		
E	Approved hessian based damp proof course to 200mm thick walling in cement/sand mortar	Lm	374		
	ELEMENT NO. 3 Carried to				
	WALLING Main summary				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	PROPOSED KINDERGARTEN				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 4-WINDOWS				
	MILD STEEL WINDOWS				
	Supply, fabricate and fix the following purpose made mild steel casement windows to be fabricated from approved mild steel sections (atleast 14g 2mm thick) comprising of frame and casement incorporating permanent hooded high level ventilation panels infilled with mosquito gauze : window supplied complete with and including 12mm solid square burglar proofing bars fixed at 200mm centres both ways and metal fixing lugs including building into wall and making good, and all necessary iron mongery viz hinges, fasteners, and hasp including shop priming window with red oxide primer before delivery to site:-				
A	Window, overall size 2400 X 1500mm high to Architects Details	NO	22		
B	Ditto Size 600 x 900mm high (WC/SH)	NO	5		
C	Ditto size 525 X 1500mm high to Architects Details	NO	25		
	Glazing				
C	4mm Thick clear sheet glass panes over 0.1 but not exceeding 0.5 square meters; fixing with putty	SM	99		
D	Ditto; obscure	SM	3		
	Painting and Decorations				
	On Metal work				
	Prepare and apply aerosol spray painting in two finishing coats of first grade Crown Solo or other equal and approved to: -				
E	General window and grille surfaces; over 300mm girth internal	SM	203		
	Carried to Collection				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	Precast concrete, finishing fair on all exposed surfaces and hoisting and placing in position, bedding, jointing and pointing in pigmented cement and sand (1:3) mortar				
A	150 x 25mm thick precast concrete window sill	LM	74		
	Carried to collection				
	COLLECTION				
	Total brought forward from page no: 7				
	Total brought forward from page no: 8				
	ELEMENT NO. 4 Carried to the				
	WINDOWS Main summary				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	PROPOSED KINDERGARTEN				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 5-DOORS				
	Steel Casement Doors				
	Supply, fabricate and fix the following purpose made mild steel casement door comprising 40 x 25 x3mm stiles, top and bottom stiles, 4 No Intermediate rails, 1.5mm steel sheet both sideswelded in place and 5mm thick clear glazing, all primed with red oxide and spray painted with two finishing coats of first grade quality gloss oil paint on ; complete with all necessary ironmongery fasteners and necessary seremetals assembled and fixed to opening including cutting and pinning lugs to concrete or block work sorroung and bedding frame in cement and sand mortar (1:3).				
A	Door size 900 x 2400mm high	NO	7		
B	Ditto Door size 1500 x 2400mm high	NO	1		
	Frames and frame finishes in soft Wood Timber				
C	25 x 25mm quadrant beading	LM	76		
D	25 x 50mm architrave with two labours, plugged	LM	76		
E	150mm x 50mm frame with three labours; chamfered edges; plugged	LM	76		
	Flush timber doors				
	50 mm thick Semi Solid cored flush doors with plywood facing to receive painting (m.s) all to Architects details, specifications and approval				
F	Door size 900mm x 2060mm	NO	7		
G	Ditto Size 800 x 2060mm high	NO	8		
	Carried to collection				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	Painting and decorating				
	Priming back of frame with an aluminium or equivalent and approved wood primer				
A	Surfaces not exceeding 100mm girth	LM	151		
B	Surfaces over 100mm but not exceeding 200mm girth	LM	76		
	Prepare and apply undercoat and one coats first grade polyurethane clear gloss varnish to wood surfaces				
C	General timber surfaces	SM	52		
D	Surfaces not exceeding 200mm girth	LM	76		
E	Architraves: not exceeding 100 mm girth	LM	76		
F	Quadrant beading : not exceeding 100 mm girth	LM	76		
	Ironmongery				
	Supply and fix the following ironmongery to timber complete with matching screws and keys to the approval of the Architect				
	Supply and Fix the following ironmongery to the approval of the Architect				
G	100mm pressed steel Butt Hinges	Pairs	23		
H	Stainless steel 2 Lever Door Lock with handles	NO	15		
I	Door fixing cramps	NO	15		
	Carried to Collection				
	COLLECTION				
	Total brought forward from page no: 9				
	Total brought forward from page no: 10				
	ELEMENT NO. 5 **Carried to**				
	DOORS **Main summary**				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	PROPOSED KINDERGARTEN				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 6 - EXTERNAL FINISHES				
	EXTERNAL WALL FINISHES				
	External Finish				
	Cement and sand (1:3) render:wood floated: on concrete or blockwork: to				
A	15mm thick to columns/beams surfaces externally	SM	381		
	Keying				
B	Extra over horizontal and vertical pointing in 10mm thick rod in cement and sand mix (1:3) mortar including one coat Bituminous paint	SM	567		
	External Painting				
	Prepare and apply one coat undercoat and two finishing coats of long lasting exterior/ weatherguard paint or other equal and approved exterior quality paint to surfaces as described in:-				
C	Columns surfaces externally	SM	381		
	ELEMENT NO. 6 Carried to				
	EXTERNAL FINISHES Main summary				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	PROPOSED KINDERGARTEN				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 7 - INTERNAL FINISHES				
	Internal Wall Finishes				
	Cement and sand (1:4) backings				
A	12mm thick to receive Wall tiles	SM	108		
	Ceramic wall tiles				
	Allow a Prime Cost supply rate of Ksh. 700 per SM				
B	Supply and Fix 300x300x6mm thick ceramic wall tiles as manufactured by Saj Ceramics or equal and approved on prepared backings(m.s) with proprietary adhesive; jointed and pointed in matching coloured proprietary grouting: including pvc spacers and expansion joint as necessary: all to Architect's approval. - Wall Surfaces	SM	108		
	12mm (minimum) two coat lime plaster complete with wire gauze anti-crack mechanism at the intersection of masonry walling and concrete beams as described to:-				
C	Concrete/masonry surfaces	SM	862		
D	Ditto to door Jambs Externally and Surfaces not exceeding 200mm girth	LM	411		
	Painting and Decoration				
	Prepare and apply one undercoat and one finishing coat first quality permaplast emulsion paint manufactured by Crown Solo Paints or equal and approved paint on:-				
E	Plastered concrete/masonry surfaces internally	SM	862		
F	Ditto to window cills, door Jambs Externally and Surfaces not exceeding 200mm girth	LM	411		
	Carried to Collection				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	Floor Finishes				
	Cement and sand (1:3) screeds, backings, beds etc				
A	32mm bed finished to receive Floor Tiles (m.s)	SM	974		
B	32mm Thick coloured cement sand screed mix 1:3 finished with red oxide to approval	SM	10		
	Steps finishes				
	Cement and sand (1:4) backings etc				
C	25 x 300 mm wide treads to receive ceramic tiles (m.s)	LM	159		
D	20 x 150mm risers to receive ceramic tiles (m.s)	LM	161		
	Ceramic Floor tiles				
E	Supply and Fix 300 x 300x 10mm thick Ceramic tiles, as manufactured by Saj Ceramics or equal and approved; on prepared bed(m.s) with proprietary adhesive; jointed and pointed in matching coloured proprietary grouting: including pvc spacers and expansion joint as necessary: all to Architect's approval.	SM	974		
F	Ditto Non Slip Ceramic Tiles	SM	0		
G	Ditto 100mm wide Wall Skirtings	LM	517		
	Steps finishes				
H	Non Slip Ceramic Tiles to 300 mm wide treads	LM	159		
I	Non Slip Ceramic Tiles to 150mm risers	LM	161		
	Carried to Collection				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	Ceiling finishes				
	Chipboard ceiling				
A	Supply and fix 6mm thick chipboard ceiling on timber brandering (m.s)	SM	984		
	Painting and Decoration				
	Prepare and apply two undercoats and one finishing coat gloss paint onon:-				
B	Chipboard Ceiling	SM	984		
	Timber brandering				
	Sawn cypress timber				
C	50x50mm brandering at 600mm c/c	SM	984		
	Carried to Collection				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	COLLECTION Total brought forward from page no: 12 Total brought forward from page no: 13 Total brought forward from page no: 14				
	ELEMENT NO. 7 Carried to **INTERNAL FINISHES**				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	PROPOSED KINDERGARTEN				
	BILL NO.1-BUILDERS WORKS				
	ELEMENT NO 8 - ROOFING				
	ROOF STRUCTURE (GABLE ROOF)				
	Note: All structural timber to be celcured [factory impregnated]				
	Note:All timber members are jointed using galvanised nails and timber plates.				
	First grade sawn cypress: Approved structural grade: with and including all jointing and connections as necessary: in roof trusses				
	(All timber work is provisional)				
A	150 x 50 mm wall plate: fixed to masonry blocks: including hoop iron at 900mm centres	LM	208		
B	150 x 50 mm ridge board	LM	221		
C	100 x 50 rafters	LM	2632		
D	100 x 50 mm Purlins	LM	1184		
E	200 x 25 mm Fascia and barge boards	LM	208		
	ROOF COVERING				
F	Gauge 30 prepainted Galvanised Corrugated Iron roofing sheets as MRM or other equal and approved:200mm head laps:2 corrugations side laps nailed to purlins with galvanised naills c/w matching rubber washers	SM	1316		
G	Ditto: ridge caps : 200mm overlap	LM	111		
	RAIN WATER GOODS				
H	PVC Gutters size 200mm dia fixed to fascia boards (m/s) with and including approved steel brackets at 1000mm centres	LM	208		
I	Ditto: 100mm diameter offset	NO	28		
J	Ditto: 100mm diameter downpipe fixed to the wall using brackets	NO	92		
K	Ditto: 100mm diameter shoe	NO	28		
	ELEMENT NO. 8 ROOFING Carried to the Main summary				

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	PROPOSED KINDERGARTEN **BILL NO.1-BUILDERS WORKS** **ELEMENT NO 9 - BUILDERS WORKS IN CONNECTION WITH SERVICES (BWICWS)**				
	Plumbing, Drainage and Mechanical Installations				
A	Inspect all drawings and Bills of Quantities for Plumbing, Drainage and Mechanical Installations and allow for all Builder's work associated with the installations; including cutting away and making good after installing a concealed drainage system; including cutting or leaving all holes notches, mortices, sinkings and chases in both the structure and its coverings; including but not limited to forming recess in masonry	Item			
	Electrical Services Installations				
B	Inspect all drawings and Bills of Quantities for Electrical Installations and allow for all Builder's work associated with the Electrical installations, including cutting away for and making good after Electrician installing a concealed conduit system including cutting or leaving all holes notches, mortices, sinkings and chases in both the structure and its coverings; including but not limited to forming recess in masonry	Item			
	ELEMENT NO. 9 BUILDERS WORKS IN CONNECTION WITH SERVICES (BWICWS) Carried to the Main summary				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
1.0	**Internal Plumbing Installations**				
	Supply, deliver install, Test and Commission: **PP-R (Polypropylene Random Co-polymer)** pipes **PN 20** and fittings to DIN 8078 and DIN 16962 with polyfusion welded joints to DVS 2207 of approved manufacturer. Rates must allow for all Metal/plastic threaded adaptors where required for the connection of sanitary fixtures, valves, sockets, sliding and fixed joints etc. as required in the running lengths of pipework. The pipes shall run in floors and wall chase. The pipes will be pressure tested before the plastering of wall commences and as per the manufacturers recommended testing pressures.				
	Pipe Works				
A	32mm Ø PPR Pipe	40	LM		
B	Ditto 25mm Ø	33	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
C	32mm Ø Elbows/ Bends	20	No.		
D	Ditto 25mm Ø	18	No.		
	Equal/Unequal Tees				
E	32 x 32 x 32mm	21	No.		
F	25 x 25 x 25mm	14	No.		
	Reducers				
G	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
J	25 x 20mm male/female threaded adaptor	12	No.		
K	25 x 15mm ditto	10	LM		
L	25 x 15mm male threaded bend	13	LM		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total from Previous Page				
	Isolating valves				
M	32mm Ø Gate Valve as "Pegler" or Equivalent	2	No.		
	Shut off Angle Valve				
N	Brass plated 1/2" angle valve	16	No.		
	Check Meter				
O	50 mm diameter water check meter	1	No.		
	Testing and Commissioning				
P	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	TOTAL Internal Plumbing				
	Total Cost of Plumbing Installation				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
2	**Risers and Roof Levels**				
	Pipe Works				
A	50 mm Ø PPR pipe	28	LM		
B	Ditto 40mm Ø	12	LM		
C	Ditto 32mm Ø	13	LM		
D	Ditto 25mm Ø	6	LM		
	Extra Over Pipe Work				
	Elbows/ Bends				
E	50mm Ø Elbows/ Bends	4	No.		
F	Ditto 40mm Ø	3	No.		
G	Ditto 32mm Ø	3	No.		
H	Ditto 25mm Ø	2	No.		
	Equal/Unequal Tees				
I	50 x 40 x 50mm	4	No.		
J	40 x 40 x 32mm	3	No.		
K	32 x 32 x 32mm	4	No.		
L	32 x 32 x 25mm	4	No.		
M	25 x 25 x 25mm	2	No.		
	Reducers				
O	50 x 40mm reducer	2	No.		
P	40 x 32mm reducer	2	No.		
Q	40 x 32mm reducer	2	No.		
R	32 x 25mm reducer	1	No.		
	Male/Female brass threaded adaptor				
S	40 x 32mm male/female threaded adaptor	2	No.		
T	32 x 25mm male/female threaded adaptor	2	No.		
	Total Carried to the Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total from Previous Page				
	Isolating valves				
U	50 mm Ø Gate Valve as "Pegler" or Equivalent	2	No.		
	Testing and Commissioning				
V	Allow for pressure testing of the Plumbing installation to the satisfaction of the Engineer including provision of necessary pipe plugs.	1	Item		
	Total Cost of Riser & Roof Level Plumbing				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
3	**SANITARY FITTINGS AND ACCESSORIES**				
A	**Water Closet (WC) Pan** Close Coupled dual flush Floor Standing Close Coupled WC Bowl complete with seat cover and cistern, WC connector relevant fittings & accessories ***(Quote Install Only)***	6	No.		
B	**Wash Basin** WHB basin Full pedestal Wash Basin 450x485x230m White Complte with bottle traps, flexible connection hoses and other accessories with cws only tap ***(Quote Install Only)***	8	No.		
C	**Disabled Water Closet (WC) Pan** Physically challenges set as Armitage Shanks Doc M Contour 21+ close coupled right hand corner pack, WC pan, Wash basin, water saving delay fill cistern with spatula lever, grab rails, hinged support rail with toilet roll holder, seat no cover with retaining buffers, copper tails on TMV3 mixer tap or equal & approved**(Quote Install Only)**	1	No.		
D	**Urinal** Urinal bowl in white colour of size 450 x 685mm with built in spreader and concealed waste trap complete with stainless steel fixing bolts and caps. Complete with exposed Flash Valve ***(Quote Install Only)***	4	No.		
E	**Flushing and Sterilization** Allow for flushing and sterilization of the entire system to the satisfaction of the Engineer.	1	Item		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	FIRE PROTECTION				
	Hose Reel and Associated Pipework				
A	Supply and Install automatic 30 meters long, 25 mm diameter hosereel and nozzle	2	No.		
	Associated Pipework				
	Galvanised Mild Steel Class 'B' tubing to B.S. 1387 with screwed and socketed joints to BS 21 including all range piping, fittings, hanagers, supports, brackets, and supports				
B	50mm diameter	25	LM		
C	25mm ditto	4	LM		
	Extra Over Piping For Fittings:-				
	Elbows/Various Bends				
D	50mm bend/elbow	6	No.		
E	25mm ditto	5	No.		
	Equal/Unequal tees				
F	50 x 50 x 50mm tee	3	No.		
G	50 x 50 x 25mm ditto	3	No.		
	Reducers				
H	50 x 25mm reducer	3	No.		
	Unions				
I	50mm diameter union	2	No.		
J	25mm ditto	8	No.		
	Valves				
K	25mm diameter quarter Turn hose reel isolation valve to be as PEGLER or approved equivalent.	2	No.		
Total Cost Carried For hose reel and associated pipework Installations					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Portable Fire Protection Equipment				
	Supply, deliver, install, test and commission portable fire protection equipment with initial fill complete with all the necessary mounting accessories.				
A	9 litres, water/carbon dioxide gas extinguisher	4	No.		
B	4.5kg carbon dioxide gas extinguisher	4	No.		
C	4.5 kg dry powder extinguisher	4	No.		
	Testing and Commissioning				
D	Allow for testing and commissioning of the fire pump installation to the satisfaction of the Engineer.	1	Item		
Total Cost For Portable fire Extinguishers					

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Foul Drainage Supply, deliver and install the following in key "Terrain" or equal and approved uPVC Heavy gauge soil and waste system. Allow for all the various sizes of adaptor, connectors, sockets, holderbats, clips etc not measured but required for the satisfactory functioning of the system.				
	Piping				
A	32mm diameter heavy duty grey uPVC pipe	32	LM		
B	40mm ditto	50	LM		
C	50mm ditto	56	LM		
D	75mm ditto	12	LM		
E	100mm ditto	32	LM		
F	100mm diameter heavy duty golden brown	80	LM		
G	150mm diameter heavy duty golden brown	44	LM		
	Extra over uPVC Pipeworks				
H	32mm sweep bend	15	No.		
I	40mm sweep bend	60	No.		
J	50mm sweep bend	15	No.		
K	75mm sweep bend	8	No.		
L	100mm sweep bend	22	No.		
M	150mm sweep bend	16	No.		
N	40mm 450 bend	22	No.		
O	50mm 450 bend	15	No.		
P	40mm sweep tee	25	No.		
Q	40 x 32mm reducer	15	No.		
R	75 x 40mm ditto	15	No.		
S	150 x 40mm ditto	8	No.		
T	40mm access plug	22	No.		
U	100mm bend WC connector	13	No.		
V	40mm bottle 'p' trap	15	No.		
	Total Carried to Next Page				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Total From Previous Page				
Z	100 x 50mm floor trap set complete with polycarbonate flush grating	17	No.		
AA	**Gulley Trap** Gully trap comprising of 100mm diameter golden brown uPVC gully piece, 100mm diameter uPVC trap spigot outlet with screws and washers, and 300 x 300mm masonry gully trap chamber with mild steel plate and a heavy	4	No.		
BB	**Manholes** Construct manhole/ inspection chamber size 450 x 600 x 750mm deep internally in 200mm stone walls, 150mm concrete bed, water proof plaster, forming drain channels, medium duty cover frame in cast iron with recessed cover with concrete infill and all necessary formwork, excavation and soil disposal.	10	No.		
CC	**Excavations** Excavate trench for pipe not exceeding 100mm diameter and not exceeding 1.5m deep (average 600mm deep) and make good as before.	120	LM		
DD	Allow for hydrostatic pressure testing of drainage installation including provision of pipe plugs and other required fittings.	1	Item		
	Total Cost For Ground Floor Foul Drainage Installation				

ITEM	DESCRIPTION	QTY.	UNIT	RATE (KES)	AMOUNT (KES)
	Rain Water Drainage				
	Supply, deliver and install UPVC rainwater pipes and PPR pipework. Allow for all flanges, couplings, nipples, connector joints, fixing clips holder bats etc as required in running length of pipework but not measured.				
	Piping				
A	100mm ditto	100	LM		
	Extra over piping for fittings:-				
B	100mm ditto	16	No.		
C	100mm sweep bend	2	No.		
D	100mm single branch	13	No.		
E	100mm double branch	7	No.		
F	100mm flat roof rain water outlets	10	No.		
	Testing and Commissioning				
G	Allow for testing and commissioning of the rain water drainage installation to the satisfaction of the engineer.	1	Item		
	Total Cost For Rain Water Drainage Installation				

ITEM	DESCRIPTION	AMOUNT

ITEM	DESCRIPTION	(KES)
	SUMMARY PAGE	
1.0	**Total Cost for Internal Plumbing**	
2.0	**Total Cost for Roof + Riser**	
3.0	**Total Cost for Sanitary Fittings**	
4.0	**Total Cost Carried For hose reel and associated pipework Installations**	
5.0	**Total Cost For Portable fire Extinguishers**	
6.0	**Total Cost For Ground Floor Foul Drainage Installation**	
7.0	**Total Cost For Rain Water Drainage Installation**	
	Total carried to Mechanical Works Main Summary Page	

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	BILL NO. 8				
1.00	**ECD**				
	LIGHTING POINTS, FITTINGS & ACCESSORIES				
	Supply, Install, Connect, Test and Set to work the following:-				
1.01	Lighting points wired in 3x1.5mm2 PVC insulated single core (SC) copper cables drawn in 20mm diameter HG PVC conduit concealed in walls and or floor slabs with all accessories but excluding switch and fitting for one way switching.	No.	112		
1.02	Ditto but for two way switching.	No.	8		
1.03	Ditto but for Emergency Switching.	No.	12		
	Supply, Install, Connect, Test and Set to work the following as marked on drawings and described in the schedule of Fittings:- ***10A white moulded wide rocker switch plates:-***				
1.04	10A 1 gang 1 way switch	No.	12		
1.05	10A 2 gang 2 way switch	No.	4		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	Light fittings, complete with lamps of specified wattage and appropriate colour rendering:-				
1.06	Type P 1200 X 300MM 220/240V x 30 watt Warm White, 6500K Ceiling Mount. (Two LED Tubes)	No.	36		
1.07	Type D - Round Light with LED lamp	No.	50		
1.08	Spherical screwneck luminaire with opal glass and 16W compact lamp as Astra, Micromark, Thorn or approved equivalent. "**Type BF"**	No.	20		
1.09	Type Exit	No.	6		
1.10	d) Bulkhead fitting with moulded glass diffuser & Die Cast Aluminium base c/w 16W PL Lamp as Massive Sunderland Cat. No. 71410/01/31 for security lights. **"Type S"**	No.	20		
1.11	Presence sensor complete with assocaited wiring (light and motion sensor) as Osram Duo with the following characteristics: Operation voltage 220 - 240V 50Hz, detection area-12m dia minimum, settable light value, switch-off delay (if no motion detected), installation height - 5m minimum	No.	4		
1.12	24A, 240V, 2P DB/CU mounted silent operation contactor for Switching External lights complete with all accessories and as CRABTREE CIK24 or an approved equivalent	No.	2		
1.13	Photocell control unit and wired to energize the contactors complete with a D.P override switch as THORN QPK or approved equivalent	No.	2		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	<u>POWER POINTS & ACCESSORIES</u> **Supply, Install, connect and set to work the following:-**				
1.14	13A SP socket point completely wired in 3 x 2.5mm^2 single core PVC insulated copper cables drawn in 25mm diameter heavy gauge PVC conduits including all accessories but excluding the 13A SP switched socket outlet.	No.	40		
	Socket Outlet plates i) 13A SP twin switched socket outlet as MK 2536 or equal & approved equivalent.	No.	40		
1.15	Cooker outlet power points completely wired in 3 x 6.0mm^2 single core PVC insulated copper cables drawn in 32mm diameter heavy gauge PVC conduits including all accessories ,but excluding the 45A DP connection unit	No.	1		
1.16	45A Moulded plate Cooker Control Unit complete with 13A fused socket outlet as MK/Crabtree or approved equivalent.	No.	1		
1.17	45A moulded plate cooker connection unit as MK/Crabtree or approved equivalent:	No.	1		
1.18	300x 300x 100mm deep 16 G galvanized adaptable box.	No.	4		
	Total Carried Forward to Next Page				

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
1.19	Water booster power points completely wired in 5 x 6mm^2 single core PVC insulated copper cables drawn in 38mm diameter heavy gauge PVC conduits including all accessories ,but excluding the the 40A TPN isolator	No.	1		
1.20	40A TPN isolator as MK or approved equivalent	No.	1		
	ELV CABLE WAYS				
	ICT Points				
1.21	Supply, install and connect data outlet point consisting of average 20 meters of 25 mm diameter concealed heavy gauge PVC conduit inclusive of conduit, couplers, draw boxes, switch boxes, draw wire and other necessary accessories but excluding face plates.	No.	20		
	CCTV Points				
1.22	Supply, install and connect CCTV outlet point consisting of average 20 meters of 25 mm diameter concealed heavy gauge PVC conduit inclusive of conduit, couplers, draw boxes, switch boxes, draw wire and other necessary accessories.	No.	12		
	Fire Alarm Points				
1.23	Outlets for fire Alarm points drawn in 25mm diameter heavy gauge PVC conduits concealed in wall and floor slabs including all conduit accessories and draw wire but excluding cabling and detectors	No.	16		
	Total Carried Forward to Next Page				0.00

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	Total B/F from Previous Pg.				
	<u>POWER DISTRIBUTION</u> **Supply, Install, connect and set to work the following:-**				
1.24	8 ways 100A TPN distribution boards 'T' complete with 100A TPN integral isolator ,but excluding the MCBs ,and as Schneider Electric Acti 9 or approved equivalent.	No.	2		
	i)10 A SP MCB	No.	8		
	ii) 32 A SP MCB	No.	8		
	iii) 40 A SP MCB	No.	1		
	iv) 32 A TP MCB	No.	2		
	v) Blanking plates	No.	8		
	vi)Earthing of the Distribution Board above	Item.	2		
1.25	Sub-mains circuits for DB 'T' above comprising of 4 core 25mm^2 PVC/SWA/PVC cable drawn in cable tray/ 50mm diameter heavy gauge conduits and running from the Lv switchboard	LM	100		
TOTAL AMOUNT FOR BILL No. 8 ECD CARRIED FORWARD TO GRAND SUMMARY PAGE					

Item	DESCRIPTION	Unit	QTY	Rate	Amount
	PROPOSED KINDERGARTEN				
	BILL NO.1-BUILDERS WORKS				
	MAIN SUMMARY		**PAGE**		**AMOUNT (KSHS)**
1	**Substructures**		**C/4**		
2	**Reinforced Concrete Frame**		**C/5**		
3	**Walling**		**C/6**		
4	**Windows**		**C/8**		
5	**Doors**		**C/10**		
6	**External Finishes**		**C/11**		
7	**Internal Finishes**		**C/15**		
8	**Roofing**		**C/16**		
9	**Builders works in connection with services**		**C/17**		
10	**Mechanical Works**		**C/18**		
11	**Electrical Works**		**C/19**		
	TOTAL FOR KINDERGARTEN CARRIED TO GRAND SUMMARY				

SWIMMING POOL

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	SWIMMING POOL				
	Notes. **Tenderer to allow for working space in his rates.** **Reinforcement to BS 4449:1997 , Grade 460B high strength type 2 ribbed bars with proof stress of 460 N/mm2**				
	Excavations including trimming sides and bottoms of excavations; maintaining and supporting sides; and keeping free from water, mud and fallen material; with and including destruction of termites nests within site of works,take out and destroy queens, imp				
	Site Clearance				
A	Bulk Excavation for swimming pool depth not exceeding 1.50 metres starting from ground levels and cut to spoil heaps on site	CM	596		
B	Ditto exceeding 1.50m but not exceeding 3.00m	CM	392		
C	Extra over excavation for excavating in all classes of rock	CM	78		
D	Allow for keeping the whole of the excavation free rom all spring and running water by pumping or any other such means as may be necessary	Item	1		
E	Allow for maintaining and upholding the sides of excavations and keeping excavations clear of all fallen materials, rubbish etc	Item	1		
	Disposal & Backfill				
F	Return, fill and ram selected excavated material around foundations.	CM	49		
G	Load,wheel and cart away surplus excavated material away from site	CM	938		
H	Grade bottom of excavations or top of fill to falls and cross falls including rolling and compacting to 95% M.D.D. standard compaction.	SM	392		
I	150mm thick hardcore bed: hand packed : compacted in layers not exceeding 150mm thick: to the satisfaction of the Structural Engineer: including 50mm Thick murram or "equal and approved" blinding to surfaces of hardcore	SM	392		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Anti-termite treatment				
A	Apply approved anti-termite chemical treatment; applied by an approved professional pest control specialist with 10 year guarantee; strictly applied in accordance with manufacturer's instructions	SM	392		
	Blinding as described in:				
B	Plain concrete class 15 in 50 mm Thick under swimming pool bed	SM	392		
	Reinforced concrete : class 25 : vibrated : reinforced				
C	Retaining wall footing	CM	24		
D	200mm thick bed	SM	392		
E	200mm thick sub walls	SM	80		
F	200mm thick superstructure walls	SM	176		
G	Steps	CM	3		
H	150mm thick slab around the pool	SM	340		
I	200mm thick suspended slab; balancing tank	SM	17		
J	Extra over concrete for forming sump; 300 x 300 x 300mm deep; form sinking in hardcore including hand packing hardcore : including all necessary formwork	NO.	2		
K	Extra over concrete for forming drainage channel around the pool; complete with 200mm thick wall and floor bed; form sinking in hardcore including hand packing hardcore : including all necessary formwork	M	114		
	Reinforcement to BS 4449:1997 , Grade 460B high strength type 2 Ribbed bars with proof stress of 460 N/mm2; Including all necessary cutting, bending fixing and provision of spacer blocks and stools to S.E's detail				
	High tension ribbed steel bars reinforcement to BS 4449 ; Grade 460B high strength type 2 Ribbed bars with proof stress of 460 N/mm^2 ; in structural concrete work **(Provisional)**				
L	Assorted reinforcement	KGS	12,911		
	Steel mesh fabric reinforcement to BS 4483 : including setting in concrete with 300mm laps(measured nett : no allowance for laps)				
M	Mesh reference A142 weighing 2.22 kilogrammes per square metre in floor beds.	SM	340		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Sawn formwork as described to:-				
A	Sides of walls	SM	511		
B	Edge of slab, over 150mm but not exceeding 225mm girth	LM	154		
C	Ditto exceeding 75mm but not exceeding 150mm wide	LM	154		
D	Sofffits of suspened slab; balancing tank	SM	17		
E	Edge of suspended slab exceeding 150mm but not exceeding 225mm wide	LM	18		
F	Sloping soffits of steps	SM	17		
G	Edges of risers; 75mm but not exceeding 150mm wide	LM	56		
H	Opening edge of string of 300 mm wide (extreme) including cutting to profile of treads and risers	LM	9		
	Waterproofing				
	Supply and apply X-Pruf Crystal Coat by X-Calibur on horizontal and vertical surfaces, complete with surface preparation: or other equal and approved cementitious crystalline waterproof coating from an approved manufacturer: executed by specialist under 10 years guarantee				
I	To horizontal surfaces	SM	392		
J	Ditto vertical wall surfaces	SM	176		
	Water bars				
K	200x2mm uPVC water bar with centre bulb: set vertically in concrete wall at construction or expansion joint.	LM	14		
L	200x2mm uPVC water bar, set horizontally in concrete bed at construction or expansion joint.	LM	114		
	Finishes				
	Cement and sand (1:4) backings etc				
M	32mm bed finished to receive Floor Tiles (m.s)	SM	392		
N	12mm thick to receive Wall tiles	SM	176		
O	32mm bed finished to receive Mazera Stone Tiles (m.s)	SM	340		
P	25 x 300 mm wide treads to receive ceramic tiles (m.s)	LM	54		
Q	20 x 150mm risers to receive ceramic tiles (m.s)	LM	56		
R	Sides of pool steps	SM	9		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Ceramic Floor tiles				
A	Supply and Fix 300 x 300 thick Non Slip Ceramic tiles or equal and approved; Bidder to include all materials needed for fixing to completion as selected by the Architect: on prepared bed(m.s) with proprietary adhesive; jointed and pointed in matching coloured proprietary grouting: including pvc spacers and expansion joint as necessary: all to Architect's approval. - Floor Surfaces	SM	568		
	Approved non-slip colour glazed ceramic floor tiles laid on prepared screed (m/s)				
B	Non Slip Ceramic Tiles to 300 mm wide treads	LM	54		
C	Non Slip Ceramic Tiles to 150mm risers	LM	56		
D	Non Slip Ceramic Tiles to sides of pool steps	SM	9		
	Mazeras stone tiles on screed backing (m.s) as described;				
E	10 mm thick "Mazeras" stone tiles fixed with approved adhesive on prepared screed (m/s)	SM	340		
	Mazeras stone tiles of drainage channels				
F	Approved galana stone inlay tiles of 300mm wide to drainage channels curved to various radii on plan in 1000mm long panels with and including screed backing	LM	114		
	Manholes Covers				
G	Cast iron Heavy duty manhole cover size 600 x 600 and frame as per "East African Foundry" and casting frame in concrete including greasing.	NO.	1		
	Cut-off drains				
H	40x40x5mm angle framing all round and flats welded diagonally to framing at 30mm centres.	LM	114		
	Swimming pool accessories builder's works				
I	Allow a sum for builder's work associated with swimming pool equipment & accessories comprising of inlets, suction grating, vacuum point, balance tank inlet basket, chlorinator, filters, pumps, pool fittings, pool cleaning equipment, ladders and handrails, etc	Item	1		
	Swimming pool equipment				
J	Allow a provisional sum of Kshs 3,500,000/= for swimming pool equipment & accessories comprising of inlets, suction grating, vacuum point, balance tank inlet basket, chlorinator, filters, pumps, pool fittings, pool cleaning equipment, ladders and handrails, etc	Item	1		
	Carried to collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	COLLECTION				
	Total brought forward from page no: 1				
	Total brought forward from page no: 2				
	Total brought forward from page no: 3				
	Total brought forward from page no: 4				
	TOTAL FOR SWIMMING POOL				
	CARRIED TO GRAND SUMMAEY				

CIVIL WORKS (ROADS)

MUGUGA AHP SITE - CIVIL WORKS

BILL № 1: Preliminary and General Items

ITEM	DESCRIPTION	UNIT	QUANTITY	RATE (KSH)	AMOUNT (KSH)
A	Allow Provisional sum of Kenya shillings (KSh 100,000/=) for materials testing as instructed by the Engineer.	Prov. Sum			
B	Extra Over on Item 1.01 for Contractors overheads and profits	%			
BILL 1 TOTAL CARRIED TO SUMMARY PAGE					-

BILL № 2: Site Clearance and Topsoil Stripping

ITEM	DESCRIPTION	UNIT		RATE (KShs)	AMOUNT (KShs)
A	Clear site including removal of trees (girth less than 300 mm), hedges, bushes and other vegetation and other deleterious materials, grub up roots and backfilling of holes left by removal of stumps and roots in accordance with the Specifications, as shown on the drawings and as instructed by Engineer.	ha	1.30		
B	Removal of top soil to a maximum depth of 200 mm including excavation, loading and disposal	m3	0.00		
C	Cutting of trees of all girth above 300 mm including cutting of trunks, branches, uprooting and removal of all materials and stacking within the Right of Way and complete with filling of depressions/pits by earth including liaison with concerned authorities for obtaining permissions.				
	(i) Girth from 300 mm to 600 mm	№	30.00		
	(ii) Girth above 600 mm but up to 900 mm	№	25.00		
	(iii) Girth above 900 mm but up to 1800 mm	№	15.00		
D	Transpotation of the existing trees of girth above 600 mm girth as instructed by Engineer, including shifting of the tree and storing at locations as instructed by the Engineer.	№	70.00		
	Total of Bill № 2 (Carried Forward to Summary				

BILL № 3: Earthworks					
ITEM	**DESCRIPTION**	**UNIT**		**RATE (KShs)**	**AMOUNT (KShs)**
	No separate payments shall be made for the overhaul of the material and the cost of such haulage shall be included in the rates and or prices.				
A	Cut to spoil in soft material	m3	10508.00		
B	As Item 5.01 but in hard material	m3	105.00		
C	Provide, spread, water, process and compact 300 mm improved subgrade to 100% MDD (AASHTO T99) in two layers of 150 mm thickness.	m2	13134.00		
D	Provide and compact soft material as fill material as shown in the drawing and as directed by the Engineer	m3	6567.00		
E	Provide and fill in hard material as shown in the drawing and as directed by the Engineer.	m3	657.00		
F	Provide, Spread and compact rockfill in swampy areas	m3	525.00		
	Total of Bill № 3 (Carried Forward to Summary)				

BILL № 4: Culvert and Drainage Works					
ITEM	**DESCRIPTION**	**UNIT**		**RATE (KShs)**	**AMOUNT (KShs)**
	No separate payment shall be made for the haulage of surplus or unsuitable excavated material and the cost of such haulage shall be included in the rates and/or prices				
A	Excavate in soft material for pipe culverts, subsoil drains, headwalls, wing walls, aprons, toe walls, drop inlets, mitre drains, catch water drains and median drains including support of trench sides, backfilling and compacting as specified or as instructed by the Engineer.	m3	83.00		
B	As Item 8.01 but in hard material (any method)	m3	8.00		
C	Allow for hacking in existing concrete drain for junction connections	m3	5.00		
D	Allow for perforation and connecting to the existing drain including stoppage of inflowing water (hole approximately 600 widex800 high x 250 thick)	no.	5.00		
E	Excavate/ desilt, grade to shape inlets outfalls, side drains to free flow conditons including cart to spoil any excess grass debris and soils as and where directed by the Engineer.	m3	2221.00		
F	Provide, lay and joint 450 mm Internal Diameter (I. D.) Reinforced Cement Concrete pipes. The rate to include backfilling and compaction to drain formation level	m	46.00		
G	Ditto item 8.06 above but 600mm I.D. Reinforced Cement Concrete pipes	m	2.00		
H	Ditto item 8.06 above but 900mm I.D. Reinforced Cement Concrete pipes	m	2.00		
I	Provide place and compact class 25/20 concrete to headwalls, wingwalls, aprons and toe walls to pipe culverts.	m3	10.00		
J	Provide place and compact 150mm class 15/20 concrete to beds and surround to 450mm diameter pipes (0.4059m3/m)	m3	6.00		
K	Ditto item 8.11 above but 600mm I.D. Reinforced Cement Concrete pipes (0.5259m3/m)	m3	1.00		
L	Ditto item 8.11 above but 900mm I.D. Reinforced Cement Concrete pipes (0.8118m3/m)	m3	1.00		
M	Allow for in-situ lining with concrete Class 20/20 on outfall drains through built-up areas and limit of works areas and access roads	m3	2.00		
N	Provide and joint 450mm diameter precast concrete invert block drain (IBD) channels with two double side precast side slabs of 600x225x75mm as lining for side drain including bedding and backfilling with selected material as directed by the Engineer.	m	2221.00		
O	Extra Over for precast side slabs of 600x225x75mm.	m	2221.00		
P	Provide all materials lay and joint shallow IBD as directed by the Engineer to form mitre drains. Rate to include provision of 100mm well compacted bed and jointed by 1:3 cement mortar	m	10.00		
Q	Provide and lay 150mm thick grouted stone pitching with ratio 1:4 cement to Mortar, on culvert inlets and outlets and where directed by the Engineer.	m2	22.00		
R	Concrete class 20/20 for side closed drains , including formwork and steel reinforcements as directed by the Engineer	m	5.00		
S	Provide all materials and construct standard untrapped gully pot in concrete class 20/20 reinforced with BRC A142 and with 350x500mm polyresin frames and covers conforming with standard specifications	no.	5.00		
T	Provide and place A142 fabric Mesh reinforcement or equivalent for wing walls, head walls, aprons, toe, inlets and outlets as directed by the Engineer	m2	11.00		
U	Excavate in soft material for service ducts including support of trench sides, backfilling and compacting as specified or as instructed by the Engineer.	m3	10.00		
V					
W	As Item 8.20 but in hard material (any method)	m3	5.00		
X	Provide and lay 450 Dia service ducts of length 10 m each as per the drawings and as instructed by the Engineer	No.	2.00		
	Total of Bill №4 (Carried Forward to Summary)				

BILL № 5: Concrete Works

ITEM	DESCRIPTION	UNIT		RATE (KSH)	AMOUNT (KSH)
	CONCRETE				
A	Provide and fix on the carriageway and parking interlocking concrete paved unishaped blocks (monolithic single layer precast concrete blocks) of any specified colour/size & shape, with approved pattern of 60 mm thick having average crushing strength of 50 N/mm2 on average thickness of 50 mm complete with uniformly graded river sand cushioning properly compacted with a mechanical compactor to required level, grade and camber as instructed by Engineer. Rate to include bedding sand and that to fill the joints, ties and edge restraints	m2	10458.00		-
B	Extra over item 17.01 for laying blocks at speed bumps	m2	250.00		-
C	Ditto item 17.01 above but for 60mm heavy duty blocks at the walkway	m2	250.00		-
D	Provide, lay in place and joint 600x600x50mm well cured paving slabs on 50mm well compacted sand/quarry dust bed to footpaths/islands, Cloth drying areas and around the blocks as stipulated in the special Specifications -TWO ROWS OF PCC slab	m2	2677.00		-
BILL 5 TOTAL CARRIED TO SUMMARY PAGE					-

BILL № 6: Road Furniture

ITEM	DESCRIPTION	UNIT		RATE (KShs)	AMOUNT (KShs)
	Road Marking and Road Signs				
	Road Marking				
A	Provide and lay hot applied thermoplastic road marking compound in approved colour and shade (ASTM 9) for road marking on bituminous surface on centerline, 100 mm, edge line 150 mm wide 3.0 mm thick, using fully automatic extrusion machine and using pre-melter for melting thermoplastic material including cleaning the surface of all dirt, dust, and other foreign matter, complete with demarcation at site/pre-marking, finishing and managing the traffic movements. Marking to be done as per the specifications, detailed drawings and as instructed by the Engineer.				
	(i) For lane marking (broken lines) with white paint, 100 mm wide	m2	550.00		
	(ii) For lane marking with yellow paint, 100mm wide	m2	1100.00		
	(iii) For raised kerb lines with black paint, 150 mm wide	m2	278.00		
B	Provide and lay hot applied thermoplastic road marking compound in approved colour and shade (ASTM 9) for road marking on bituminous road surface on pedestrian crossings, chevrons, directional arrows, give way and stop lines mm thick using fully automatic extrusion machine and using pre-melter for melting thermoplastic. Material, including dispensing drop on glass beads of approved make and as per BS 6088 at the rate of 250g/m² including cleaning the surface of all dirt, dust, and other foreign matter, complete with demarcation at site/ pre-marking, finishing and managing the traffic control. Marking to be done as per the specifications, drawings	m2	100.00		
C	**Other Road Furniture**				
D	Provide, lay and Joint complete with hauncing as shown on the drawings and as instructed by the Engineer				
	(i) Raised Kerbs	m	318.00		
	(ii) Flush Kerbs	m	1903.00		
20B.02	Provide, lay and Joint complete with hauncing as shown on the drawings and as instructed by the Engineer 100 x 125 mm channels for the walkways and shallow drains	m	2014.00		
	Total of Bill № 6 (Carried Forward to Summary				

Bill	DESCRIPTION	AMOUNT KSHS.
1	Preliminary and General Items	
2	Site Clearance and Topsoil Stripping	
3	Earthworks	
4	Culverts and Drainage Works	
5	Concrete Works	
6	Road Furniture	
A	**Sub-total A**	

SEWER RETICULATION WORKS

	BILL NO. 1 - PRELIMINARIES AND GENERAL ITEMS				
Item No	**Description**	**Unit**	**Quantity**	**Rate (KSh.)**	**Amount (KSh.)**
	CLASS A - GENERAL ITEMS				
	Contractual Requirements				
A	Provide for preparation and submission to the employer 1No set of virograph and 2No sets of blue print copies (A1 SIZE) of as built drawings for all the sewer pipelines in the contract. Note that manhole positions in the layout should be actual (geo-referenced to the national grid).	sum	1		
	Specified Requirements				
B	Provide for leasing of contractor's temporary yard including offices and stores. Rate to include for all necessary equiping to meet the contractor's requirements.	month	0		
	Specified Requirements				
	Testing of Materials and Works				
C	Provide for concrete strength test. Rate to include for casting of the necessary number of cubes, curing,transport from site to testing institution and fees payable for the service.	nr	5		
D	Provide for testing of the sewer pipes.Rate to include for transportation to the testing institutions and fees payable for this service.	nr	2		
	Temporary Works				
E	Traffic regulation (including signages,warning tapes and warning signs); establishment, operation and removal.	Item			
	Bill No. 1- PAGE 1 TOTAL CARRIED TO GRAND SUMMARRY				

BILL No. 2 MEASURED WORKS					
ITEM No.	**DESCRIPTION**	**Unit**		**Rate**	**Amount (Kshs.)**
	The rates quoted by the Contractor shall be deemed to include provision by the Contractor to provide temporary vehicular access to all construction sites including negotiating with private land owners and paying the necessary charges as required.				
	CLASS A - GENERAL ITEMS				
	GENERAL CLEARANCE				
A	Allow for setting out of the works	m	2500		
	Testing of the works				
B	Carrying out test on sewer, a pipeline as specified or directed by the engineer, include provision of all equipment and materials	m	2500		
C	Allow for keeping trenches and other excavation free of water which may have entered through ground seepage, rain or by other means as directed by the Engineer	sum	1		
	CLASS B - SITE INVESTIGATION				
D	Trial holes where ordered to prove location , construction size etc., of pipelines, services or existing structures, max depth n.e 1m (provisional)	nr	2		
E	Trial holes where ordered to prove location , construction size etc., of pipelines, services or existing structures, max depth 1- 2m (provisional)	nr	2		
F	Trial holes where ordered to prove location , construction size etc., of pipelines, services or existing structures, max depth 2-3m (provisional)	nr	2		
G	Trial holes where ordered to prove location , construction size etc., of pipelines, services or existing structures, max depth 3-5m (provisional)	nr	1		
	CLASS D - DEMOLITION AND SITE CLEARANCE				
	The rate quoted is for site clearance and demolition along construction wayleave shall be deemed to include removal of the material and carting away to tips, identified by the Contractor in liaison with the Local Authority.				
H	General site clearance through undeveloped land over the wayleave, include for additional clearance required	ha	0.20		
I	Removal of trees girth 0.5- 1m (Provisional)	nr	5		
J	Removal of trees girth 1-2m (Provisional)	nr	5		
Bill No. 2- PAGE 1 TOTAL CARRIED FORWARD TO COLLECTION SHEET					

ITEM No.	DESCRIPTION	Unit		Rate	Amount (Kshs.)
	CLASS I - PIPEWORK - PIPES				
	Provide materials, lay, joint and test approved pipes and fittings. Rates to include for handling, laying, all jointing materials and fixing as directed by the engineer.				
	Supply of pipes				
A	Nomial bore 150mm uPVC Class 34 Pipeline	m	1250		
B	Nomial bore 225mm uPVC Class 34 Pipeline	m	750		
C	Nomial bore 300 mm DWC HDPE SN8 Pipe	m	50		
D	Nomial bore 450 mm DWC HDPE SN8 Pipe	m	450		
	uPVC & PRECAST CONCRETE PIPES TO BS 5911 WITH SPIGOT AND SOCKET CONCRETE PIPES				
	The rates entered against the items in this section shall include for stripping top soil, laying aside and subsequently replacing over refilled trench, excavation in trench in material other than rock, shuttering where necessary, refilling and compacting spreading surplus soil evenly over and alongside pipe trench, compacting, lay and joint pipes to correct line and level. Depths are stated from ground level to invert level.				
	Nominal bore 150 mm in trenches				
A	depth not exceeding 1.5 m.	m	1250		
	Nominal bore 225 mm in trenches				
B	depth not exceeding 1.5 m.	m	450		
C	ditto but depth; 1.5 - 2.0 m.	m	300		
	Nominal bore 300 mm in trenches				
I232.1	depth not exceeding 1.5 m.	m	30		
I233.1	ditto but depth; 1.5 - 2.0 m.	m	20		
	Nominal bore 450 mm in trenches				
I232.1	depth not exceeding 1.5 m.	m	113		
I233.1	ditto but depth; 1.5 - 2.0 m.	m	135		
I234.1	ditto but depth; 2.0 - 2.5 m.	m	81		
I235.1	ditto but depth; 2.5 - 3.0 m.	m	122		
Bill No. 2- PAGE 2 TOTAL CARRIED FORWARD TO COLLECTION SHEET					

ITEM No.	DESCRIPTION	Unit		Rate	Amount (Kshs.)
	CLASS K - PIPEWORK - MANHOLES AND PIPEWORK ANCILLARIES				
	Excavation quantities are given net. The rate entered are to include for manhole concrete slabs and covers, step irons or ladder, excavation, shuttering where necessary, refilling and compacting around the finished manholes, and disposing of surplus spoil is to be evenly spread. Excavation in any material other than rock				
	Masonary manhole 1050 mm , reinforced concrete manhole slab and cover.				
A	depth not exceeding 0.6 m.	nr	145		
B	depth not exceeding 0.9 m.	nr	145		
	MANHOLES				
	Manhole size 1050 mm , reinforced concrete manhole slab and cover.				
C	depth not exceeding 1.5 m.	nr	26		
D	ditto but depth; 1.5 - 2.0 m.	nr	26		
	MANHOLES				
	Manhole size 1200 mm , reinforced concrete manhole slab and cover.				
E	depth not exceeding 1.5 m.	nr	9		
	Bill No. 2- PAGE 3 TOTAL CARRIED FORWARD TO COLLECTION SHEET				

ITEM No.	DESCRIPTION	Unit		Rate	Amount (Kshs.)
A	ditto but depth; 4.0 - 4.5 m.	nr	1		
	CLASS L; SUPPORTS AND PROTECTION ANCILLIARIES TO LAYING AND EXCAVATION				
	Extras to Excavation and backfilling Trenches. (Note : blasting not allowed for any rock excavation)				
	In pipe trenches 225mm bore				
B	Excavation of rock	m3	12		
C	Allow for excavation of soft material below final surface of pipe trench and back fill with approved hardcore, well compacted in ,layers of 200mm thickness , depth not exceeding 1.0m	m3	12		
	In pipe trenches 300mm bore				
D	Excavation of rock	m3	4		
E	Allow for excavation of soft material below final surface of pipe trench and back fill with approved hardcore, well compacted in ,layers of 200mm thickness , depth not exceeding 1.0m	m3	4		
	In pipe trenches 450 mm bore				
F	Excavation of rock	m3	15		
G	Allow for excavation of soft material below final surface of pipe trench and back fill with approved hardcore, well compacted in ,layers of 200mm thickness , depth not exceeding 1.0m	m3	15		
	In Manholes and other chambers *(Note: Blasting not allowed for any rock excavation)*				
H	Excavation of rock	m3	20		
I	Allow for excavation of soft material below final surface of manhole and back fill with approved hardcore, well compacted in ,layers of 200mm thickness , depth not exceeding 1.0m	m3	20		
	Bill No. 2- PAGE 4 TOTAL CARRIED FORWARD TO COLLECTION SHEET				

ITEM No.	DESCRIPTION	Unit		Rate	Amount (Kshs.)
	Bed, Haunches and Surrounds				
	Mass concrete grade 15/20 in 150mm Thick Beds, Haunches and surrounds				
A	225 mm nominal bore pipeline Bed haunch and surround type A (0.0904 m^3)	m	0		
B	225 mm nominal bore pipeline Bed haunch and surround type D (0.2821 m^3)	m	10		
C	300 mm nominal bore pipeline Bed haunch and surround type A (0.1471 m^3)	m	10		
D	300 mm nominal bore pipeline Bed haunch and surround type C (0.3485m^3)	m	0		
E	300 mm nominal bore pipeline Bed haunch and surround type D (0.3702 m^3)	m	10		
F	450 mm nominal bore pipeline Bed haunch and surround type A (0.1689 m^3)	m	10		
G	450 mm nominal bore pipeline Bed haunch and surround type C (0.4059 m^3)	m	0		
H	450 mm nominal bore pipeline Bed haunch and surround type D (0.4818 m^3)	m	20		
	Bill No. 2- PAGE 5 TOTAL CARRIED FORWARD TO COLLECTION SHEET				

COLLECTION PAGE					
ITEM No.	**DESCRIPTION**	**Unit**			**Amount (Kshs.)**
	COLLECTION PAGE				
1	**From Page 2**				
2	**From Page 3**				
3	**From Page 4**				
3	**From Page 5**				
4	**From Page 6**				
	Sub-Total (i)				
Bill No. 2-TOTAL CARRIED FORWARD TO GRAND SUMMARY					

GRAND SUMMARY

Bill No.	Description	Page No.	Amount	
Bill No. 1	Preliminaries and General Items	**S/1**		
Bill No. 2	Measured Works	**S/7**		
	GRAND TOTAL			

ITEM	DESCRIPTION	UNIT	QTY	RATE (KSH)	AMOUNT (KSH)
	BILL NO. 3				
i)	**EXTENAL SERVICES**				
	Install, test and Commission the following;				
	STREET LIGHTING				
A	Cylindrical-conical pole 8 meters with single arm and tube, in hot-dipped galvanized steel painted with anchor bolts complete with photovoltaic solar panel minimum 305Wp LED light 1x2B - 80W nominal - 24V - 4000K - >190lm/W NiMH battery 24V 4P, on top of pole,	No	81		
ii)	**POWER HOUSE ELECTRICS**				
C	All lighting points wired in 1.5mm² PVC cu cables in 20mm diameterHG PVC conduit embedded in wall fabrics, roof structure and floor slabs complete with switches as shown on the contract drawings	No	20		
	POWER				
D	4way 63A SPN CU as SCHNEIDER or Equivalent and Approved complete with MCBs or equal and approved.	No	1		
E	All socket outlet points wired in 2.5mm² PVC cable in conduit embedded in floor slabs and in metal trunking complete with 13A twin socket outlet as shown on the drawing	No	4		
F	Provisions for points including laying of conduits and provision of outlet boxes for the following:				
	i) Surveillance Cameras	No	2		
TOTAL AMOUNT FOR BILL No. 3: EXTERNAL ELECTRICS CARRIED FORWARD TO PRICE COLLECTION PAGE					

PROVISIONAL SUMS & PRIME COST SUMS

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	PROVISIONAL SUMS				
A	**UNDERGROUND WATER TANK** Allow a provisional sum of Kenya Shillings Ten Million (KSHS. 10,000,000) for provision of Underground/surface water tank as per Engineers specification. **GOK SUPPLY**	SUM	1		
B	**GROUND RELATED CONDITIONS** Allow a provisional sum of Kenya Shillings Three Hundred and Fifty Seven million (KSHS. 357,000,000) for foundations and site related contingencies as per Engineers specifications.	SUM	1		
C	**COMMERCIAL BLOCK** Allow a provisional sum of Kenya Shillings Fifty Million Two Hundred Thousand (KSHS. 50,200,000) for constructing a commercial block as per the Architect's instructions	SUM	1		
D	**BIODIGESTER** Allow a provisional sum of Kenya Shillings Twenty five Million (KSHS. 25,000,000) for Biodigester as per Engineers specifications. **GOK SUPPLY COMPLETE WITH CIVIL WORKS**	SUM	1		
E	**LANDSCAPING** Allow a provisional sum of Kenya Shillings Fourteen Million (KSHS. 14,000,000) for landscaping as per Engineers specifications.	SUM	1		
	2.0 PRIME COST SUMS				
F	Allow a prime cost of Five Hundred Thousand Only (KSHs. 500,000) for ground breaking, project launch, commissioning and project handover	SUM	1		
G	Allow for profits and overheads	%			
H	Allow for attendance	Sum			
I	Allow a prime cost of One Million (KSHs. 1,000,000) for Marketing and sales support to Boma Yangu	SUM	1		
J	Allow for profits and overheads	%			
K	Allow for attendance	Sum			
L	Allow a prime cost of Five Hundred Thousand (KSHs. 500,000) for preparation of renders and printing	SUM	1		
M	Allow for profits and overheads	%			
N	Allow for attendance	Sum			

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	ELECTRICAL INSTALLATIONS				
	KPLC RELATED WORKS				
A	Allow a P.C. sum of two million, two hundred and sixty seven thousand, three hundred and forty eight (Ksh. 2,267,348) for works to be executed by Kenya Power and Lighting Company	Sum	1		
B	Allow for profits and overheads	%			
C	Allow for attendance	Sum			
D	Allow a P.C. sum of twenty million (Ksh. 20,000,000) for capital contribution to Kenya Power and Lighting Company for power connection	Sum	1		
E	Allow for profits and overheads	%			
F	Allow for attendance	Sum			
	LIFTS INSTALLATIONS				
G	Allow a Prime cost sum of Two Hundred and Thirty Three million, nine hundred and forty thousand (Ksh 233,940,000) for Lift installations to be executed by a Nominated subcontractor.	Sum	1		
H	Add for profit	%			
I	Allow for general and special attendance	Sum			
	GENERATOR INSTALLATIONS				
J	Allow a Prime cost sum of Ten million (Ksh 10,000,000) for generator installations to be executed by a Nominated subcontractor.	Sum	1		
K	Add for profit	%			
L	Allow for general and special attendance	Sum			
	CCTV INSTALLATIONS				
M	Allow a Prime cost sum of Nine million (Ksh 9,000,000) for CCTV installations to be executed by a Nominated subcontractor.	Sum	1		
N	Add for profit	%			
O	Allow for general and special attendance	Sum			
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	LV SWITCHBOARDS INSTALLATIONS				
A	Allow a Prime cost sum of Twenty million(Ksh 20,000,000) a for LV Switchboards installations to be executed by a Nominated subcontractor.	Sum	1		
B	Add for profit	%			
C	Allow for general and special attendance	Sum			
	COMMERCIAL STALLS				
D	Allow a Prime cost sum of One Million Two Hundred and Fifty Seven Thousand and Six Hundred (Ksh 1,257,600) for commercial stalls electrical installations to be executed by a Nominated subcontractor.	Sum	1		
E	Add for profit	%			
F	Allow for general and special attendance	Sum			
	MECHANICAL INSTALLATIONS				
	SANITARY FITTINGS				
G	Allow a Prime cost sum of Eighty One million five hundred and fifty two thousand and six hundred (Ksh 81,552,600) for supply of sanitary fittings to be executed by a Nominated subcontractor.	Sum	1		
H	Add for profit	%			
I	Allow for general and special attendance	Sum			
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	BOOSTER PUMPS				
A	Allow a Prime cost sum of Five million and six hundred thousand (Ksh 5,600,000) for supply of booster pumps to be executed by a Nominated subcontractor.	Sum	1		
B	Add for profit	%			
C	Allow for general and special attendance	Sum			
	ROOF LEVEL WATER TANKS				
D	Allow a Prime cost sum of Twenty Five million and Two Hundred Thousand (Ksh 25,200,000) for supply of roof level water tanks to be executed by a Nominated subcontractor.	Sum	1		
E	Add for profit	%			
F	Allow for general and special attendance	Sum			
	ROOF LEVEL HOSE REEL PUMPS				
G	Allow a Prime cost sum of Four million and Two hundred thousand (Ksh 4,200,000) for supply of roof level hose reel pumps to be executed by a Nominated subcontractor.	Sum	1		
H	Add for profit	%			
I	Allow for general and special attendance	Sum			
	DRY RISER INSTALLATION				
J	Allow a Prime cost sum of Ten million Seven hundred and thirty one thousand (Ksh 10,731,000) for dry riser installation to be executed by a Nominated subcontractor.	Sum	1		
K	Add for profit	%			
L	Allow for general and special attendance	Sum			
	BOREHOLE INSTALLATION				
M	Allow a Prime cost sum of Six million (Ksh 6,000,000) for borehole drilling and equipping to be executed by a Nominated subcontractor.	Sum	1		
N	Add for profit	%			
O	Allow for general and special attendance	Sum			
	Carried to Collection				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	EXTERNAL FIRE HYDRANT SYSTEM INSTALLATION				
A	Allow a Prime cost sum of Six million, sixty thousand and eight hundred (Ksh 6,060,800) for external fire hydrant system installation to be executed by a Nominated subcontractor.	Sum	1		
B	Add for profit	%			
C	Allow for general and special attendance	Sum			
	EXTERNAL RETICULATION BOREHOLE WATER INSTALLATION				
D	Allow a Prime cost sum of Two hundred and forty five thousand(Ksh 245,000) for external reticulation borehole water installation to be executed by a Nominated subcontractor.	Sum	1		
E	Add for profit	%			
F	Allow for general and special attendance	Sum			
	LPG INSTALLATIONS				
	Allow a Prime cost sum of Two Million (Ksh 2,000,000) for LPG installation works	Sum	1		
G	Add for profit	%			
H	Allow for general and special attendance	Sum			
	Carried to Collection				
	Collection Page				
	Total brought forward from Page 1				
	Total brought forward from Page 2				
	Total brought forward from Page 3				
	Total brought forward from Page 4				
	Total brought forward from Page 5				
	TOTAL FOR PROVISIONAL SUM AND PRIME COST SUM CARRIED TO GRAND SUMMARY				

GRAND SUMMARY

AFFORDABLE HOUSING PROGRAMME

PROPOSED CONSTRUCT + FINANCE OF A MIXED-USE AHP DEVELOPMENT IN

GRAND SUMMARY

ITEM	DESCRIPTION	PAGE	FOR TENDERER USE ONLY	FOR OFFICIAL USE
1.00	PARTICULAR PRELIMINARIES	PP/7		
2.00	GENERAL PRELIMINARIES	GP/22		
3.00	PROJECT PROVISIONS	PR/2		
4.00	BUILDERS WORK BLOCK TYPE B	B/19		
5.00	BUILDERS WORK BLOCK TYPE C	C/19		
6.00	GARBAGE RECEPTACLE	R/12		
7.00	GUARD HOUSE	GH/16		
8.00	COMMUNITY CENTRE	CC/20		
9.00	BOUNDARY WALLING	BW/8		
10.00	BASKETBALL PITCH	BP/10		
11.00	CLUB HOUSE	CH/22		
12.00	KINDERGARTEN	KG/18		
13.00	SWIMMING POOL	SP/5		
14.00	CIVIL WORKS - ROADS	CR/4		
15.00	CIVIL WORKS - SEWER	SW/8		
16.00	WATER RETICULATION			
17.00	EXTERNAL ELECTRICAL SERVICES			
18.00	PROVISIONAL SUMS & P C SUMS	PS/5		
	SUB-TOTAL			
	ADD CONTINGENCY (2%)	**2%**		
	GRAND TOTAL CARRIED TO FORM OF TENDER (VAT INCLUSIVE)			

AMOUNT IN WORDS : KENYA SHILLINGS .....

.....

TENDERER'S NAME .....

ADDRESS .....

DATE .....

TENDERER'S SIGNATURE .....

WITNESS'S NAME.....

ADDRESS .....

DATE .....

WITNESS SIGNATURE.....

KEY

- **AFORDABLE +MARKET BLOCK** FULL RESIDENTIAL
- **SOCIAL+AFFORDABLE BLOCK** [G- shops]
- **COMMERCIAL** [Ground floor]
- **ECD** [Ground floor]
- **CLUB HOUSE** [G+1]
- **COMMUNITY CENTER** [G +2
- **SWIMMING POOL**
- **GATE HOUSE**
- **GARBAGE RECEPTACLE**

GENERAL NOTES

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3. Drawings are not to be scaled. Only figured dimensions should be used.
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect.

CONSTRUCTION

Approved anti-termite treatment & 1000 gauge polythene sheeting cover to be provided under all ground floor concrete slab on compacted hardcore to approval.
DPC to be 3ply bituminous felt to be provided under all walls.

STRUCTURAL

1. All Black cotton soil to be removed from below all building and paved surfaces
2. All reinforced concrete work will be in accordance with structural drawings.
3. Foundation depths to be determined on site to S.E approval
4. All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
5. All adjacent R.C work and masonry walls to be tied with strap irons at every course

MECHANICAL

1. All Plumbing and Drainage Work to comply with specifications
2. S.V.P denotes soil vent pipe and to be provided at the head of the drainage
3. Where drainage is shown under driveways and slabs, to be encased in 150mm thick concrete surround.
4. All underground foul and waste drain pipes shall be of PVC to comply with BS5255
5. All ICs within building area, driveway and parking to have heavy duty,double-seal airtight covers and walls to be 200mm.
6. Minimum slope in the drain pipes to be 1%
7. No chases for pipes will be allowed in the slabs
8. Sleeves will be allowed with written approval from S.E.
9. No cutting of concrete without express approval of the Architect or S.E
10. All testing of pipes must be coordinated with electrical and any conflicts must be resolved before works begin
11. Permanent vents denoted as P.V to be provided as shown on plan.

ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN
MUGUGA ,KIAMBU COUNTY

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: _____ **Date:** _____

DRAWING TITLE:
Master plan

SCALE: 1:500

DRAWN BY:
ML

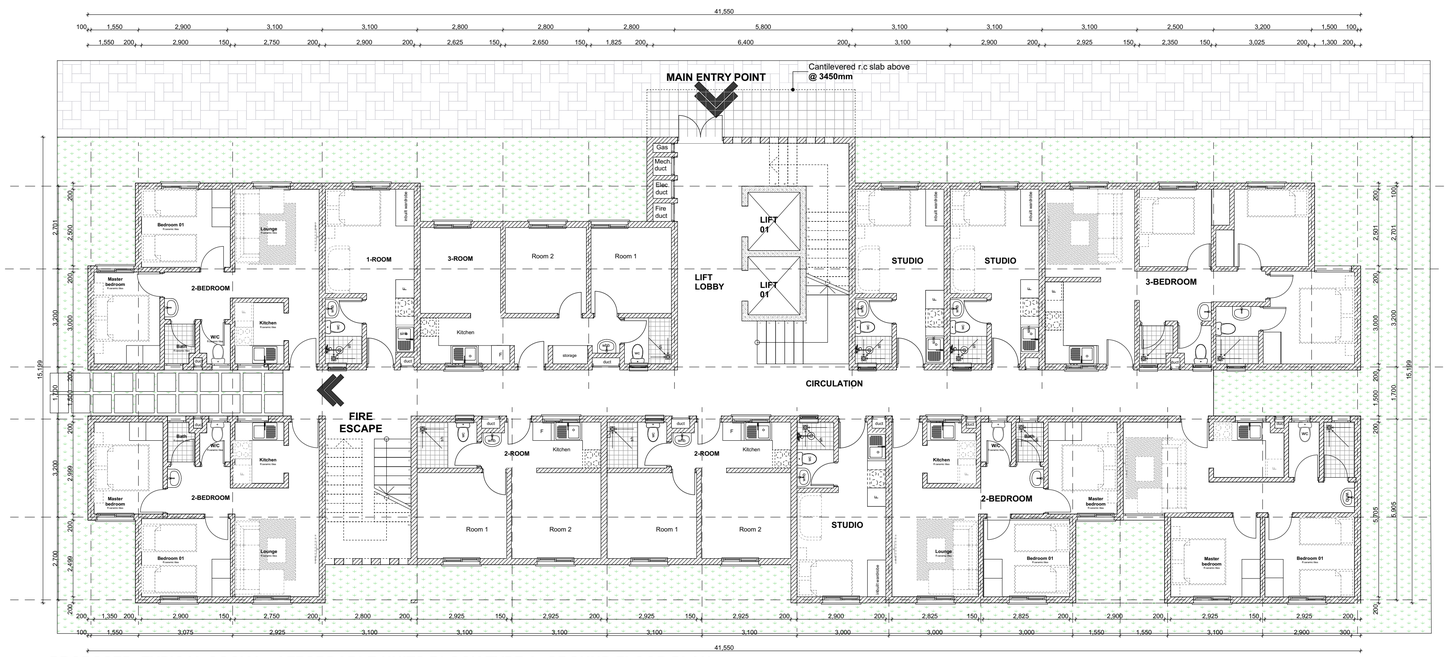
CHECKED BY:
Name: _____
Signature: _____ **Date:** _____

DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

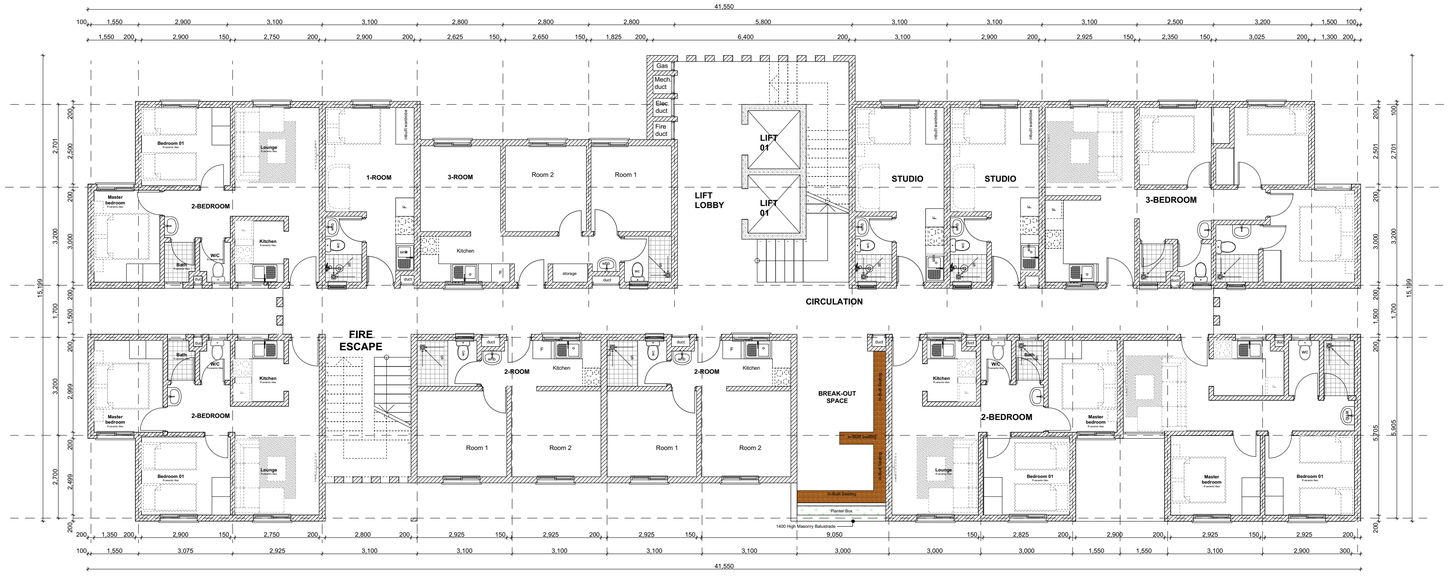
STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL SOCIAL+ AFFORDABLE UNITS BLOCK TYPE A_GROUND FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	3	4	1



PROPOSED TYPICAL SOCIAL+ AFFORDABLE UNITS BLOCK TYPE A_TYPICAL 1ST FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	2	4	1

BLOCK TYPOLOGY A [G+9]

GENERAL NOTES

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CONSTRUCTION

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DPC to be 3ply bituminous felt to be provided under all walls.

STRUCTURAL

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ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: _____ **Date:** _____

DRAWING TITLE:
BLOCK A _FLOOR PLANS

SCALE: 1:100

DRAWN BY:
ML

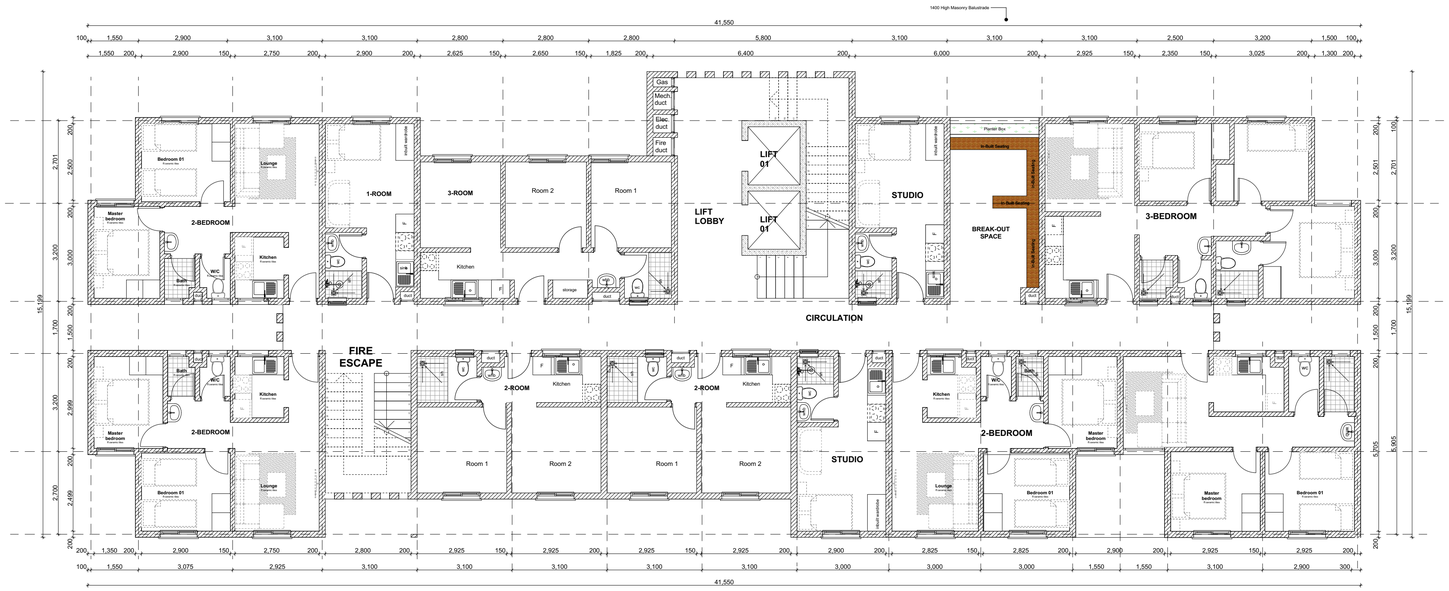
CHECKED BY:
Name: _____
Signature: _____ **Date:** _____

DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

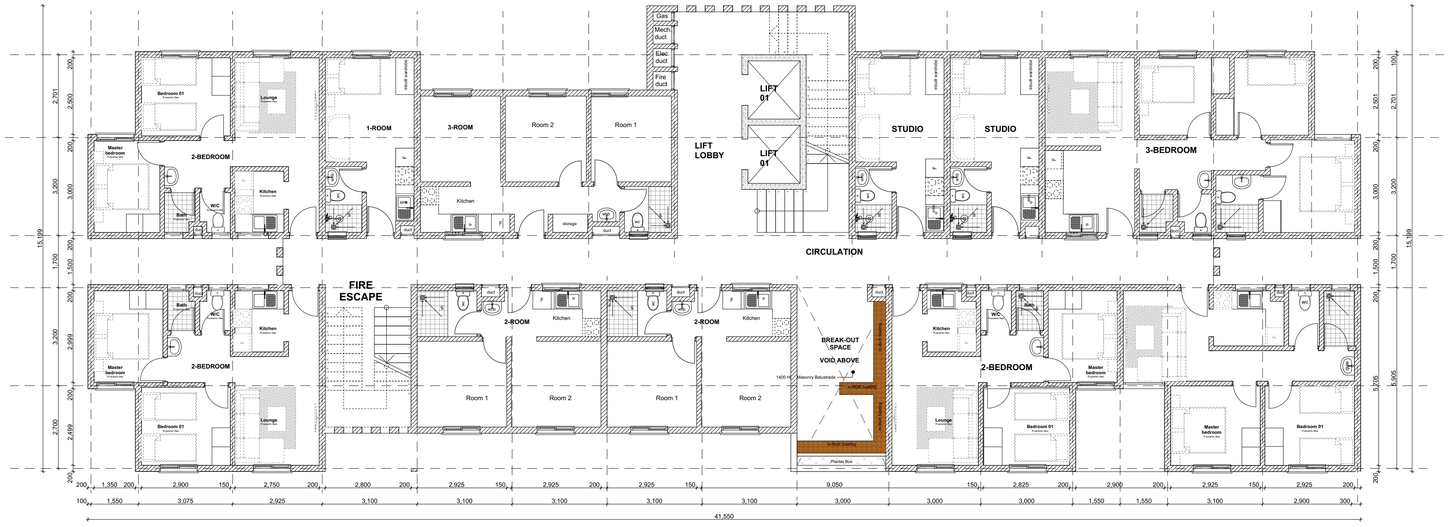
STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL SOCIAL+ AFFORDABLE UNITS BLOCK TYPE A_TYPICAL 2ND ABD 9TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	2	4	1



PROPOSED TYPICAL SOCIAL+ AFFORDABLE UNITS BLOCK TYPE A_TYPICAL 3RD AND 7TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	2	4	1

BLOCK TYPOLOGY A [G+9]

GENERAL NOTES

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2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled. Only figured dimensions should be used.
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect.

CONSTRUCTION

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DPC to be 3ply bituminous felt to be provided under all walls.

STRUCTURAL

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MECHANICAL

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ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: _____ **Date:** _____

DRAWING TITLE:
BLOCK A _FLOOR PLANS

SCALE: 1:100

DRAWN BY:
ML

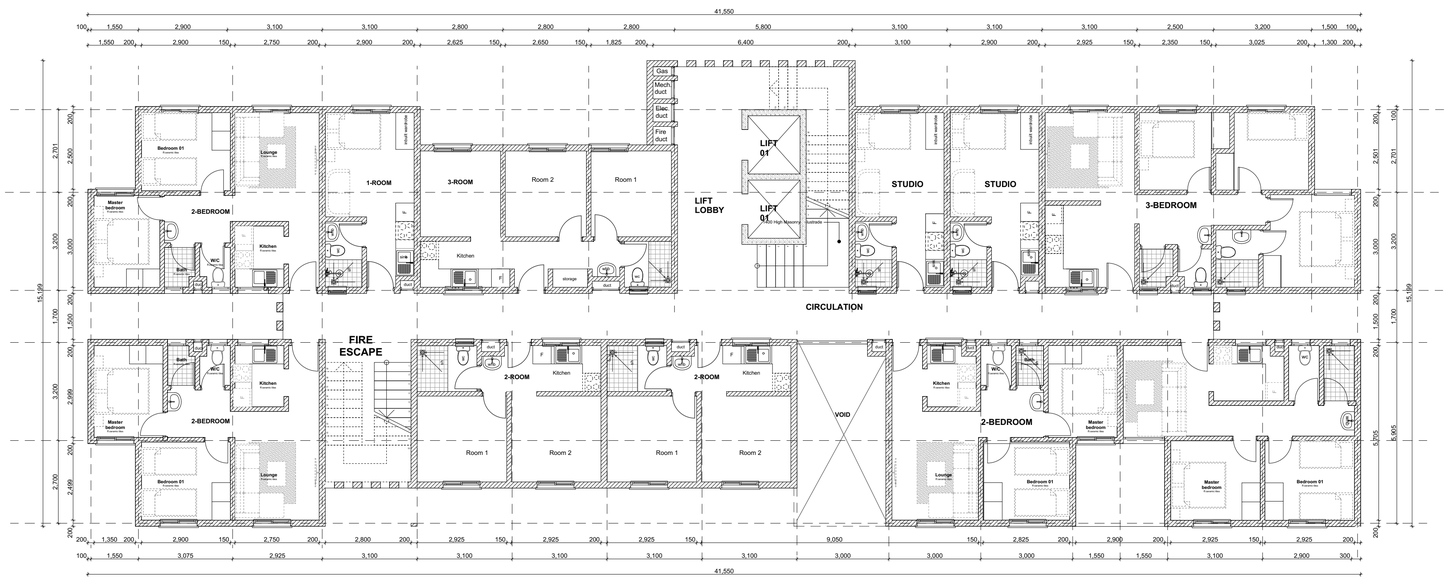
CHECKED BY:
Name: _____
Signature: _____ **Date:** _____

DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

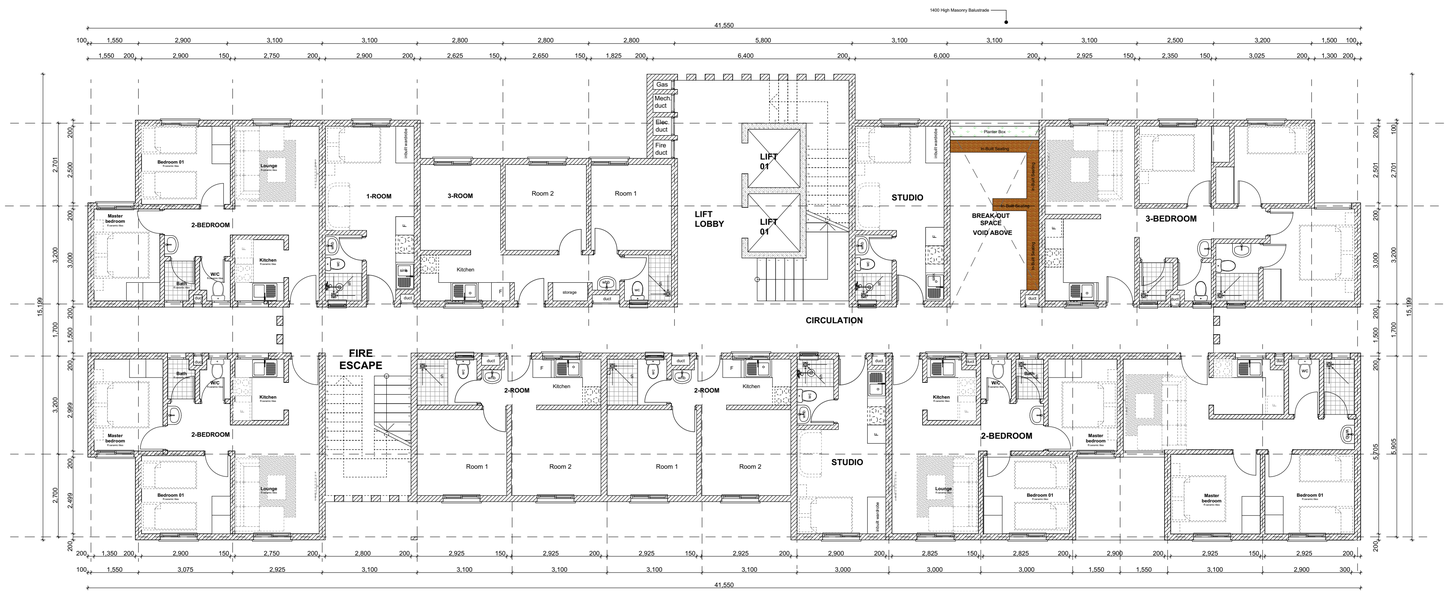
STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL SOCIAL+ AFFORDABLE UNITS BLOCK TYPE A_TYPICAL 4TH AND 8TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	2	4	1



PROPOSED TYPICAL SOCIAL+ AFFORDABLE UNITS BLOCK TYPE A_TYPICAL 5TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	2	4	1

BLOCK TYPOLOGY A [G+9]

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CONSTRUCTION

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STRUCTURAL

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ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: **Date:**

DRAWING TITLE:
BLOCK A _FLOOR PLANS

SCALE: 1:100

DRAWN BY:
ML

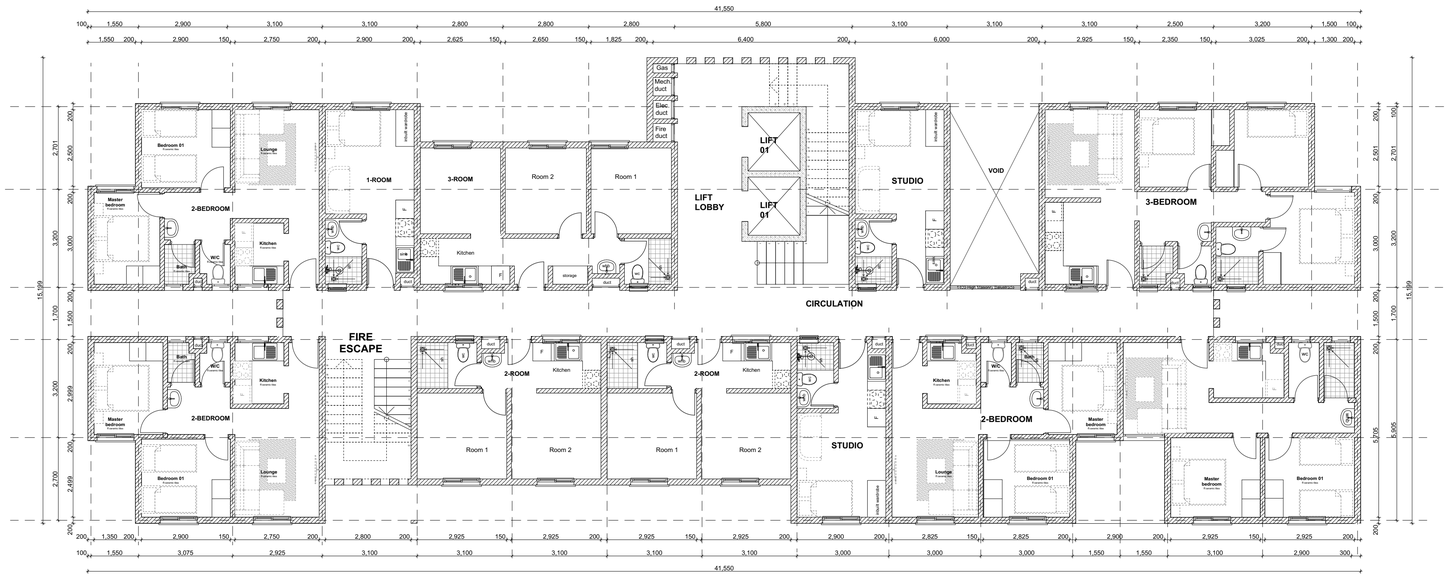
CHECKED BY:
Name:
Signature: **Date:**

DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL SOCIAL+ AFFORDABLE UNITS BLOCK TYPE A_TYPICAL 6TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	2	4	1

BLOCK TYPOLOGY A [G+9]

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ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: _____ **Date:** _____

DRAWING TITLE:
BLOCK A _FLOOR PLANS

SCALE: 1:100

DRAWN BY:
ML

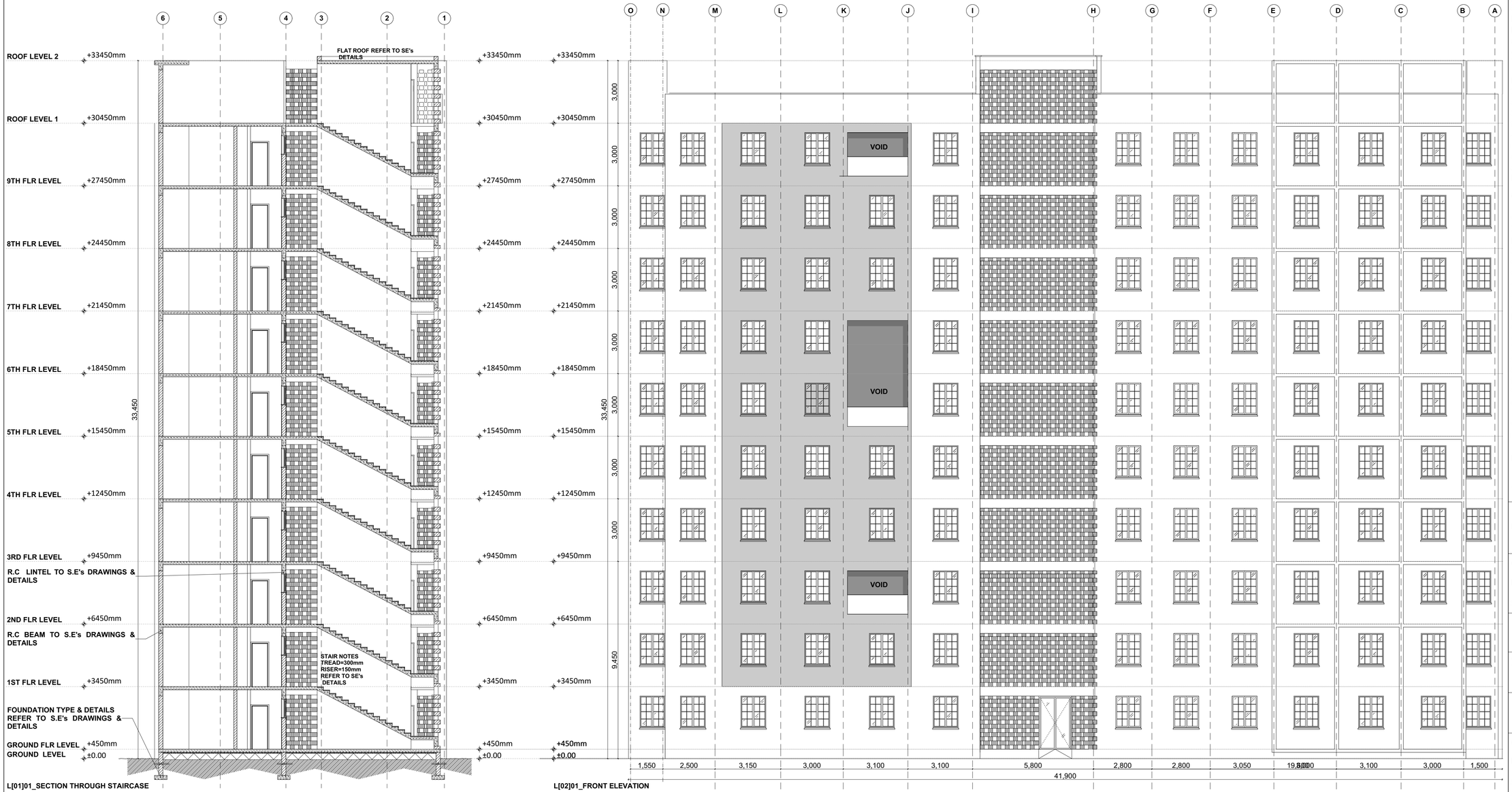
CHECKED BY:
Name: _____
Signature: _____ **Date:** _____

DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[01]01_SECTION THROUGH STAIRCASE

L[02]01_FRONT ELEVATION

BLOCK TYPOLOGY A [G+9]

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ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: _____ **Date:** _____

DRAWING TITLE:
BLOCK A _SECTION & ELEVATION

SCALE: 1:100

DRAWN BY:
ML

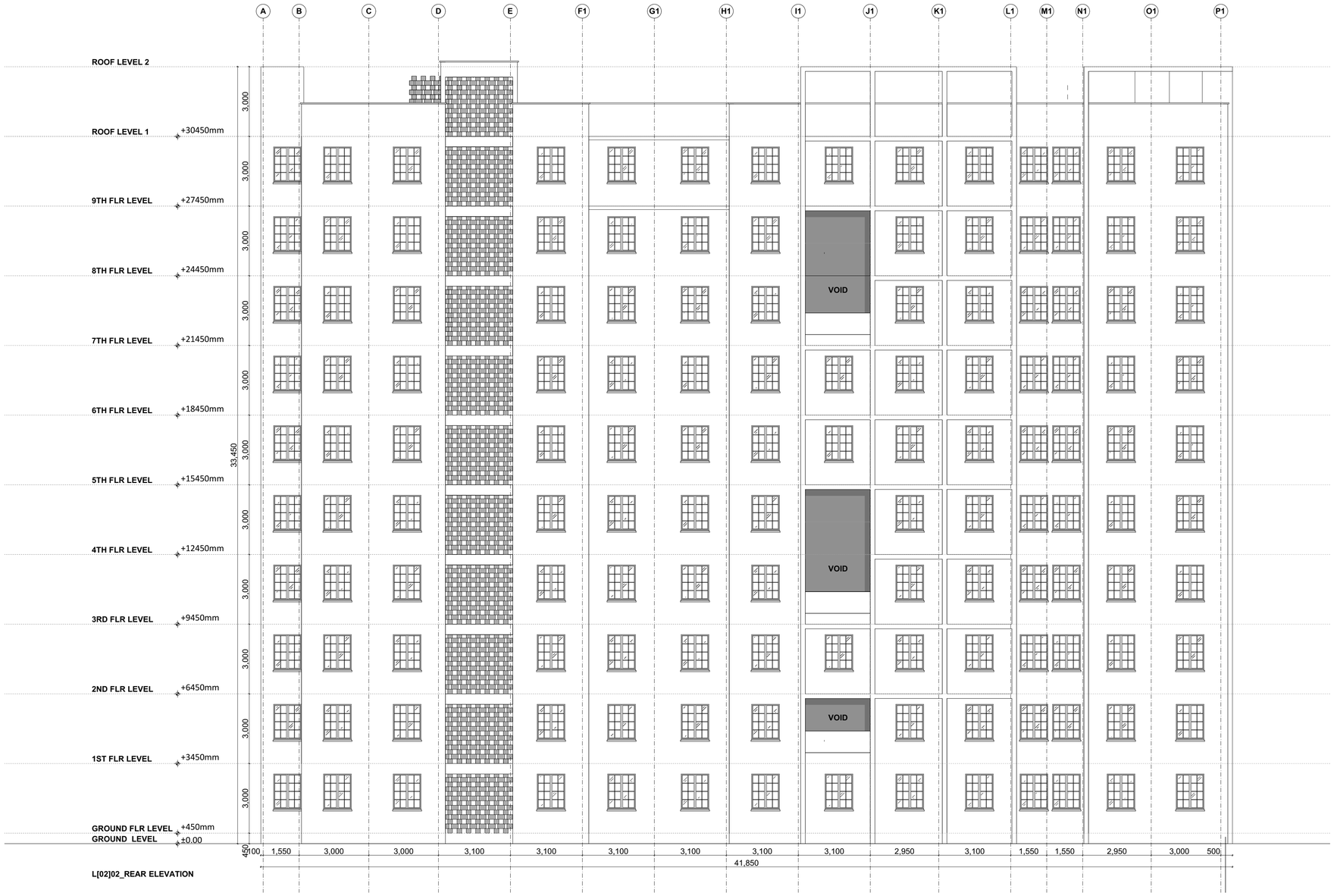
CHECKED BY:
Name: _____
Signature: _____ **Date:** _____

DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[02]02_REAR ELEVATION

BLOCK TYPOLOGY A [G+9]

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ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: _____ **Date:** _____

DRAWING TITLE:
BLOCK A _SECTION & ELEVATION

SCALE: 1:100

DRAWN BY:
ML

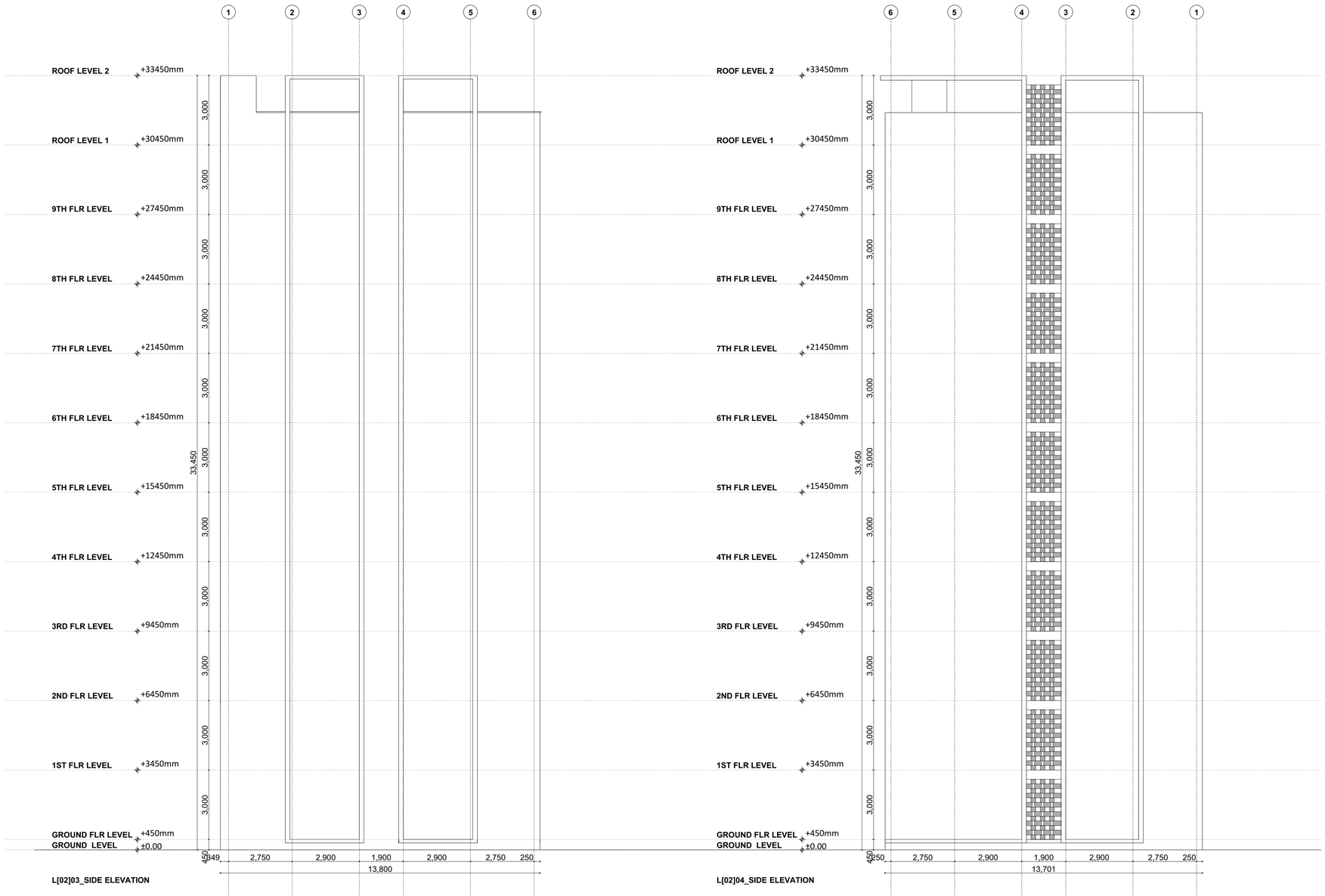
CHECKED BY:
Name: _____
Signature: _____ **Date:** _____

DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[02]03_SIDE ELEVATION

L[02]04_SIDE ELEVATION

BLOCK TYPOLOGY A [G+9]

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ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: _____ **Date:** _____

DRAWING TITLE:
BLOCK A _SECTION & ELEVATION

SCALE: 1:100

DRAWN BY:
ML

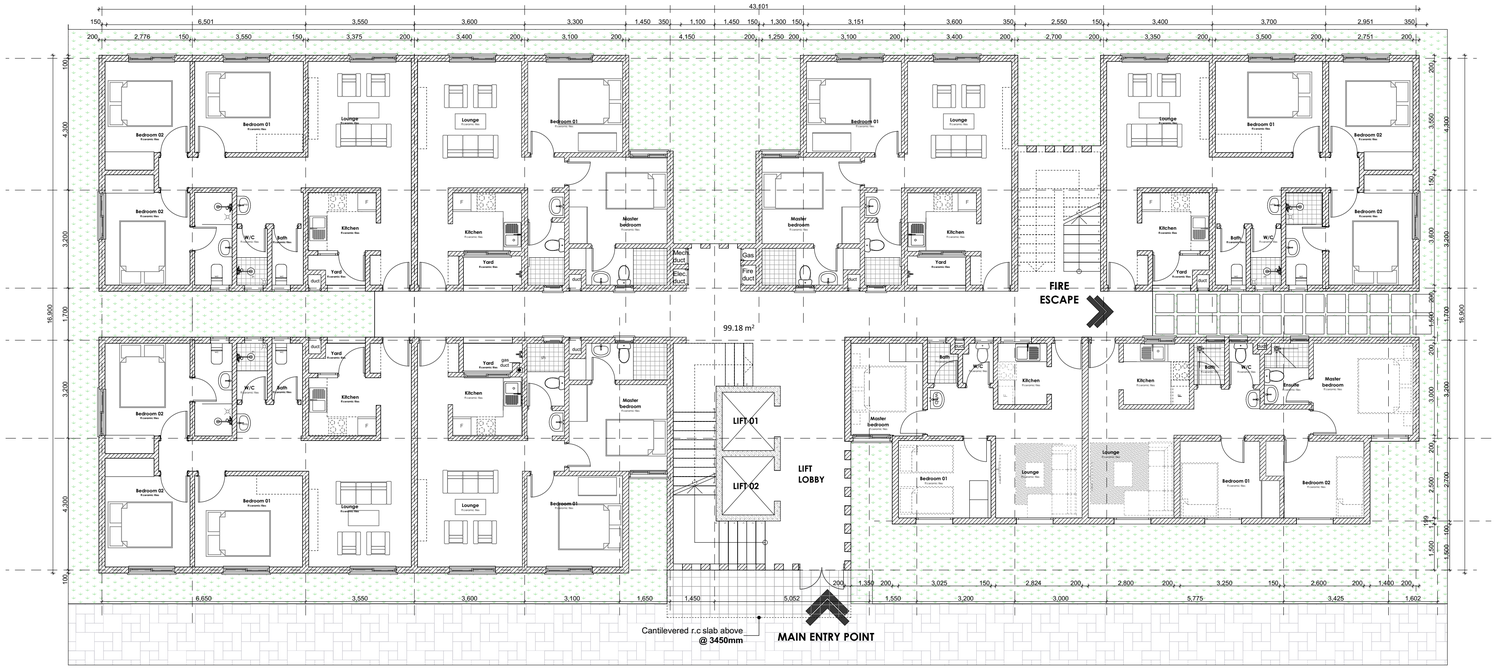
CHECKED BY:
Name: _____
Signature: _____ **Date:** _____

DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_GROUND FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN			
AFFORDABLE UNITS		MARKET UNITS	
2_BEDROOM	3_BEDROOM	2_BEDROOM	3_BEDROOM
1	1	3	3

PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_TYPICAL 1ST-9TH FLOOR LEVEL

UNIT BREAK DOWN_ UNIT BREAK DOWN			
AFFORDABLE UNITS		MARKET UNITS	
2_BEDROOM	3_BEDROOM	2_BEDROOM	3_BEDROOM
1	1	3	3

BLOCK TYPOLOGY B [G+9]

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2. S.V.P denotes soil vent pipe and to be provided at the head of the drainage
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11. Permanent vents denoted as P.V to be provided as shown on plan.

ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: **Date:**

DRAWING TITLE:
BLOCK B GROUND FLOOR AND TYPICAL PLAN

SCALE: 1:100

DRAWN BY:
ML

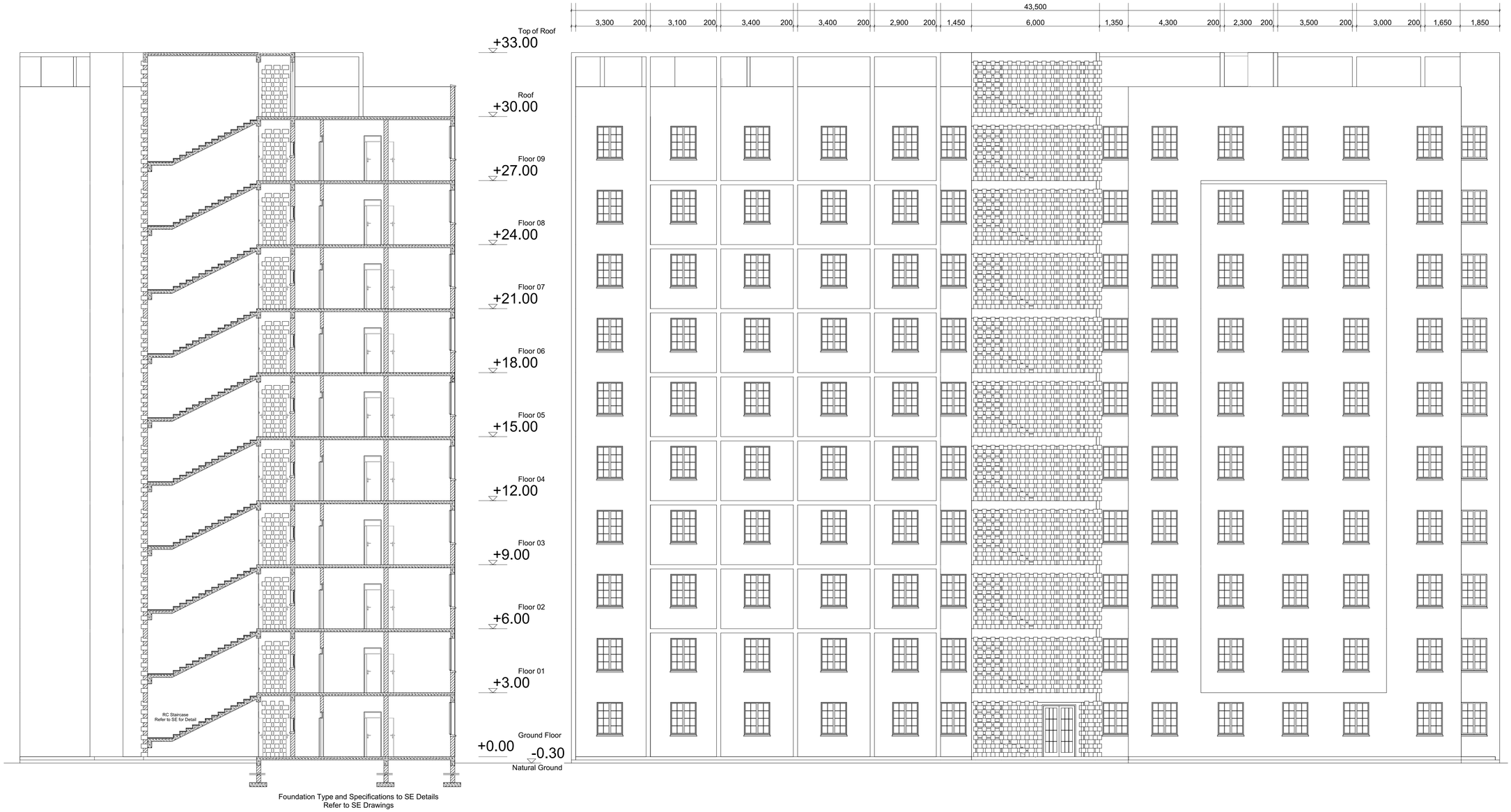
CHECKED BY:
Name:
Signature: **Date:**

DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



Foundation Type and Specifications to SE Details
Refer to SE Drawings

BLOCK TYPOLOGY B [G+9]

GENERAL NOTES

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CONSTRUCTION

Approved anti-termite treatment & 1000 gauge polythene sheeting cover to be provided under all ground floor concrete slab on compacted hardcore to approval.
DPC to be 3ply bituminous felt to be provided under all walls.

STRUCTURAL

1. All Black cotton soil to be removed from below all building and paved surfaces
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4. All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
5. All adjacent R.C work and masonry walls to be tied with strap irons at every course

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PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: _____ **Date:** _____

DRAWING TITLE:
BLOCK B _SECTION & ELEVATION

SCALE: 1:100

DRAWN BY:
ML

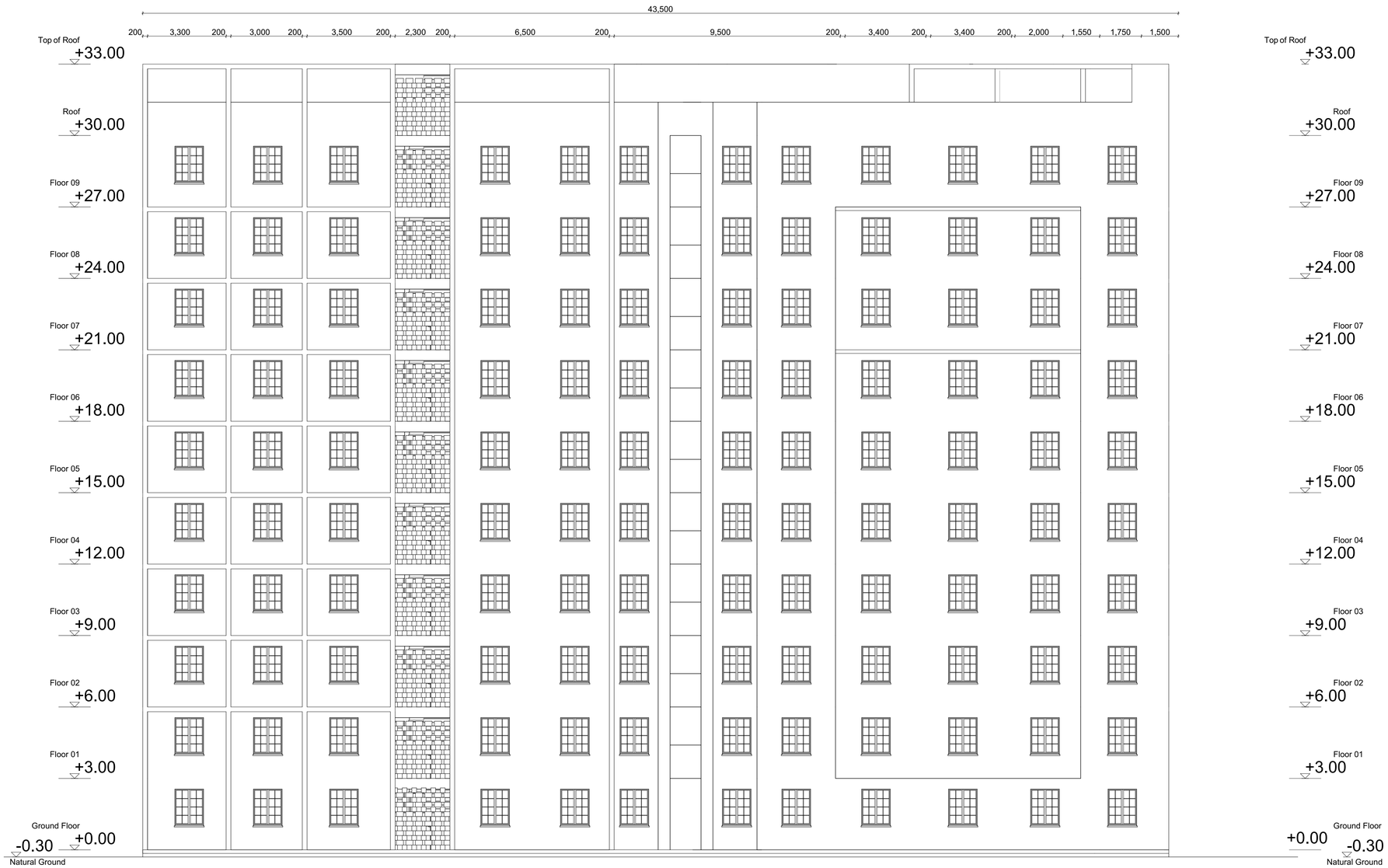
CHECKED BY:
Name: _____
Signature: _____ **Date:** _____

DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



BLOCK TYPOLOGY B [G+9]

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PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: _____ **Date:** _____

DRAWING TITLE:
BLOCK B _SECTION & ELEVATION

SCALE: 1:100

DRAWN BY:
ML

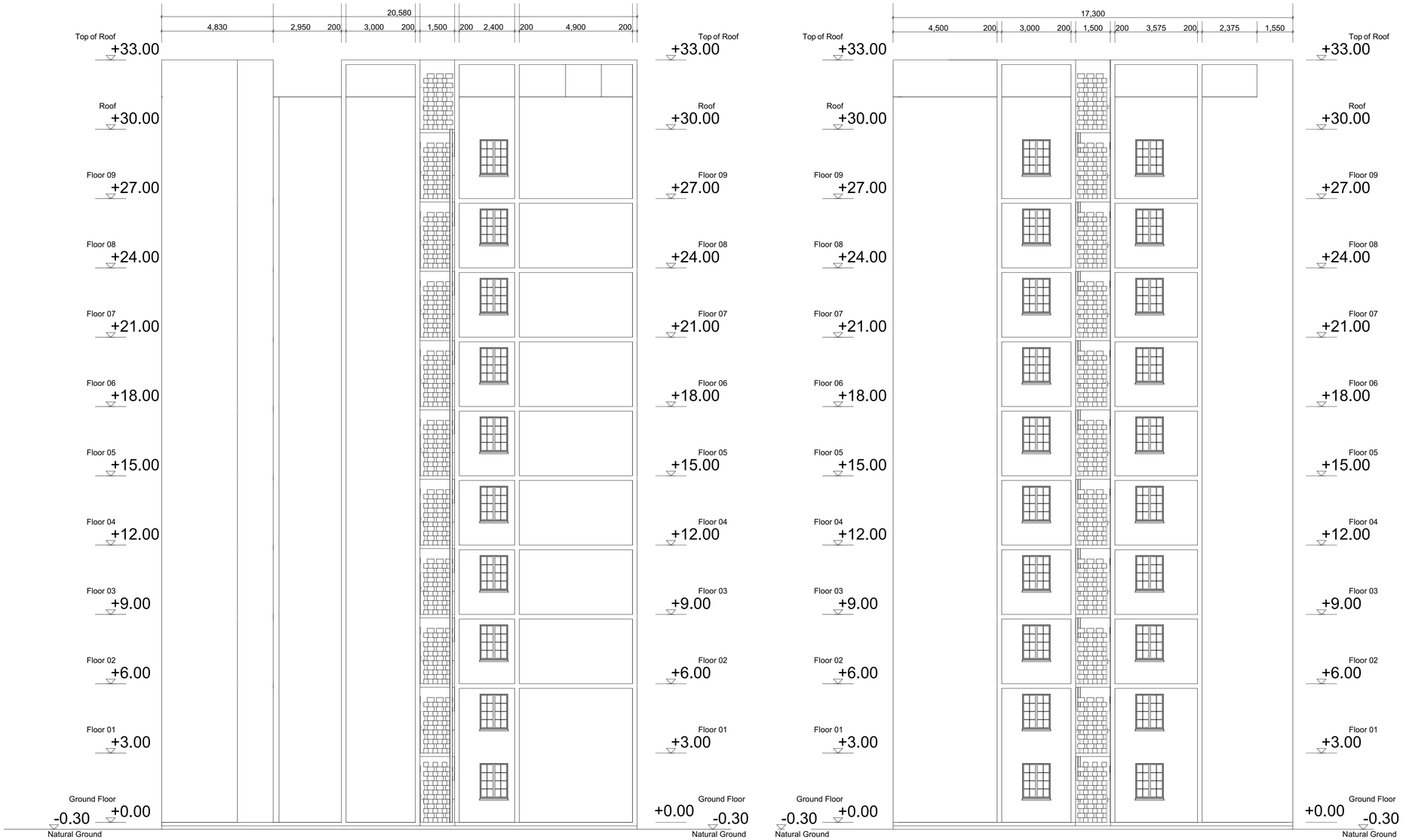
CHECKED BY:
Name: _____
Signature: _____ **Date:** _____

DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



BLOCK TYPOLOGY B [G+9]

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PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: _____ **Date:** _____

DRAWING TITLE:
BLOCK B _SECTION & ELEVATION

SCALE: 1:100

DRAWN BY:
ML

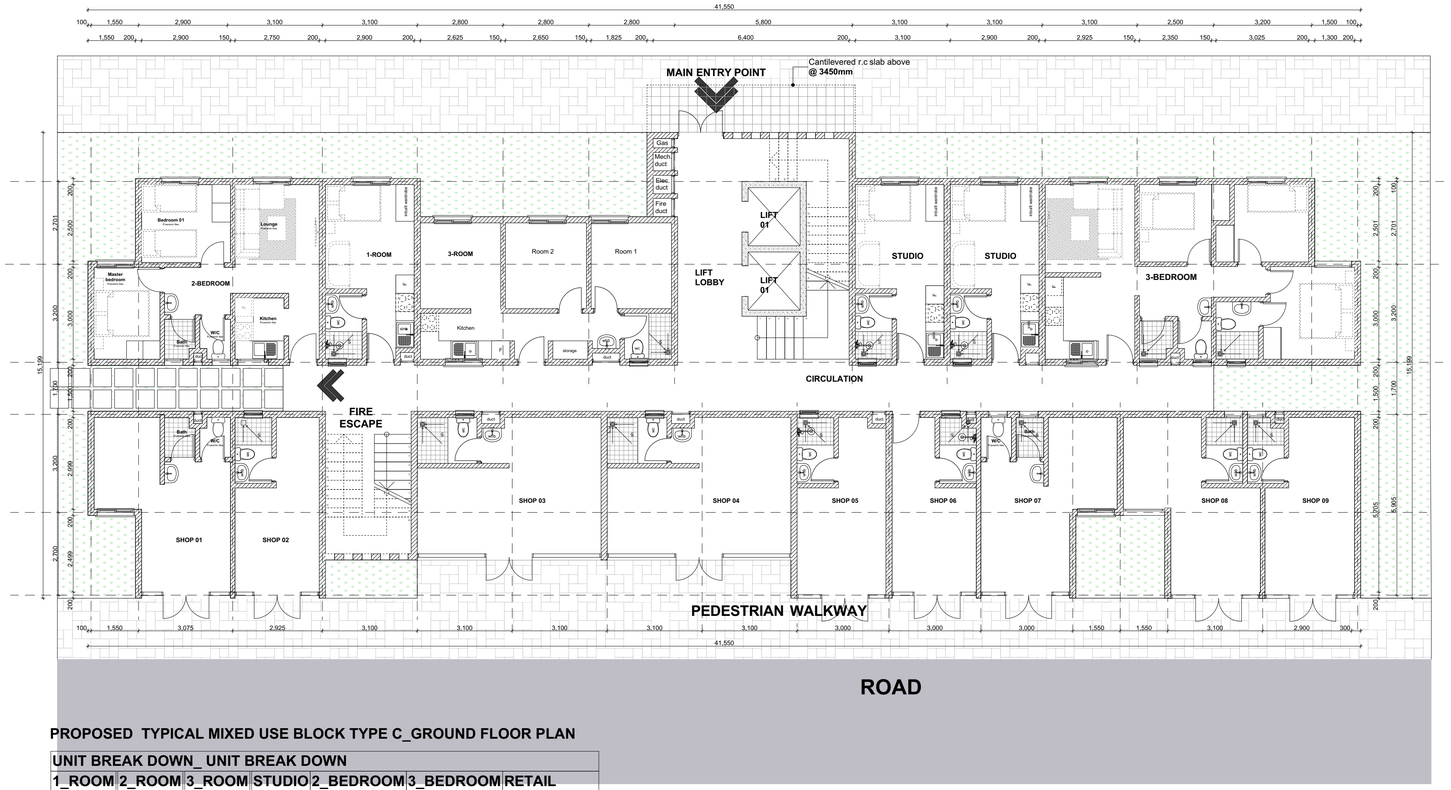
CHECKED BY:
Name: _____
Signature: _____ **Date:** _____

DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

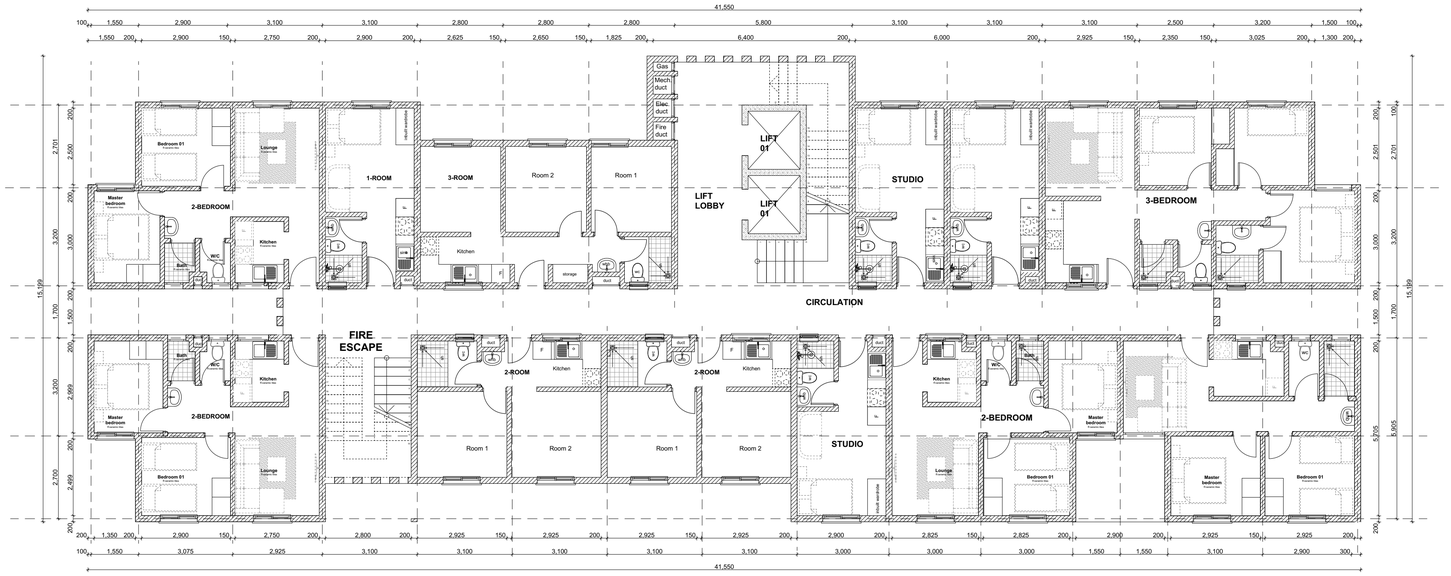
STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL MIXED USE BLOCK TYPE C_GROUND FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN						
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM	RETAIL
1	2	1	2	1	1	9



PROPOSED TYPICAL MIXED USE BLOCK TYPE C_TYPICAL 1ST-14TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	3	4	1

BLOCK TYPOLOGY C [G+14]

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All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: **Date:**

DRAWING TITLE:
BLOCK A _FLOOR PLANS

SCALE: 1:100

DRAWN BY:
ML

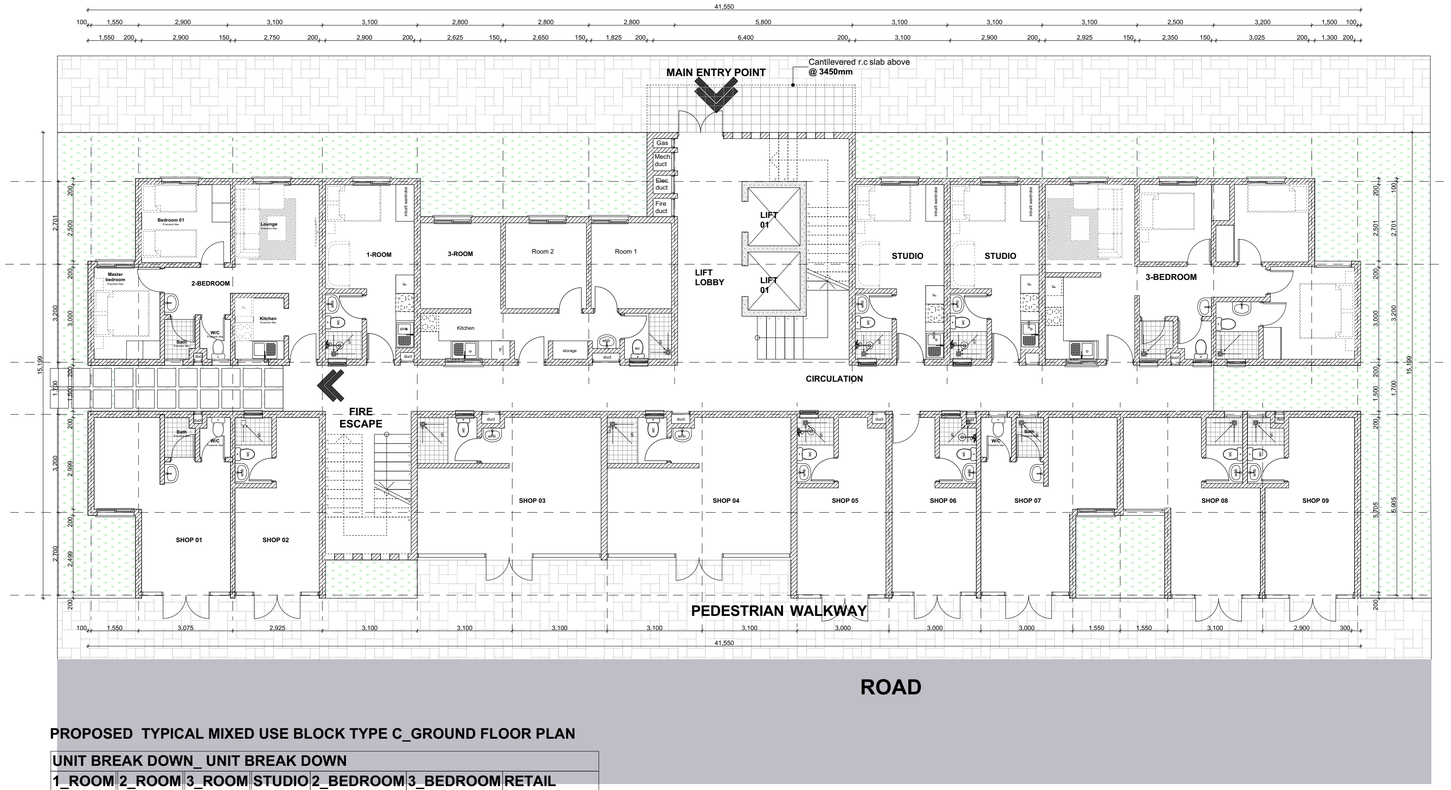
CHECKED BY:
Name:
Signature: **Date:**

DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

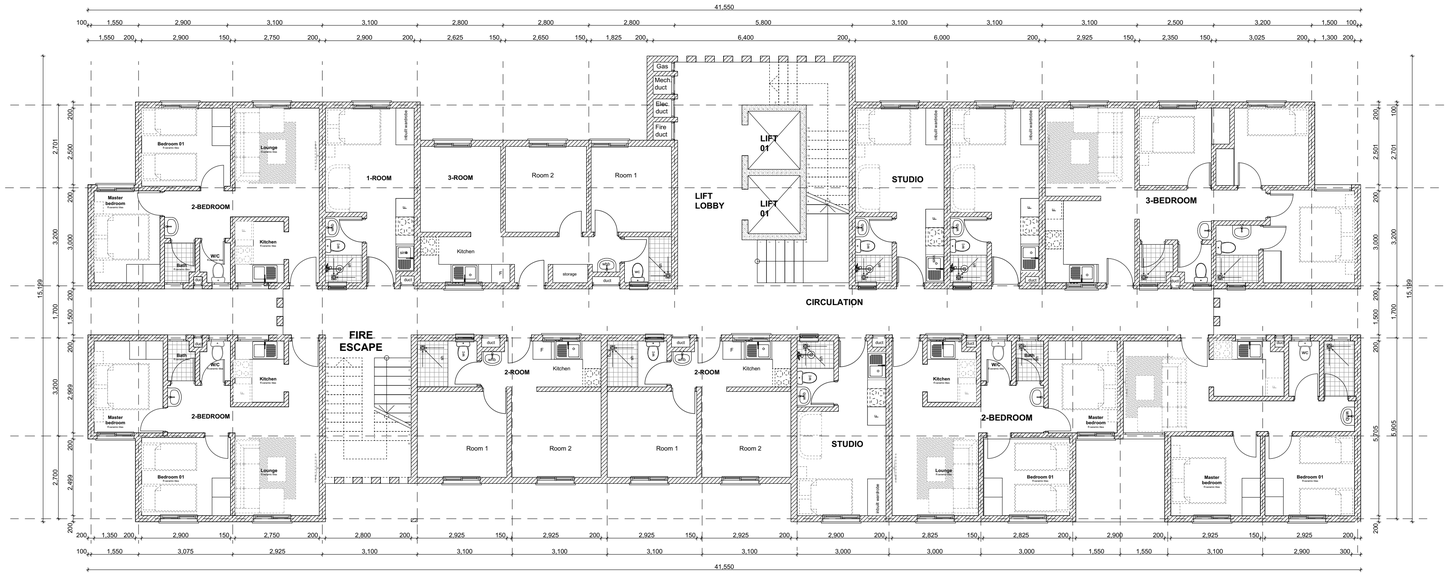
STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL MIXED USE BLOCK TYPE C_GROUND FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN						
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM	RETAIL
1	2	1	2	1	1	9



PROPOSED TYPICAL MIXED USE BLOCK TYPE C_TYPICAL 1ST-9TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	3	4	1

BLOCK TYPOLOGY C [G+9]

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PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: **Date:**

DRAWING TITLE:
BLOCK A _FLOOR PLANS

SCALE: 1:100

DRAWN BY:
ML

CHECKED BY:
Name:
Signature: **Date:**

DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

L[--]01_GROUND FLOOR PLAN
SCALE 1:100

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PROJECT:

PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:

Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

DRAWING TITLE:

CLUB HOUSE_GROUND FLOOR PLAN LAYOUT

SCALE:1:100

Paper Size **A1**

DRAWN BY:

ML

CHECKED BY:

Name:_ _ _ _ _ _ _ _ _ _ _ _ _ _ _

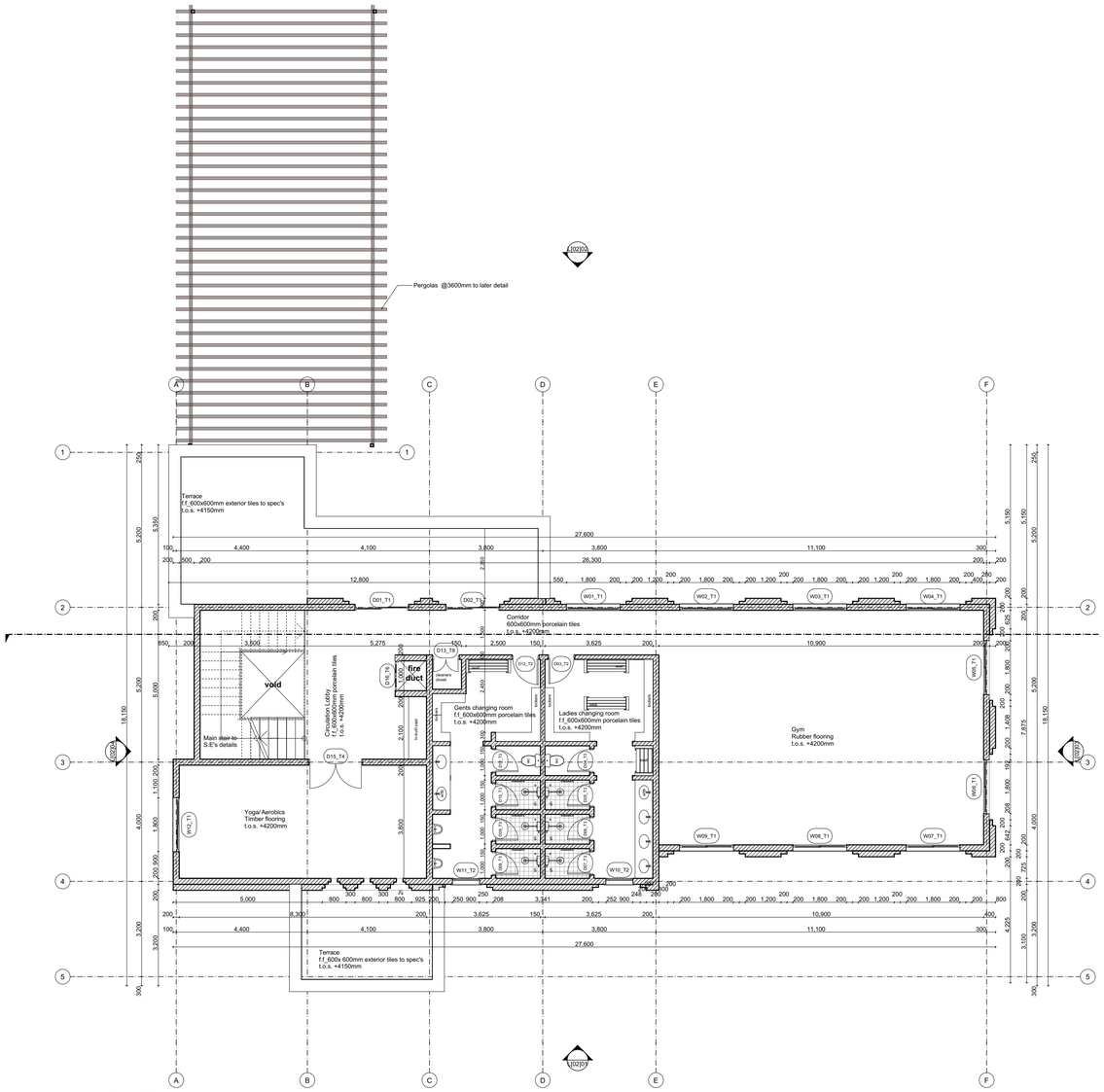
Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

DATE:

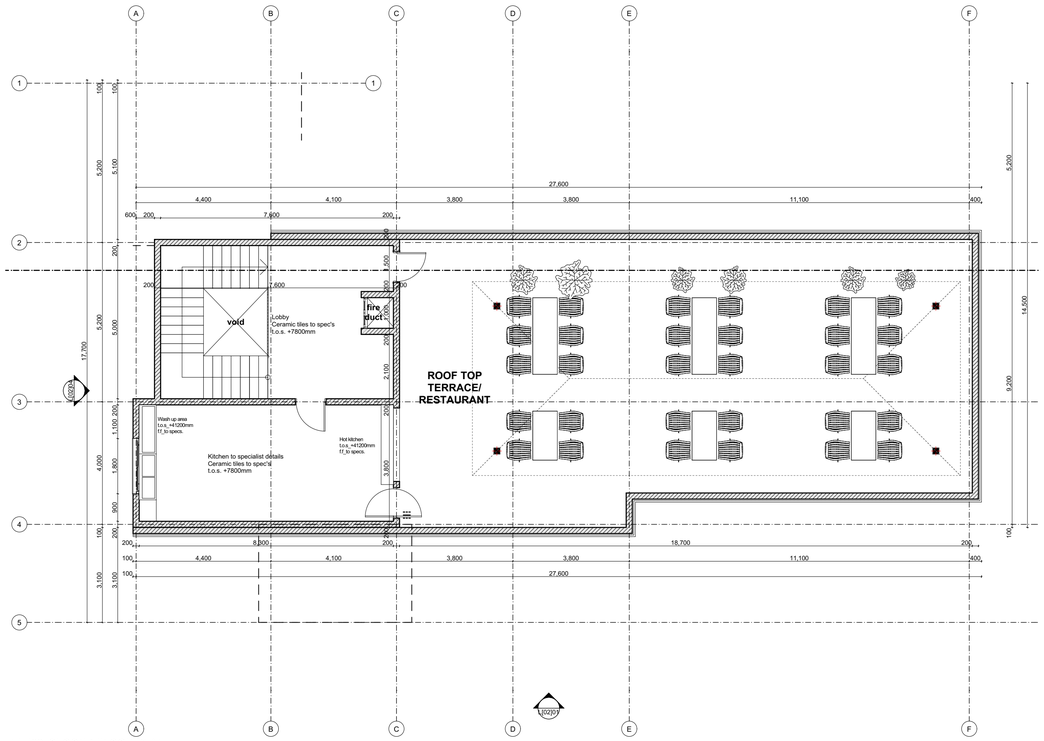
MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

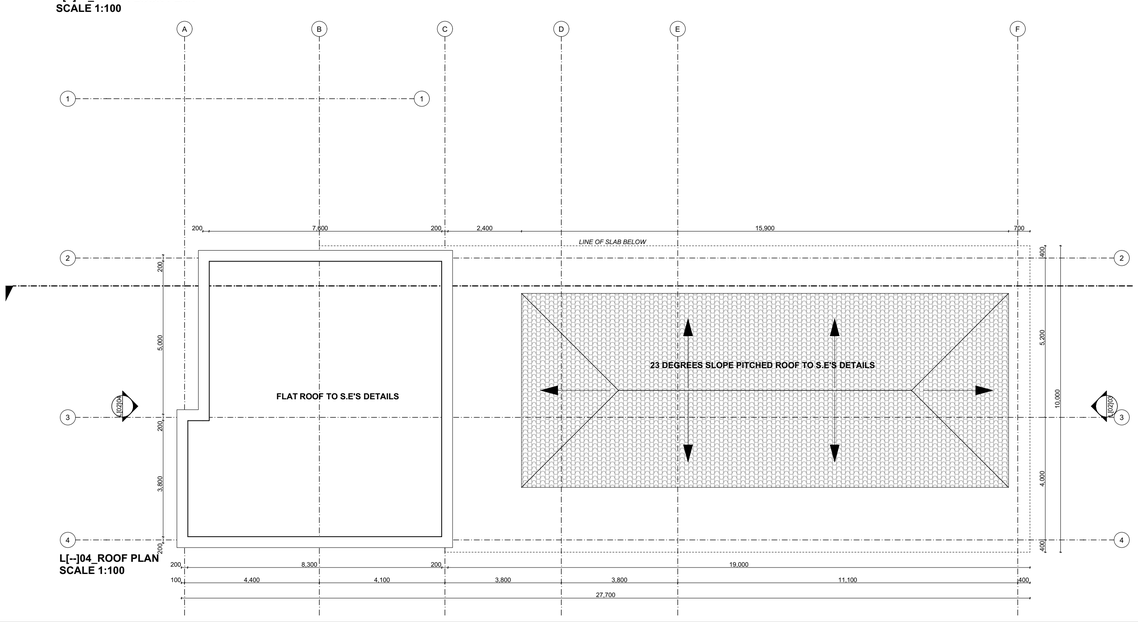
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[--]02_FIRST FLOOR PLAN
SCALE 1:100



L[--]03_SECOND FLOOR PLAN
SCALE 1:100



L[--]04_ROOF PLAN
SCALE 1:100

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PROJECT:

PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:

Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

Signature: _____ **Date:** _____

DRAWING TITLE:

CLUB HOUSE_FIRST, SECOND & ROOF FLOOR PLAN LAYOUT

SCALE:1:100

Paper Size **A1**

DRAWN BY:

ML

CHECKED BY:

Name: _____

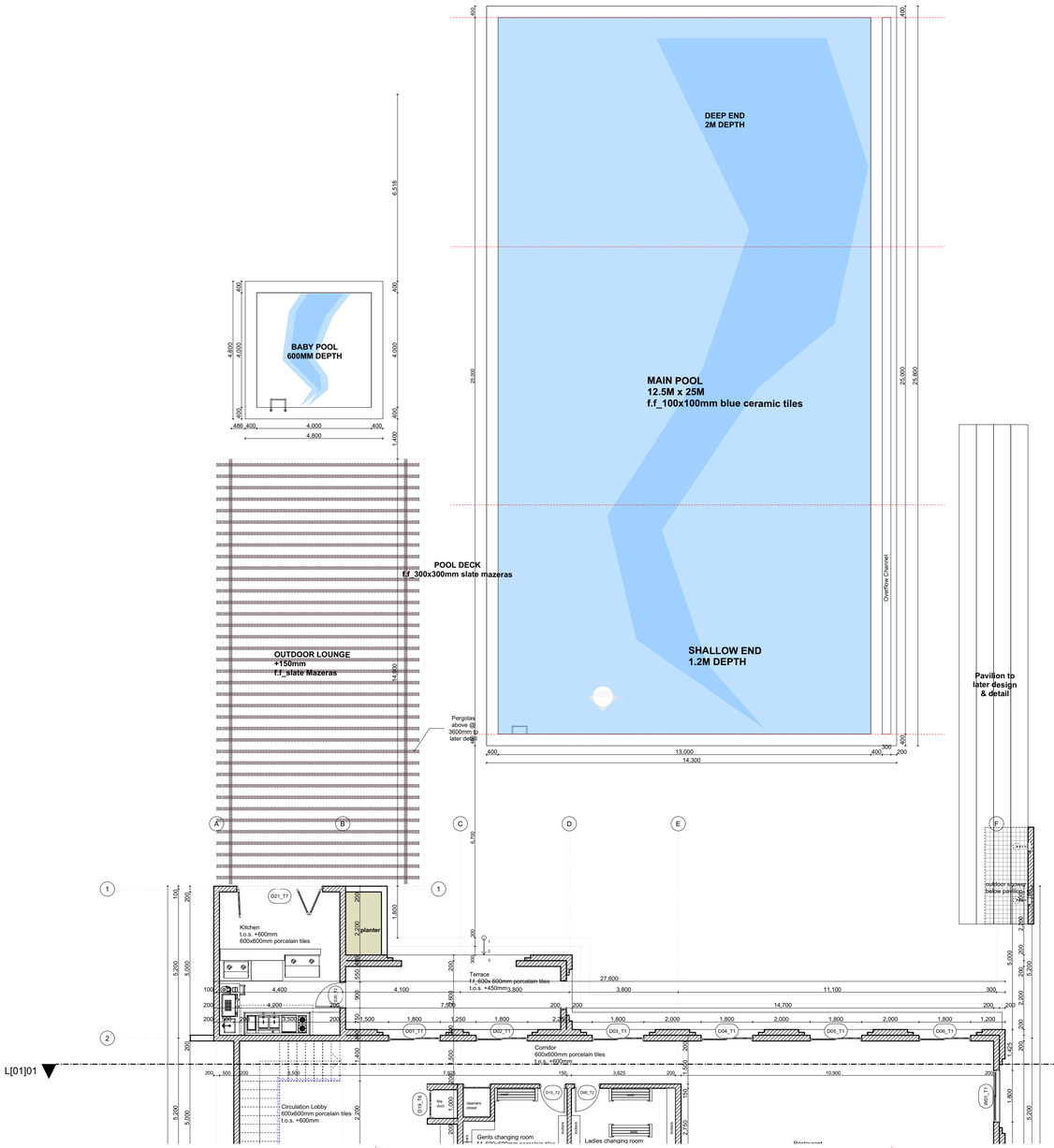
Signature: _____ **Date:** _____

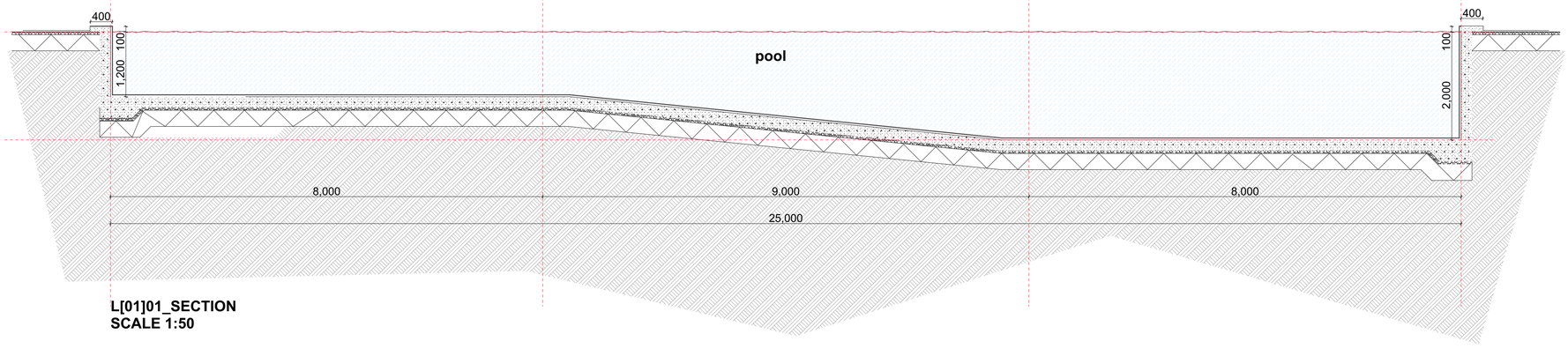
DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA





L[01]01_SECTION
SCALE 1:50

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PROJECT:

PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:

Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

Signature: _ _ _ _ _ _ **Date:** _ _ _ _ _ _

DRAWING TITLE:

CLUB HOUSE AND SWIMMING POOL LAYOUT

SCALE:1:100

Paper Size **A1**

DRAWN BY:

ML

CHECKED BY:

Name: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

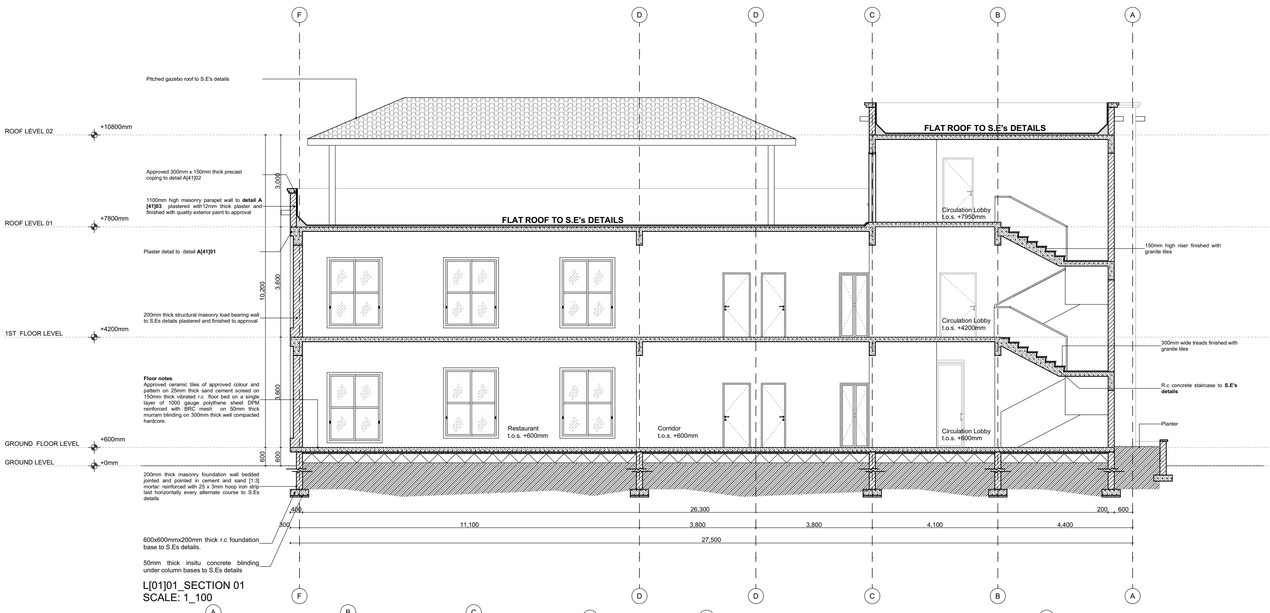
Signature: _ _ _ _ _ _ **Date:** _ _ _ _ _ _

DATE:

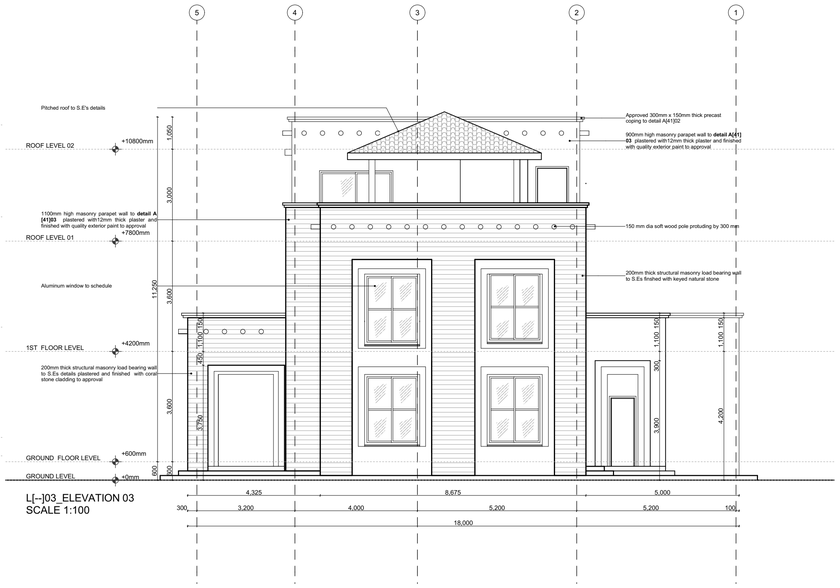
MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

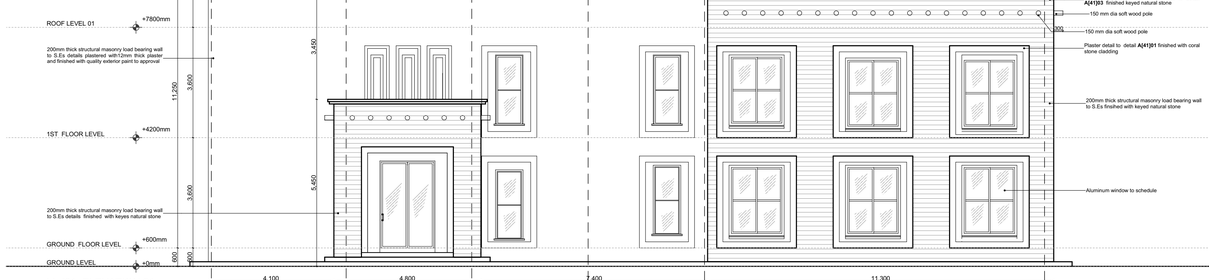
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



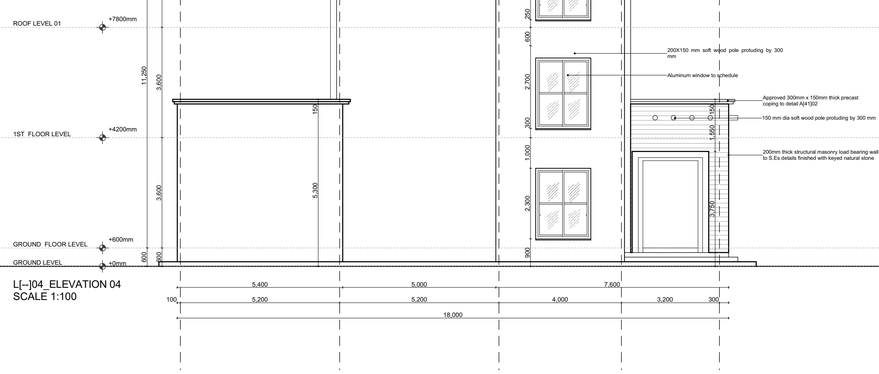
L[01]01_SECTION 01
SCALE: 1_100



L[--]03_ELEVATION 03
SCALE 1:100



L[--]01_ELEVATION 01
SCALE 1:100



L[--]04_ELEVATION 04
SCALE 1:100

L[--]02_ELEVATION 02
SCALE 1:100

GENERAL NOTES

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CONSTRUCTION

Approved anti-termite treatment & 1000 gauge polythene sheeting cover to be provided under all ground floor concrete slab on compacted hardcore to approval.
DPC to be 3ply bituminous felt to be provided under all walls.

STRUCTURAL

1. All Black cotton soil to be removed from below all building and paved surfaces
2. All reinforced concrete work will be in accordance with structural drawings.
3. Foundation depths to be determined on site to S.E approval
4. All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
5. All adjacent R.C work and masonry walls to be tied with strap irons at every course

MECHANICAL

1. All Plumbing and Drainage Work to comply with specifications
2. S.V.P denotes soil vent pipe and to be provided at the head of the drainage
3. Where drainage is shown under driveways and slabs, to be encased in 150mm thick concrete surround.
4. All underground foul and waste drain pipes shall be of PVC to comply with BS5255
5. All ICs within building area, driveway and parking to have heavy duty,double-seal airtight covers and walls to be 200mm.
6. Minimum slope in the drain pipes to be 1%
7. No chases for pipes will be allowed in the slabs
8. Sleeves will be allowed with written approval from S.E.
9. No cutting of concrete without express approval of the Architect or S.E
10. All testing of pipes must be coordinated with electrical and any conflicts must be resolved before works begin
11. Permanent vents denoted as P.V to be provided as shown on plan.

ELECTRICAL

All conduits must be laid before plastering

PROJECT:

PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:

Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

Signature: _____ **Date:** _____

DRAWING TITLE:

CLUB HOUSE_Sections & Elevations

SCALE:1:100

Paper Size **A1**

DRAWN BY:

ML

CHECKED BY:

Name: _____

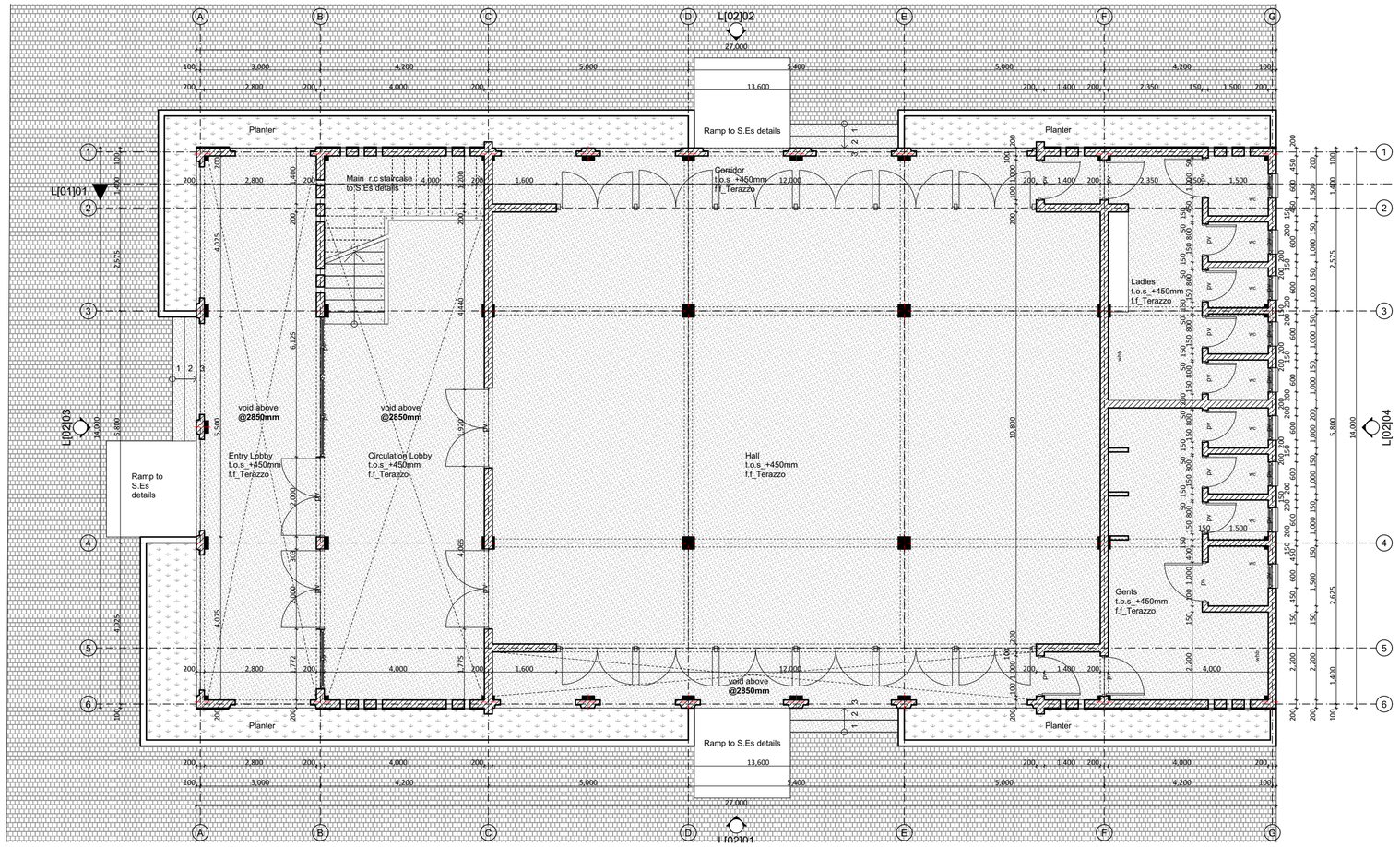
Signature: _____ **Date:** _____

DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSINGANDURBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[--]01k_GROUND FLOOR PLAN
Scale: 1_100

GENERAL NOTES

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2. All dimensions are in mm unless otherwise specified.
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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect.

CONSTRUCTION

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STRUCTURAL

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MECHANICAL

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ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: _ _ _ _ _ _ _ **Date:** _ _ _ _ _ _

DRAWING TITLE:
COMMUNITY CENTRE GROUND FLOOR PLAN

SCALE:
1:500

DRAWN BY:
ML

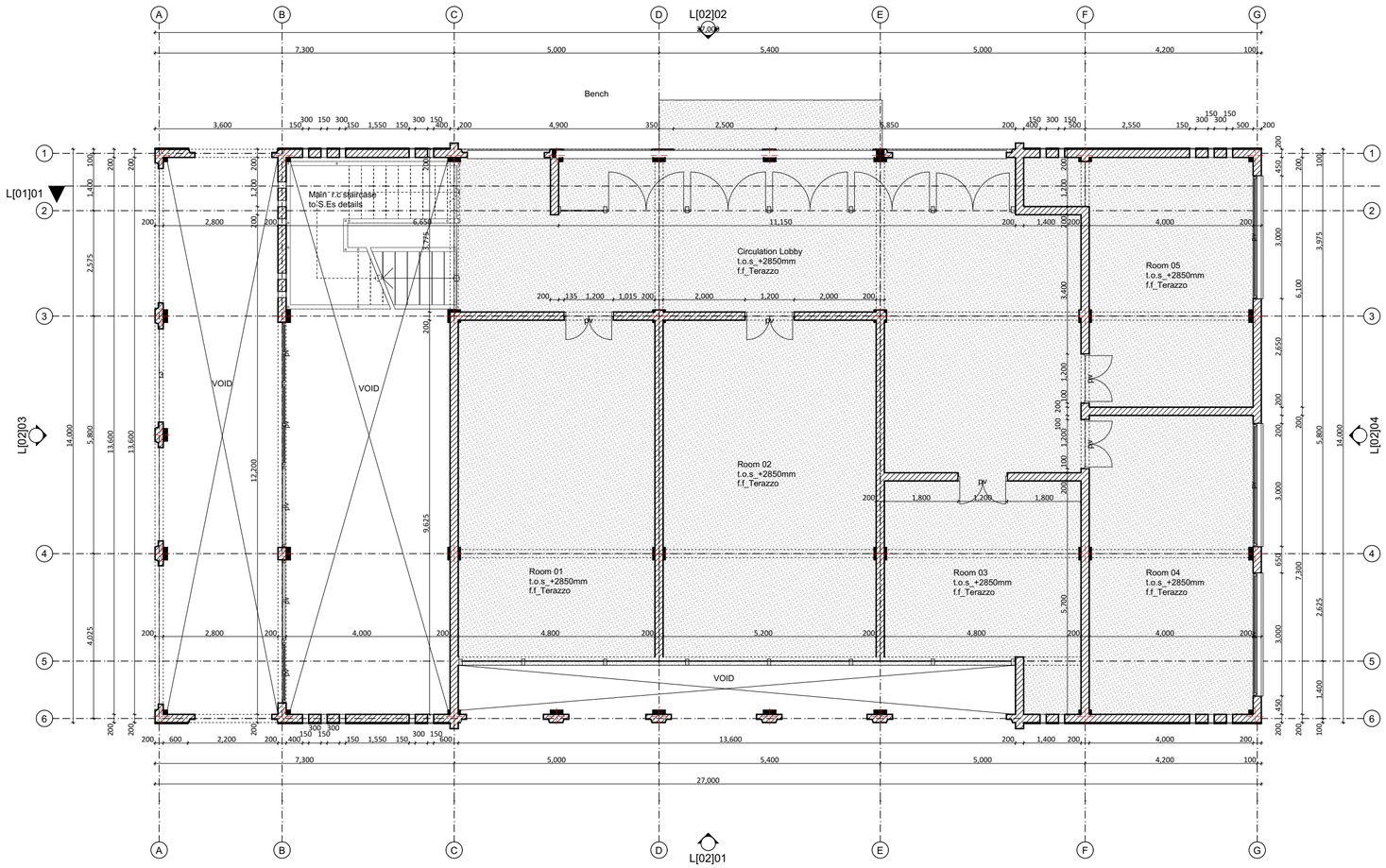
CHECKED BY:
Name: _
Signature: _ _ _ _ _ _ _ **Date:** _ _ _ _ _ _

DATE:
MAY 2023

MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[--]02k_FIRST FLOOR PLAN
Scale: 1_100

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CONSTRUCTION

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STRUCTURAL

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MECHANICAL

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ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature:_ _ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

DRAWING TITLE:
COMMUNITY CENTRE FIRST FLOOR PLAN

SCALE:
1:500

DRAWN BY:
ML

CHECKED BY:
Name:_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

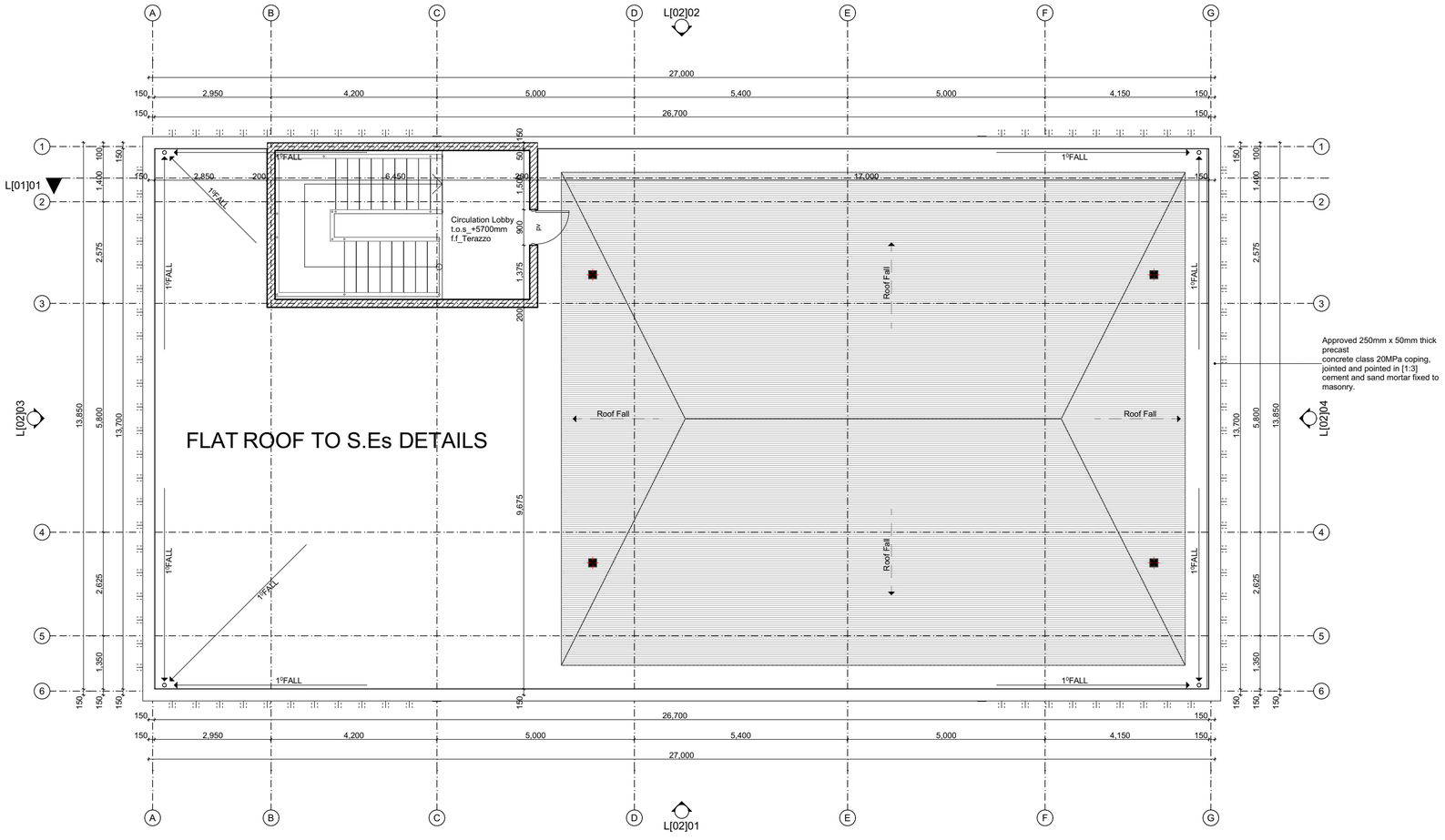
Signature:_ _ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

DATE:
MAY 2023

MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[--]03k_ROOF PLAN
Scale: 1_100

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ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

DRAWING TITLE:
COMMUNITY CENTRE ROOF PLAN

SCALE:
1:500

DRAWN BY:
ML

CHECKED BY:
Name:_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

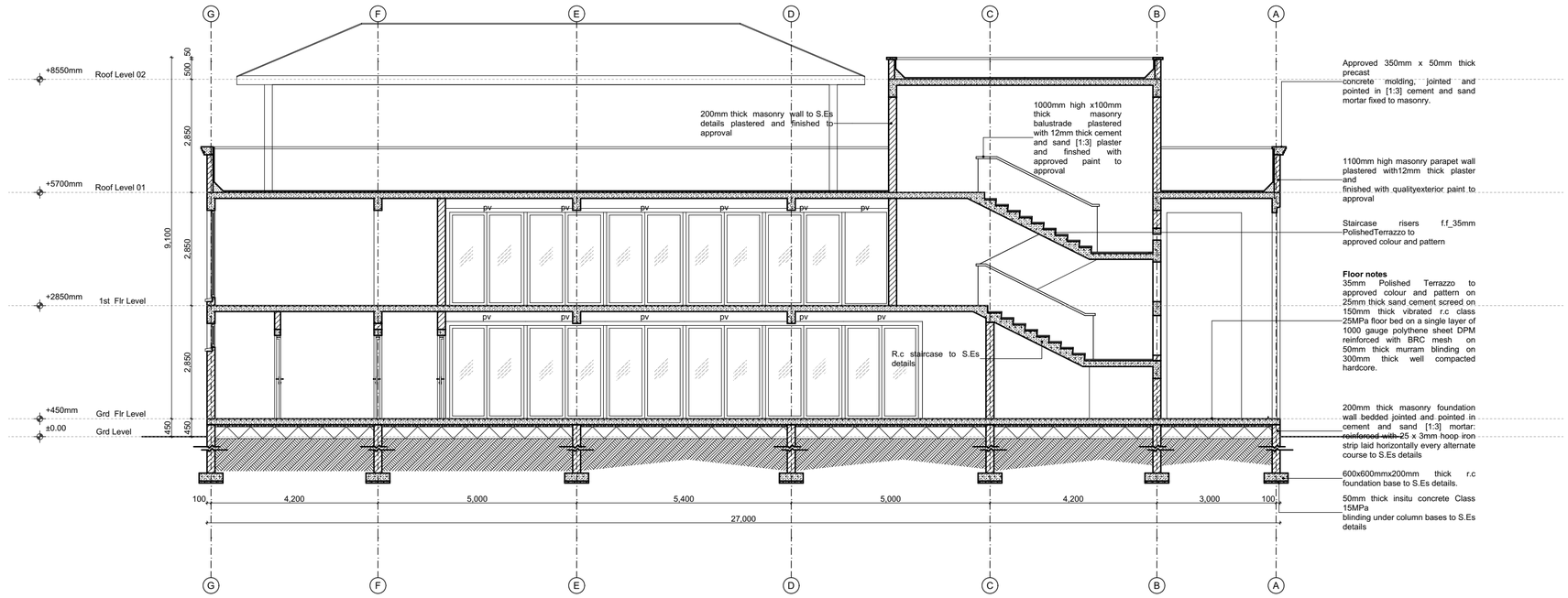
Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

DATE:
MAY 2023

MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[01]01_Section Through Staircase
Scale: 1_100

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PROJECT:

PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:

Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

DRAWING TITLE:

COMMUNITY CENTRE SECTION

SCALE:

1:500

DRAWN BY:

ML

CHECKED BY:

Name:_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

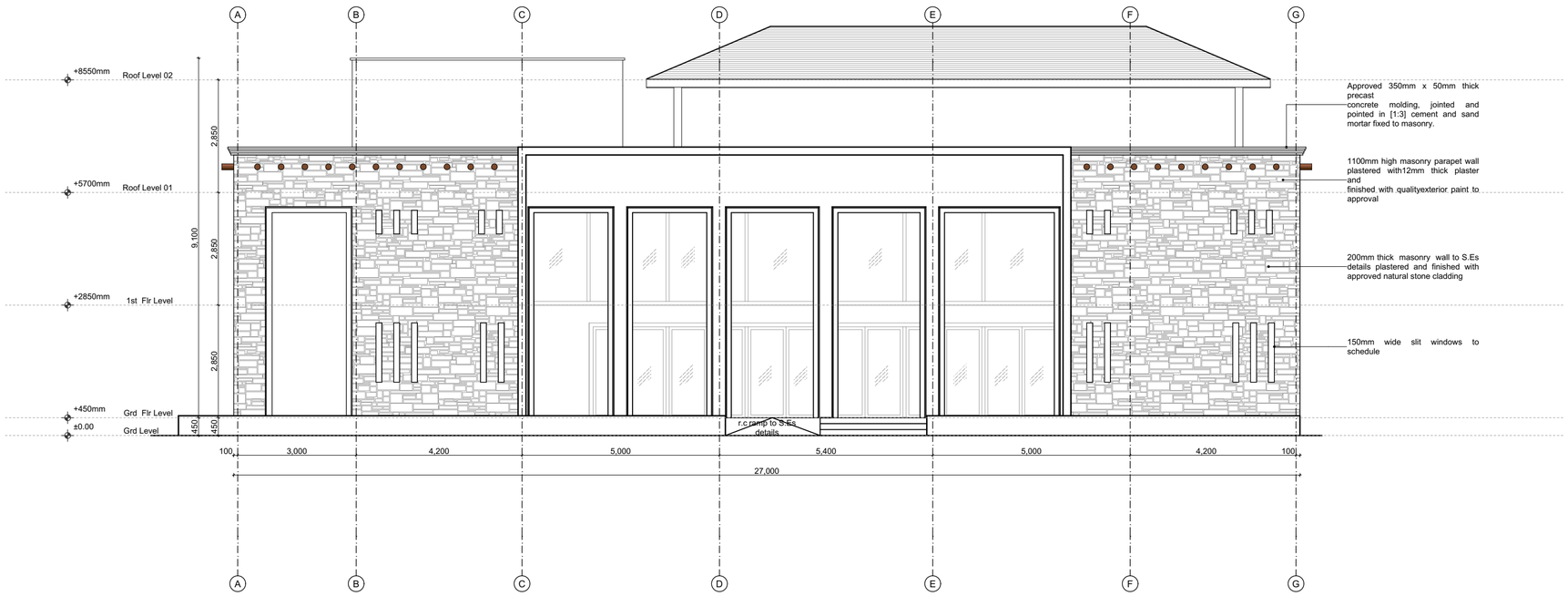
DATE:

MAY 2023

MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



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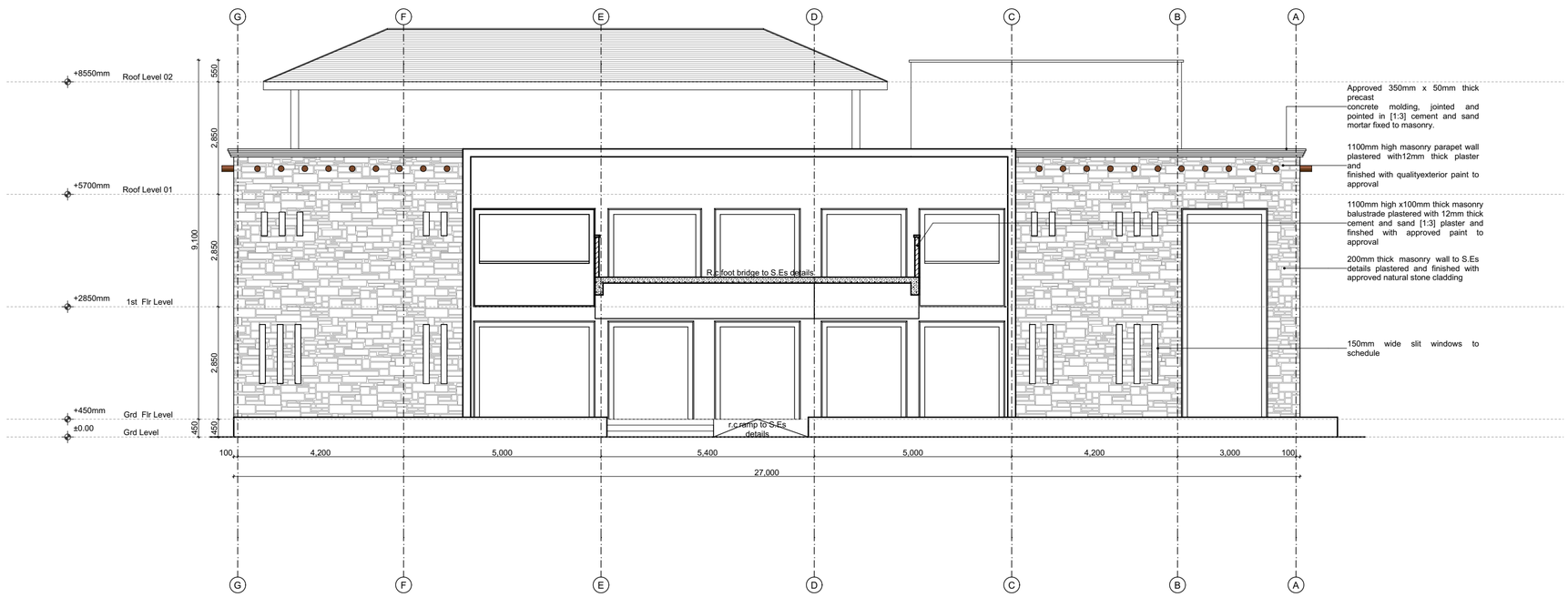
Scale: 1_100



L[02]02_Elevation 02
Scale: 1_100

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ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature:_ _ _ _ _ _ _ _ **Date:**_ _ _ _ _ _ _

DRAWING TITLE:
COMMUNITY CENTRE ELEVATIONS 01

SCALE:
1:500

DRAWN BY:
ML

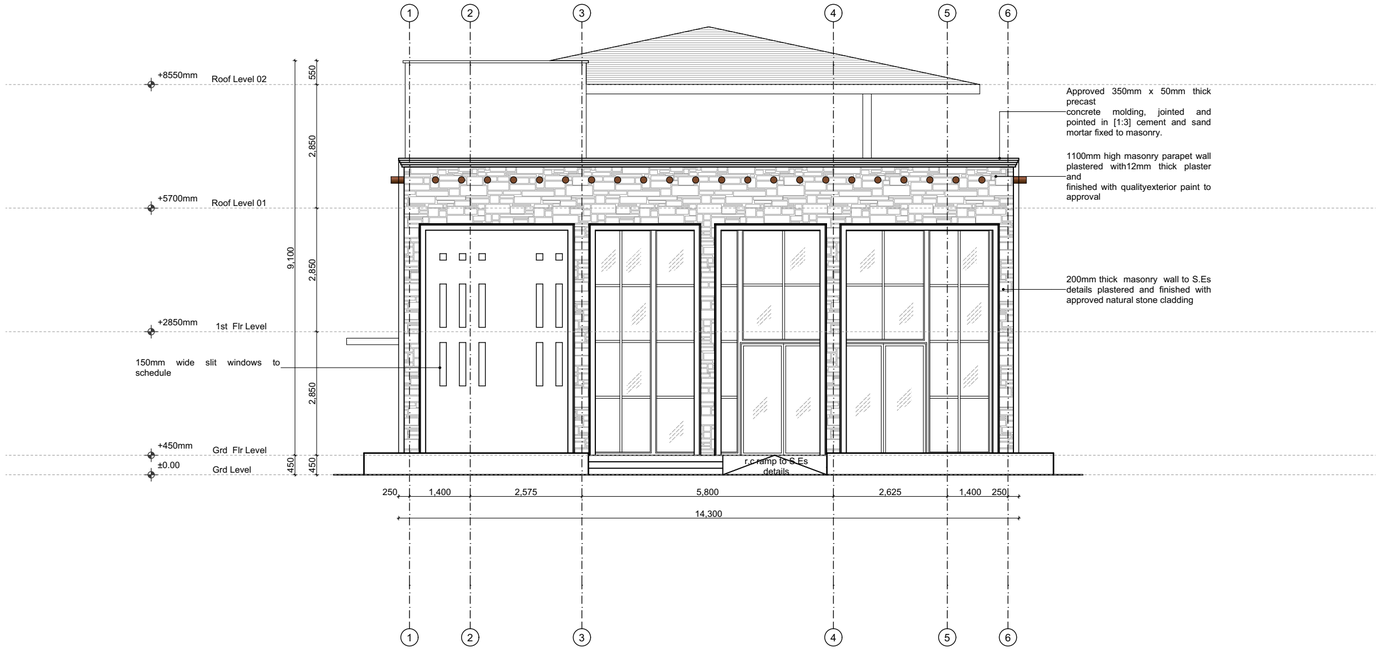
CHECKED BY:
Name:_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Signature:_ _ _ _ _ _ _ _ **Date:**_ _ _ _ _ _ _

DATE:
MAY 2023

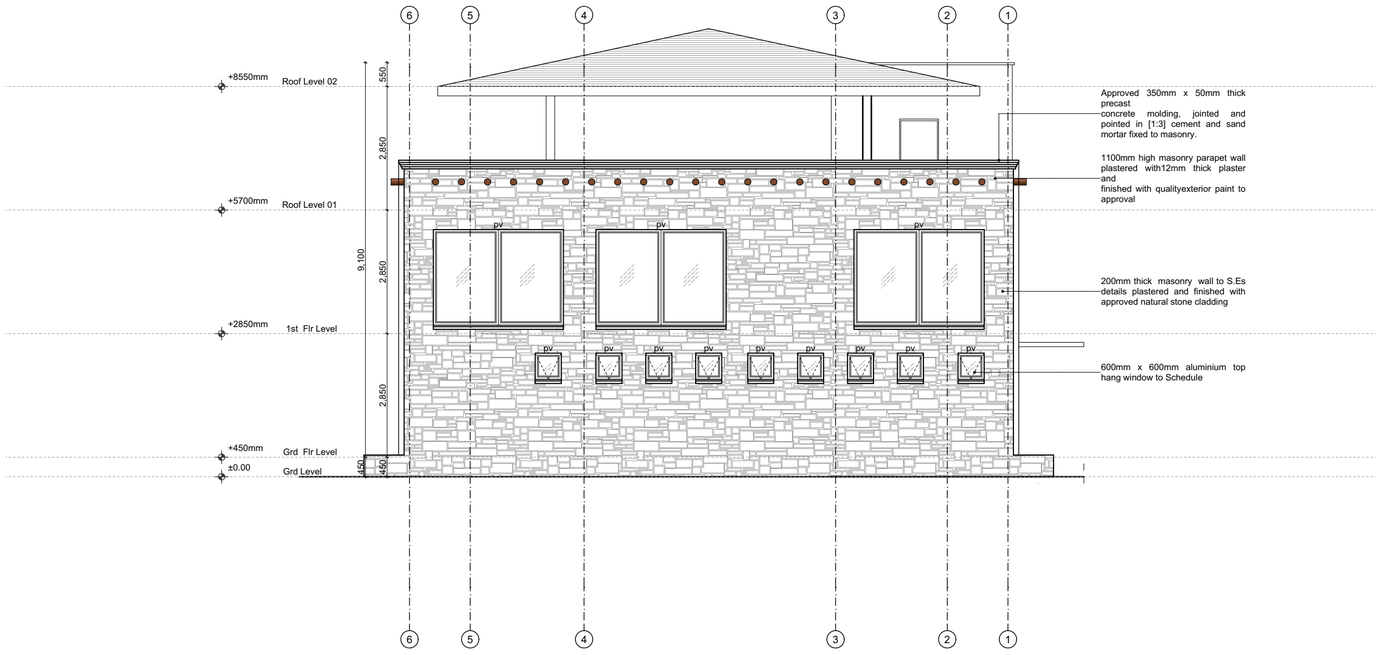
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[02]03_Elevation 03
Scale: 1_100



L[02]04_Elevation 04
Scale: 1_100

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ELECTRICAL

All conduits must be laid before plastering

PROJECT:

PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:

Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

DRAWING TITLE:

COMMUNITY CENTRE ELEVATION 02

SCALE:

1:500

DRAWN BY:

ML

CHECKED BY:

Name:_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

DATE:

MAY 2023

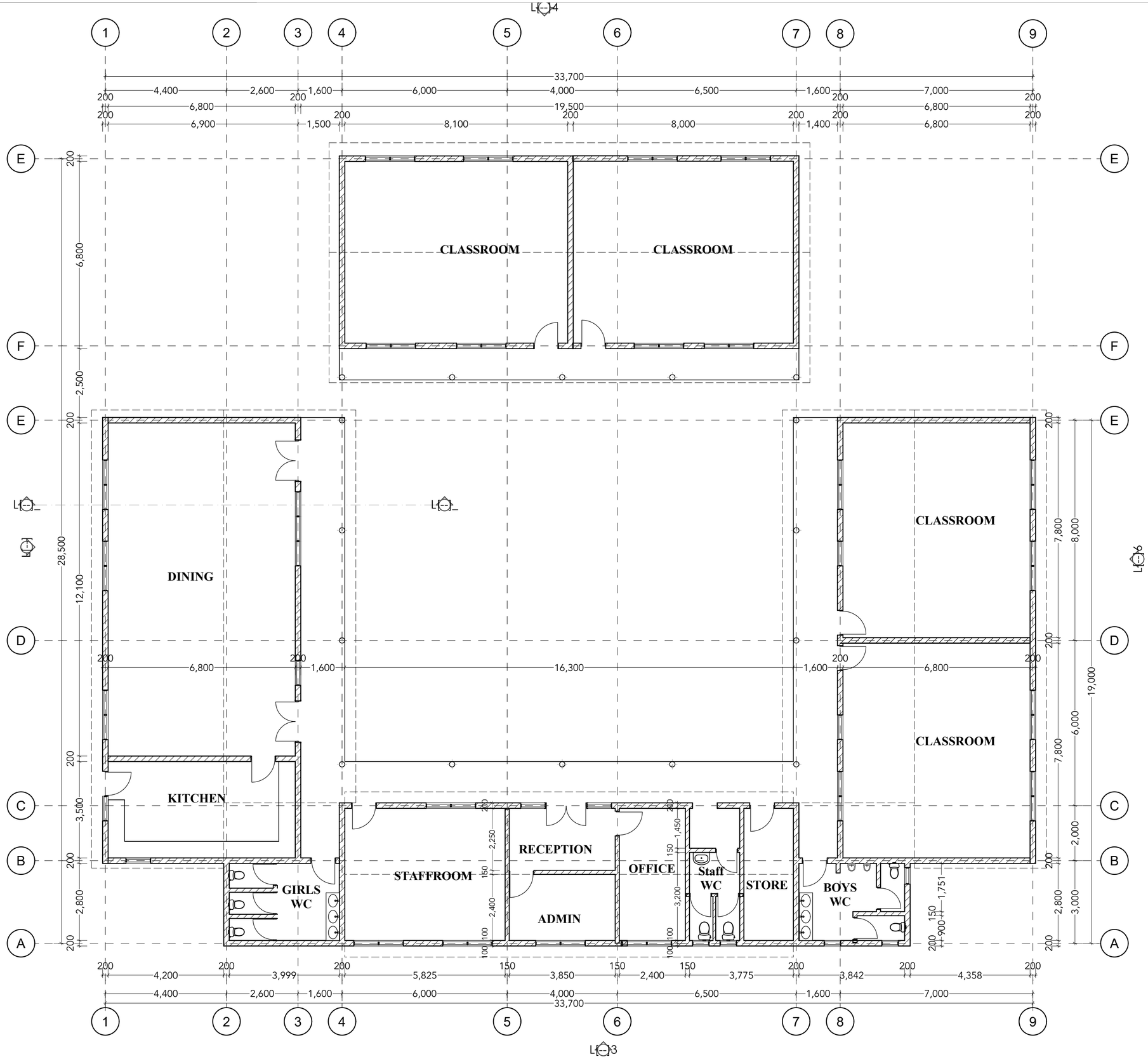
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

KINDERGARTEN

AFFORDABLE HOUSING PROGRAMME



KINDERGATEN FLOOR PLAN
Scale 1:100

NOTES

1. This drawing is protected under the copyright Act & cannot be reproduced in part or in whole without the author's consent.
2. All dimensions to be checked on site. Written dimensions rule over scaled dimensions. Any discrepancies to be reported to the Architect before any work commences.
3. All construction works to comply with the latest KEBS Standard Codes of Practice.
4. pv denotes permanent ventilation & must be provided above all windows and doors except doors to WCs.
5. All walls less than 200mm thick to be reinforced with hoop iron at every course.
6. DPC denotes one layer of bituminous felt and should be provided under all external walls.
7. Water metre to be 300mm above ground level.
8. All RC works to Structural Engineer's details. Depth of foundation to be deterined on site but should not be less than 700mm.
9. Provide one row of 600x600x50mm precast concrete slabs around the building unless otherwise stated.
10. Heavy duty polythene sheeting and anti-termite treatment to be provided under ground floor slab.
11. Plinth level to be minimum 300mm from proposed parking level or existing ground level.
12. All surface beds to be cast on well compacted & consolidated filling.
13. Depth of foundation trenches to be minimum 600mm below the reduced ground level.
14. All service pipes to be minimum 450mm below reduced ground level.
15. All inspection chambers [IC] within the building drive-way & parking areas to be heavy duty, double seal air tight covers while drains in the same areas to be pvc pipes encased in 150mm concrete.
16. All materials and works to be approved on site. Any discrepancy to be referred to the architect.
17. All sanitary works to conform to M.O.H health standards.
18. The levels shown are architectural floor finish levels.
19. The Contractor needs to match the indicated levels with those of the Surveyor.
20. All dimensions are in millimetres [mm] unless otherwise stated.

No.	DATE	REVISIONS

PROJECT:

LOCATION:

PLOT L.R. No:

CLIENT:

CLIENT'S SIGNATURE DATE:

SHEET TITLE

SUBJECT: KINDERGATEN FLOOR PLAN

DESIGNED:-

DRAWN:- EL.

CHECKED:-

SCALE:- 1:100

ISSUED FOR:

REV No:

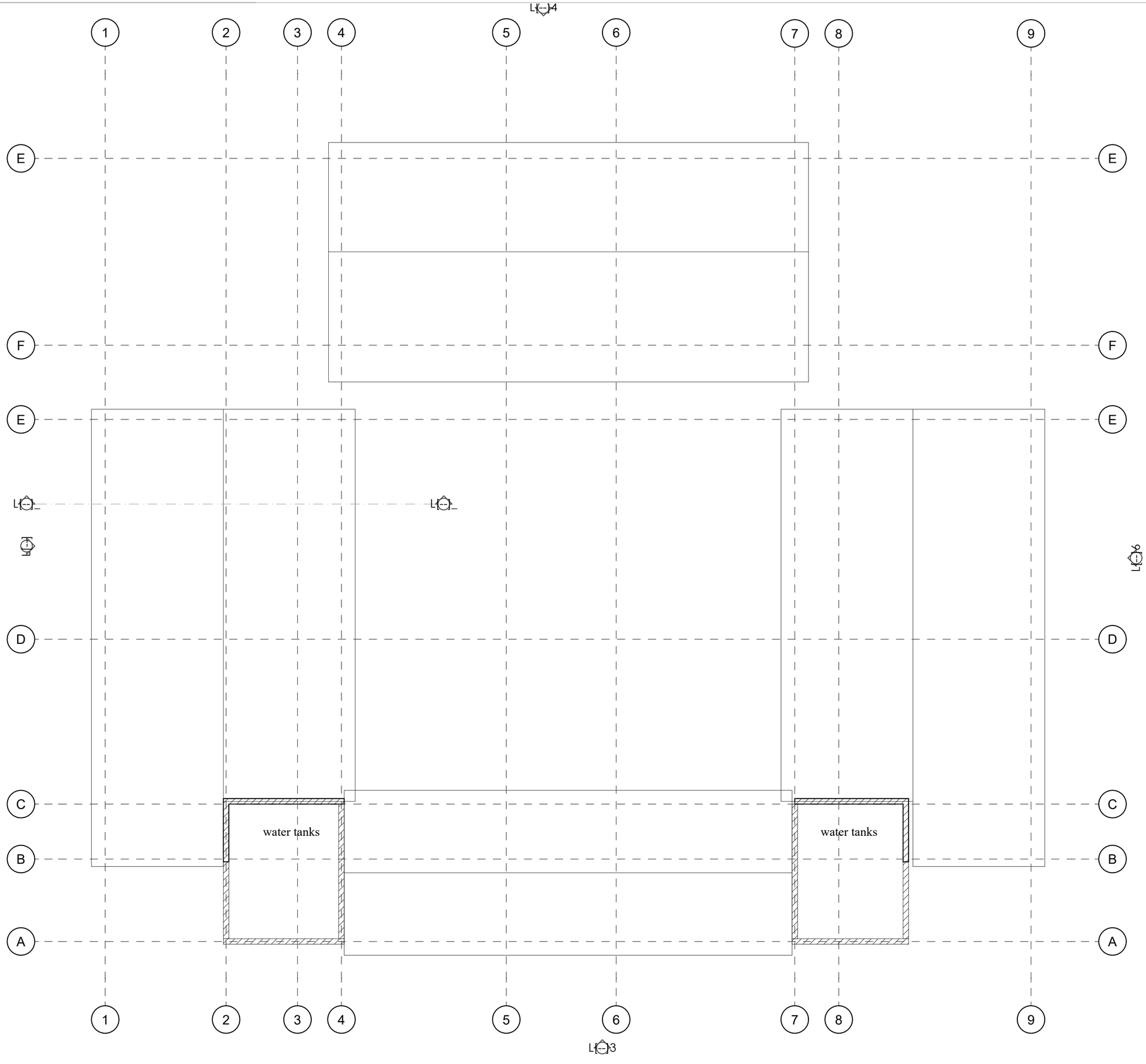
JOB No:-

SHEET No:-

SHEET PLOT DATE:

PROJECT START DATE:

JOB Path:



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13. Depth of foundation trenches to be minimum 600mm below the reduced ground level.
14. All service pipes to be minimum 450mm below reduced ground level.
15. All inspection chambers [IC] within the building drive-way & parking areas to be heavy duty, double seal air tight covers while drains in the same areas to be pvc pipes encased in 150mm concrete.
16. All materials and works to be approved on site. Any discrepancy to be referred to the architect.
17. All sanitary works to conform to M.O.H health standards.
18. The levels shown are architectural floor finish levels.
19. The Contractor needs to match the indicated levels with those of the Surveyor.
20. All dimensions are in millimetres [mm] unless otherwise stated.

No.	DATE	REVISIONS

PROJECT:

LOCATION:

PLOT L.R. No:

CLIENT:

CLIENTS SIGNATURE DATE

SHEET TITLE

SUBJECT: KINDERGATEN ROOF PLAN

DESIGNED:-

DRAWN:- EL.

CHECKED:-

SCALE:- 1:100

ISSUED FOR: REV No:

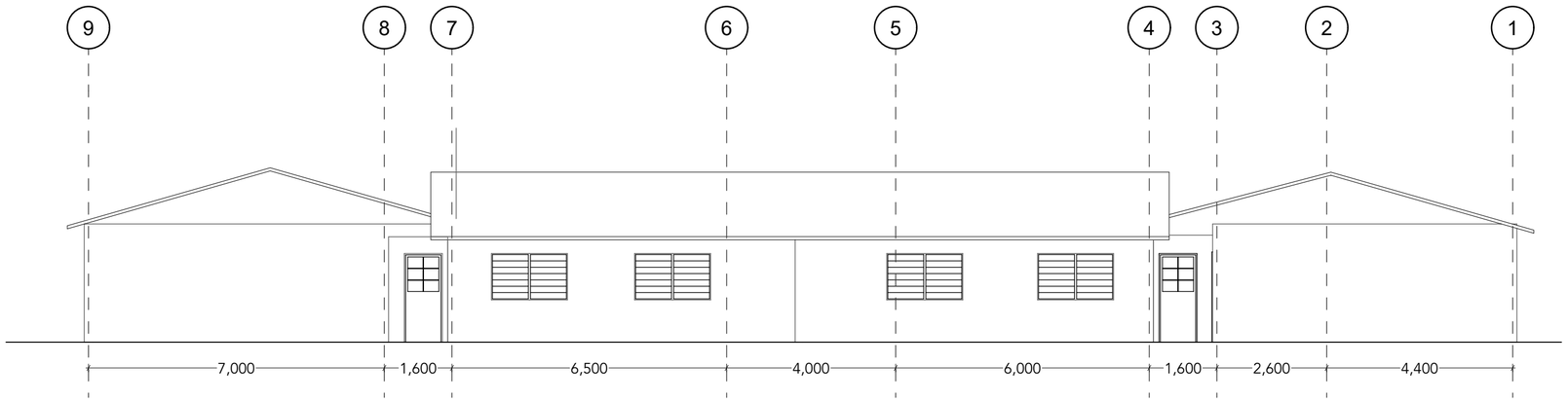
JOB No:-

SHEET No:-

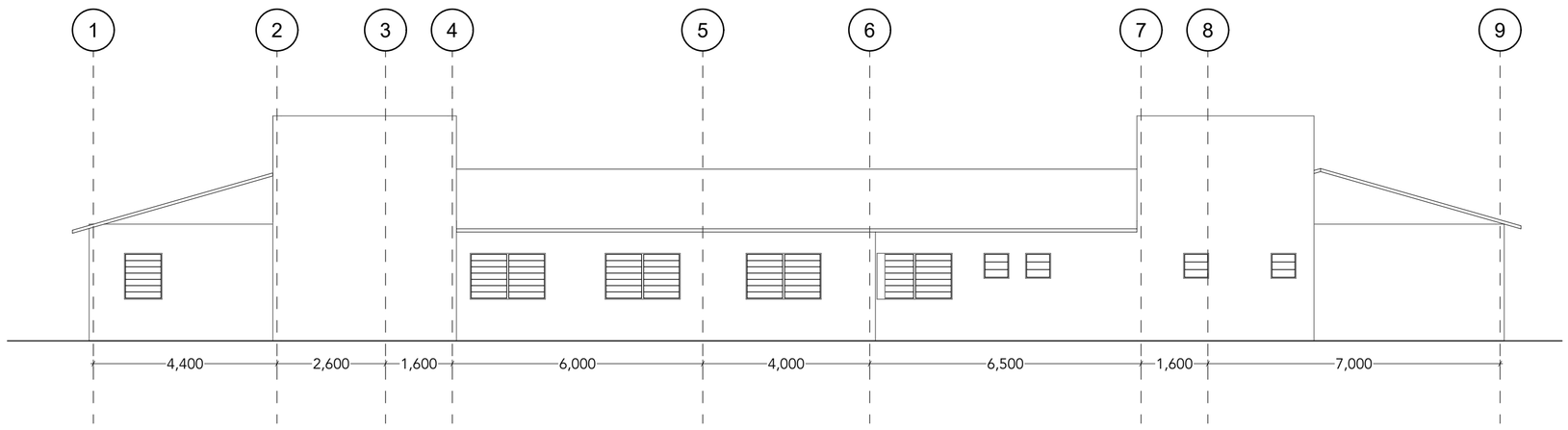
SHEET PLOT DATE:

PROJECT START DATE:

JOB Path:



L[--]2 ELEVATION
Scale 1:100



L[--] 3 ELEVATION
Scale 1:100

NOTES

1. This drawing is protected under the copyright Act & cannot be reproduced in part or in whole without the author's consent.
2. All dimensions to be checked on site. Written dimensions rule over scaled dimensions. Any discrepancies to be reported to the Architect before any work commences.
3. All construction works to comply with the latest KEBS Standard Codes of Practice.
4. pv denotes permanent ventilation & must be provided above all windows and doors except doors to WCs.
5. All walls less than 200mm thick to be reinforced with hoop iron at every course.
6. DPC denotes one layer of bituminous felt and should be provided under all external walls.
7. Water metre to be 300mm above ground level.
8. All RC works to Structural Engineer's details. Depth of foundation to be deterined on site but should not be less than 700mm.
9. Provide one row of 600x600x50mm precast concrete slabs around the building unless otherwise stated.
10. Heavy duty polythene sheeting and anti-termite treatment to be provided under ground floor slab.
11. Plinth level to be minimum 300mm from proposed parking level or existing ground level.
12. All surface beds to be cast on well compacted & consolidated filling.
13. Depth of foundation trenches to be minimum 600mm below the reduced ground level.
14. All service pipes to be minimum 450mm below reduced ground level.
15. All inspection chambers [IC] within the building drive-way & parking areas to be heavy duty, double seal air tight covers while drains in the same areas to be pvc pipes encased in 150mm concrete.
16. All materials and works to be approved on site. Any discrepancy to be referred to the architect.
17. All sanitary works to conform to M.O.H health standards.
18. The levels shown are architectural floor finish levels.
19. The Contractor needs to match the indicated levels with those of the Surveyor.
20. All dimensions are in millimetres [mm] unless otherwise stated.

No.	DATE	REVISIONS

PROJECT:

LOCATION:

PLOT L.R. No:

CLIENT:

CLIENT'S SIGNATURE DATE:

SHEET TITLE

SUBJECT: KINDERGATEN ELEVATIONS

DESIGNED:-

DRAWN:- EL.

CHECKED:-

SCALE:- 1:100

ISSUED FOR:

REV No:

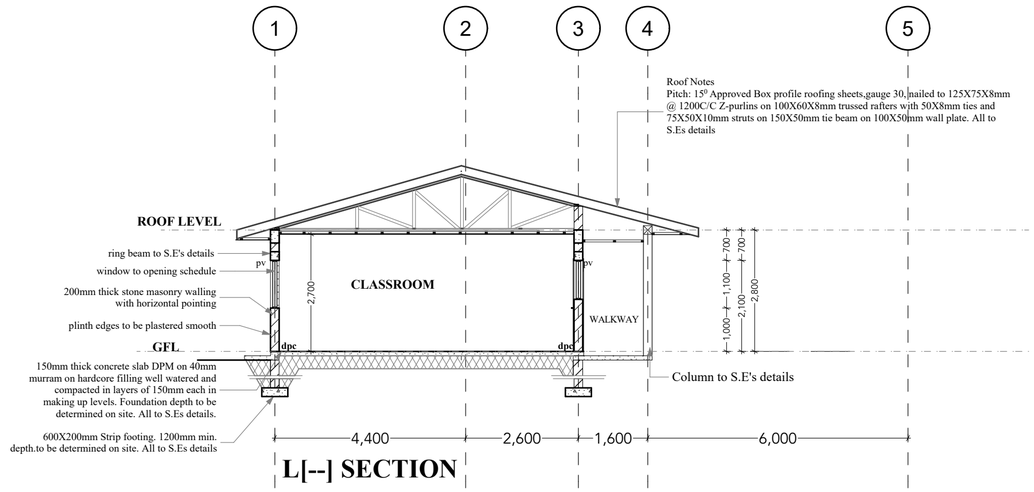
JOB No:-

SHEET No:-

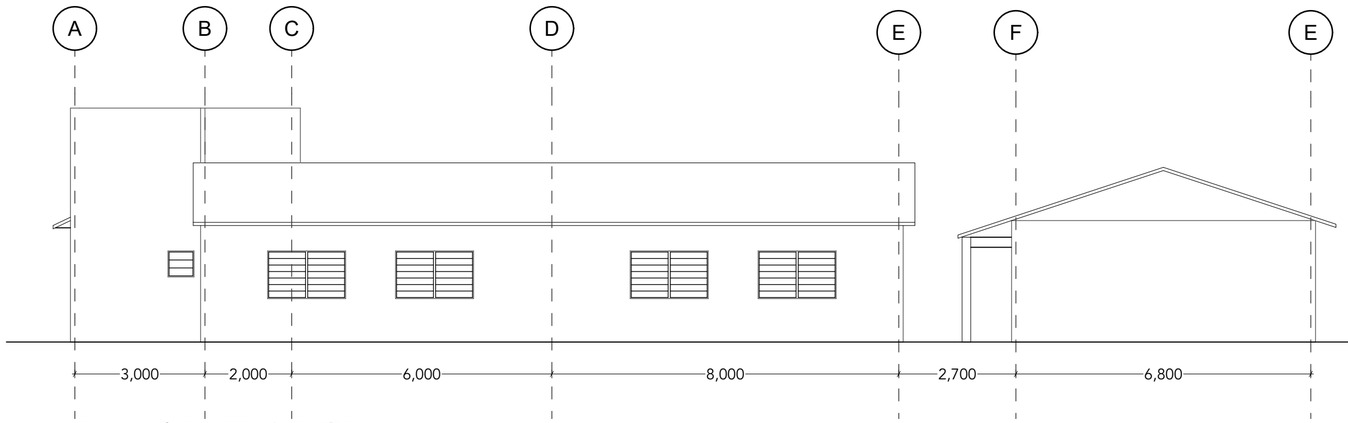
SHEET PLOT DATE:

PROJECT START DATE:

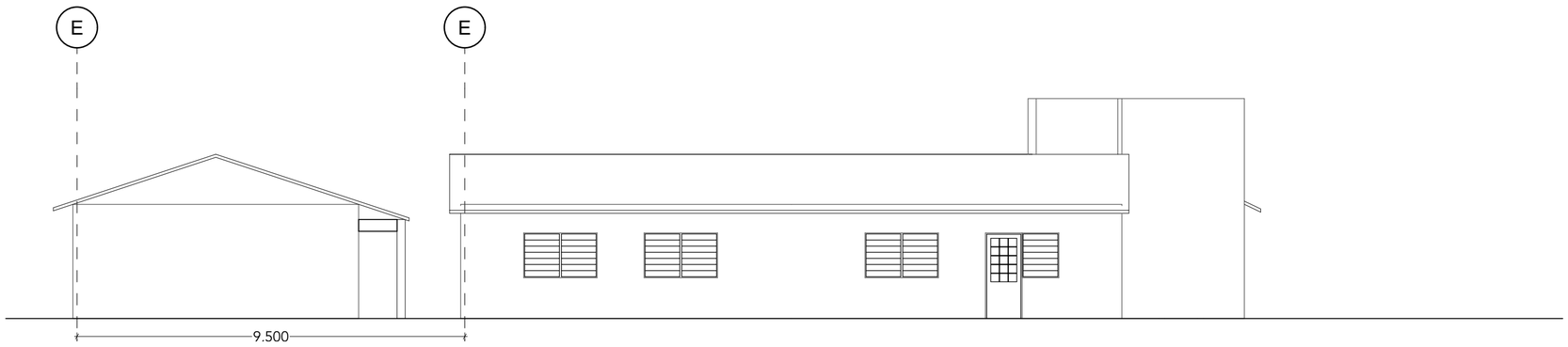
JOB Path:



L[--] SECTION



L[--] 6 ELEVATION
Scale 1:100



L[--] 1 ELEVATION
Scale 1:100

NOTES

1. This drawing is protected under the copyright Act & cannot be reproduced in part or in whole without the author's consent.
2. All dimensions to be checked on site. Written dimensions rule over scaled dimensions. Any discrepancies to be reported to the Architect before any work commences.
3. All construction works to comply with the latest KEBS Standard Codes of Practice.
4. pv denotes permanent ventilation & must be provided above all windows and doors except doors to WCs.
5. All walls less than 200mm thick to be reinforced with hoop iron at every course.
6. DPC denotes one layer of bituminous felt and should be provided under all external walls.
7. Water metre to be 300mm above ground level.
8. All RC works to Structural Engineer's details. Depth of foundation to be deterined on site but should not be less than 700mm.
9. Provide one row of 600x600x50mm precast concrete slabs around the building unless otherwise stated.
10. Heavy duty polythene sheeting and anti-termite treatment to be provided under ground floor slab.
11. Plinth level to be minimum 300mm from proposed parking level or existing ground level.
12. All surface beds to be cast on well compacted & consolidated filling.
13. Depth of foundation trenches to be minimum 600mm below the reduced ground level.
14. All service pipes to be minimum 450mm below reduced ground level.
15. All inspection chambers (IC) within the building drive-way & parking areas to be heavy duty, double seal air tight covers while drains in the same areas to be pvc pipes encased in 150mm concrete.
16. All materials and works to be approved on site. Any discrepancy to be referred to the architect.
17. All sanitary works to conform to M.O.H health standards.
18. The levels shown are architectural floor finish levels.
19. The Contractor needs to match the indicated levels with those of the Surveyor.
20. All dimensions are in millimetres [mm] unless otherwise stated.

No.	DATE	REVISIONS

PROJECT:

LOCATION:

PLOT L.R. No:

CLIENT:

CLIENT'S SIGNATURE DATE:

SHEET TITLE

SUBJECT: KINDERGATEN ELEVATIONS AND SECTION

DESIGNED:-

DRAWN:- EL.

CHECKED:-

SCALE:- 1:100

ISSUED FOR: REV No:

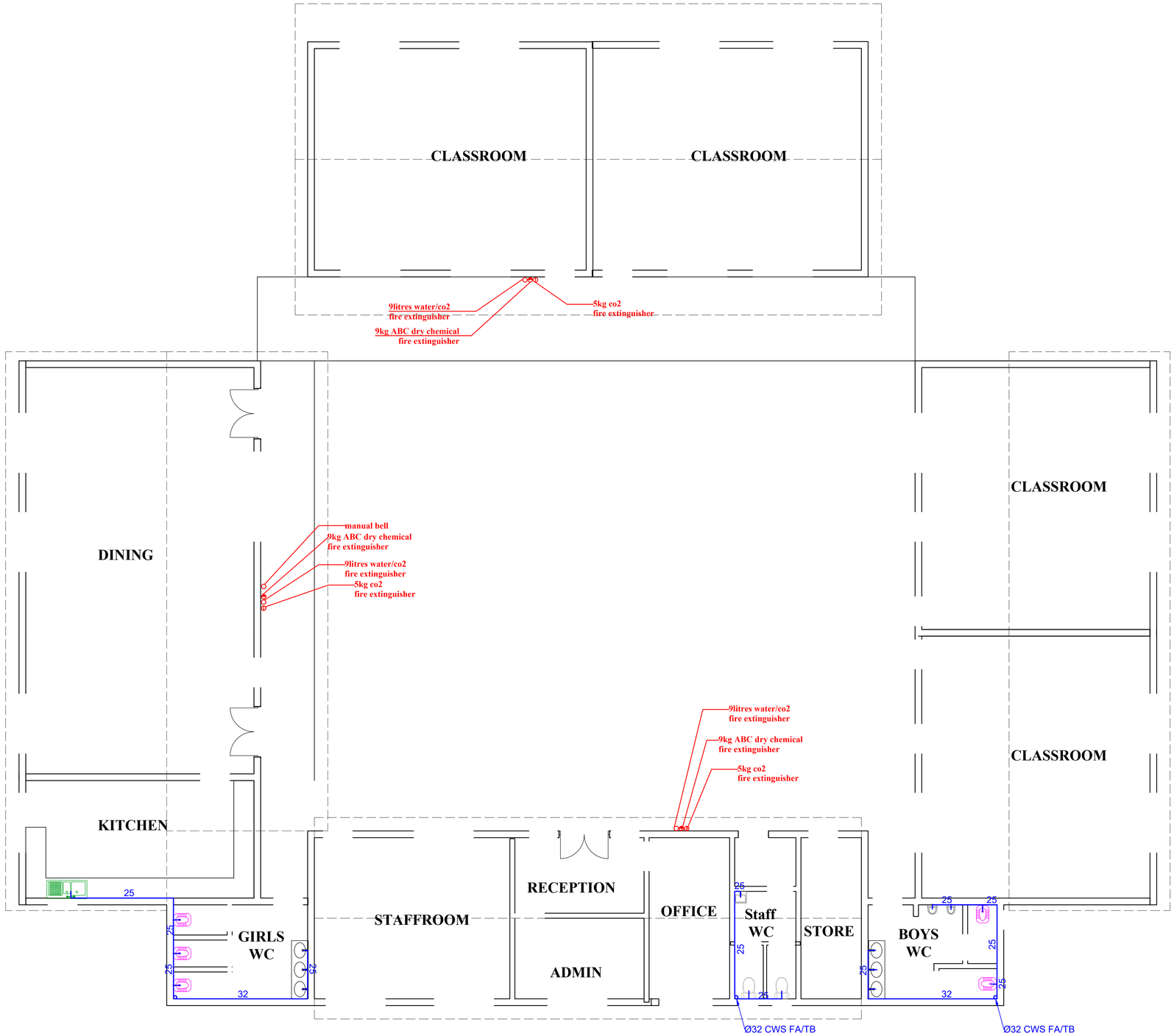
JOB No:-

SHEET No:-

SHEET PLOT DATE:

PROJECT START DATE:

JOB Path:



KINDERGARTEN TYPICAL PLUMBING AND FIRE FIGHTING FLOOR PLAN

GENERAL NOTES

1. This drawing to be read in conjunction with Engineers' drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

CONSTRUCTION

Approved anti-termite treatment & 1000 gauge polythene sheeting cover to be provided under all ground floor concrete slab on compacted hardcore to approval.
DPC to be 3ply bituminous felt to be provided under all walls.

STRUCTURAL

1. All Black cotton soil to be removed from below all building and paved surfaces
2. All reinforced concrete work will be in accordance with structural drawings.
3. Foundation depths to be determined on site to S.E approval
4. All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
5. All adjacent R.C work and masonry walls to be tied with strap irons at every course

MECHANICAL

1. All Plumbing and Drainage Work to comply with specifications
2. S.V.P denotes soil vent pipe and to be provided at the head of the drainage
3. Where drainage is shown under driveways and slabs, to be encased in 150mm thick concrete surround.
4. All underground foul and waste drain pipes shall be of PVC to comply with BS 5255
5. All ICs within building area , driveway and parking to have heavy duty ,double-seal airtight covers and walls to be 200mm.
6. Minimum slope in the drain pipes to be 1%
7. No chases for pipes will be allowed in the slabs
8. Sleeves will be allowed with written approval from S.E.
9. No cutting of concrete without express approval of the Architect or S .E
10. All testing of pipes must be coordinated with electrical and any conflicts must be resolved before works begin
11. Permanent vents denoted as P .V to be provided as shown on plan .

ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING
DEVELOPMENT

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: _____ **Date:** _____

DRAWING TITLE:
KINDERGARTEN PLUMBING AND FIRE FIGHTING FLOOR PLAN

SCALE:

DRAWN BY:

CHECKED BY:
Name: _____
Signature: _____ **Date:** _____

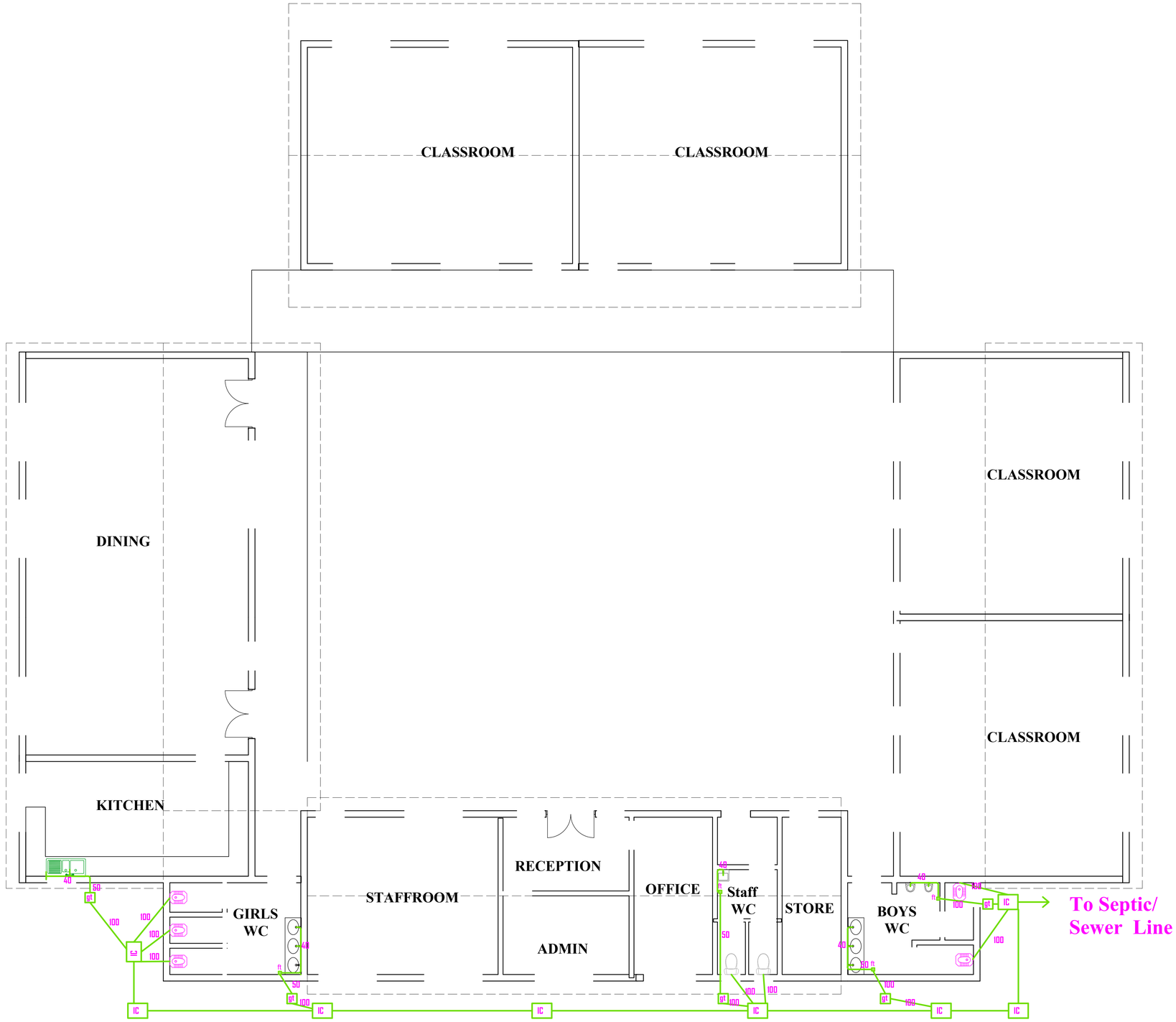
DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



KINDERGARTEN DRAINAGE FLOOR PLAN

GENERAL NOTES

1. This drawing to be read in conjunction with Engineers' drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

CONSTRUCTION

Approved anti-termite treatment & 1000 gauge polythene sheeting cover to be provided under all ground floor concrete slab on compacted hardcore to approval.
DPC to be 3ply bituminous felt to be provided under all walls.

STRUCTURAL

1. All Black cotton soil to be removed from below all building and paved surfaces
2. All reinforced concrete work will be in accordance with structural drawings .
3. Foundation depths to be determined on site to S.E approval
4. All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
5. All adjacent R.C work and masonry walls to be tied with strap irons at every course

MECHANICAL

1. All Plumbing and Drainage Work to comply with specifications
2. S.V.P denotes soil vent pipe and to be provided at the head of the drainage
3. Where drainage is shown under driveways and slabs, to be encased in 150mm thick concrete surround.
4. All underground foul and waste drain pipes shall be of PVC to comply with BS 5255
5. All ICs within building area , driveway and parking to have heavy duty ,double-seal airtight covers and walls to be 200mm.
6. Minimum slope in the drain pipes to be 1%
7. No chases for pipes will be allowed in the slabs
8. Sleeves will be allowed with written approval from S.E.
9. No cutting of concrete without express approval of the Architect or S .E
10. All testing of pipes must be coordinated with electrical and any conflicts must be resolved before works begin
11. Permanent vents denoted as P .V to be provided as shown on plan .

ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING
DEVELOPMENT

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: _____ **Date:** _____

DRAWING TITLE:
KINDERGARTEN DRAINAGE FLOOR PLAN

SCALE:

DRAWN BY:

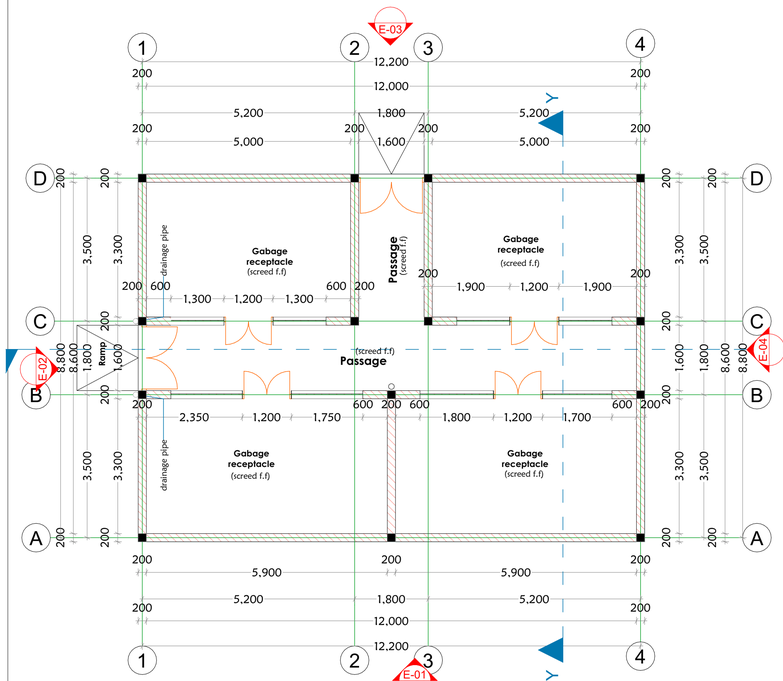
CHECKED BY:
Name: _____
Signature: _____ **Date:** _____

DATE:

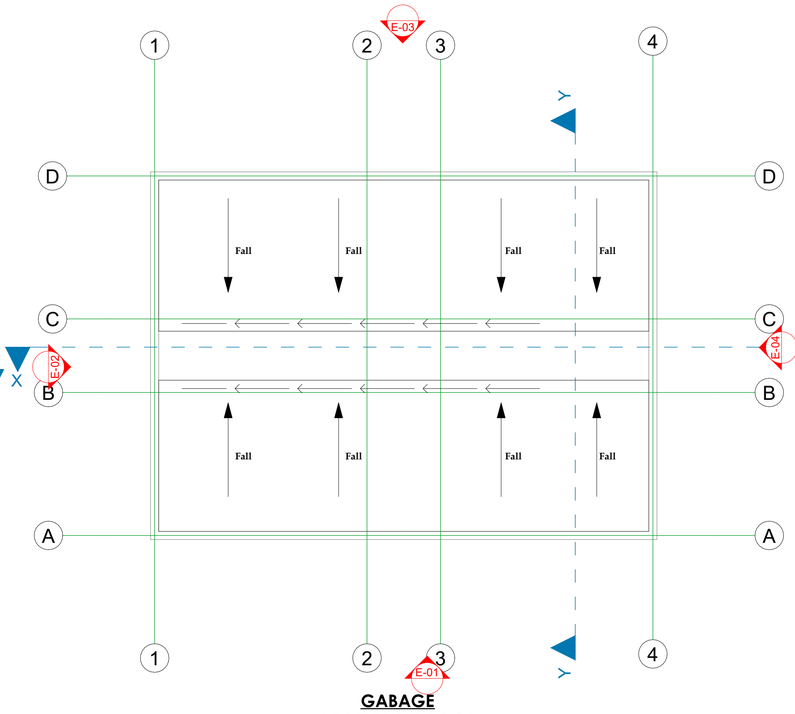
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

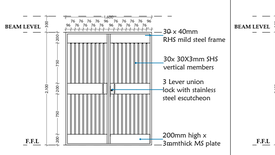
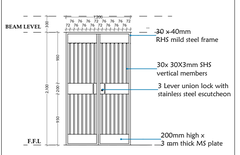
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

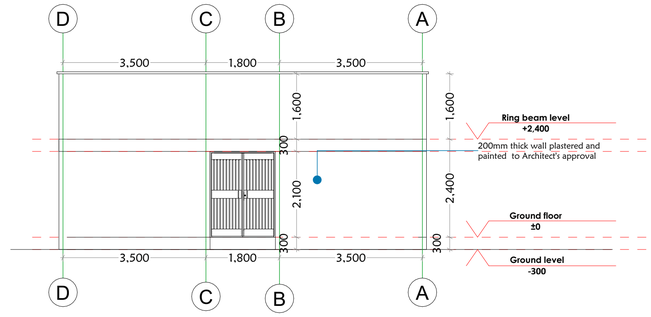


GABAGE RECEPTACLE FLOOR PLAN

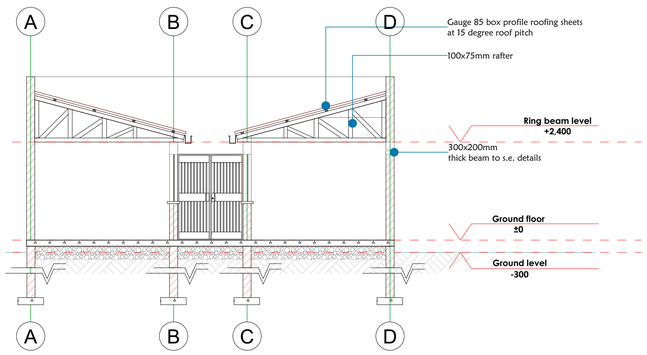


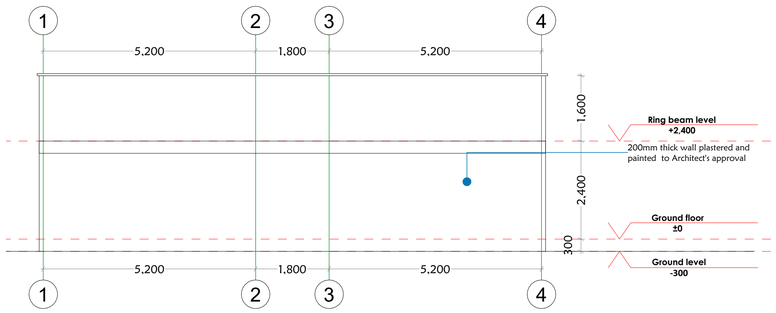
GABAGE RECEPTACLE ROOF PLAN

DOOR SCHEDULE		
		
	30 x 40mm RHS mild steel frame 30x 30X3mm SHS vertical members 3 Lever union lock with stainless steel escutcheon 200mm high x 3ammthick MS plate	30 x 40mm RHS mild steel frame 30x 30X3mm SHS vertical members 3 Lever union lock with stainless steel escutcheon 200mm high x 3 mm thick MS plate
DOOR NO.	01	02
DOOR TYPE	SPRAY PAINTED STEEL CASEMENT EXTERIOR DOOR	SPRAY PAINTED STEEL CASEMENT EXTERIOR DOOR
DOOR NO.S & LOCATION		
IRON MONGERY	-11/2 PAIRS OF HEAVY DUTY PIN TYPE HINGES -1 NO. RUBBER DOOR STOP -1 NO. 3 LEVER UNION LOCK -2 NO. 300 MM STAINLESS STEEL DOOR HANDLE	-11/2 PAIRS OF HEAVY DUTY PIN TYPE HINGES -1 NO. RUBBER DOOR STOP -1 NO. 3 LEVER UNION LOCK -2 NO. 300 MM STAINLESS STEEL DOOR HANDLE
FINISHES	ONE COAT PRIMER, TWO COATS GLOSS PAINT	ONE COAT PRIMER, TWO COATS GLOSS PAINT

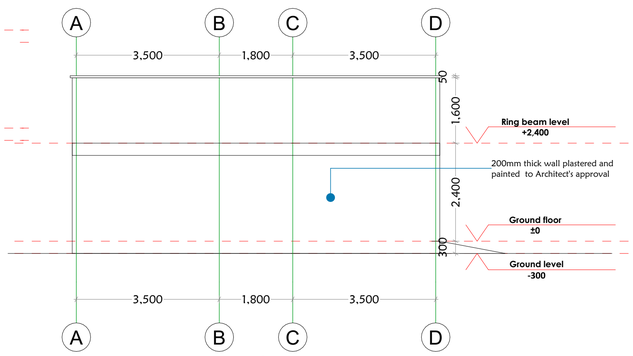


ELEVATION 02

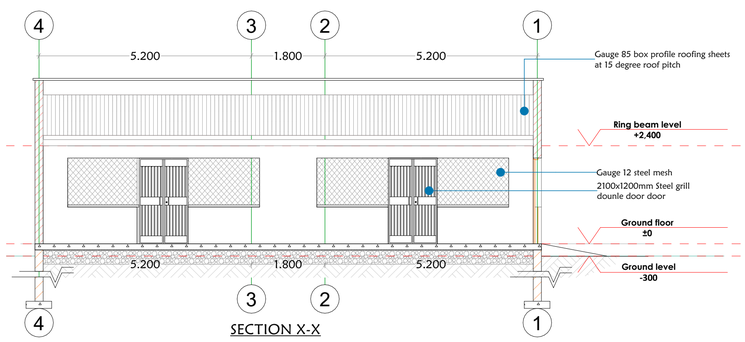




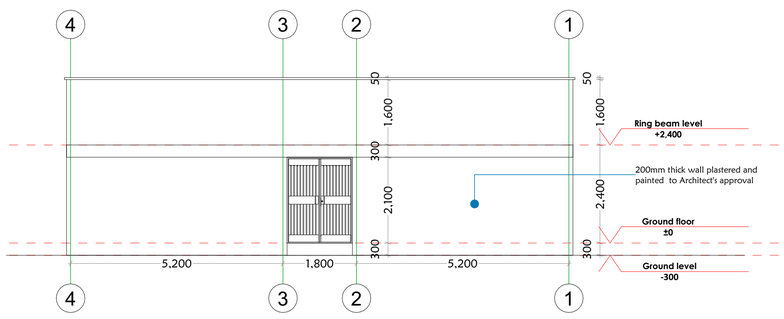
ELEVATION 01



ELEVATION 04



SECTION X-X



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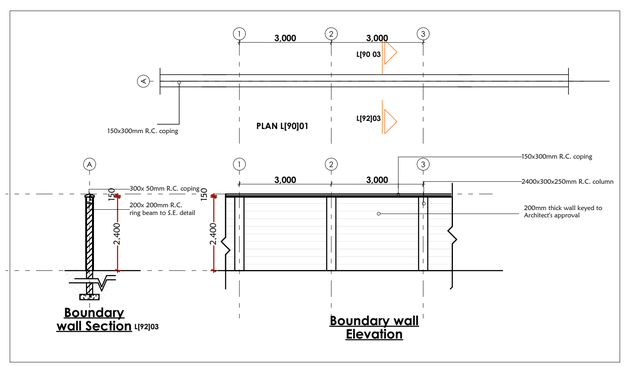

Boundary wall Section L[92]03

Boundary wall Elevation

GENERAL NOTES

1. This drawing to be read in conjunction with Engineers' drawings.
2. All dimensions are in mm unless otherwise specified.
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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect.

CONSTRUCTION

Approved anti-termite treatment & 1000 gauge polythene sheeting cover to be provided under all ground floor concrete slab on compacted hardcore to approval.
DPC to be 3ply bituminous felt to be provided under all walls.

STRUCTURAL

1. All Black cotton soil to be removed from below all building and paved surfaces
2. All reinforced concrete work will be in accordance with structural drawings.
3. Foundation depths to be determined on site to S.E approval
4. All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
5. All adjacent R.C work and masonry walls to be tied with strap irons at every course

MECHANICAL

1. All Plumbing and Drainage Work to comply with specifications
2. S.V.P denotes soil vent pipe and to be provided at the head of the drainage
3. Where drainage is shown under driveways and slabs, to be encased in 150mm thick concrete surround.
4. All underground foul and waste drain pipes shall be of PVC to comply with BS5255
5. All ICs within building area, driveway and parking to have heavy duty,double-seal airtight covers and walls to be 200mm.
6. Minimum slope in the drain pipes to be 1%
7. No chases for pipes will be allowed in the slabs
8. Sleeves will be allowed with written approval from S.E.
9. No cutting of concrete without express approval of the Architect or S.E
10. All testing of pipes must be coordinated with electrical and any conflicts must be resolved before works begin
11. Permanent vents denoted as P.V to be provided as shown on plan.

ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature:_____ **Date:**_____

DRAWING TITLE:
FLOOR PLANS, SECT'S & ELEV'S

SCALE:

DRAWN BY: F.G.W.

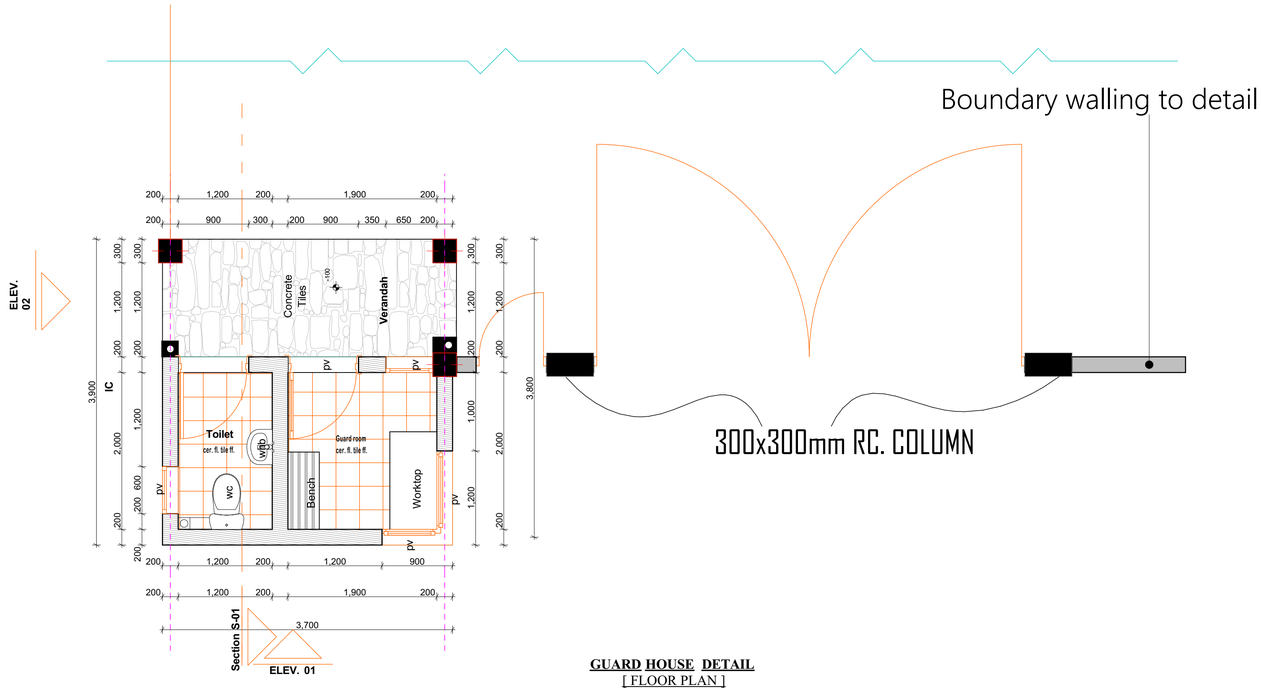
CHECKED BY:
Name:_____
Signature:_____ **Date:**_____

DATE:

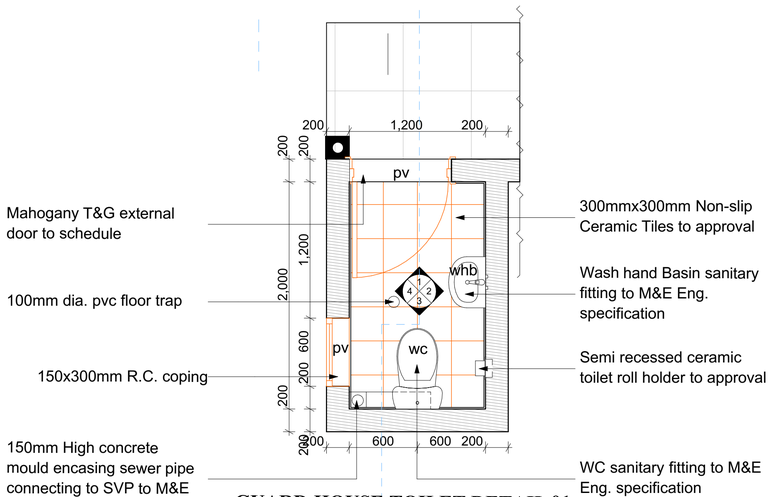
MINISTRY OF LANDS , PUBLIC WORKS , HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

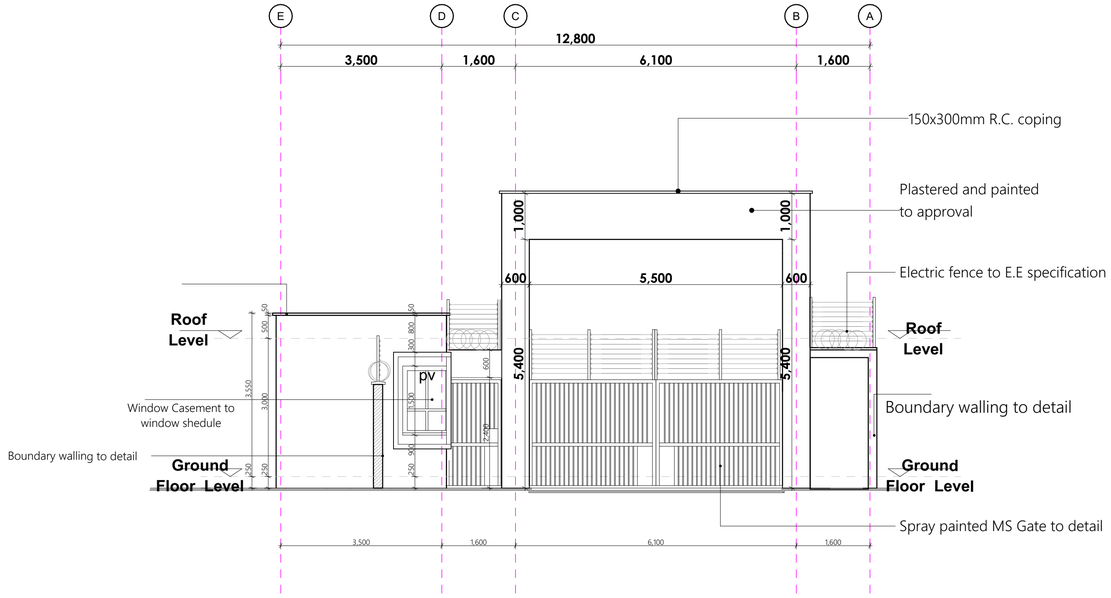
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



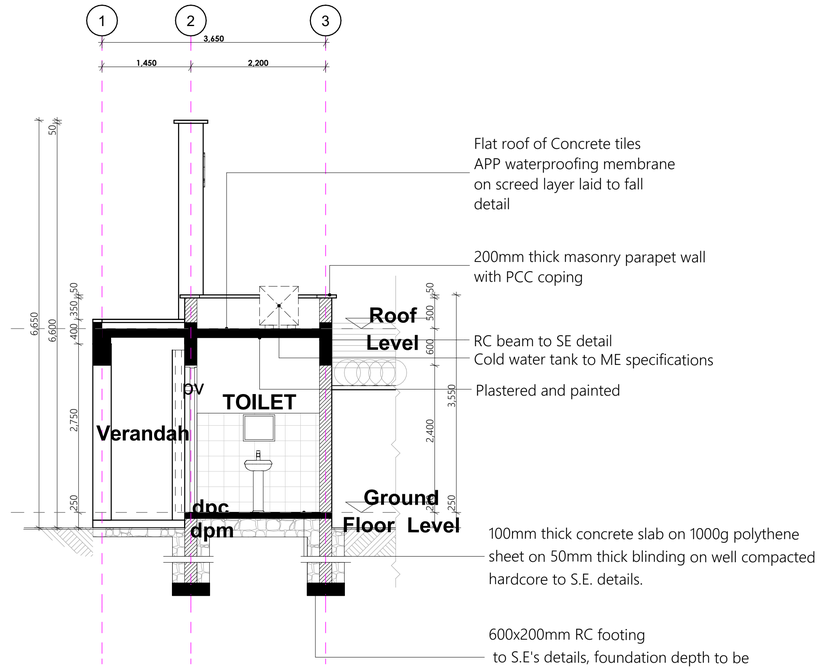
GUARD HOUSE DETAIL
[FLOOR PLAN]



GUARD HOUSE TOILET DETAIL 01
[FLOOR PLAN]



ELEVATION 01



Section S-01

GENERAL NOTES

1. This drawing to be read in conjunction with Engineers' drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled. Only figured dimensions should be used.
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect.

CONSTRUCTION

Approved anti-termite treatment & 1000 gauge polythene sheeting cover to be provided under all ground floor concrete slab on compacted hardcore to approval.
DPC to be 3ply bituminous felt to be provided under all walls.

STRUCTURAL

1. All Black cotton soil to be removed from below all building and paved surfaces
2. All reinforced concrete work will be in accordance with structural drawings.
3. Foundation depths to be determined on site to S.E approval
4. All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
5. All adjacent R.C work and masonry walls to be tied with strap irons at every course

MECHANICAL

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2. S.V.P denotes soil vent pipe and to be provided at the head of the drainage
3. Where drainage is shown under driveways and slabs, to be encased in 150mm thick concrete surround.
4. All underground foul and waste drain pipes shall be of PVC to comply with BS5255
5. All ICs within building area, driveway and parking to have heavy duty,double-seal airtight covers and walls to be 200mm.
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7. No chases for pipes will be allowed in the slabs
8. Sleeves will be allowed with written approval from S.E.
9. No cutting of concrete without express approval of the Architect or S.E
10. All testing of pipes must be coordinated with electrical and any conflicts must be resolved before works begin
11. Permanent vents denoted as P.V to be provided as shown on plan.

ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature: _____ **Date:** _____

DRAWING TITLE:
GATE HOUSE DETAILS

SCALE:
1:20, 1:75

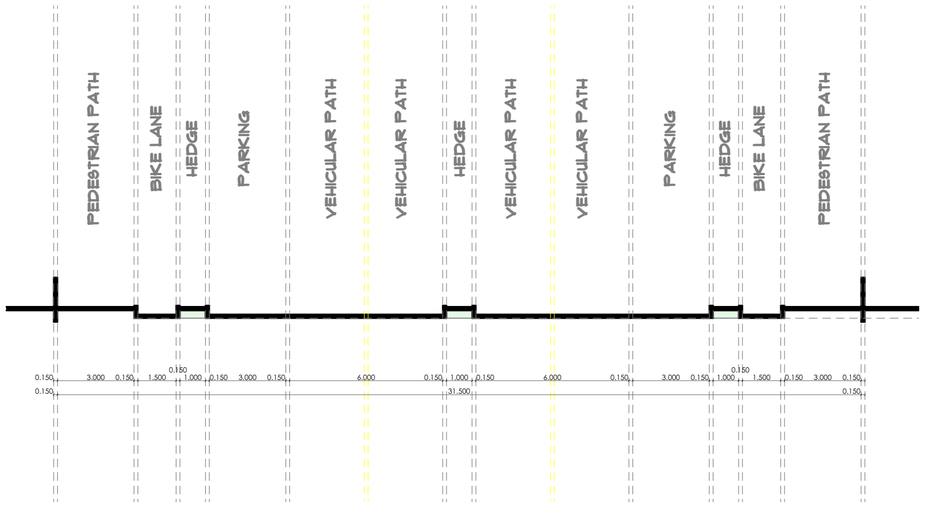
DRAWN BY:

CHECKED BY:
Name: _____
Signature: _____ **Date:** 13/03/2024

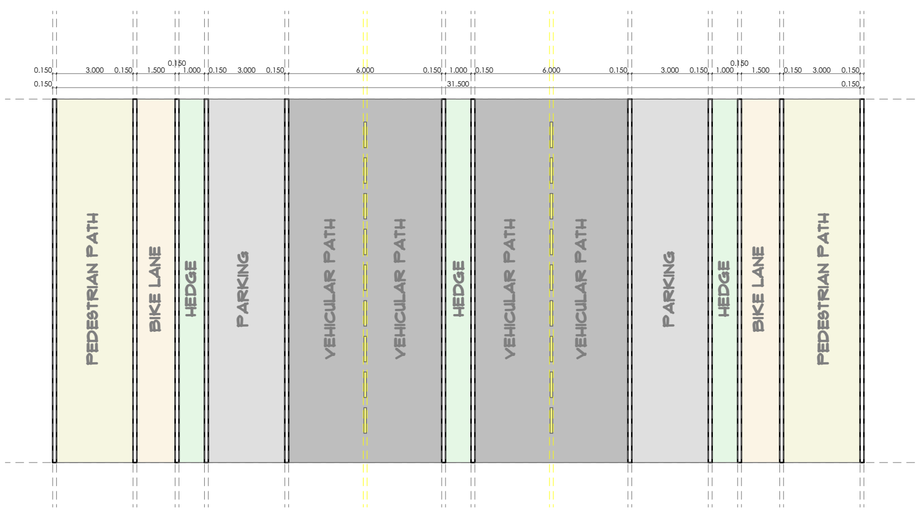
DATE:

MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

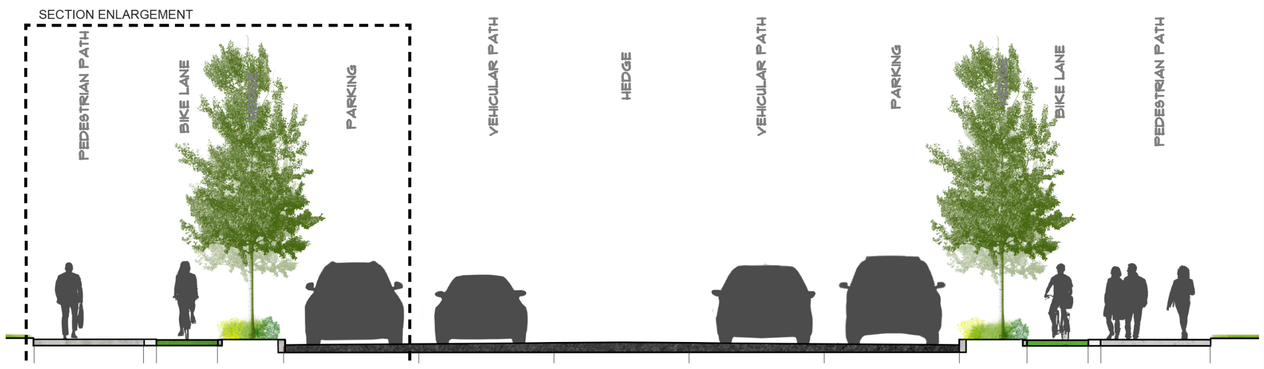


ROAD SECTIONAL PROFILE



ROAD DESIGN OPTION A

PEDESTRIAN PATH AND ROAD INTERACTION ILLUSTRATION



ROAD SECTIONAL PROFILE ILLUSTRATION

GENERAL NOTES

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3. Drawings are not to be scaled. Only figured dimensions should be used.
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect.

CONSTRUCTION

Approved anti-termite treatment & 1000 gauge polythene sheeting cover to be provided under all ground floor concrete slab on compacted hardcore to approval.
DPC to be 3ply bituminous felt to be provided under all walls.

STRUCTURAL

1. All Black cotton soil to be removed from below all building and paved surfaces
2. All reinforced concrete work will be in accordance with structural drawings.
3. Foundation depths to be determined on site to S.E approval
4. All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
5. All adjacent R.C work and masonry walls to be tied with strap irons at every course

MECHANICAL

1. All Plumbing and Drainage Work to comply with specifications
2. S.V.P denotes soil vent pipe and to be provided at the head of the drainage
3. Where drainage is shown under driveways and slabs, to be encased in 150mm thick concrete surround.
4. All underground foul and waste drain pipes shall be of PVC to comply with BS5255
5. All ICs within building area, driveway and parking to have heavy duty,double-seal airtight covers and walls to be 200mm.
6. Minimum slope in the drain pipes to be 1%
7. No chases for pipes will be allowed in the slabs
8. Sleeves will be allowed with written approval from S.E.
9. No cutting of concrete without express approval of the Architect or S.E
10. All testing of pipes must be coordinated with electrical and any conflicts must be resolved before works begin
11. Permanent vents denoted as P.V to be provided as shown on plan.

ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _ _

DRAWING TITLE:
ROAD DESIGN **OPTION A**

SCALE:
1:500

DRAWN BY:
ML

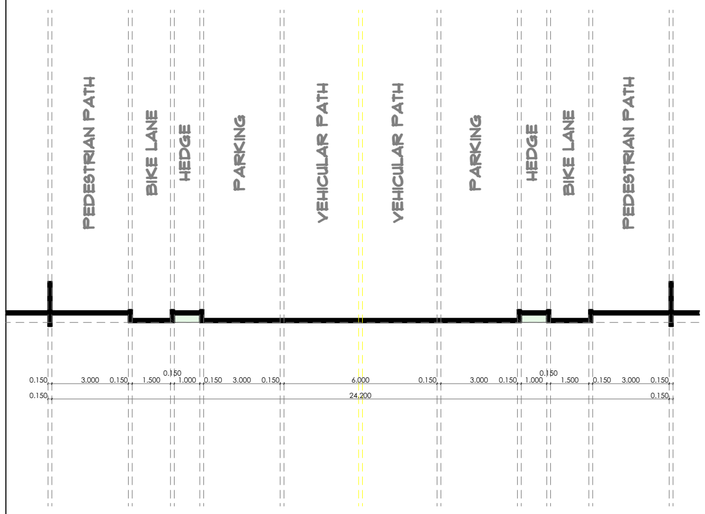
CHECKED BY:
Name:_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _ _

DATE:
MAY 2023

MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

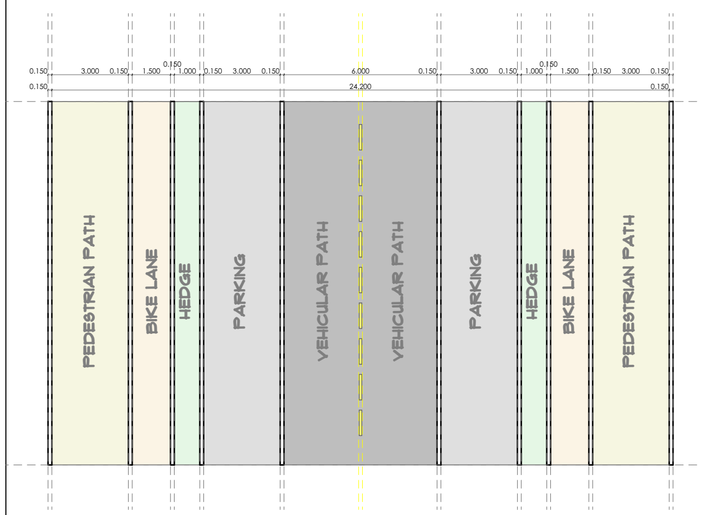
STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



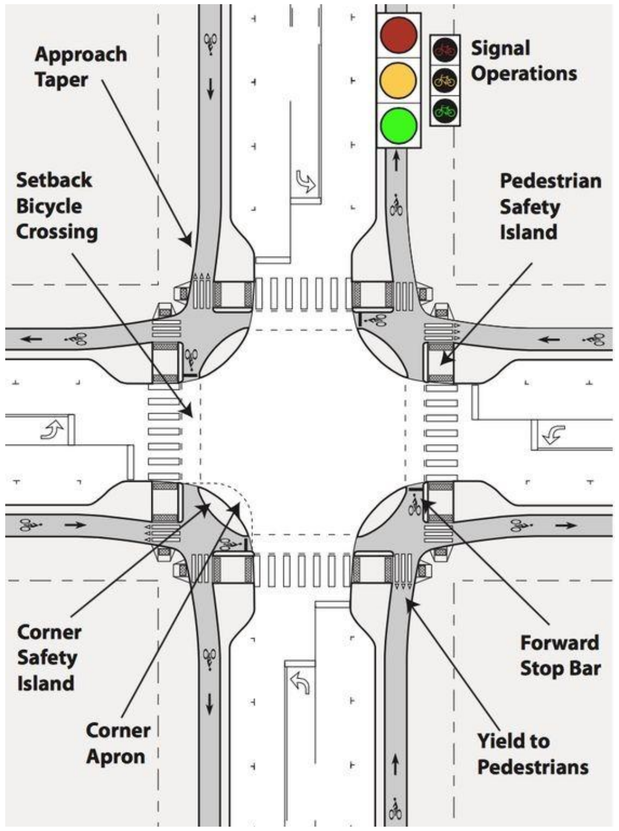
ROAD SECTIONAL PROFILE

ROAD ACTIVITY FLOW ILLUSTRATION

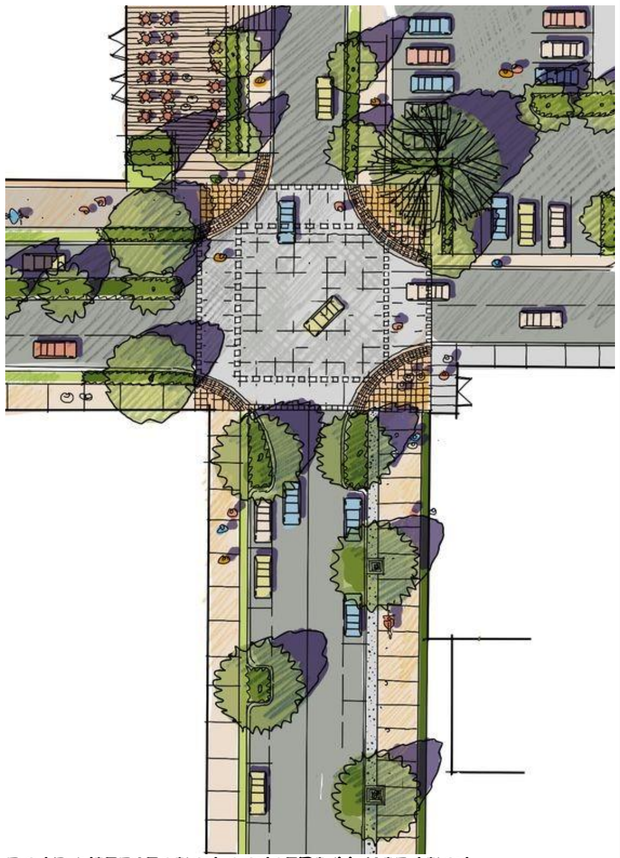


ROAD DESIGN OPTION B

BIKE LANE AND VEHICULAR TRAFFIC INTERACTION ILLUSTRATION



ROAD INTERSECTION CONCEPT ILLUSTRATION



ROAD INTERSECTION CONCEPT ILLUSTRATION

GENERAL NOTES

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CONSTRUCTION

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DPC to be 3ply bituminous felt to be provided under all walls.

STRUCTURAL

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2. All reinforced concrete work will be in accordance with structural drawings.
3. Foundation depths to be determined on site to S.E approval
4. All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
5. All adjacent R.C work and masonry walls to be tied with strap irons at every course

MECHANICAL

1. All Plumbing and Drainage Work to comply with specifications
2. S.V.P denotes soil vent pipe and to be provided at the head of the drainage
3. Where drainage is shown under driveways and slabs, to be encased in 150mm thick concrete surround.
4. All underground foul and waste drain pipes shall be of PVC to comply with BS5255
5. All ICs within building area, driveway and parking to have heavy duty,double-seal airtight covers and walls to be 200mm.
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10. All testing of pipes must be coordinated with electrical and any conflicts must be resolved before works begin
11. Permanent vents denoted as P.V to be provided as shown on plan.

ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature:_ _ _ _ _ _ **Date:**_ _ _ _ _ _

DRAWING TITLE:
ROAD DESIGN **OPTION B**

SCALE:
1:500

DRAWN BY:
ML

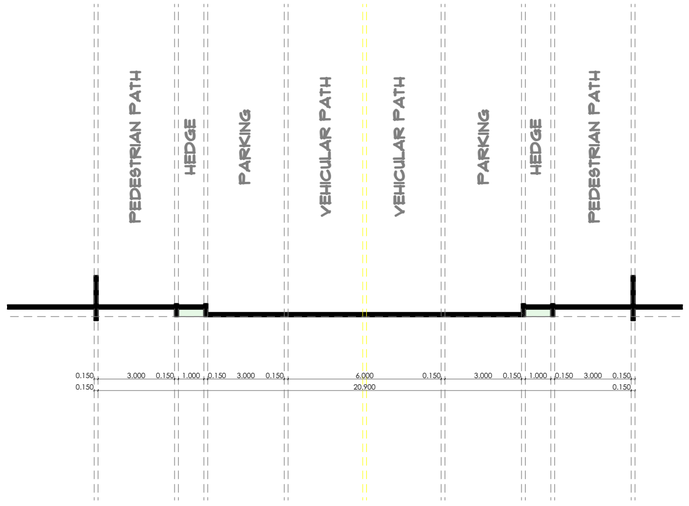
CHECKED BY:
Name:_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Signature:_ _ _ _ _ _ **Date:**_ _ _ _ _ _

DATE:
MAY 2023

MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

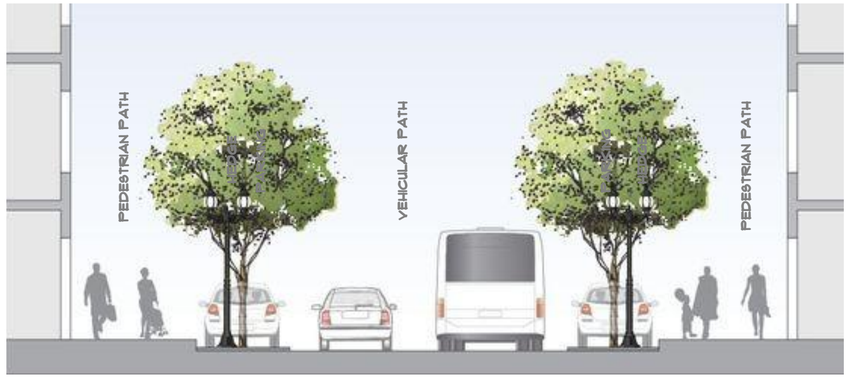
STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

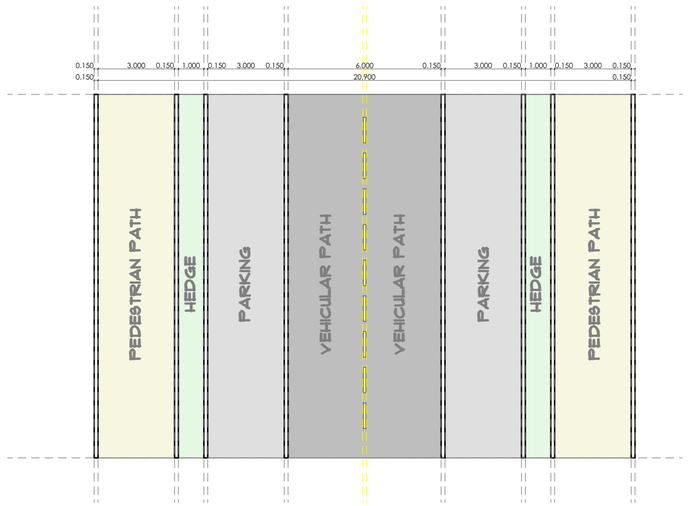


ROAD SECTIONAL PROFILE

ROAD ACTIVITY FLOW ILLUSTRATION

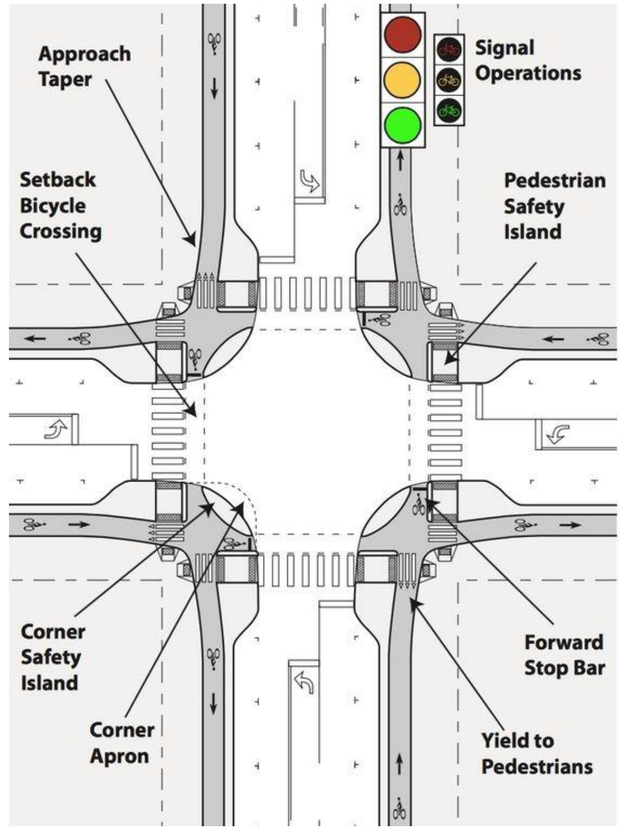


ROAD SECTIONAL PROFILE CONCEPT ILLUSTRATION

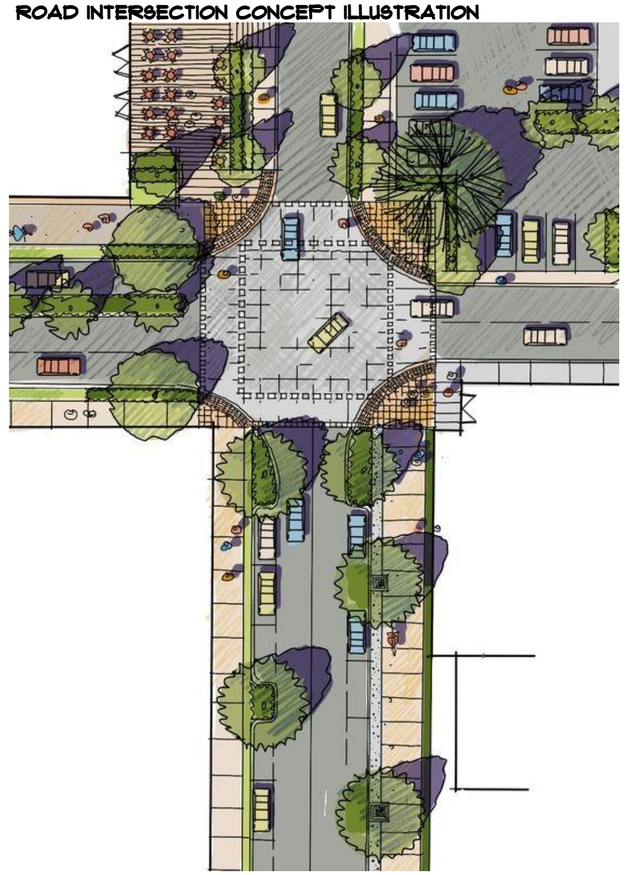


ROAD DESIGN OPTION C

ROAD INTERSECTION CONCEPT ILLUSTRATION



ROAD INTERSECTION CONCEPT ILLUSTRATION



ROAD INTERSECTION CONCEPT ILLUSTRATION

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DPC to be 3ply bituminous felt to be provided under all walls.

STRUCTURAL

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MECHANICAL

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11. Permanent vents denoted as P.V to be provided as shown on plan.

ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

DRAWING TITLE:
ROAD DESIGN **OPTION C**

SCALE:
1:500

DRAWN BY:
ML

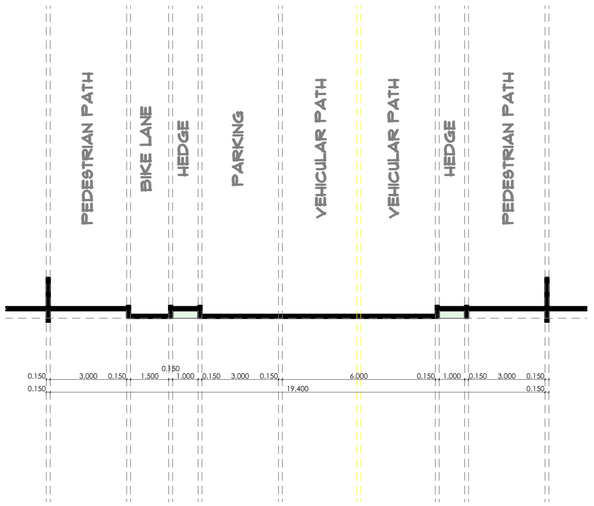
CHECKED BY:
Name:_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

DATE:
MAY 2023

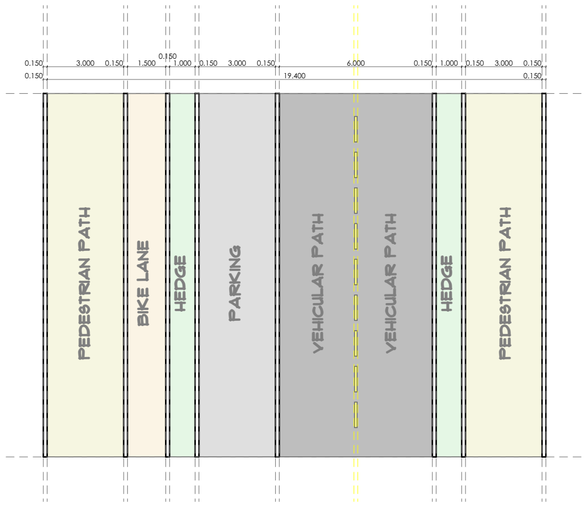
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

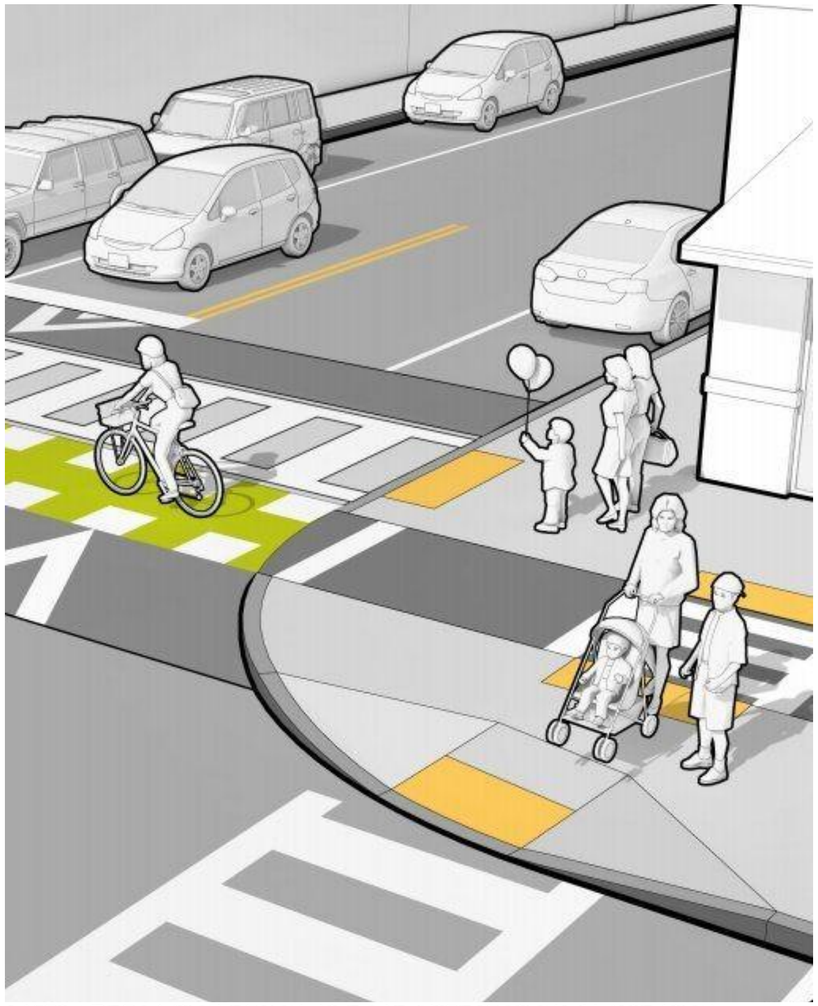
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



ROAD SECTIONAL PROFILE

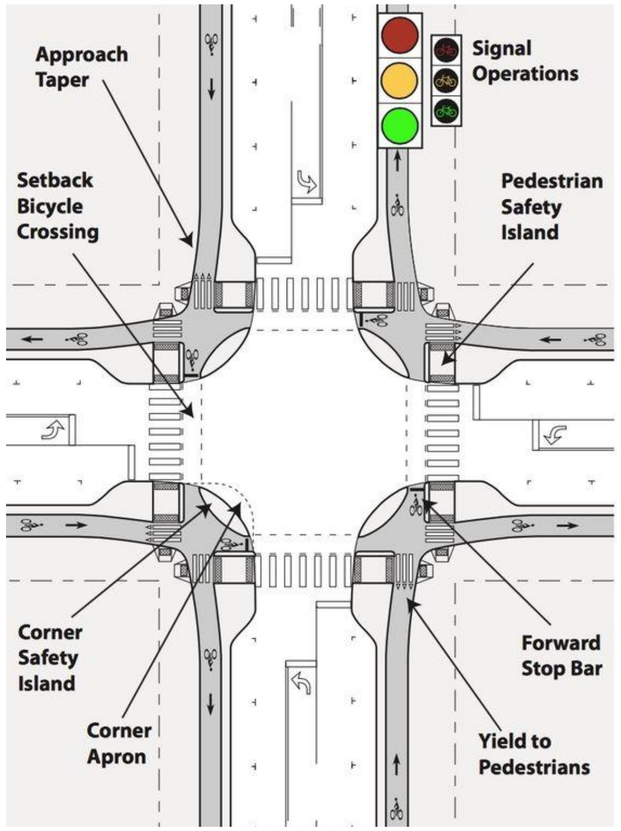


ROAD DESIGN OPTION D



SAFETY PRECAUTION DESIGN AT ROAD INTERSECTIONS ILLUSTRATION

BIKE LANE AND VEHICULAR TRAFFIC INTERACTION ILLUSTRATION



ROAD INTERSECTION CONCEPT ILLUSTRATION

ROAD INTERSECTION CONCEPT ILLUSTRATION

GENERAL NOTES

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STRUCTURAL

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MECHANICAL

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ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature:_ _ _ _ _ _ **Date:**_ _ _ _ _ _

DRAWING TITLE:
ROAD DESIGN **OPTION D**

SCALE:
1:500

DRAWN BY:
ML

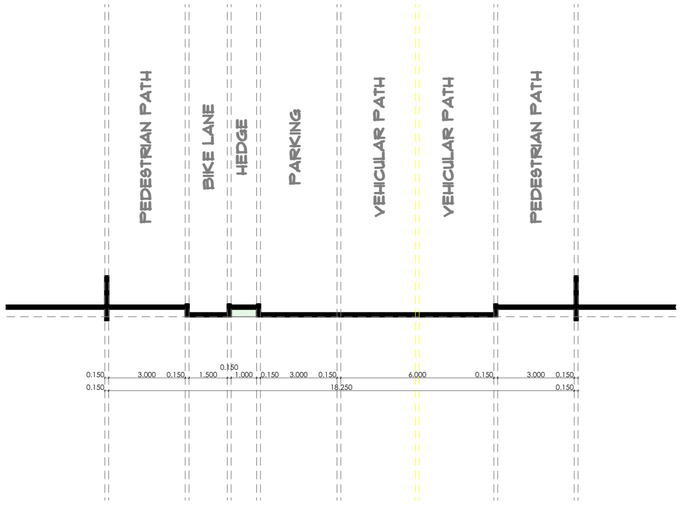
CHECKED BY:
Name:_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Signature:_ _ _ _ _ _ **Date:**_ _ _ _ _ _

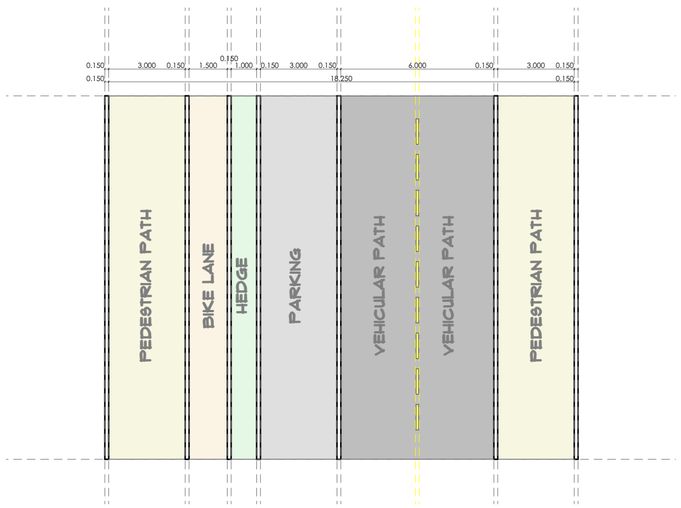
DATE:
MAY 2023

MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

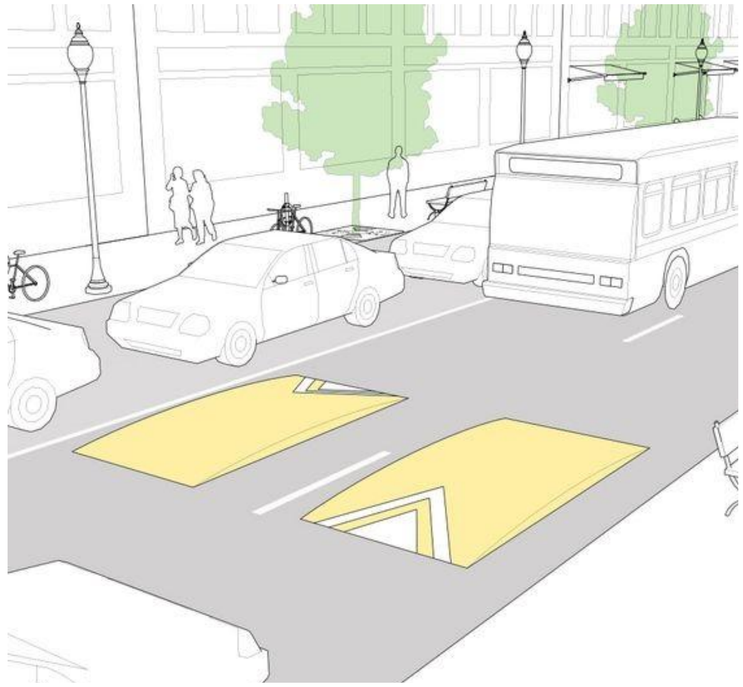
STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

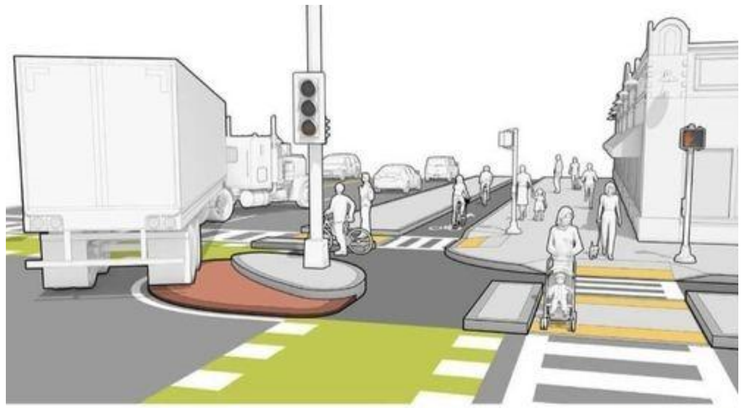




ROAD DESIGN OPTION E

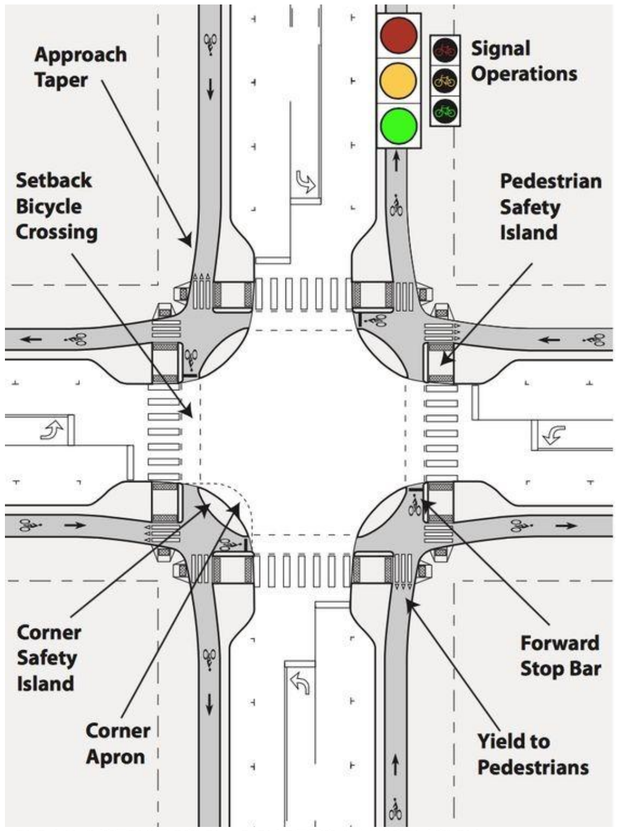


ROAD ACTIVITY FLOW ILLUSTRATION

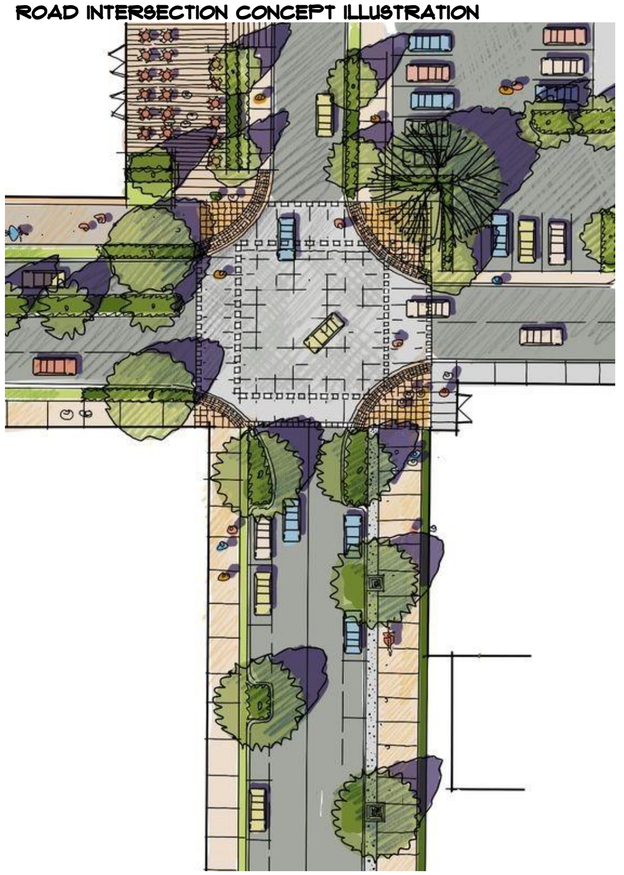


SAFETY PRECAUTION DESIGN AT ROAD INTERSECTIONS ILLUSTRATION

BIKE LANE AND VEHICULAR TRAFFIC INTERACTION ILLUSTRATION



ROAD INTERSECTION CONCEPT ILLUSTRATION



ROAD INTERSECTION CONCEPT ILLUSTRATION

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STRUCTURAL

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ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

DRAWING TITLE:
ROAD DESIGN **OPTION E**

SCALE:
1:500

DRAWN BY:
ML

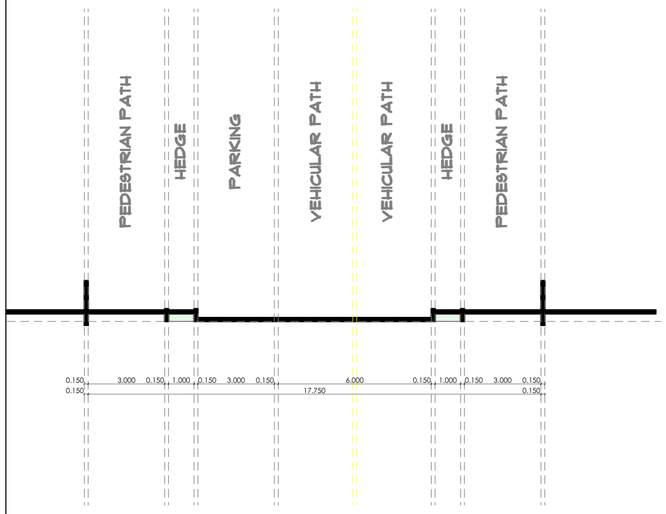
CHECKED BY:
Name:_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

DATE:
MAY 2023

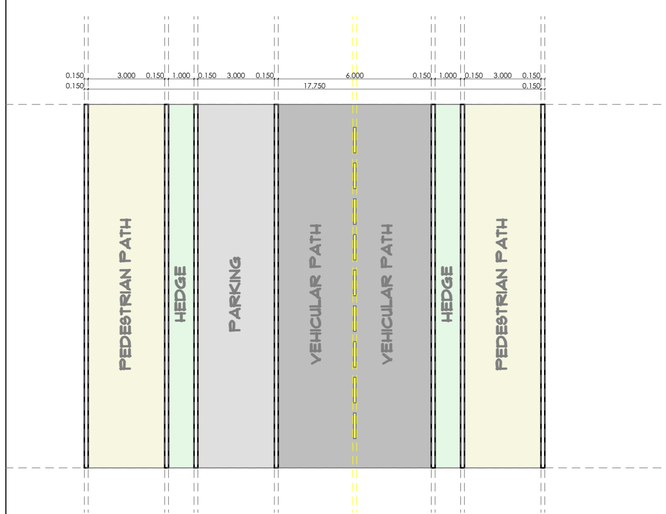
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

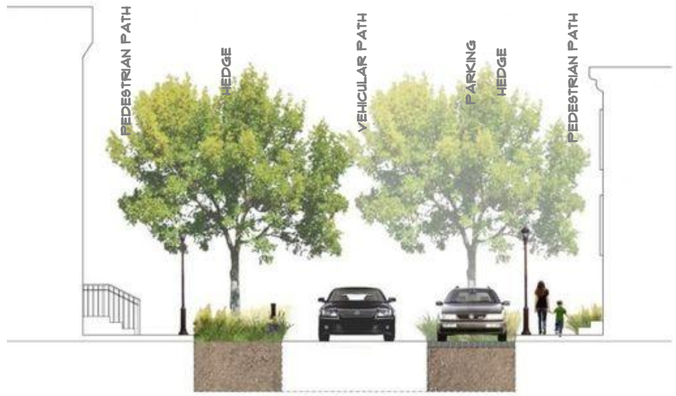
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



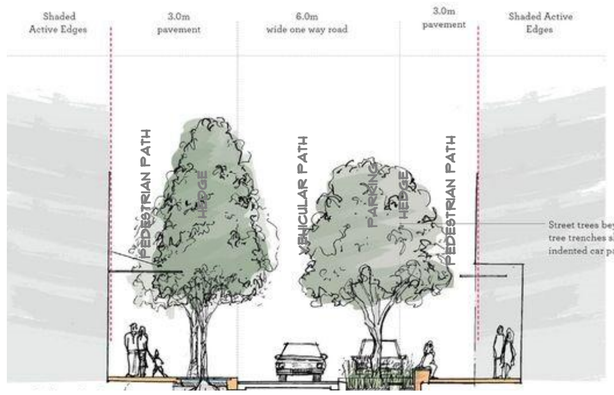
ROAD SECTIONAL PROFILE



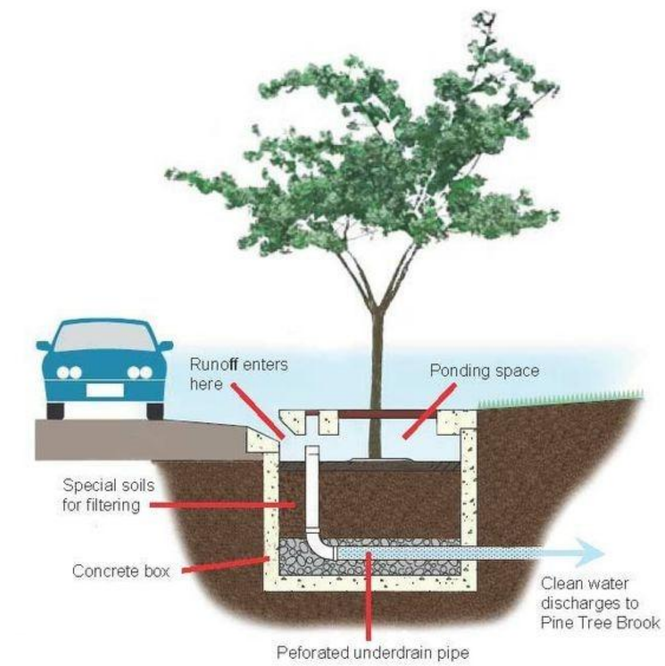
ROAD DESIGN OPTION F



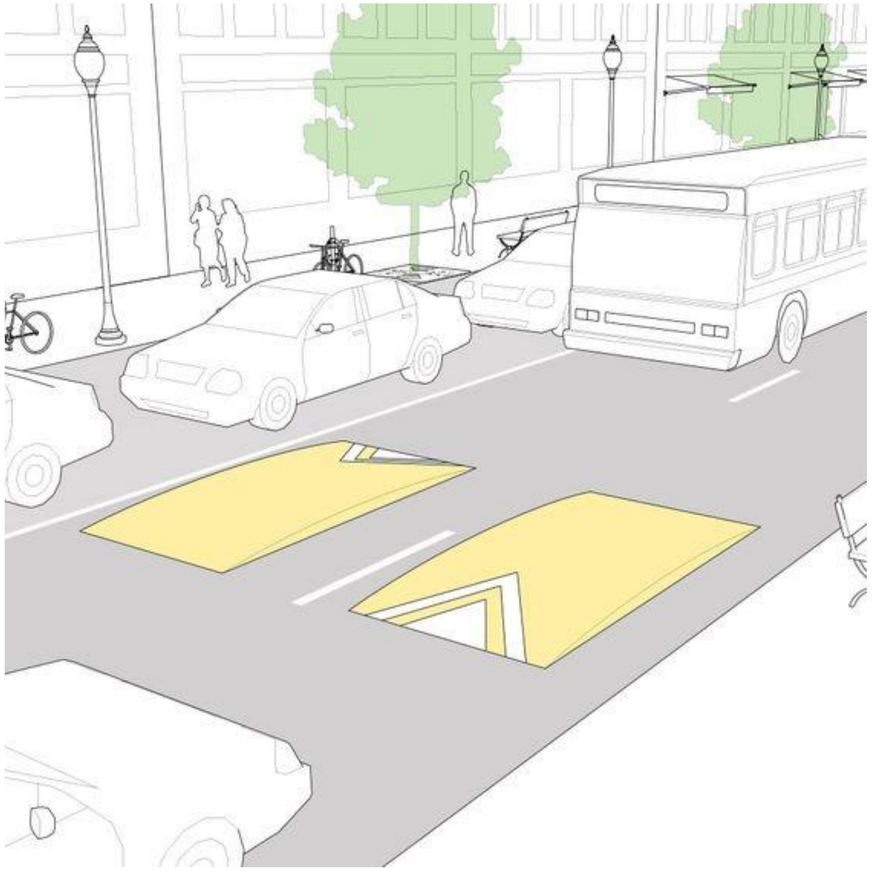
ROAD SECTIONAL PROFILE CONCEPT ILLUSTRATION



ROAD SECTIONAL PROFILE CONCEPT ILLUSTRATION



ROAD DRAINAGE TO HEDGE DETAIL CONCEPT



ROAD ACTIVITY FLOW ILLUSTRATION

ROAD ACTIVITY FLOW ILLUSTRATION

GENERAL NOTES

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ELECTRICAL

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PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature:_ _ _ _ _ _ **Date:**_ _ _ _ _ _

DRAWING TITLE:
ROAD DESIGN **OPTION F**

SCALE:
1:500

DRAWN BY:
ML

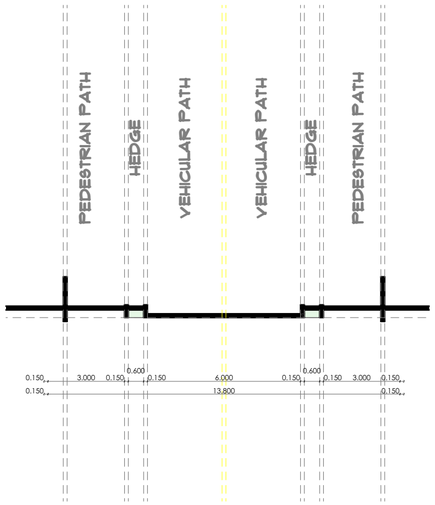
CHECKED BY:
Name:_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Signature:_ _ _ _ _ _ **Date:**_ _ _ _ _ _

DATE:
MAY 2023

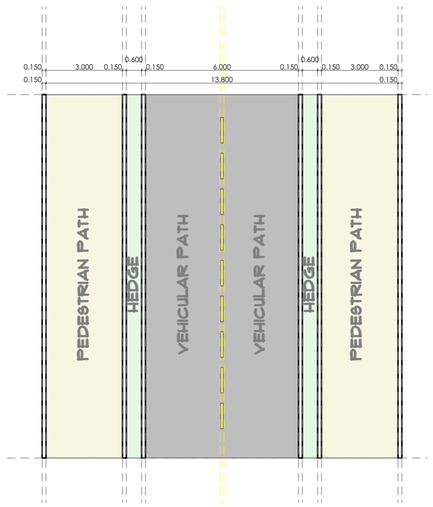
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

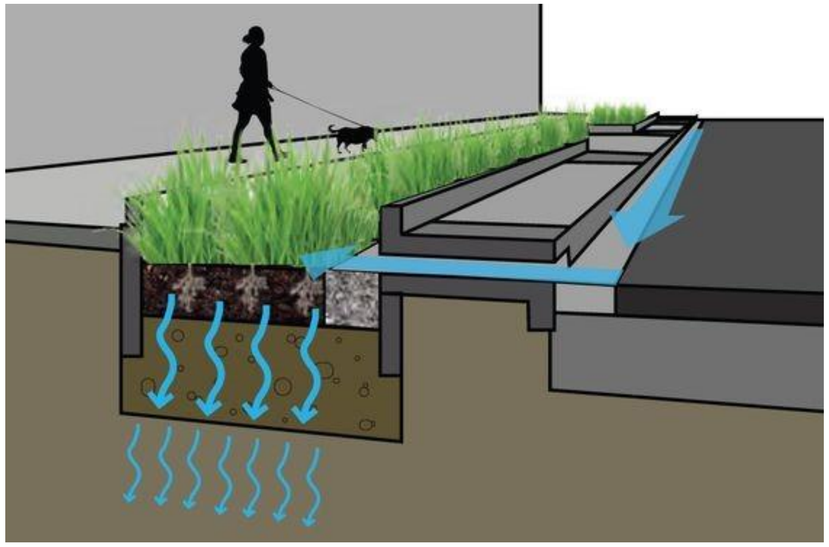
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



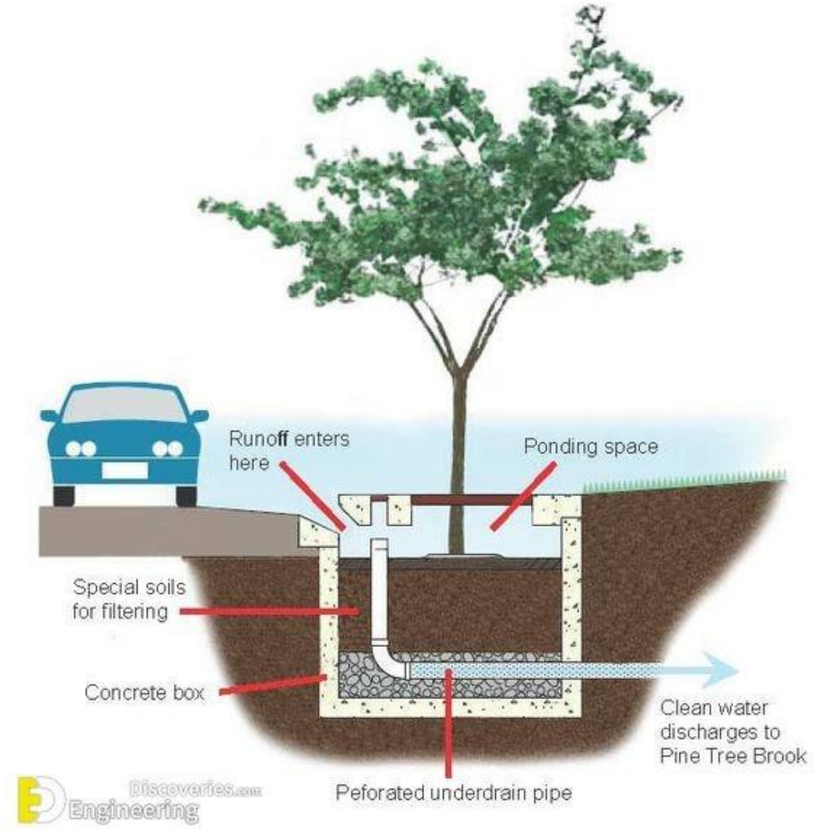
ROAD SECTIONAL PROFILE



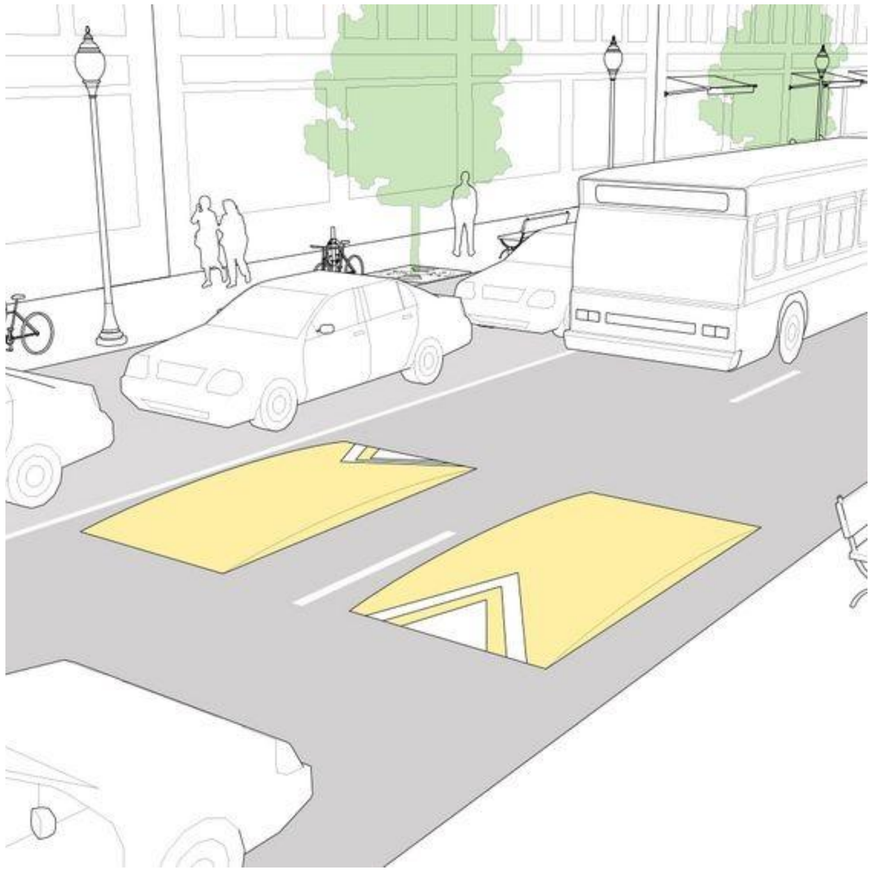
ROAD DESIGN OPTION G



ROAD DRAINAGE TO HEDGE DETAIL CONCEPT



ROAD DRAINAGE TO HEDGE DETAIL CONCEPT



ROAD ACTIVITY FLOW ILLUSTRATION

ROAD ACTIVITY FLOW ILLUSTRATION

GENERAL NOTES

1. This drawing to be read in conjunction with Engineers' drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled. Only figured dimensions should be used.
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect.

CONSTRUCTION

Approved anti-termite treatment & 1000 gauge polythene sheeting cover to be provided under all ground floor concrete slab on compacted hardcore to approval.
DPC to be 3ply bituminous felt to be provided under all walls.

STRUCTURAL

1. All Black cotton soil to be removed from below all building and paved surfaces
2. All reinforced concrete work will be in accordance with structural drawings.
3. Foundation depths to be determined on site to S.E approval
4. All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
5. All adjacent R.C work and masonry walls to be tied with strap irons at every course

MECHANICAL

1. All Plumbing and Drainage Work to comply with specifications
2. S.V.P denotes soil vent pipe and to be provided at the head of the drainage
3. Where drainage is shown under driveways and slabs, to be encased in 150mm thick concrete surround.
4. All underground foul and waste drain pipes shall be of PVC to comply with BS5255
5. All ICs within building area, driveway and parking to have heavy duty,double-seal airtight covers and walls to be 200mm.
6. Minimum slope in the drain pipes to be 1%
7. No chases for pipes will be allowed in the slabs
8. Sleeves will be allowed with written approval from S.E.
9. No cutting of concrete without express approval of the Architect or S.E
10. All testing of pipes must be coordinated with electrical and any conflicts must be resolved before works begin
11. Permanent vents denoted as P.V to be provided as shown on plan.

ELECTRICAL

All conduits must be laid before plastering

PROJECT:
PROPOSED AFFORDABLE HOUSING DEVELOPMENT IN

CLIENT:
Name: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT
Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

DRAWING TITLE:
ROAD DESIGN **OPTION G**

SCALE:
1:500

DRAWN BY:
ML

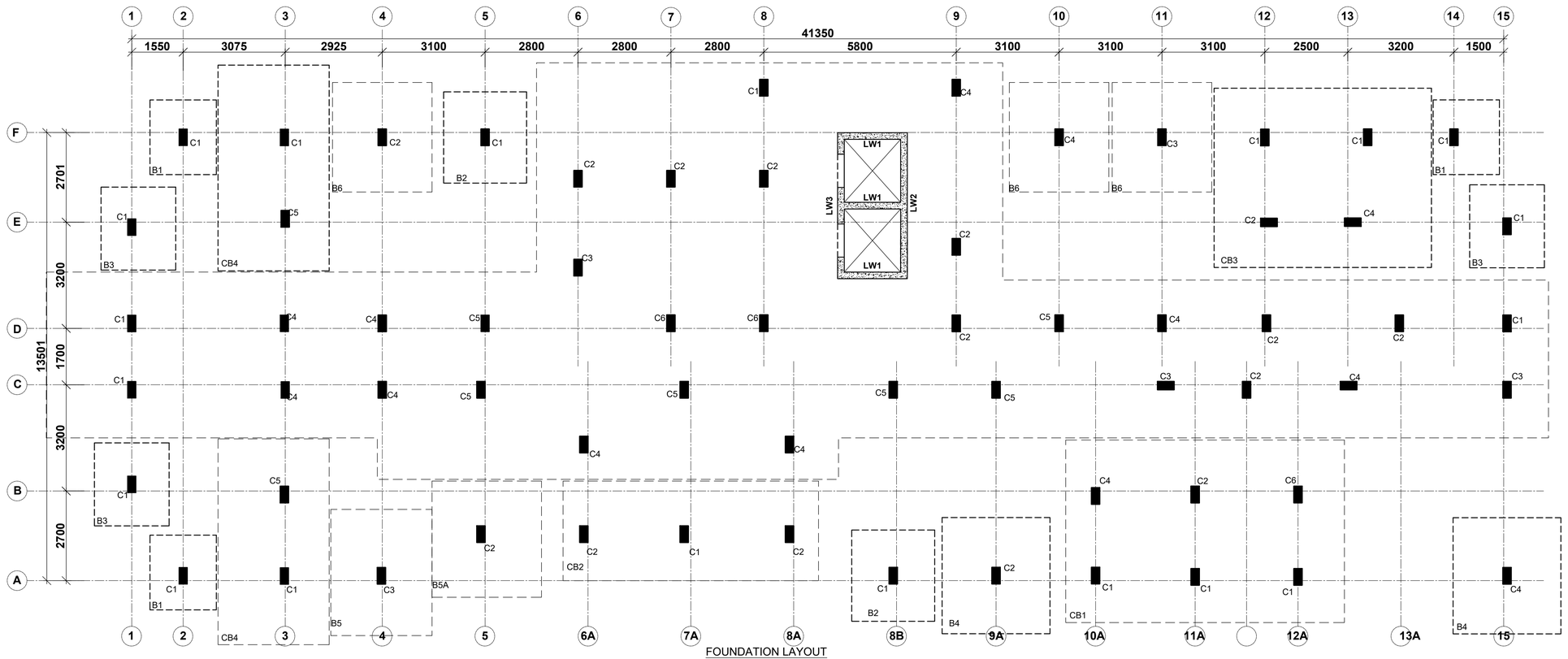
CHECKED BY:
Name:_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Signature:_ _ _ _ _ _ _ **Date:**_ _ _ _ _ _

DATE:
MAY 2023

MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



FOUNDATION LAYOUT
SCALE 1:75

BASES SCHEDULE

Metrix Integrated Consultancy
P.O. Box 26524 00504
Nairobi, Kenya
Tel : 555294
Fax : 554360

REFERENCE	SIZE	CONCRETE CLASS C25 NUMBER
B1	2250x2000x500mm	3
B2	2750x2500x500mm	2
B3	2500x2250x500mm	3
B4	3500x3250x650mm	2
B5	3800x3050x650mm	1
B5a	3500x3300x650mm	1
B6	3300x3000x650mm	3
CB1	8400x5500x800mm	1
CB2	7700x3000x800mm	1
CB3	6550x5400x800mm	1
CB4	6200x3350x800mm	2
MAT 1	REFER TO DWG(Depth 750mm)	1

COLUMN SCHEDULE

Metrix Integrated Consultancy
P.O. Box 26524 00504
Nairobi, Kenya
Tel : 555294
Fax : 554360

REFERENCE	SIZE	LEVEL	CONCRETE CLASS C25 NUMBER
C1	500x250	GF-ROOF	20
C2	500x250	GF-ROOF	13
C3	500x250	GF-ROOF	5
C4	500x250	GF-ROOF	13
C5	500x300	GF-3RD FLOOR	8
	500x250	GF-ROOF	
C6	500x350	GF-3RD FLOOR	2
	500x300	2ND-3RD FLOOR	
	500x250	3RD FLOOR-ROOF	

NOTE:

1. Foundations to be excavated to a minimum depth of 3.0m
2. Introduce a 300x200 ground beam over all the foundation wallings
3. All masonry units to be machine cut blocks

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to BS 4461: T - Top face, B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

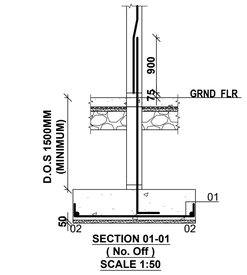
Designed by: M.K.M | *Checked by: R.M.O*
Approved by: SECRETARY, HOUSING DEPARTMENT
Date: 22ND MARCH 2024 | *Scale: As shown*
Drawing Number: AHP-G+9-BLKA 01

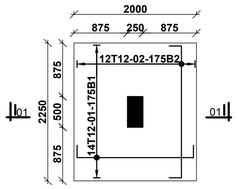
Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA.

Title
FOUNDATION LAYOUT.

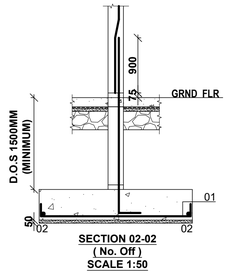
Revisions

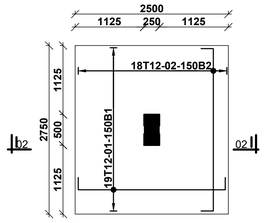
No.	Description	Date





BASE B1 -2250x2000x500
3NO.
SCALE 1:50





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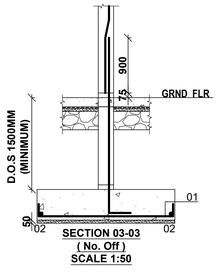
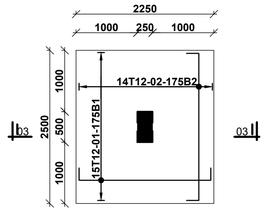
SCALE 1:50





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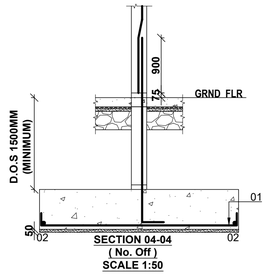

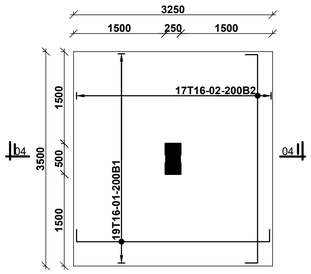

BASE B4 -3500x3250x650
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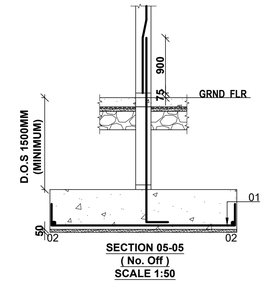
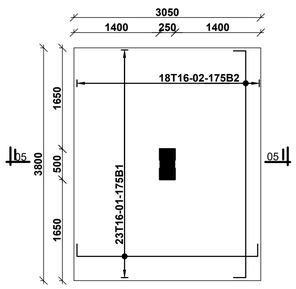
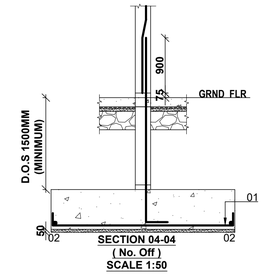
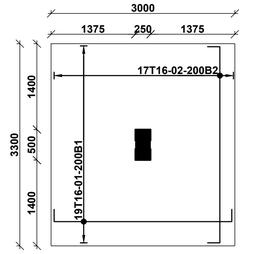
SCALE 1:50





BASE B5 -3800x3050x650
2NO.
SCALE 1:50





BASE B6 -3300x3000x650
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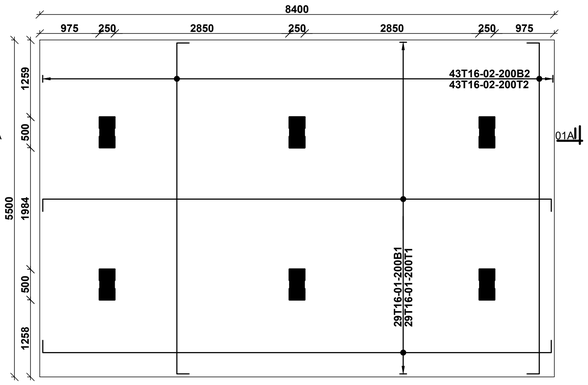
SCALE 1:50



BASE CB1 -6200x3350x800
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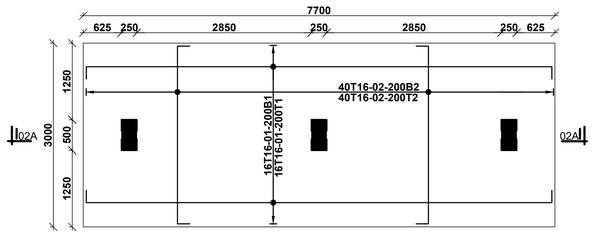
SCALE 1:50



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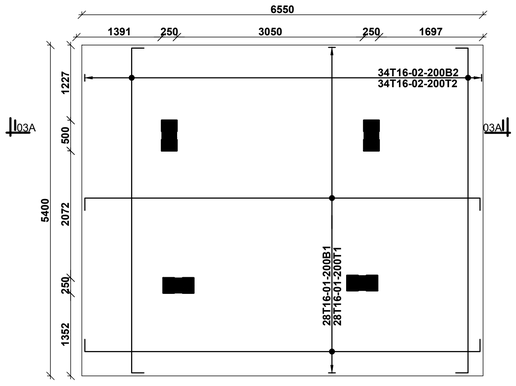
SCALE 1:50



BASE CB3 -5400x6550x800
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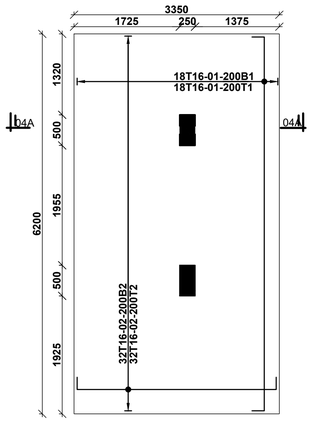
SCALE 1:50



BASE CB4 -6200x3350x800
2NO.
SCALE 1:50

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to BS 4461: T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: M.K.M | *Checked by: R.M.O*

Approved by: SECRETARY, HOUSING DEPARTMENT

Date: 22ND MARCH 2024 | *Scale: As shown*

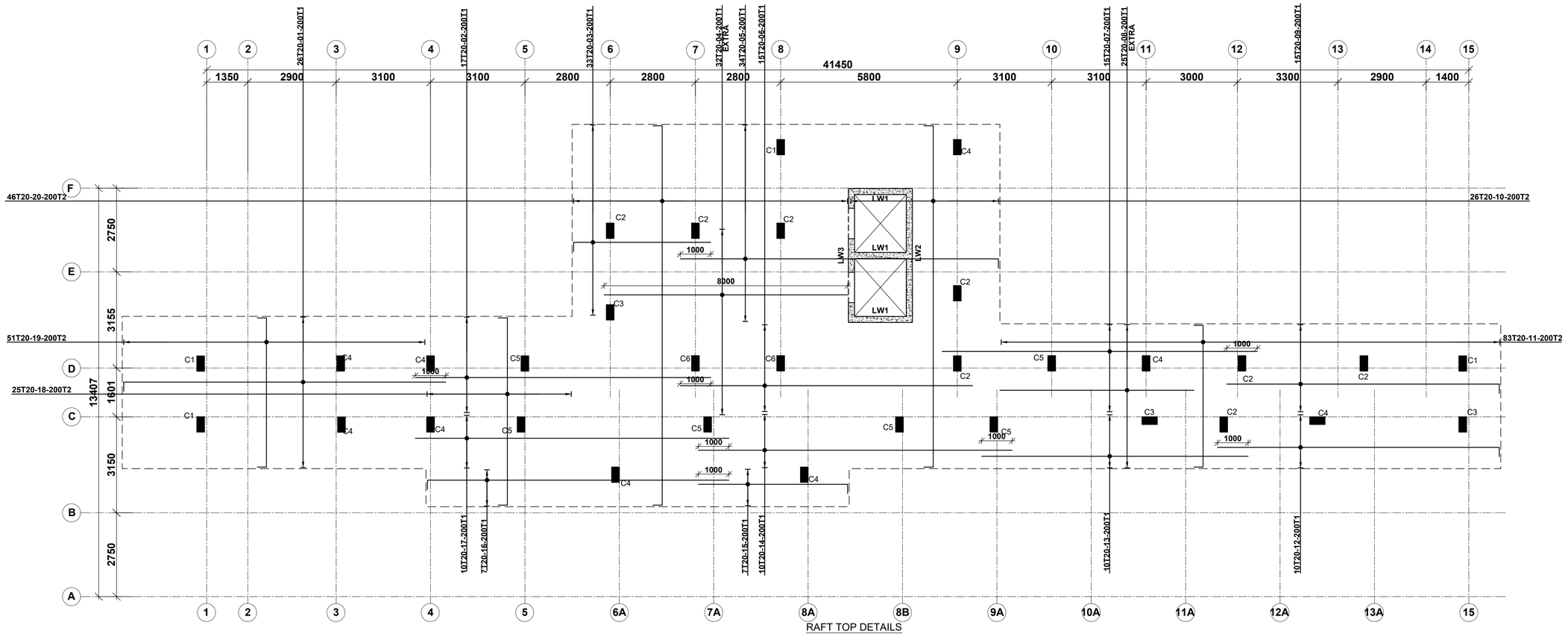
Drawing Number: AHP-G+9-BLKA 02

Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA.

Title
FOUNDATION DETAILS.

Revisions

No.	Description	Date



RAFT TOP DETAILS
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
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3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
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5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to BS 4461: T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

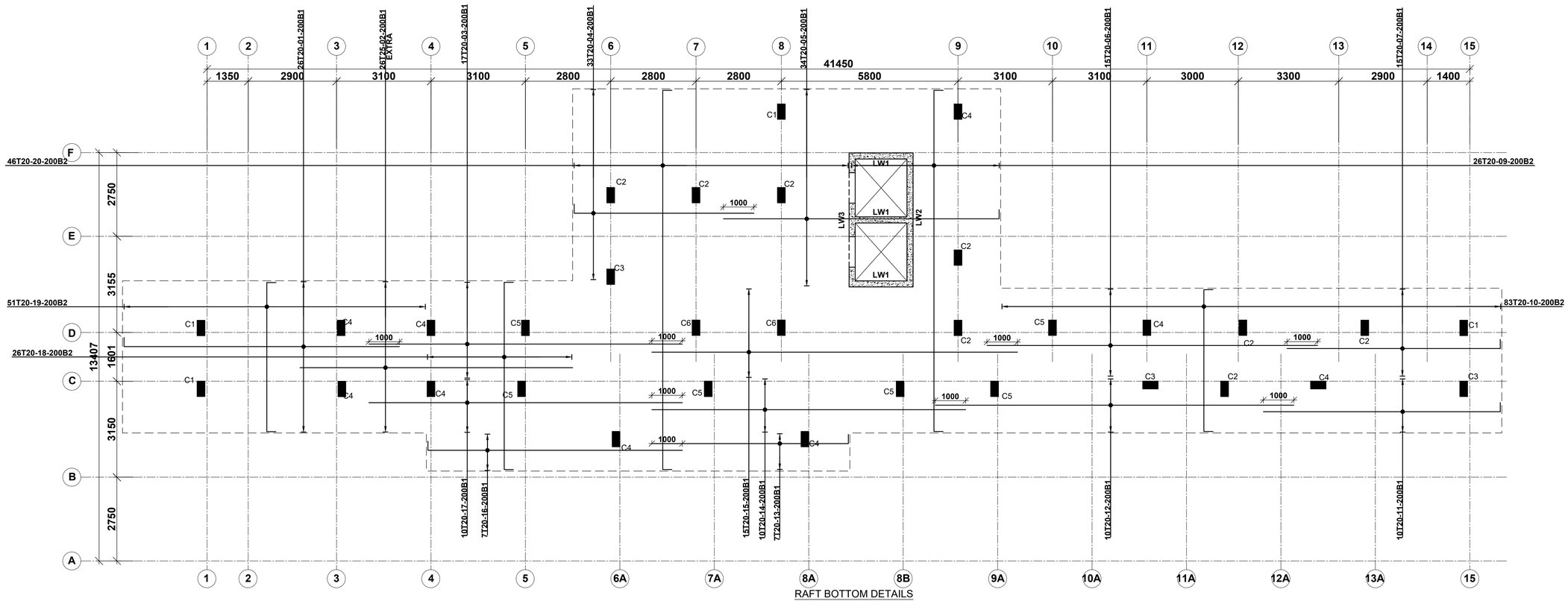
Designed by: M.K.M | *Checked by: R.M.O*
Approved by: SECRETARY, HOUSING DEPARTMENT
Date: 22ND MARCH 2024 | *Scale: As shown*
Drawing Number: AHP-G+9-BLKA 03

Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA.

Title
RAFT FOUNDATION DETAILS.

Revisions

No.	Description	Date



RAFT BOTTOM DETAILS
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
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B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

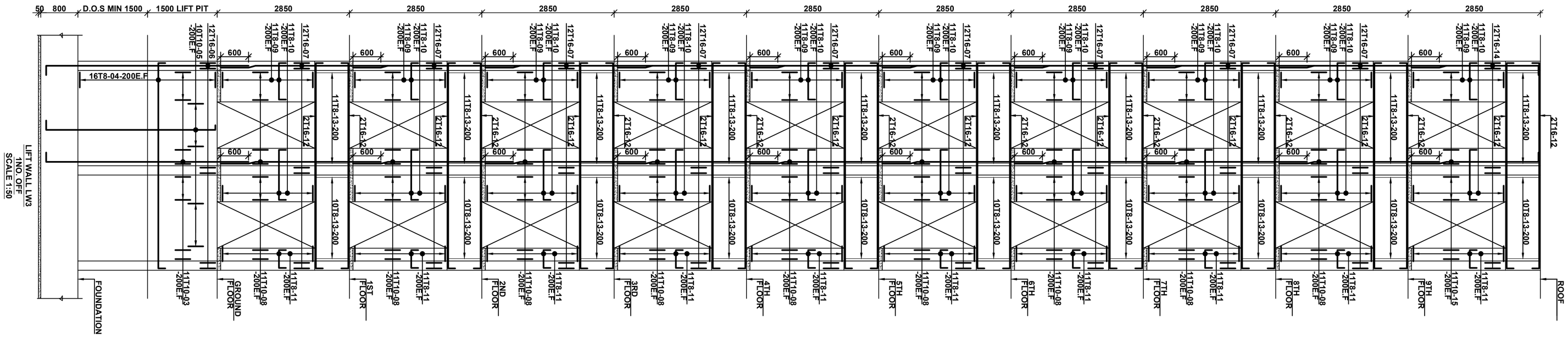
Designed by: M.K.M | *Checked by: R.M.O*
Approved by: SECRETARY, HOUSING DEPARTMENT
Date: 22ND MARCH 2024 | *Scale: As shown*
Drawing Number: AHP-G+9-BLKA 04

Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA.

Title
RAFT FOUNDATION DETAILS.

Revisions

No.	Description	Date



LIFT WALL LW3
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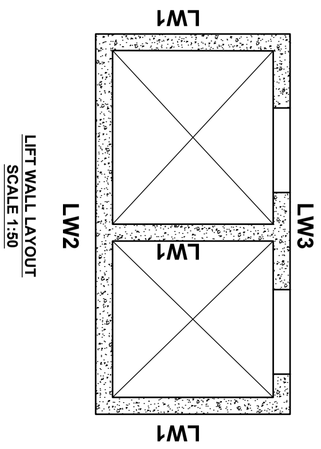
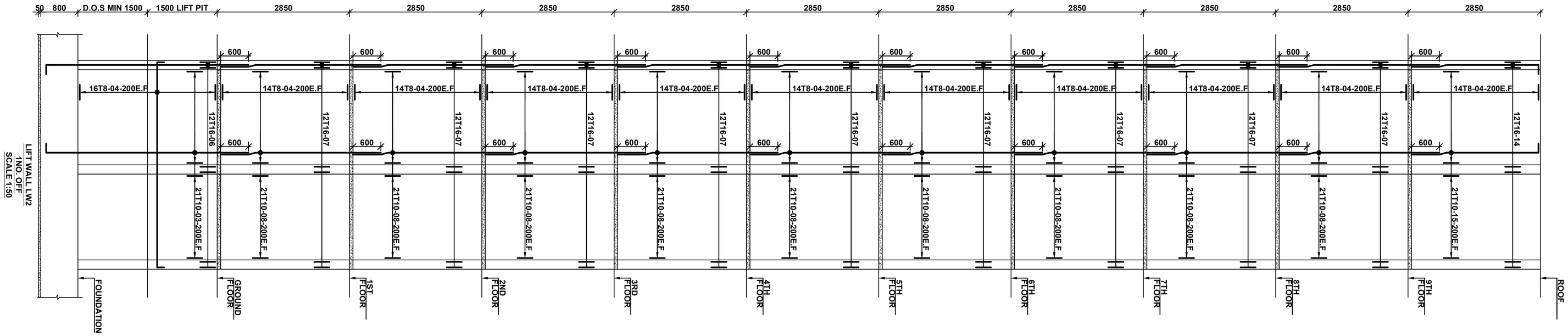
SCALE 1:50



LIFT WALL LAYOUT
SCALE 1:50



LIFT WALL LW2
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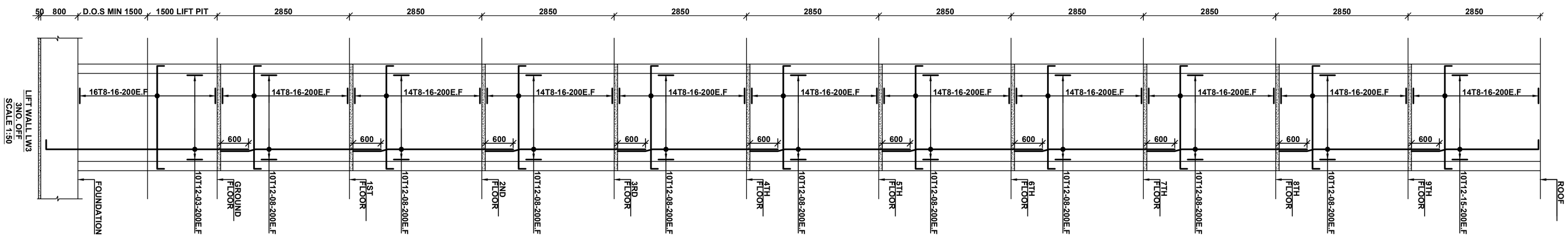
SCALE 1:50



LIFT WALL LW3
3NO. OFF
SCALE 1:50

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to BS 4461: T - Top face, B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: M.J | *Checked by: R.M.O*

Approved by: SECRETARY, HOUSING DEPARTMENT

Date: 22ND MARCH 2024 | *Scale: As shown*

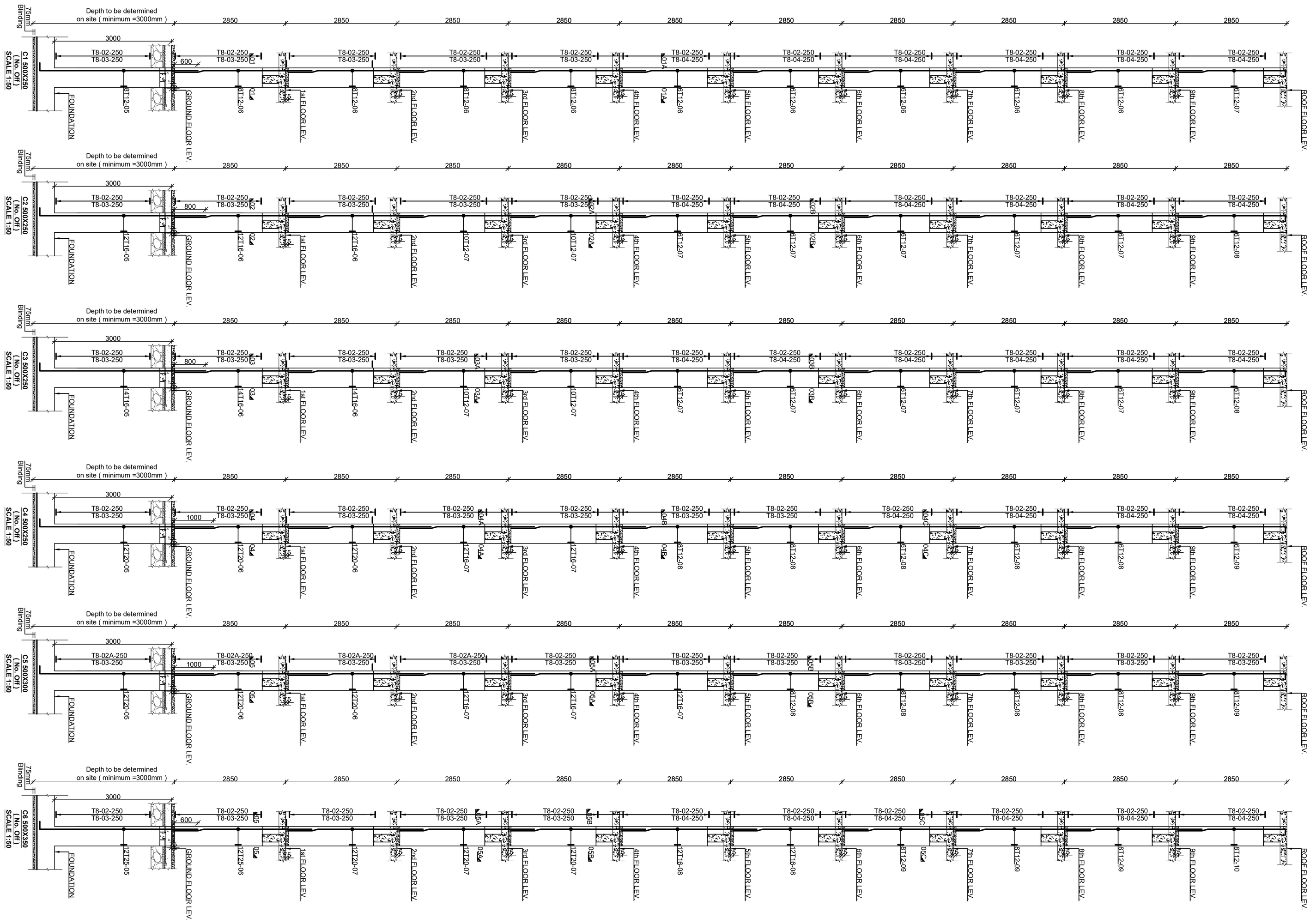
Drawing Number: AHP-G+9-BLKA 04

Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA

Title
LIFT WALL DETAILS

Revisions

No.	Description	Date



NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
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6. Symbols; T-TMT Rebars to BS 4461: T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: M.J | *Checked by: R.M.O*

Approved by: SECRETARY, HOUSING DEPARTMENT

Date: 22ND MARCH 2024 | *Scale: As shown*

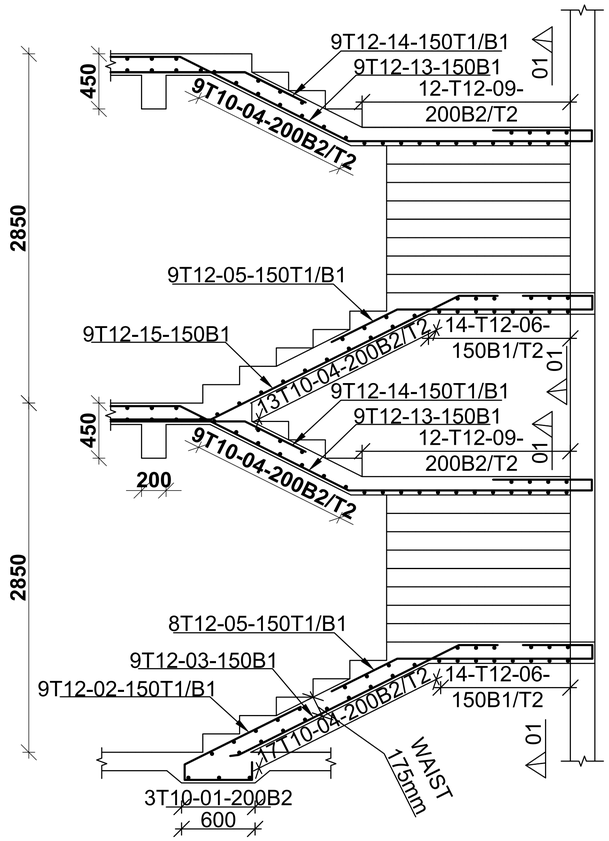
Drawing Number: AHP-G+9-BLKA 05

Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA.

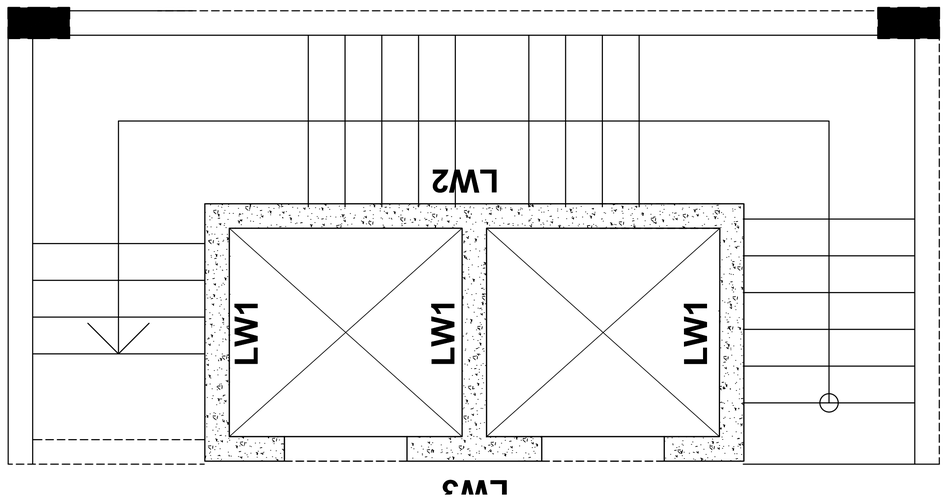
Title
COLUMN DETAILS

Revisions

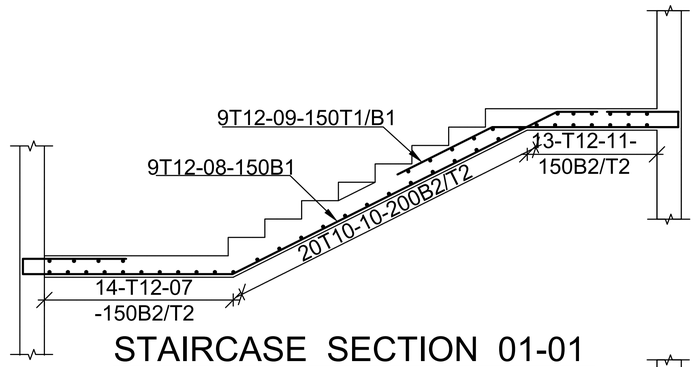
No.	Description	Date



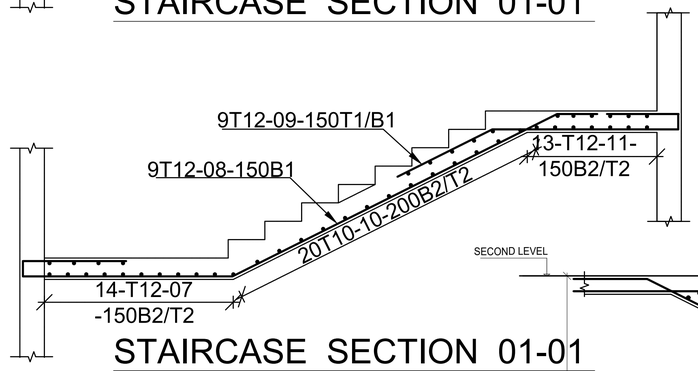
TYPICAL STAIRCASE SECTION



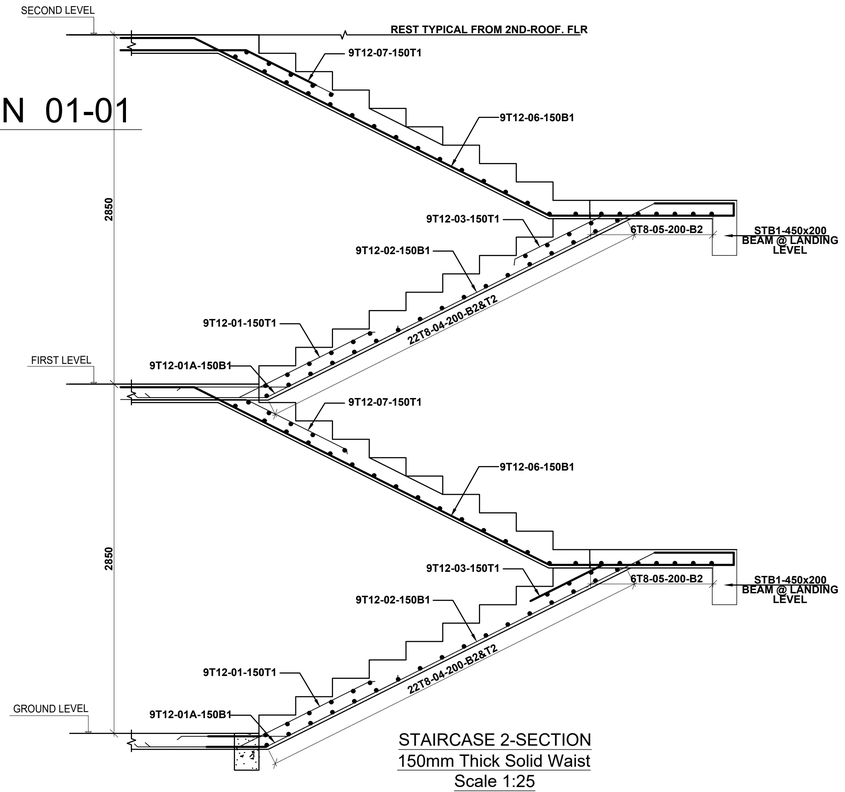
STAIRCASE PLAN
SCALE 1:50



STAIRCASE SECTION 01-01



STAIRCASE SECTION 01-01



STAIRCASE 2-SECTION
150mm Thick Solid Waist
Scale 1:25

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to BS 4461: T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

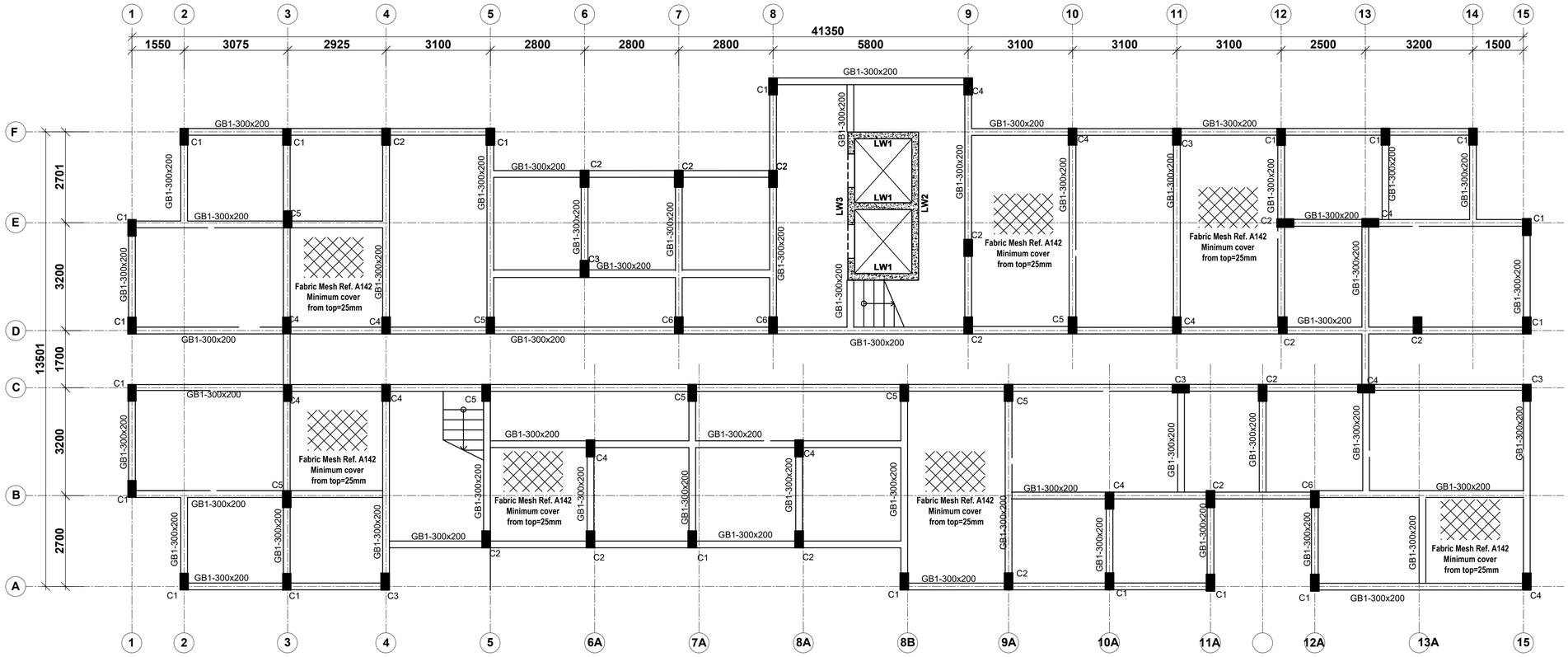
Designed by: J.E.W | *Checked by: R.M.O*
Approved by: SECRETARY, HOUSING DEPARTMENT
Date: 22ND MARCH 2024 | *Scale: As shown*
Drawing Number: AHP-G+9-BLKA 06

Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA.

Title
STAIRCASE DETAILS

Revisions

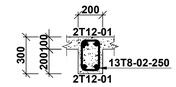
No.	Description	Date



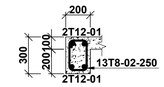
GROUND FLOOR LAYOUT
100mm THICK SOLID SLAB ON GRADE
SCALE 1:75

SLAB THICKENING SECTION THROUGH
WALLS WITHOUT GROUND BEAMS
SCALE 1:25

TYPICAL SECTION THROUGH GROUND BEAM
SCALE 1:25



TYPICAL INTERNAL
GROUND BEAM SECTION
SCALE 1:25



TYPICAL EXTERNAL
GROUND BEAM SECTION
SCALE 1:25

NOTE:

1. Foundations to be excavated to a minimum depth of 3.0m
2. Introduce a 300x200 ground beam over all the foundation wallings
3. All masonry units to be machine cut blocks

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to BS 4461: T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

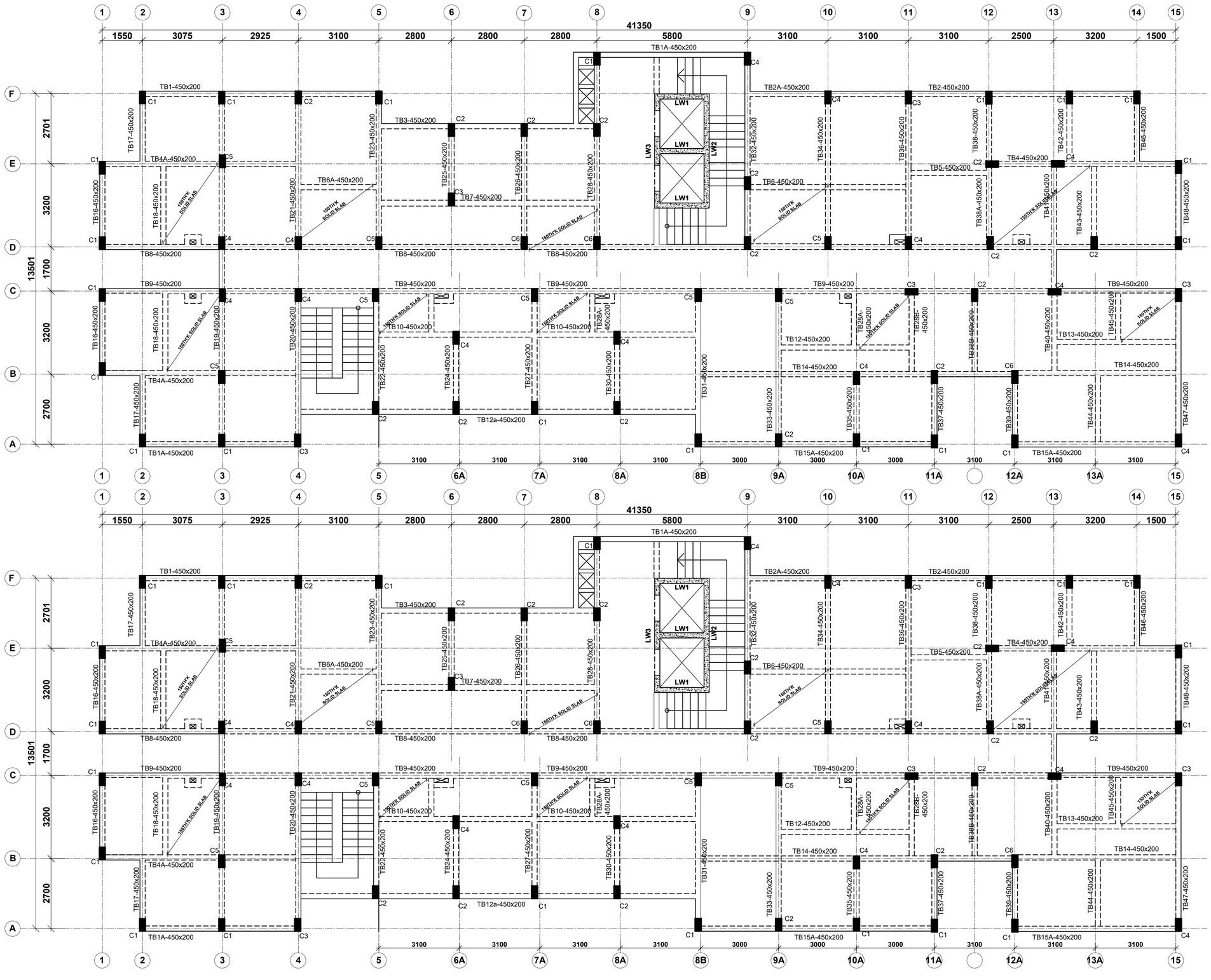
Designed by: J.E.W	*Checked by: R.M.O*
Approved by: SECRETARY, HOUSING DEPARTMENT	
Date: 22ND MARCH 2024	*Scale: As shown*
Drawing Number: AHP-G+9-BLKA 07	

Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA.

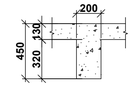
Title
GROUND FLOOR LAYOUT.

Revisions

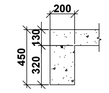
No.	Description	Date



TYPICAL 1ST FLOOR LAYOUT
130mm THICK SOLID SLAB UNLESS SPECIFIED OTHERWISE
SCALE 1:75



TYPICAL INTERNAL SECTION
SCALE 1:25



TYPICAL EXTERNAL SECTION
SCALE 1:25

TYPICAL 2ND & 9TH FLOOR LAYOUT
130mm THICK SOLID SLAB UNLESS SPECIFIED OTHERWISE
SCALE 1:75

NOTE:

1. Foundations to be excavated to a minimum depth of 3.0m
2. Introduce a 300x200 ground beam over all the foundation wallings
3. All masonry units to be machine cut blocks

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to BS 4461: T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: J.E.W | *Checked by: R.M.O*

Approved by: SECRETARY, HOUSING DEPARTMENT

Date: 22ND MARCH 2024 | *Scale: As shown*

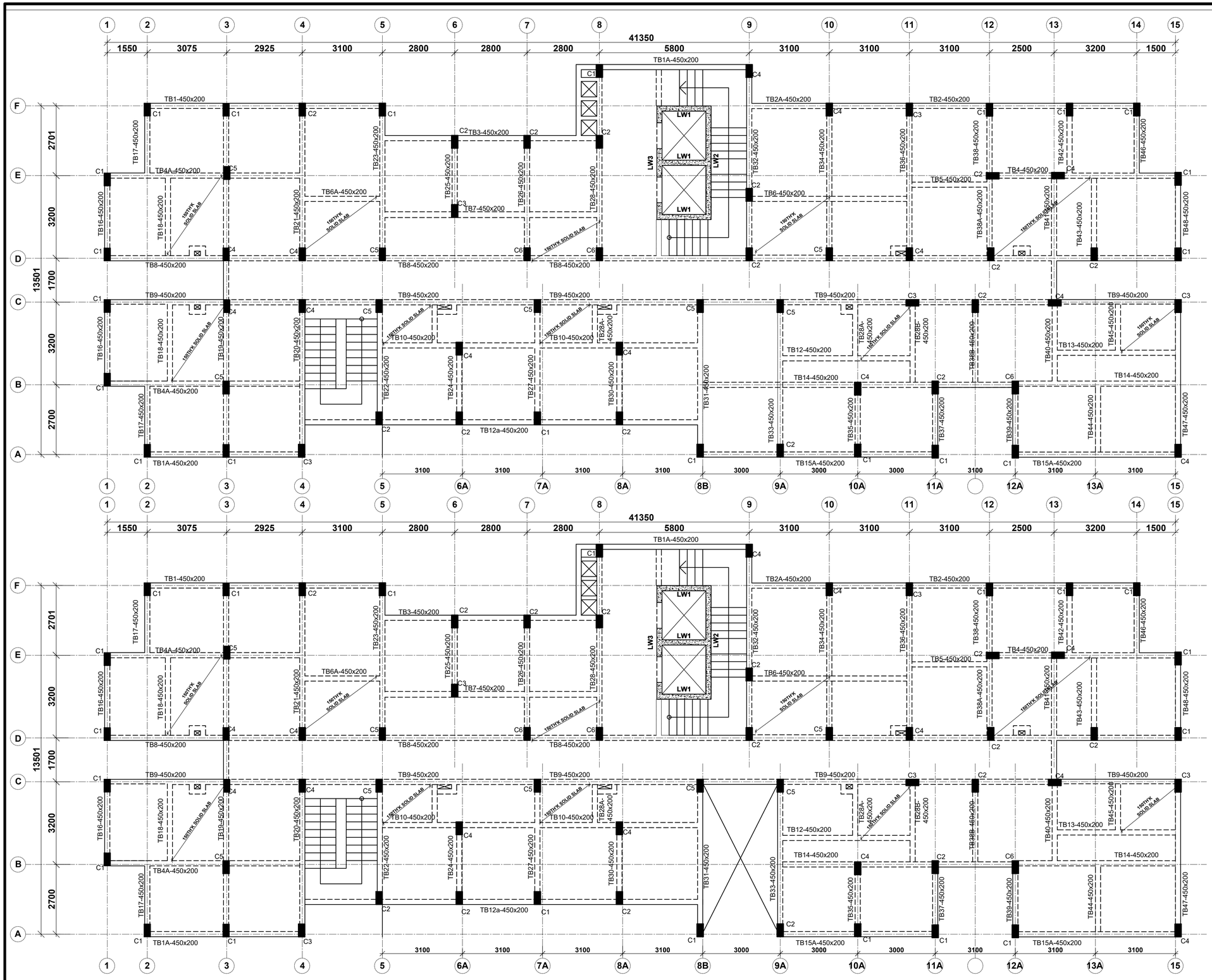
Drawing Number: AHP-G+9-BLKA 08

Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA.

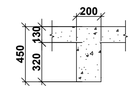
Title
TYPICAL 1ST,2ND & 9TH FLOOR LAYOUT.

Revisions

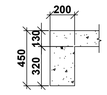
No.	Description	Date



TYPICAL 3RD & 7TH FLOOR LAYOUT
130mm THICK SOLID SLAB UNLESS SPECIFIED OTHERWISE
SCALE 1:75



TYPICAL INTERNAL SECTION
SCALE 1:25



TYPICAL EXTERNAL SECTION
SCALE 1:25

TYPICAL 4TH & 8TH FLOOR LAYOUT
130mm THICK SOLID SLAB UNLESS SPECIFIED OTHERWISE
SCALE 1:75

NOTE:

1. Foundations to be excavated to a minimum depth of 3.0m
2. Introduce a 300x200 ground beam over all the foundation wallings
3. All masonry units to be machine cut blocks

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to BS 4461: T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: J.E.W | *Checked by: R.M.O*

Approved by: SECRETARY, HOUSING DEPARTMENT

Date: 22ND MARCH 2024 | *Scale: As shown*

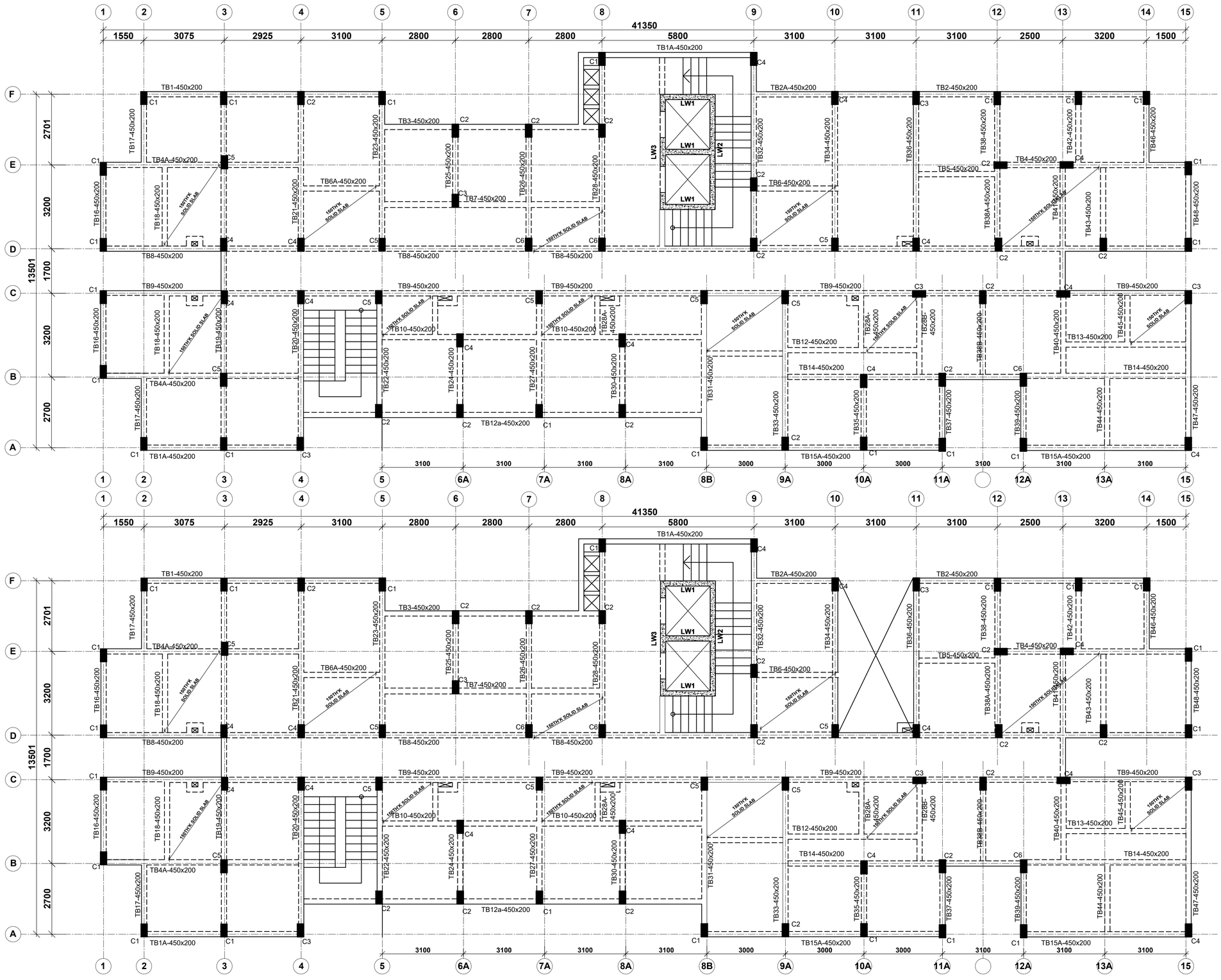
Drawing Number: AHP-G+9-BLKA 09

Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA.

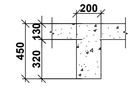
Title
TYPICAL 3RD,7TH, 4TH & 8TH FLOOR LAYOUT.

Revisions

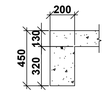
No.	Description	Date



TYPICAL 5TH FLOOR LAYOUT
130mm THICK SOLID SLAB UNLESS SPECIFIED OTHERWISE
SCALE 1:75



TYPICAL INTERNAL SECTION
SCALE 1:25



TYPICAL EXTERNAL SECTION
SCALE 1:25

TYPICAL 6TH FLOOR LAYOUT
130mm THICK SOLID SLAB UNLESS SPECIFIED OTHERWISE
SCALE 1:75

NOTE:

1. Foundations to be excavated to a minimum depth of 3.0m
2. Introduce a 300x200 ground beam over all the foundation wallings
3. All masonry units to be machine cut blocks

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to BS 4461: T - Top face, B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: J.E.W | *Checked by: R.M.O*

Approved by: SECRETARY, HOUSING DEPARTMENT

Date: 22ND MARCH 2024 | *Scale: As shown*

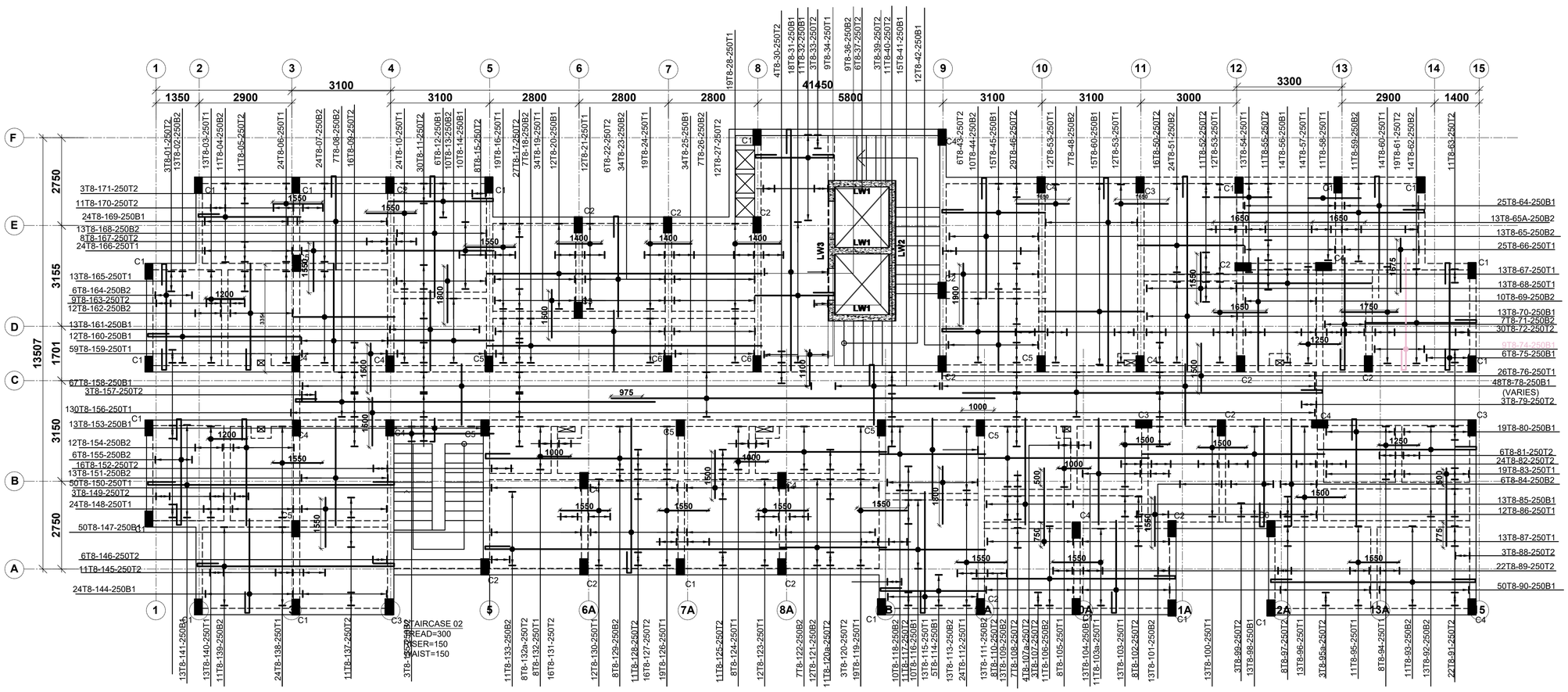
Drawing Number: AHP-G+9-BLKA 10

Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA.

Title
TYPICAL 1ST,2ND & 9TH FLOOR LAYOUT.

Revisions

No.	Description	Date



TYPICAL 1ST,2ND,3RD,5TH,7TH,9TH, FLOOR SLAB DETAILS
130mm THICK SOLID SLAB UNLESS SPECIFIED OTHERWISE
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to BS 4461: T - Top face, B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

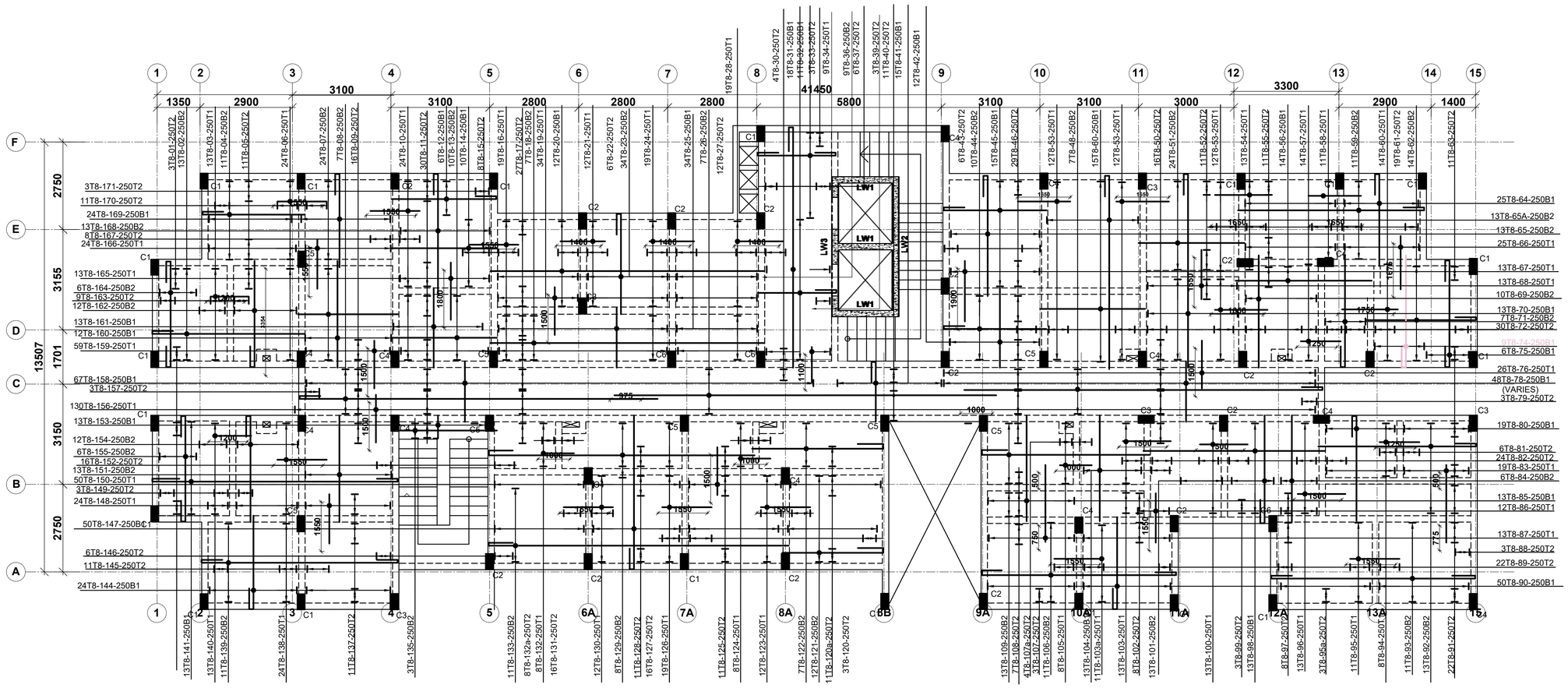
Designed by: J.E.W | *Checked by: R.M.O*
Approved by: SECRETARY, HOUSING DEPARTMENT
Date: 22ND MARCH 2024 | *Scale: As shown*
Drawing Number: AHP-G+9-BLKA 11

Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA.

Title
TYPICAL 1,2,3,5,7 & 9TH SLAB DETAILS

Revisions

No.	Description	Date



TYPICAL 4TH & 8TH FLOOR LAYOUT
130mm THICK SOLID SLAB UNLESS SPECIFIED OTHERWISE
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to BS 4461: T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

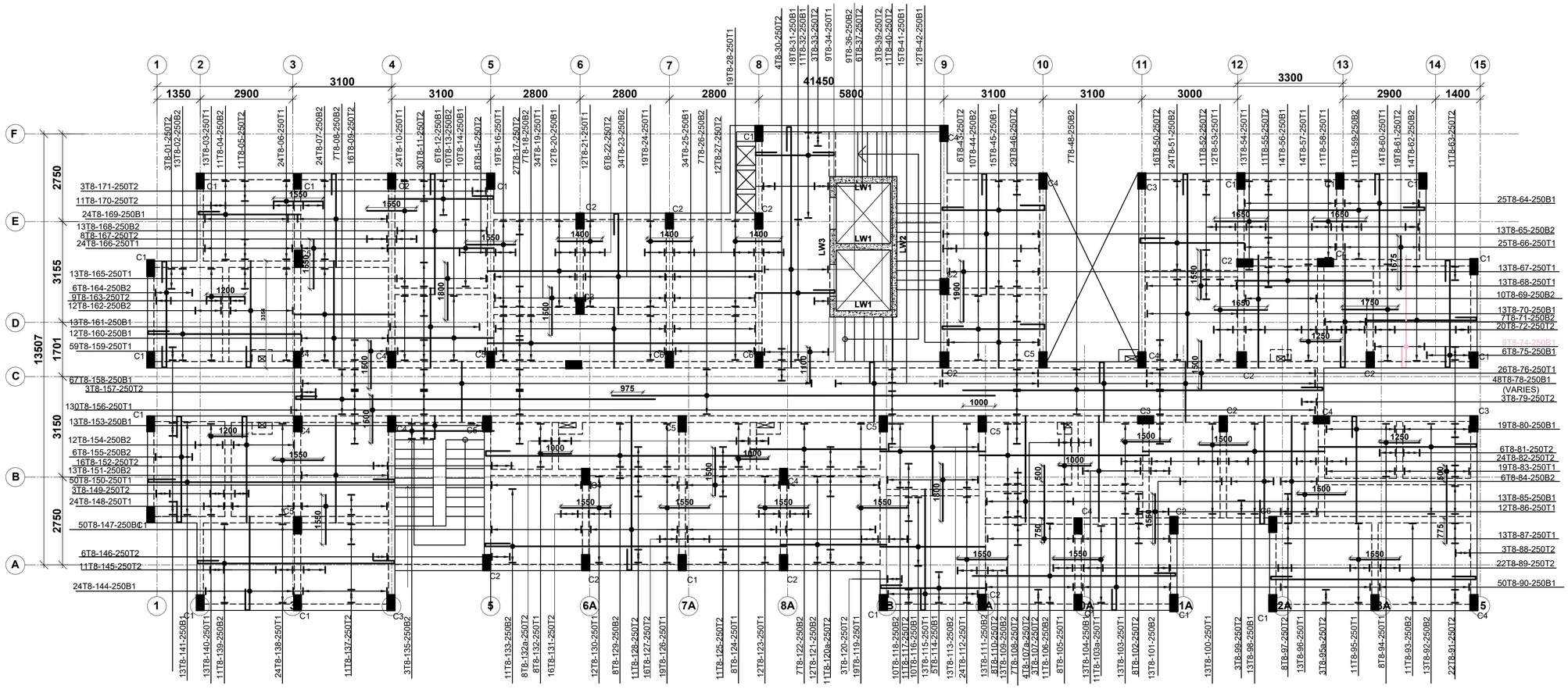
Designed by: J.E.W | *Checked by: R.M.O*
Approved by: SECRETARY, HOUSING DEPARTMENT
Date: 22ND MARCH 2024 | *Scale: As shown*
Drawing Number: AHP-G+9-BLKA 12

Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA.

Title
TYPICAL 4 & 8TH SLAB DETAILS

Revisions

No.	Description	Date



TYPICAL 6TH FLOOR DETAILS
130mm THICK SOLID SLAB UNLESS SPECIFIED OTHERWISE
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to BS 4461: T - Top face, B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

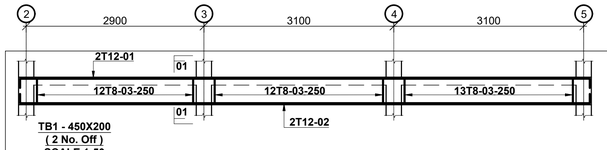
Designed by: J.E.W | *Checked by: R.M.O*
Approved by: SECRETARY, HOUSING DEPARTMENT
Date: 22ND MARCH 2024 | *Scale: As shown*
Drawing Number: AHP-G+9-BLKA 12

Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA.

Title
TYPICAL 6TH FLOOR SLAB DETAILS

Revisions

No.	Description	Date



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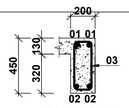

SECTION 01-01
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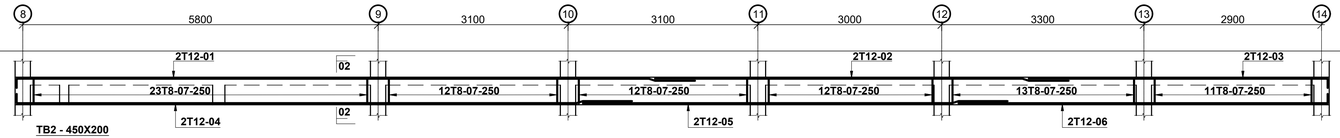

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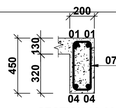
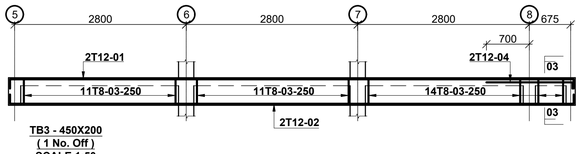


SECTION 02-02
Scale 1:25



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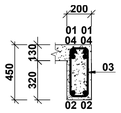
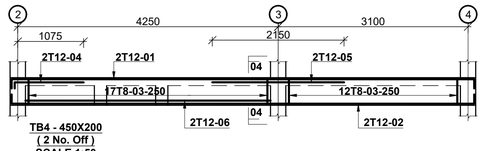


SECTION 03-03
Scale 1:25



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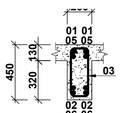
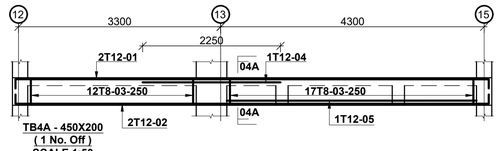
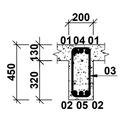
SCALE 1:50



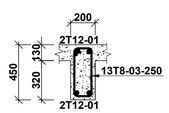
SECTION 04-04
Scale 1:25



TB4A - 450X200
(1 No. Off)
SCALE 1:50



SECTION 04A-04A
Scale 1:25



TB5 - 450x200
(1 No.s)
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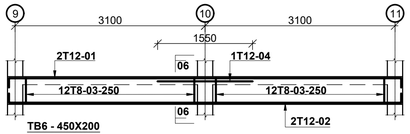

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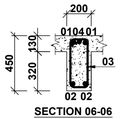
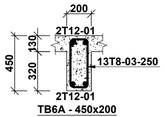
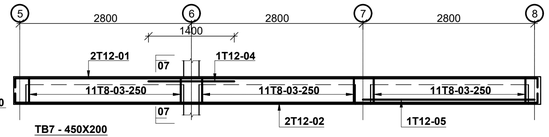


SECTION 06-06
Scale 1:25



TB6A - 450x200
(1 No.s)
Scale 1:25



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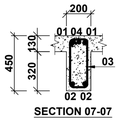
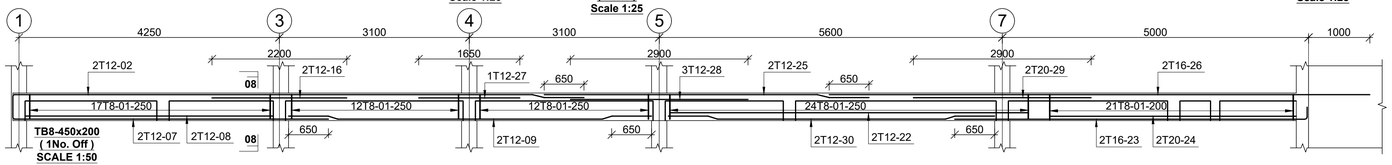
(1 No. Off)
SCALE 1:50



SECTION 07-07
Scale 1:25



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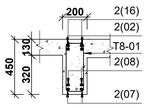
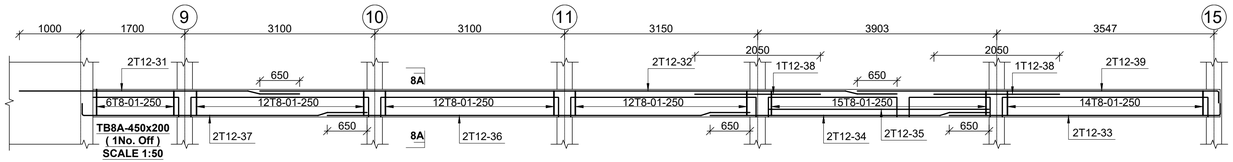


SECTION 08-08
SCALE 1:25



TB8A-450x200
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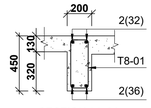
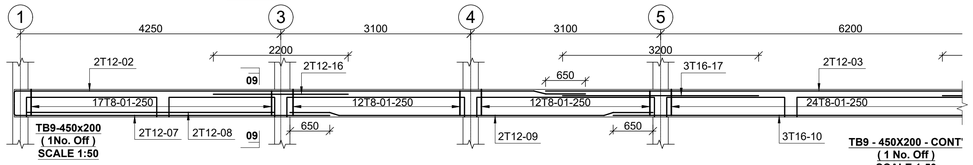
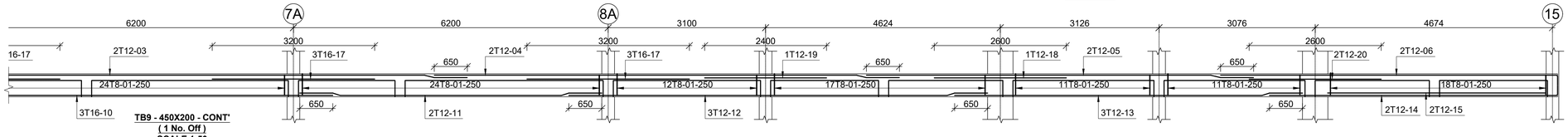


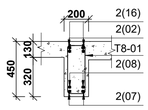
SECTION 8A-8A
SCALE 1:25



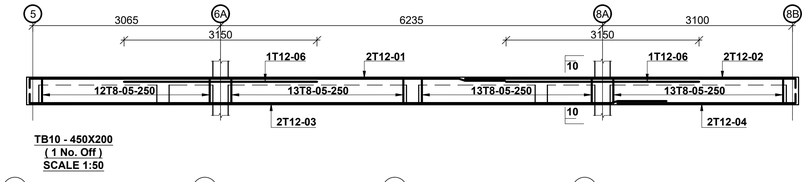
TB9-450x200
(1No. Off)
SCALE 1:50

TB9 - 450X200 - CONT'
(1 No. Off)
SCALE 1:50





SECTION 09-09
SCALE 1:25



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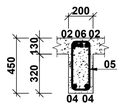
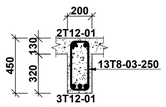
(1 No. Off)
SCALE 1:50



SECTION 10-10
Scale 1:25



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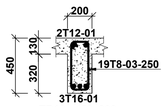

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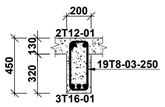
Scale 1:25



TB13 - 450x200
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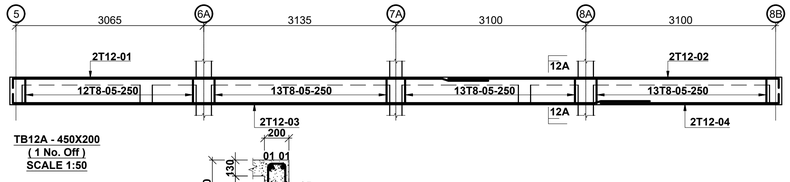
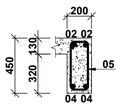
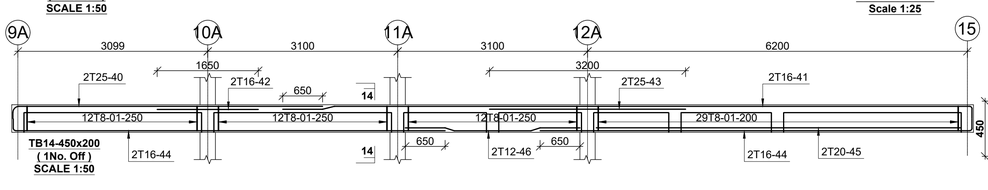
Scale 1:25



TB12A - 450X200
(1 No. Off)
SCALE 1:50



SECTION 12A-12A
Scale 1:25



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(1No. Off)
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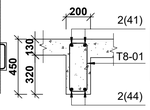
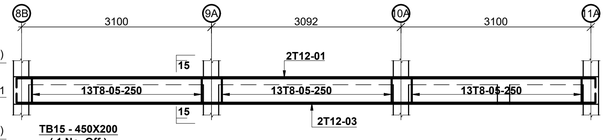


SECTION 14-14
SCALE 1:25



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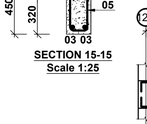
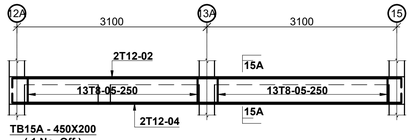
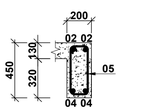


SECTION 15-15
Scale 1:25



TB15A - 450X200
(1 No. Off)
SCALE 1:50



SECTION 15A-15A
Scale 1:25

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to BS 4461: T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: J.E.W | *Checked by: R.M.O*

Approved by: SECRETARY, HOUSING DEPARTMENT

Date: 22ND MARCH 2024 | *Scale: As shown*

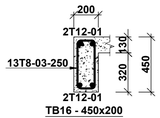
Drawing Number: AHP-G+9-BLKA 10

Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA.

Title
TYPICAL/ROOF FLOOR BEAM DETAILS

Revisions

No.	Description	Date



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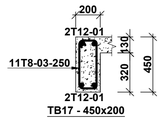
(2 No.s)
Scale 1:25



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(2 No.s)
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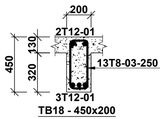

TB18 - 450x200
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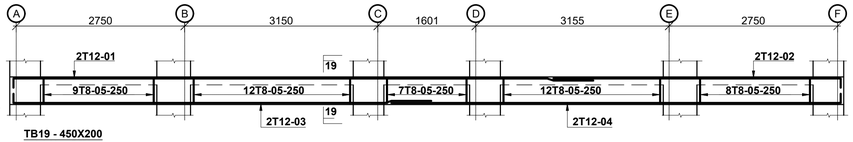
Scale 1:25



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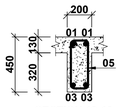
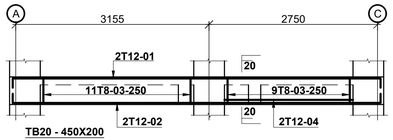


SECTION 19-19
Scale 1:25



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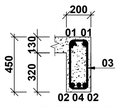
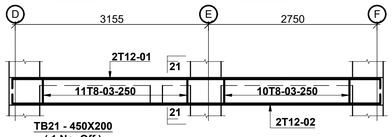


SECTION 20-20
Scale 1:25



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(1 No. Off)
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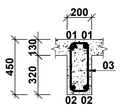

SECTION 21-21
Scale 1:25

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(1 No. Off)
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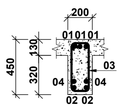

SECTION 22-22
Scale 1:25

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(1 No. Off)
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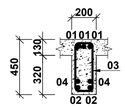
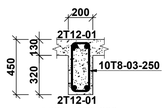


SECTION 23-23
Scale 1:25



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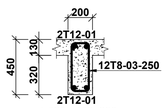

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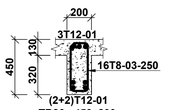
(1 No.s)
Scale 1:25



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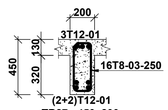
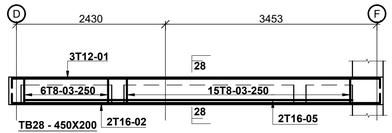


TB27 - 450x200
(1 No.s)
Scale 1:25



TB28 - 450X200
(1 No. Off)
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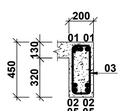
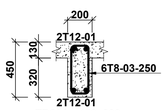


SECTION 28-28
Scale 1:25



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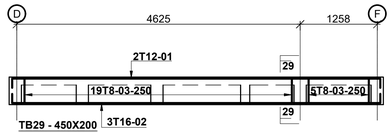

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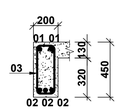
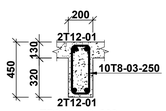
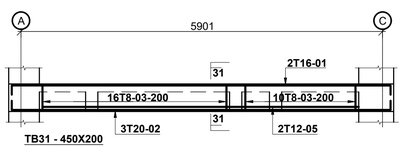


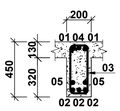
SECTION 29-29
Scale 1:25



TB30 - 450x200
(1 No.s)
Scale 1:25

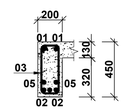


TB31 - 450X200
(1 No. Off)
SCALE 1:50

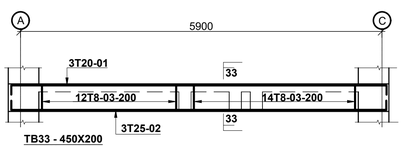


SECTION 31-31
Scale 1:25

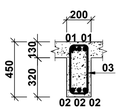
TB32 - 450X200
(1 No. Off)
SCALE 1:50



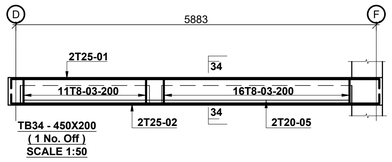
SECTION 32-32
Scale 1:25



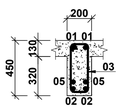
TB33 - 450X200
(1 No. Off)
SCALE 1:50



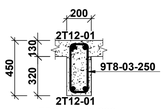
SECTION 33-33
Scale 1:25



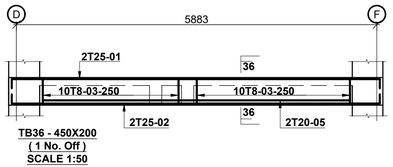
TB34 - 450X200
(1 No. Off)
SCALE 1:50



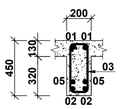
SECTION 34-34
Scale 1:25



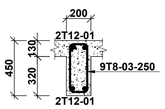
TB35 - 450x200
(1 No.s)
Scale 1:25



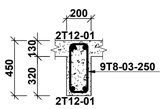
TB36 - 450X200
(1 No. Off)
SCALE 1:50



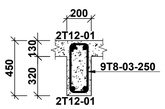
SECTION 36-36
Scale 1:25



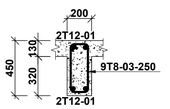
TB37 - 450x200
(1 No.s)
Scale 1:25



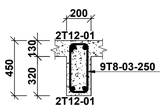
TB38 - 450x200
(1 No.s)
Scale 1:25



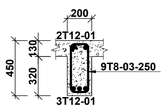
TB38A - 450x200
(2 No.s)
Scale 1:25



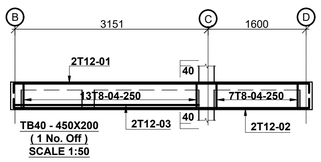
TB39 - 450x200
(1 No.s)
Scale 1:25



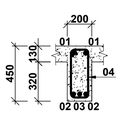
TB38B - 450x200
(2 No.s)
Scale 1:25



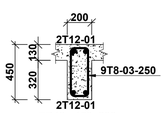
TB41 - 450x200
(1 No.s)
Scale 1:25



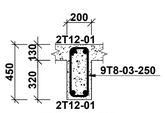
TB40 - 450X200
(1 No. Off)
SCALE 1:50



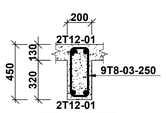
SECTION 40-40
Scale 1:25



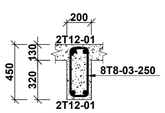
TB42 - 450x200
(1 No.s)
Scale 1:25



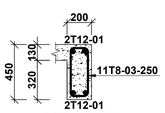
TB43 - 450x200
(1 No.s)
Scale 1:25



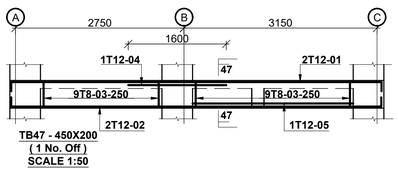
TB44 - 450x200
(1 No.s)
Scale 1:25



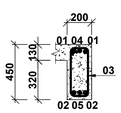
TB45 - 450x200
(1 No.s)
Scale 1:25



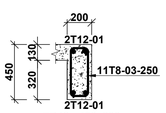
TB46 - 450x200
(1 No.s)
Scale 1:25



TB47 - 450X200
(1 No. Off)
SCALE 1:50



SECTION 47-47
Scale 1:25



TB48 - 450x200
(1 No.s)
Scale 1:25

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to BS 4461: T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: J.E.W | *Checked by: R.M.O*

Approved by: SECRETARY, HOUSING DEPARTMENT

Date: 22ND MARCH 2024 | *Scale: As shown*

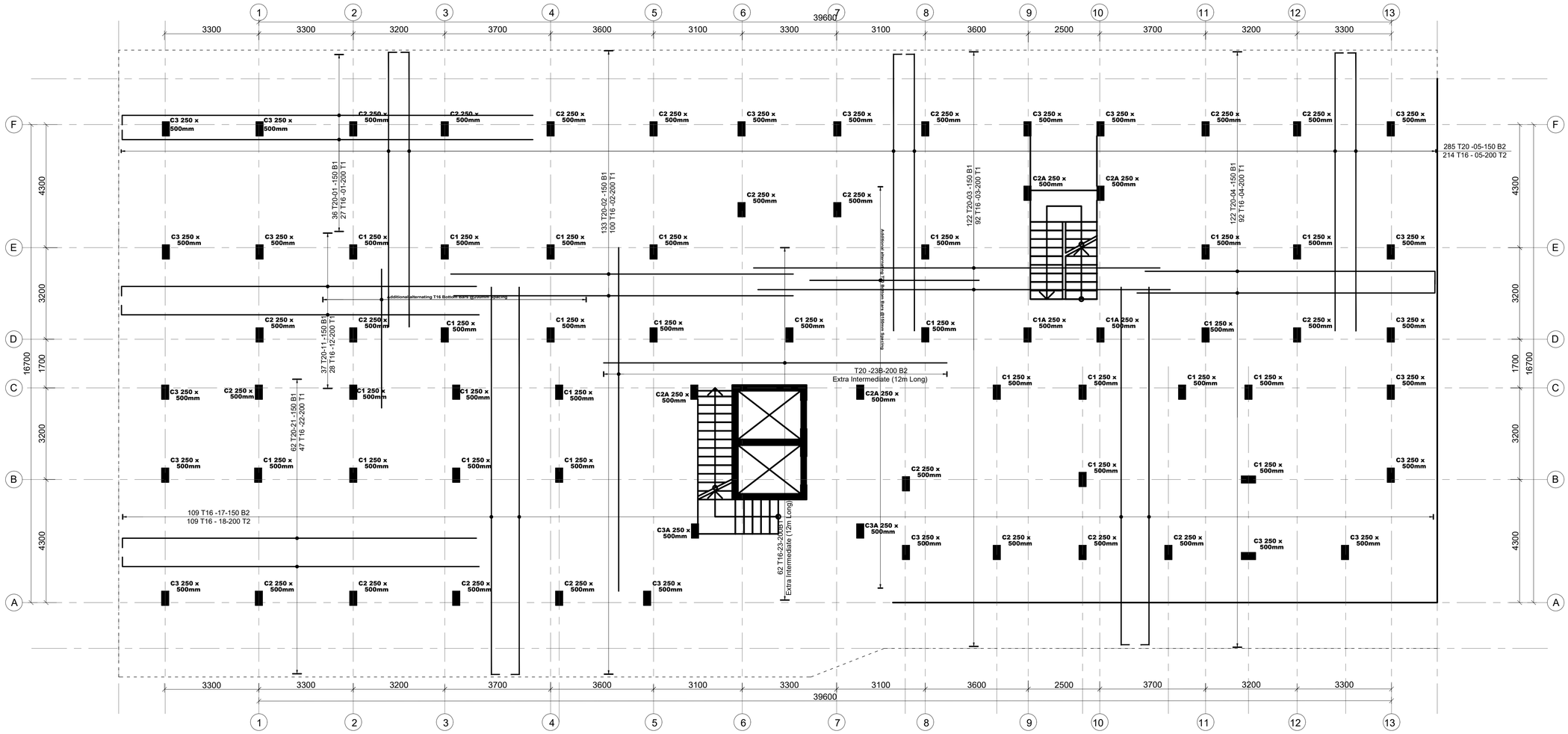
Drawing Number: AHP-G+9-BLKA 11

Project
PROPOSED AFFORDABLE HOUSING PROGRAM-G+9 BLOCK A-MUGUGA.

Title
TYPICAL/ROOF FLOOR BEAM DETAILS

Revisions

No.	Description	Date



FOUNDATION RAFT REBAR DETAILS
-750 MM THK RAFT SLAB
SCALE 1:75

NOTE: RAFT FORMATION SURFACE TO BE COMPACTED PRIOR TO LAYING OF RAFT BLINDING

	ELEMENT	Kg/m3
	RAFT	35
	COLUMNS	194
	SLAB	66
	BEAMS	63
	GROUND BEAMS	104
	STAIRCASE 1	167
	STAIRCASE 2	121
	LIFT	89
	SLAB OVER STAIRCASE 1	113
	BEAM OVER STAIRCASE 1	95
	SLAB OVER STAIRCASE 2	123
	BEAMS OVER STAIRCASE 2	108

NOTE:
Soil bearing capacity 100KN/m2

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

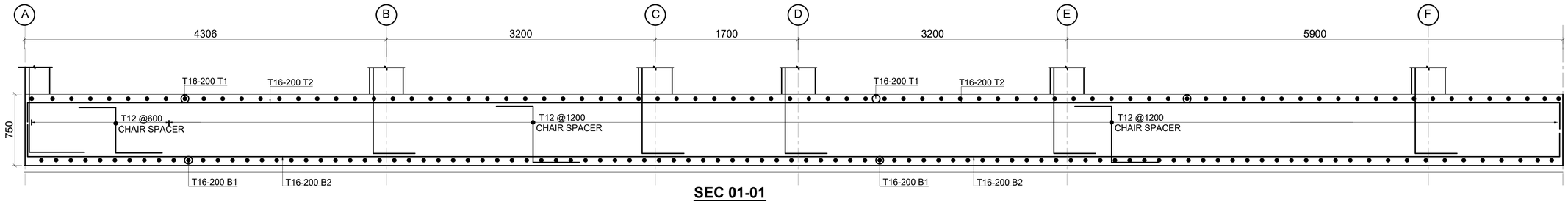
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 1.0B*

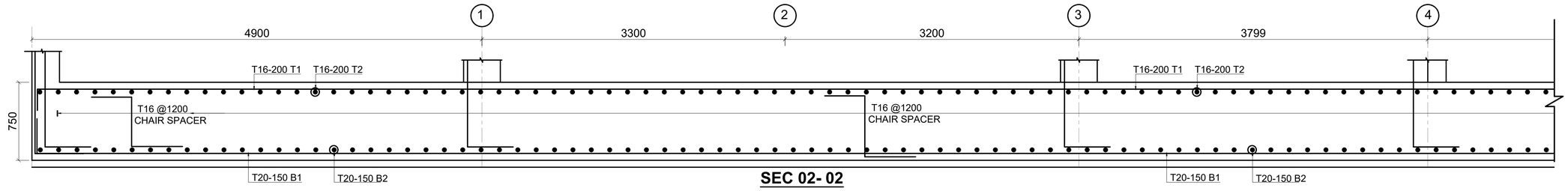
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
FOUNDATION RAFT RC DETAILS

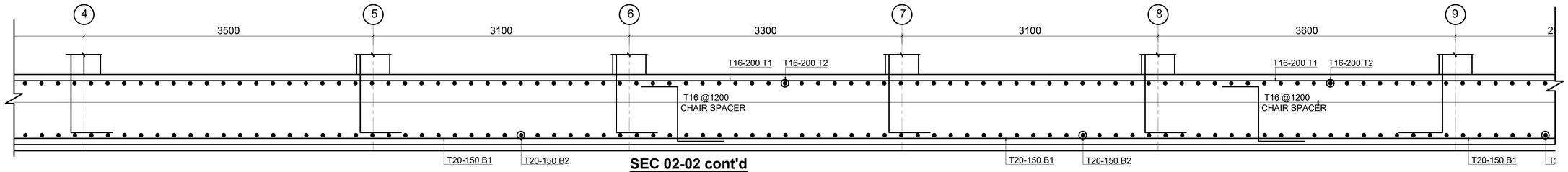
Revisions		
No.	Description	Date



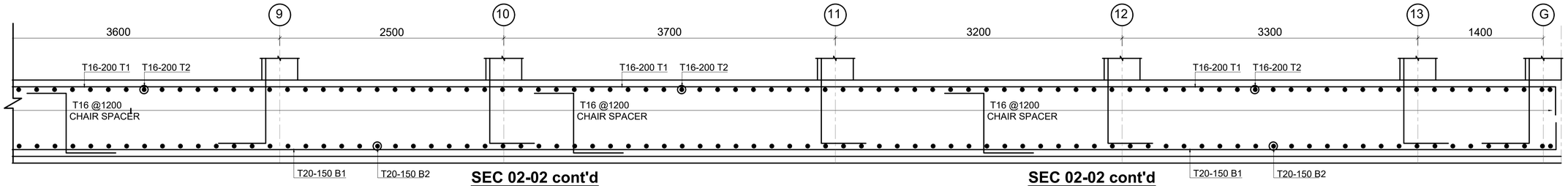
SEC 01-01



SEC 02- 02



SEC 02-02 cont'd



SEC 02-02 cont'd

SEC 02-02 cont'd

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

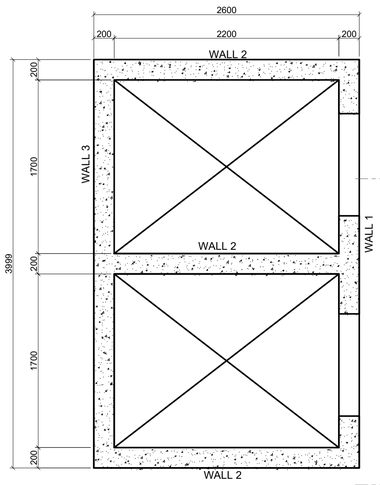
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 1.1B*

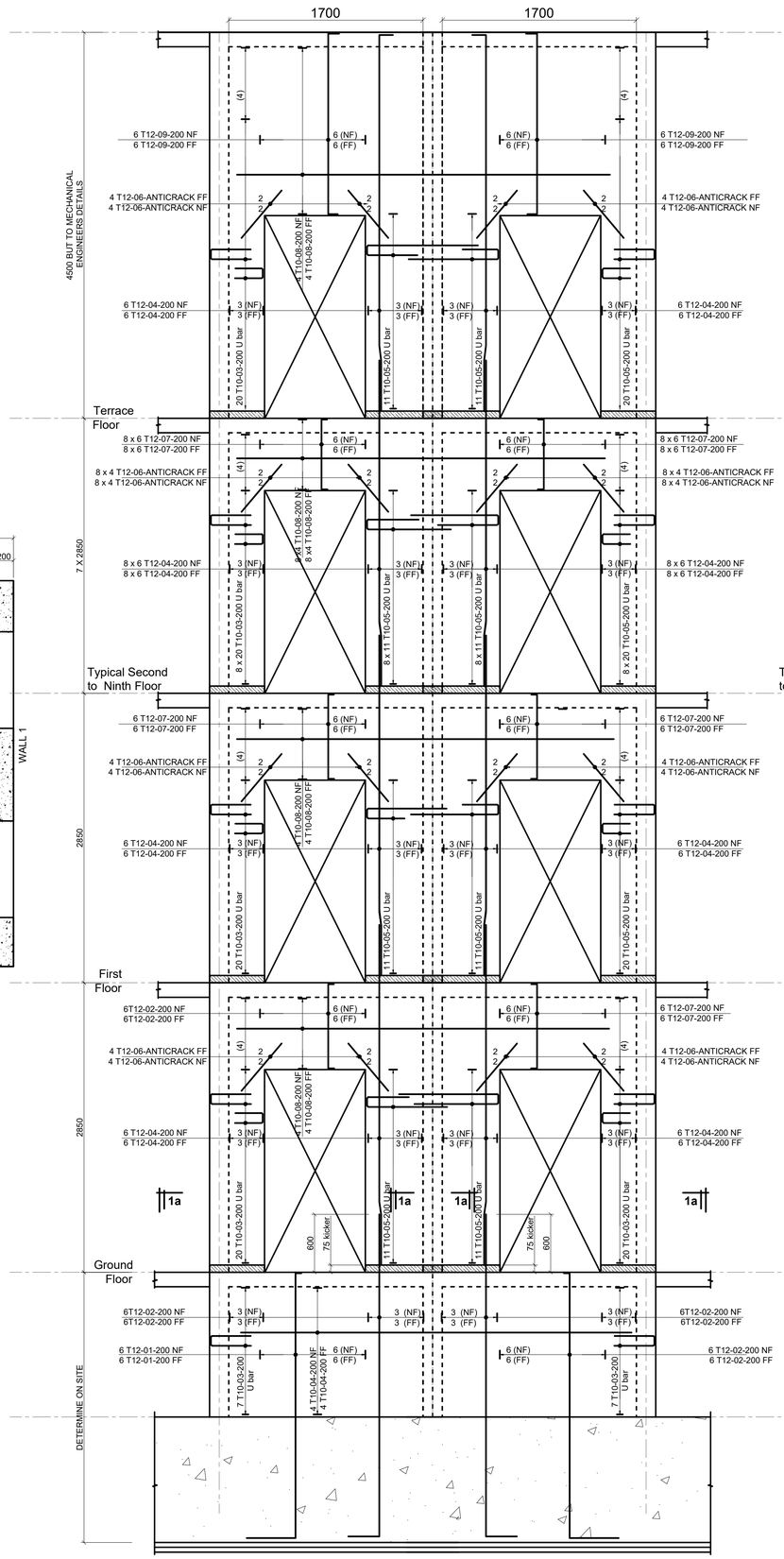
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
RAFT SECTION RC DETAILS

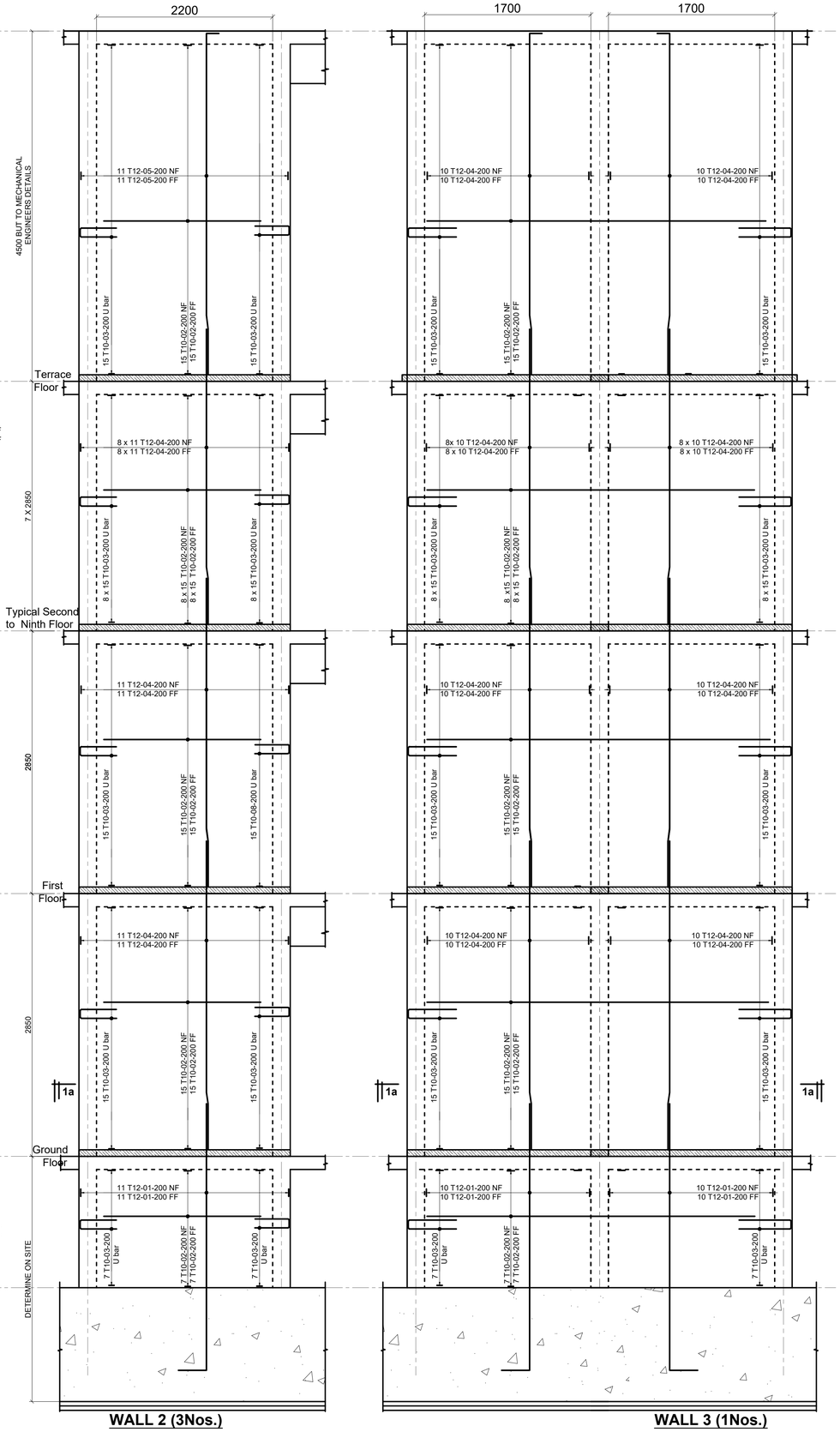
Revisions

No.	Description	Date





WALL 1 (1No.)



WALL 2 (3Nos.)

WALL 3 (1Nos.)

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. Only figured dimensions to be taken from this drawing.
4. Any figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.
6. Symbols; T-TMT Rebars to B S 4 461 T - Top face, B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns -40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds as 6mm fillet.
10. All structural steel to be painted with anti-rust primmer paint.

STRUCTURAL ENGINEER:

Revisions

No.	Description	Date

Project: PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS)

Title: LIFT SHAFT RC DETAILS

Designed by: JMN | Checked by: JMN

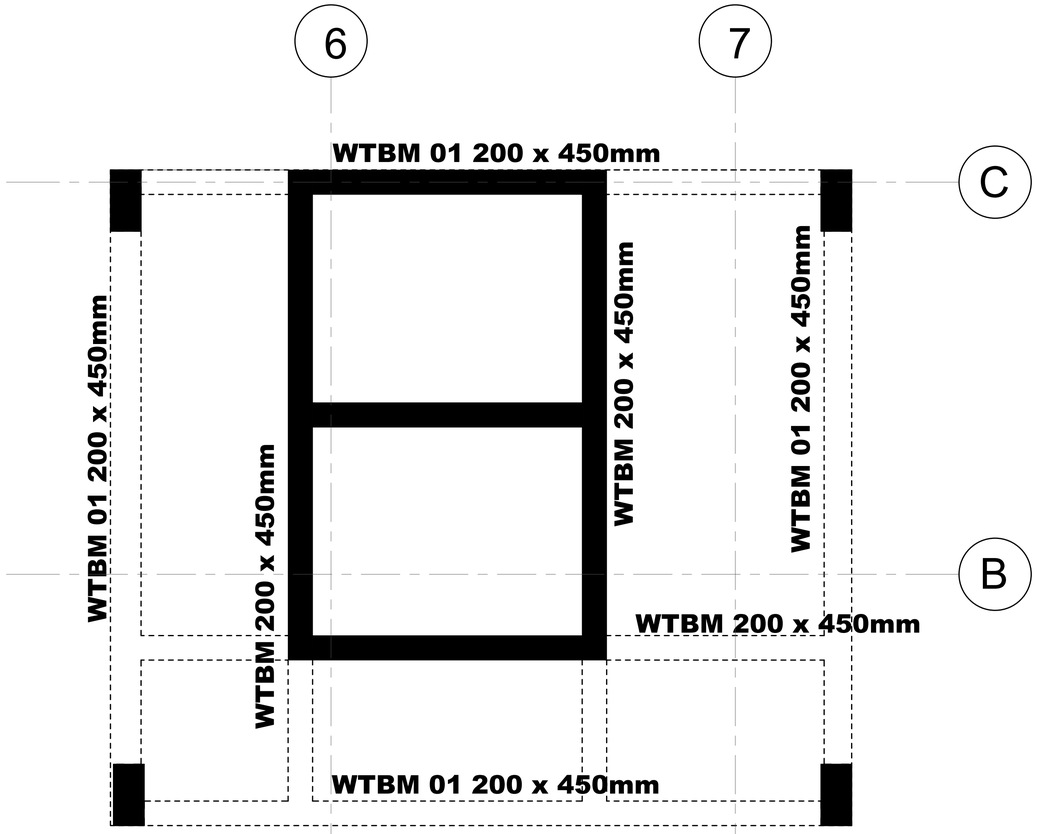
Approved by:SECRETARY, HOUSING DEPARTMENT

Date: 13th March 2024 | Scale: As shown

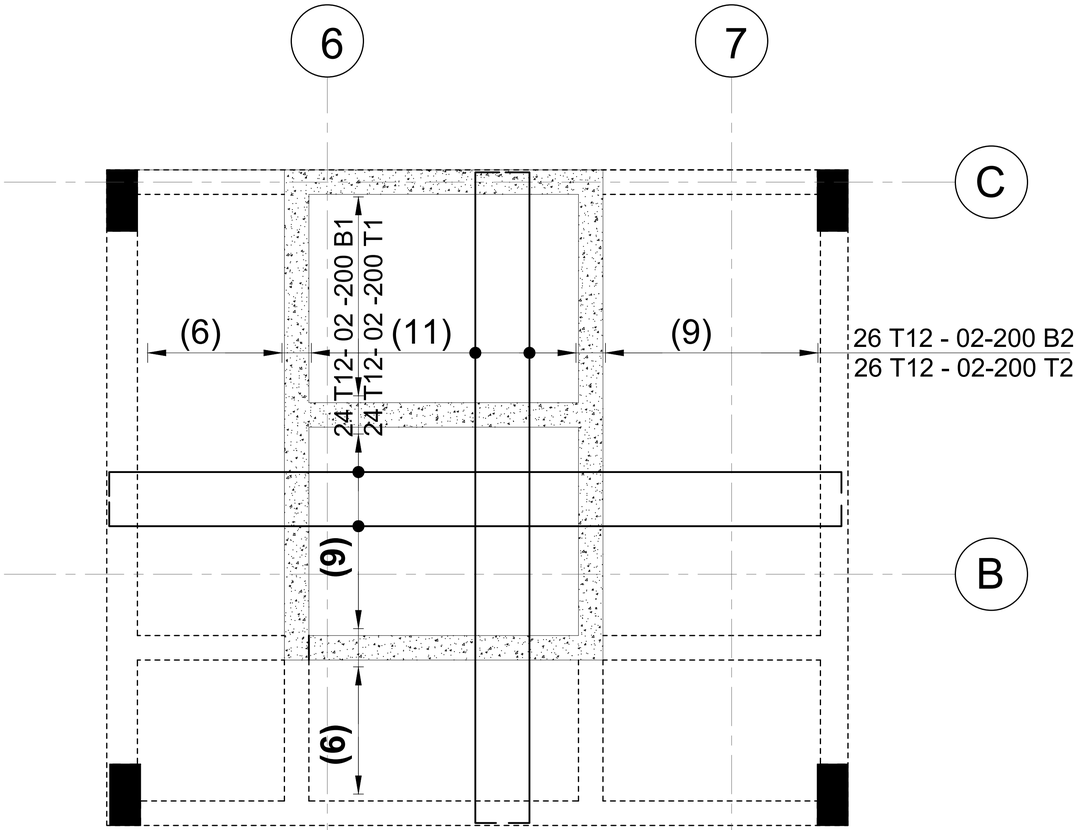
Drawing Number: AHP-G+9-BLKB 2.08

Client: MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

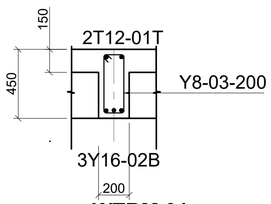
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT



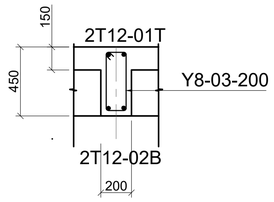
SLAB LAYOUT ABOVE LIFT & STAIRCASE 2
SCALE 1:25



RC SLAB ABOVE LIFT & STAIRCASE 2
SCALE 1:25



WTBM 01
(200X450mm)



WTBM
(200X450mm)

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

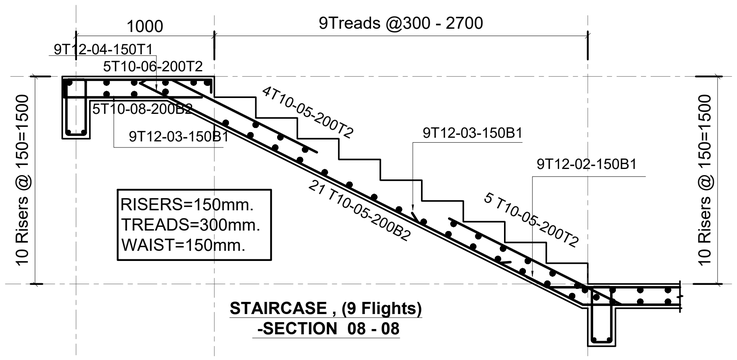
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 2.1B*

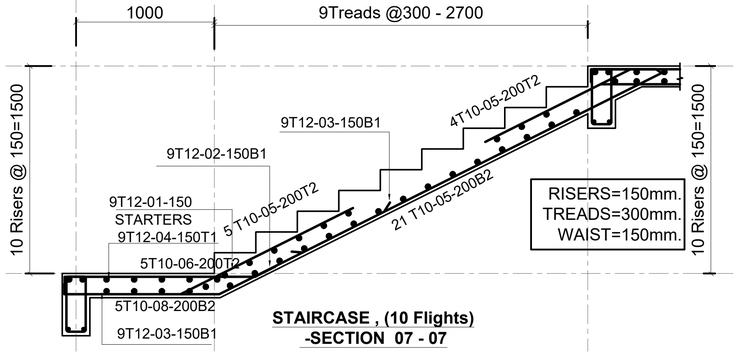
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
SLAB OVER LIFT SHAFT RC DETAILS

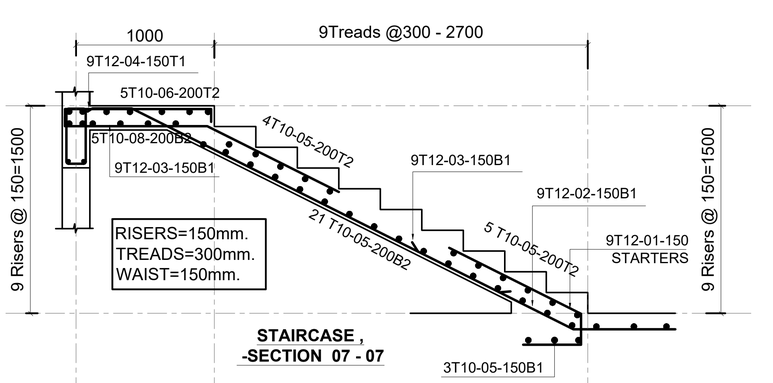
Revisions		
No.	Description	Date



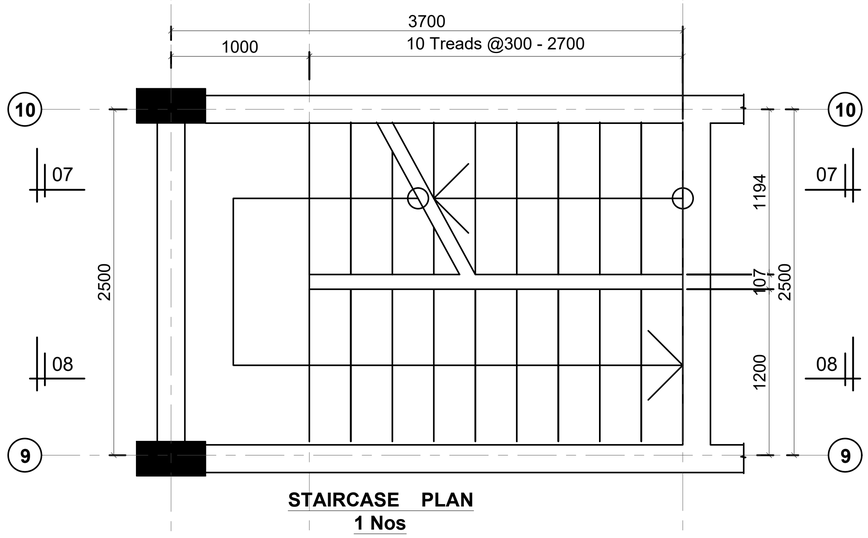
STAIRCASE , (9 Flights)
-SECTION 08 - 08



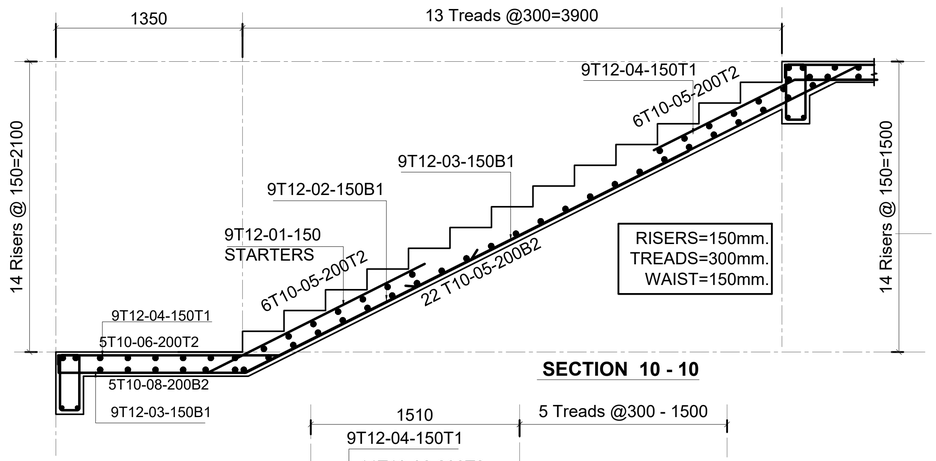
STAIRCASE , (10 Flights)
-SECTION 07 - 07



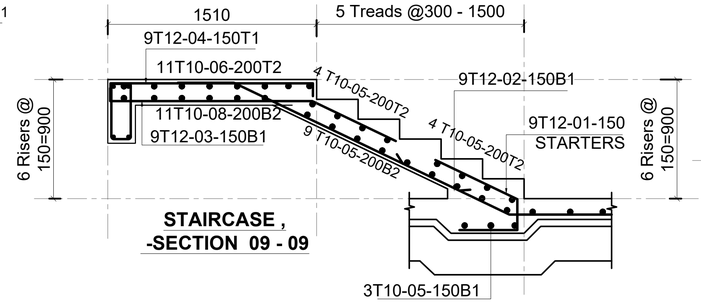
STAIRCASE ,
-SECTION 07 - 07



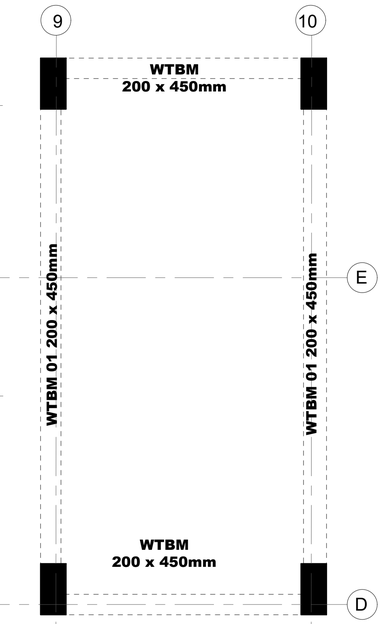
1 Nos



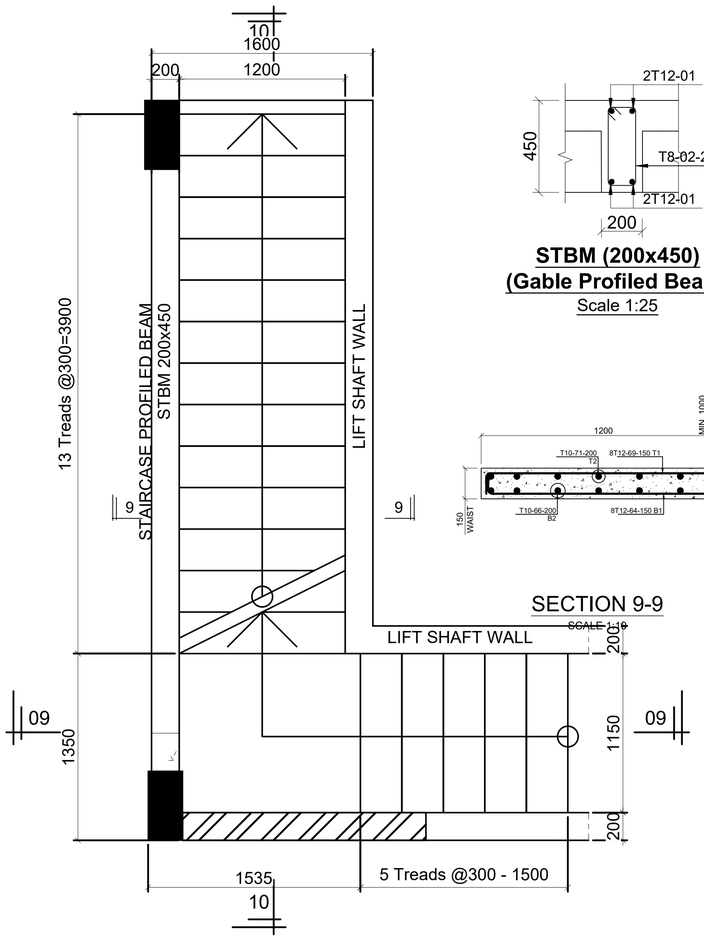
SECTION 10 - 10

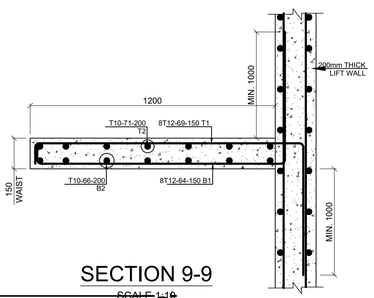


STAIRCASE ,
-SECTION 09 - 09

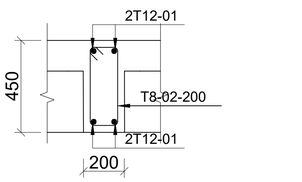


SLAB LAYOUT ABOVE STAIRCASE 1
SCALE 1:25

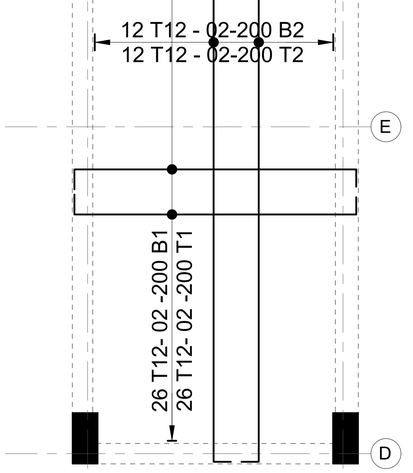




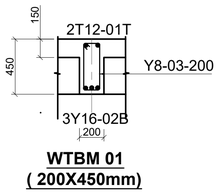
SECTION 9-9
SCALE 1:10



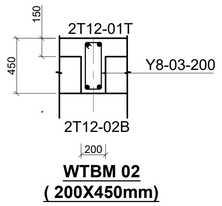
STBM (200x450)
(Gable Profiled Beam)
Scale 1:25



RC SLAB ABOVE STAIRCASE 1
SCALE 1:25



WTBM 01
(200X450mm)



WTBM 02
(200X450mm)

NOTES:
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.
6. Symbols: T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement: Slabs - 20mm. Beams - 25mm.Columns -40mm. Foundations -50mm
8. All structural steel be grade 43A.
9. All structural steel to be painted with anti-rust primmer paint.
10. All structural steel to be painted with anti-rust primmer paint.

Revisions		
No.	Description	Date

Project: PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title: STAIRCASE RC DETAILS

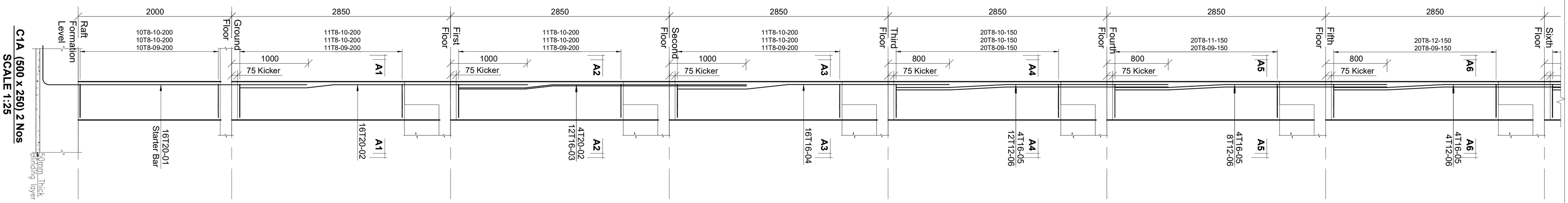
Designed by: JMN | Checked by: JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: 13th March 2024 | Scale: As shown
Drawing Number: AHP-G+9-BLK8 3.08

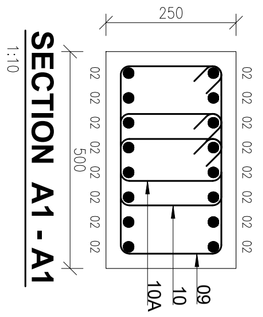
STRUCTURAL ENGINEER:

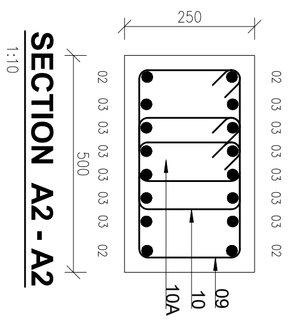
Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

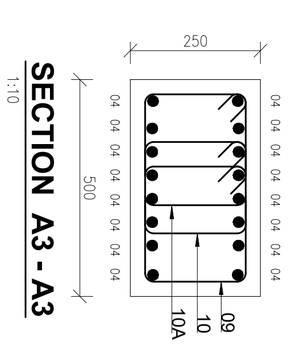
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

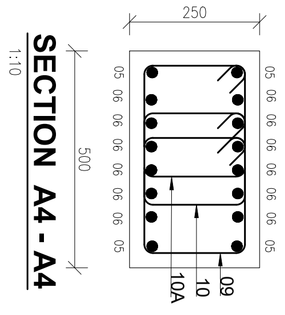
C1A (500 x 250) 2 Nos
SCALE 1:25

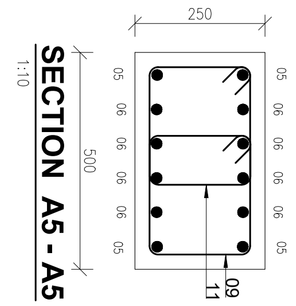


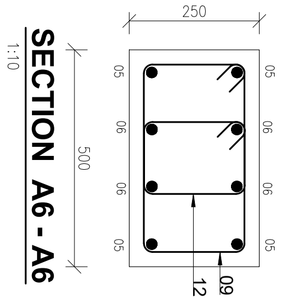


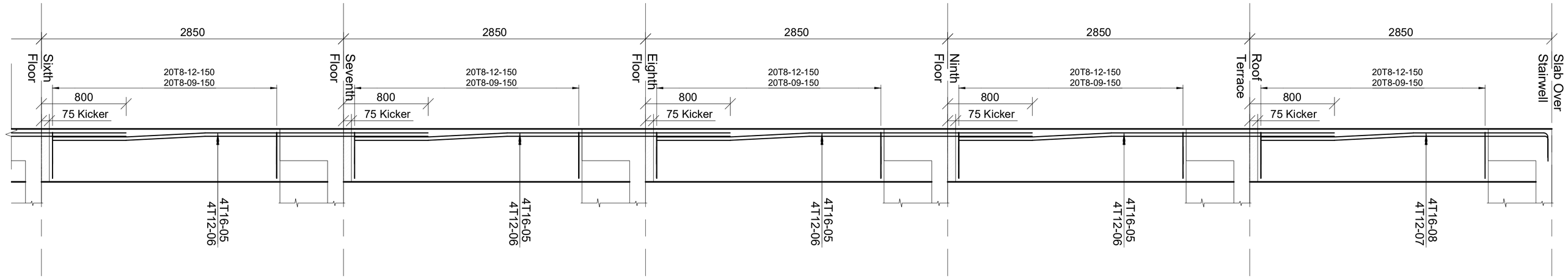












NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face, B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

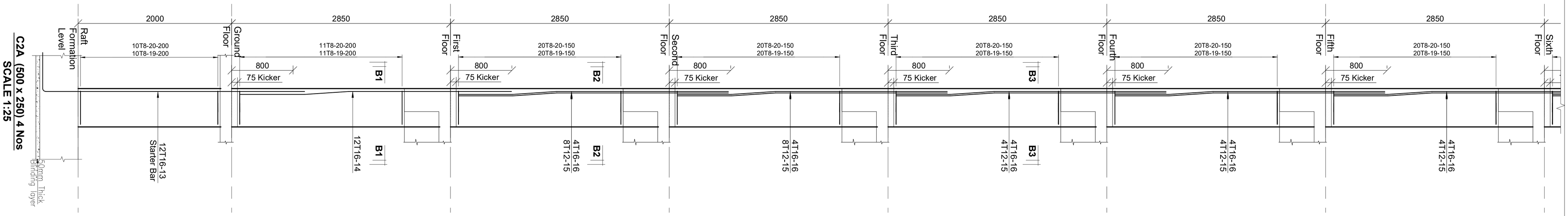
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.0B*

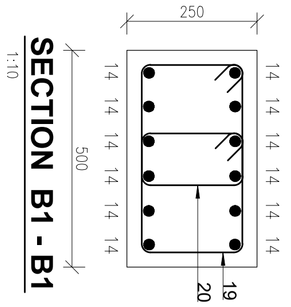
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C1A RC DETAILS

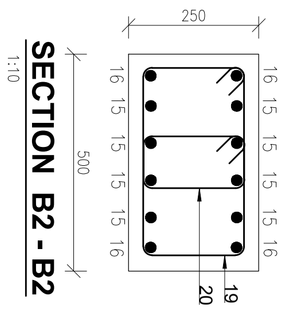
Revisions		
No.	Description	Date

C2A (500 x 250) 4 Nos
SCALE 1:25

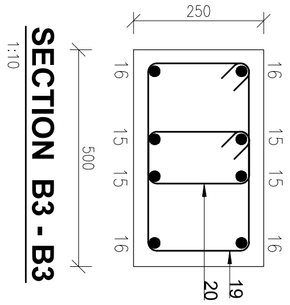




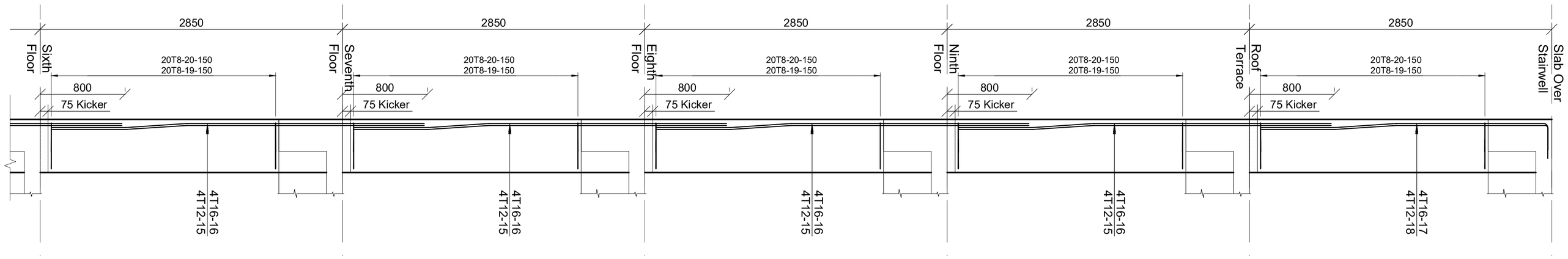
SECTION B1 - B1
1:10



SECTION B2 - B2
1:10



SECTION B3 - B3
1:10



NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.1B*

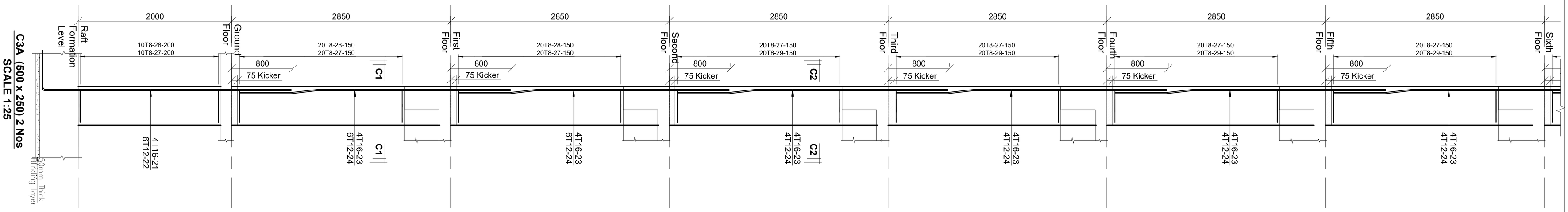
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

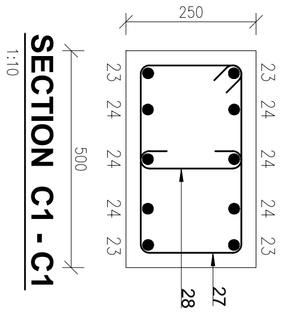
Title
COLUMN C2A RC DETAILS

Revisions

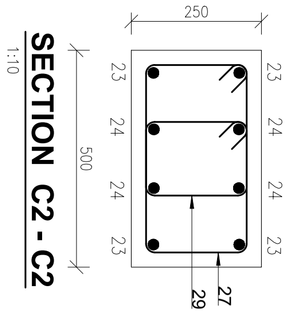
No.	Description	Date

C3A (500 x 250) 2 Nos
SCALE 1:25

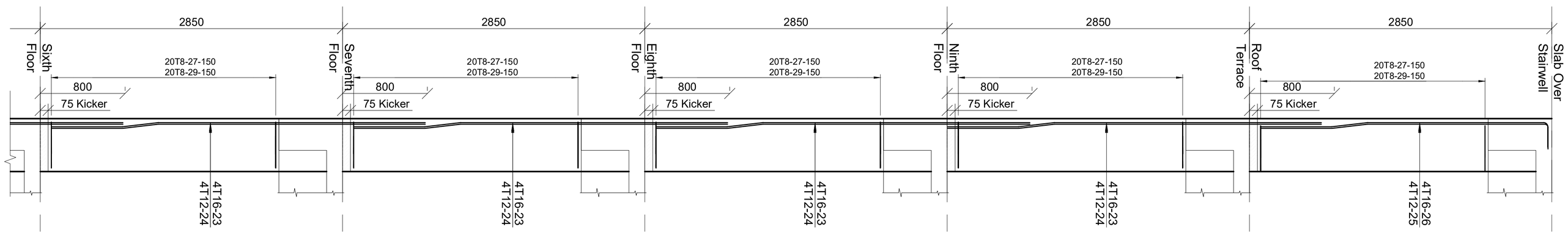




SECTION C1 - C1
1:10



SECTION C2 - C2
1:10



NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

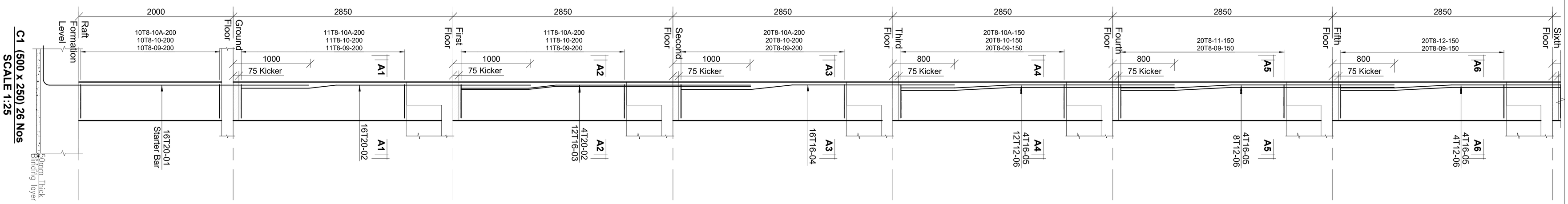
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.2B*

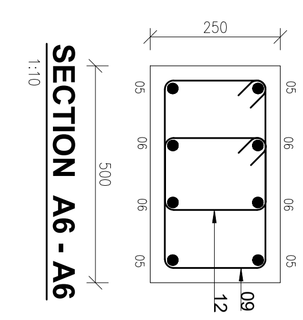
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C3A RC DETAILS

Revisions		
No.	Description	Date

C1 (500 x 250) 26 Nos
SCALE 1:25





SECTION A6 - A6
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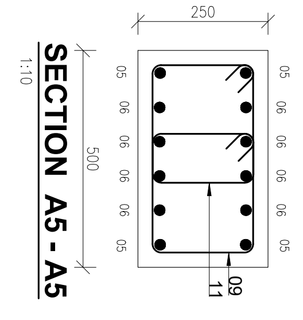
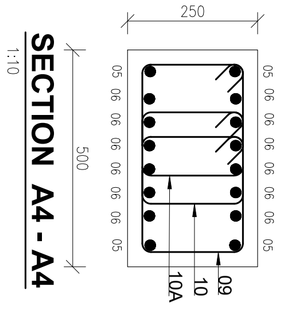
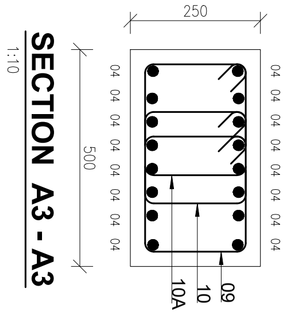


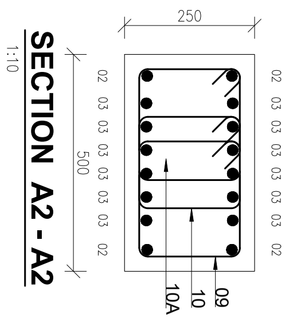
SECTION A5 - A5
1:10



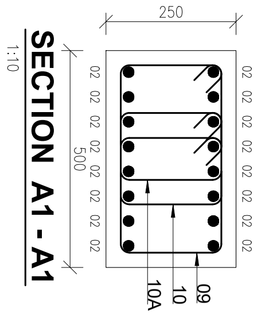
SECTION A4 - A4
1:10



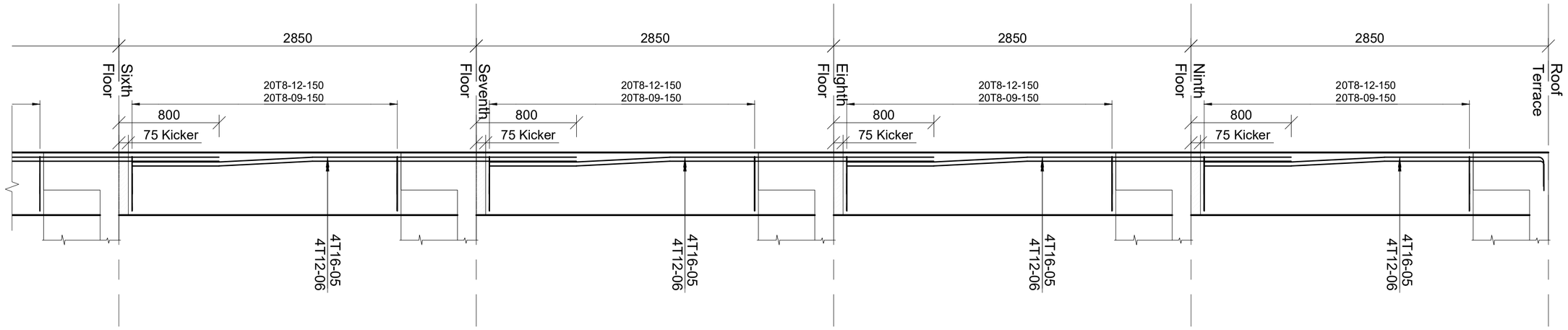
SECTION A3 - A3
1:10



SECTION A2 - A2
1:10



SECTION A1 - A1
1:10



NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

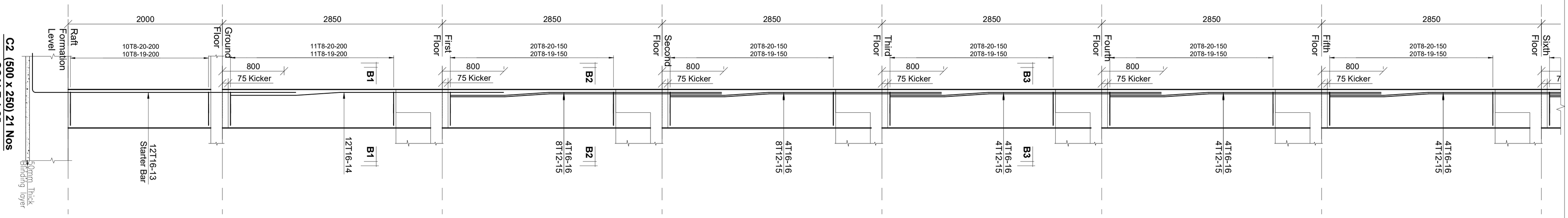
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.3B*

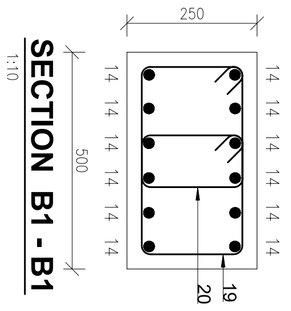
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C1 RC DETAILS

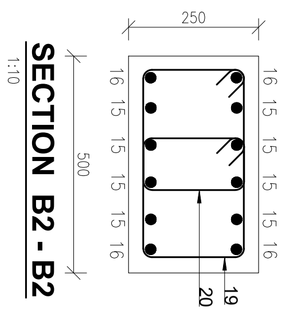
Revisions		
No.	Description	Date

C2 (500 x 250) 21 Nos
SCALE 1:25

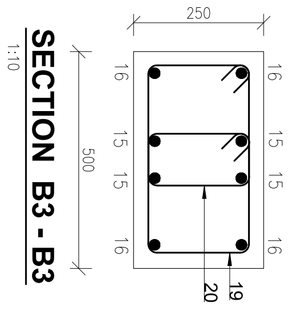




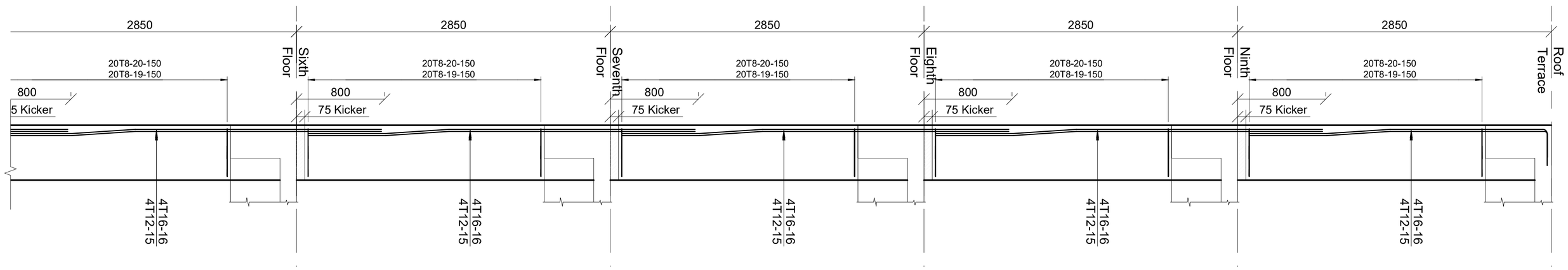
SECTION B1 - B1
1:10



SECTION B2 - B2
1:10



SECTION B3 - B3
1:10



NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.4B*

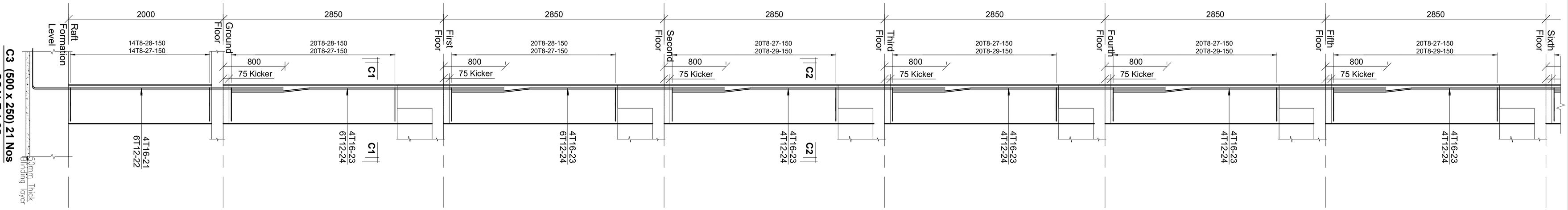
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

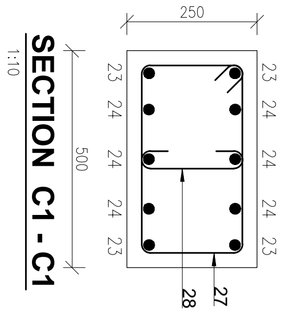
Title
COLUMN C2 RC DETAILS

Revisions

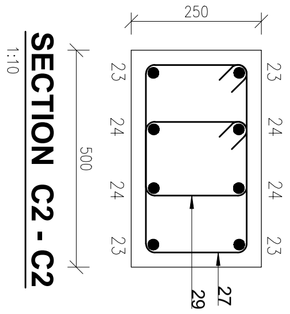
No.	Description	Date

C3 (500 x 250) 21 Nos
SCALE 1:25

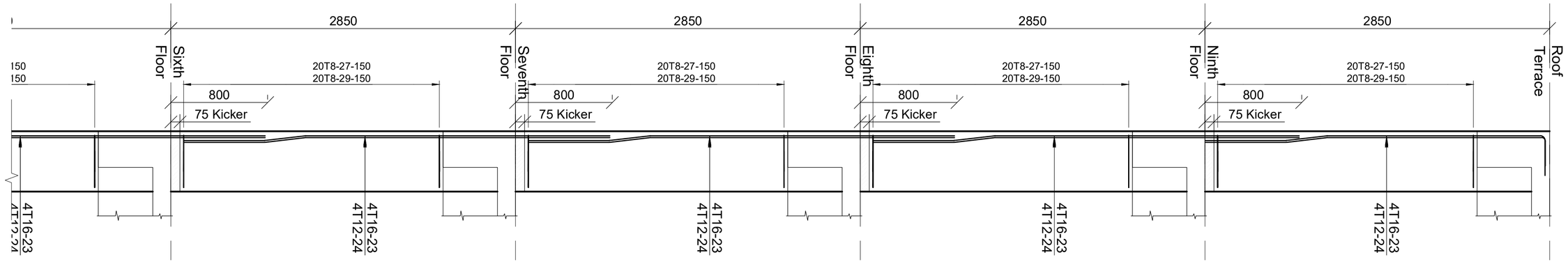




SECTION C1 - C1
1:10



SECTION C2 - C2
1:10



NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

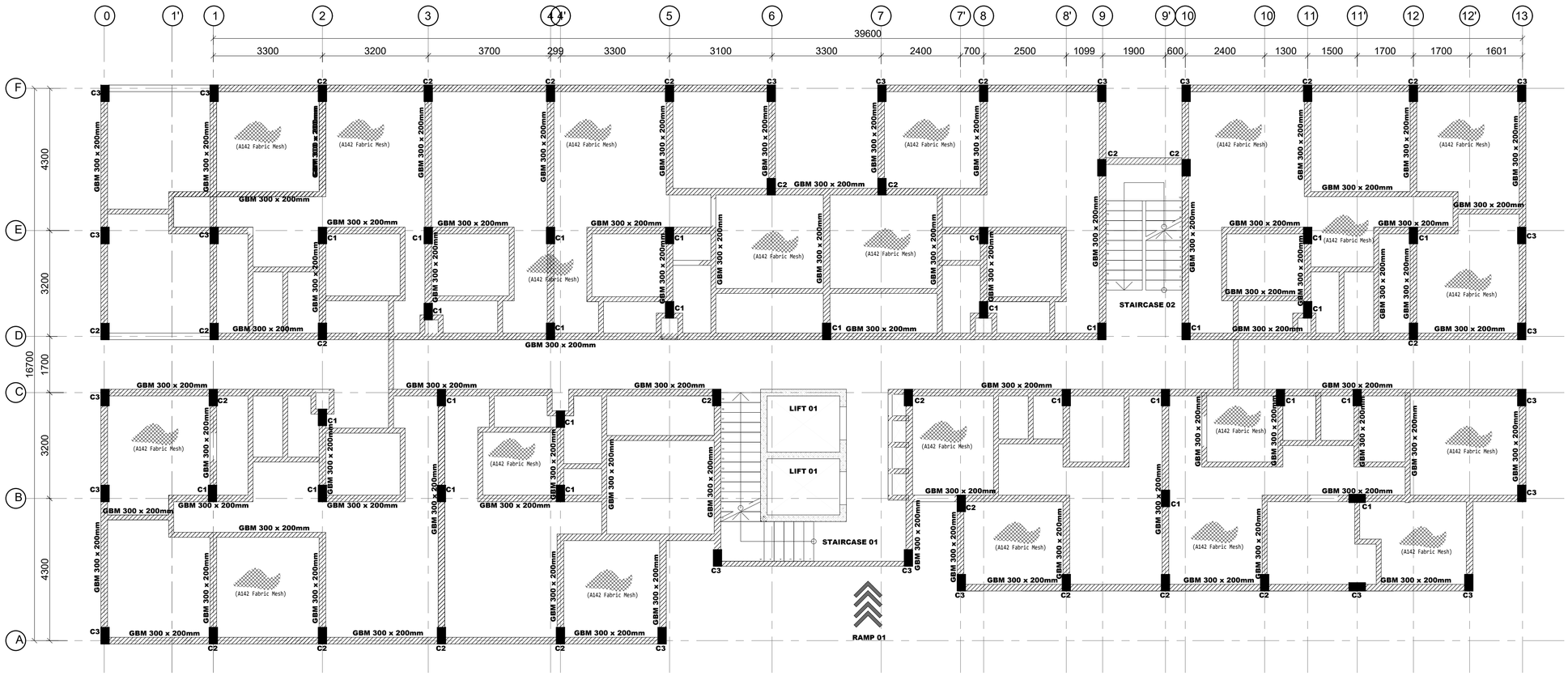
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.5B*

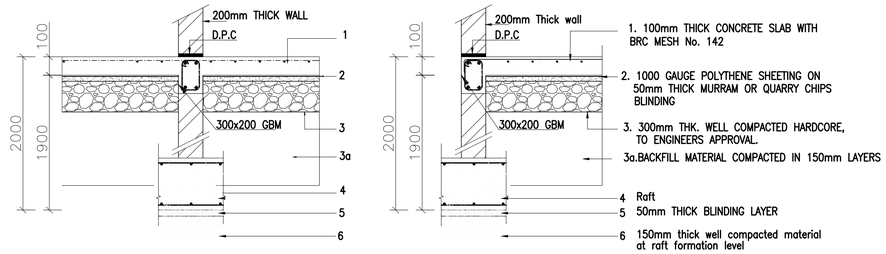
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C3 RC DETAILS

Revisions		
No.	Description	Date

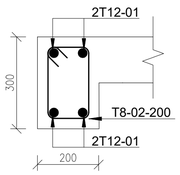


GROUND FLOOR LAYOUT
(100mm Thick Solid Slab With BRC Mesh A142 on top)
SCALE 1:75



TYPICAL INTERNAL FOUNDATION WALLING SECTION
1:25

TYPICAL INTERNAL FOUNDATION WALLING SECTION
1:25



GBM (300 X 200mm)
Scale 1:10

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

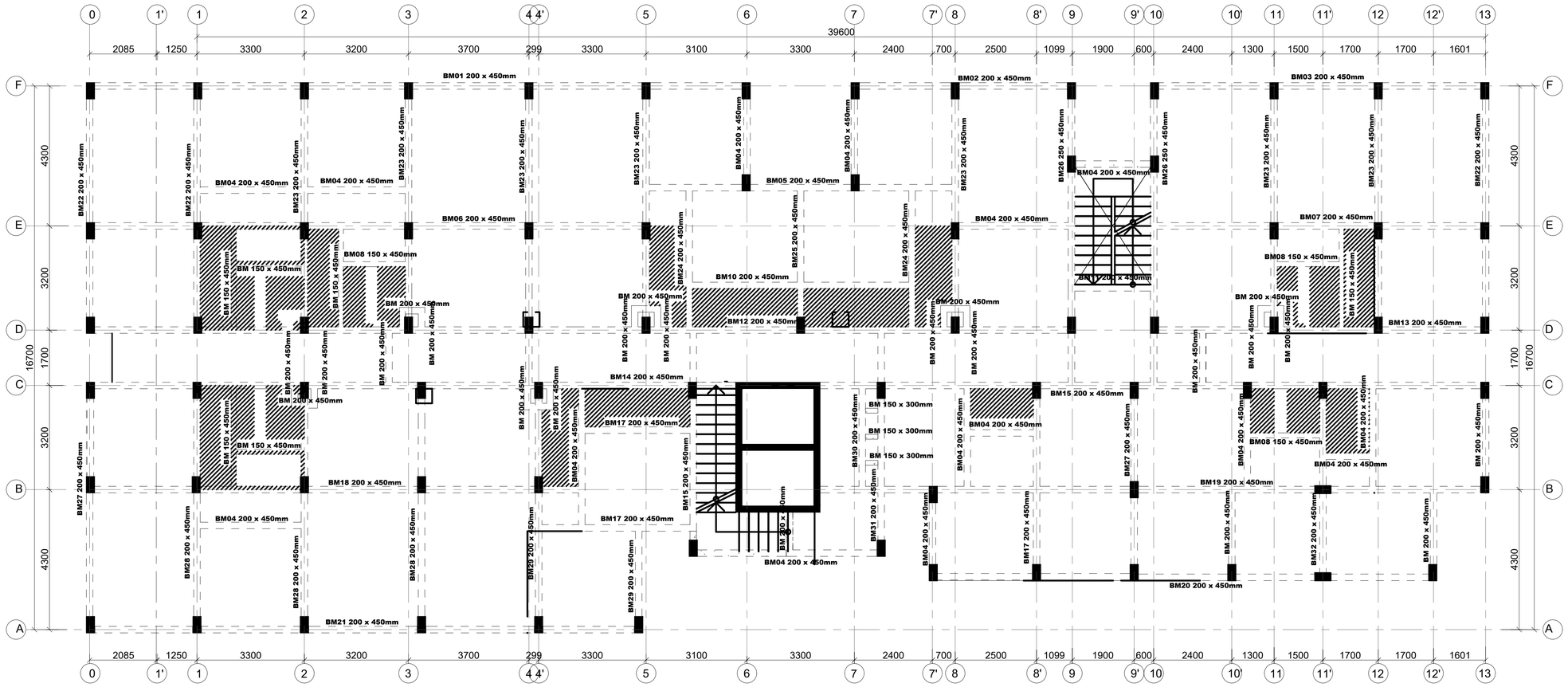
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 5.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
GROUND FLOOR LAYOUT DETAILS

Revisions		
No.	Description	Date



TYPICAL FLOOR SLAB LAYOUT
130 MM THICK SOLID SLAB AND 150 MM THICK SLAB IN WET AREAS(HATCHED)
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

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7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

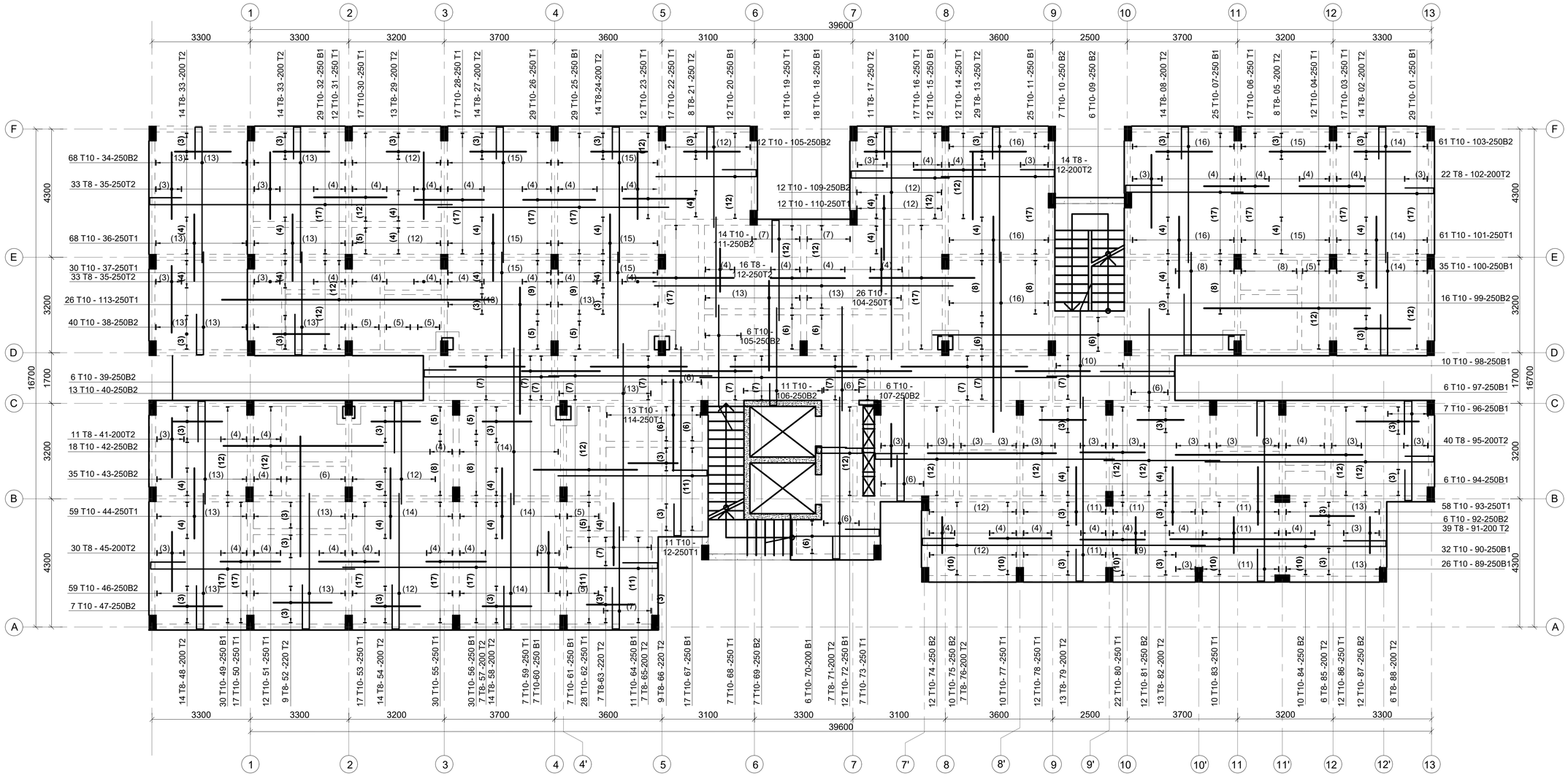
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 6.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
TYPICAL FLOOR SLAB LAYOUT DETAILS

Revisions		
No.	Description	Date



TYPICAL FLOOR SLAB REBAR DETAILS
130 MM THICK SOLID SLAB AND 150 MM THICK SLAB IN WET AREAS REBAR DETAILS
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
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Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

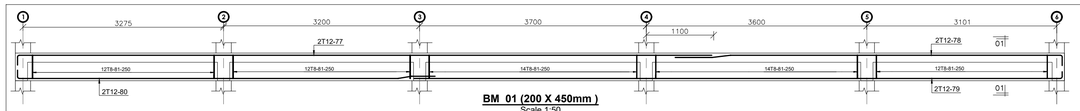
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 6.1B*

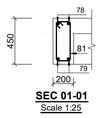
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
TYPICAL FLOOR SLAB REBAR DETAILS

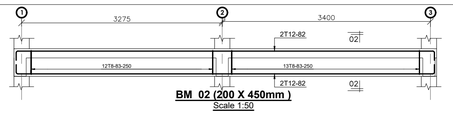
Revisions		
No.	Description	Date



BM 01 (200 X 450mm)
Scale 1:50

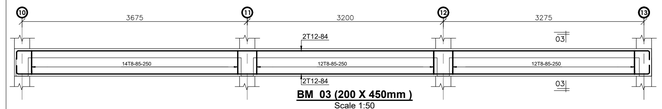


SEC 01-01
Scale 1:25

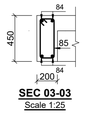


BM 02 (200 X 450mm)
Scale 1:50

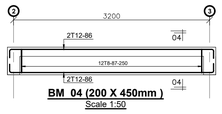
SEC 02-02
Scale 1:25



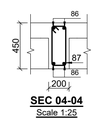
BM 03 (200 X 450mm)
Scale 1:50



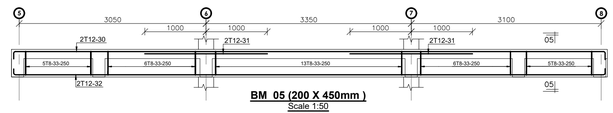
SEC 03-03
Scale 1:25



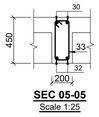
BM 04 (200 X 450mm)
Scale 1:50



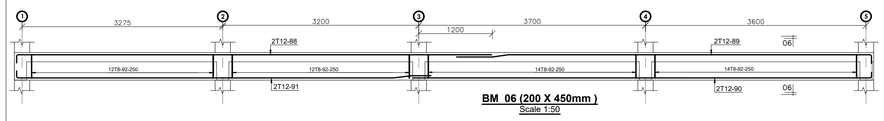
SEC 04-04
Scale 1:25



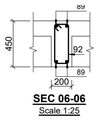
BM 05 (200 X 450mm)
Scale 1:50



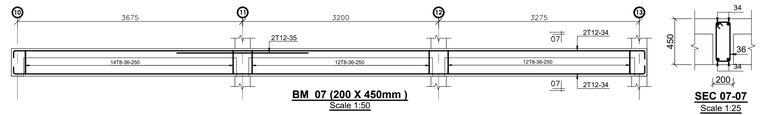
SEC 05-05
Scale 1:25



BM 06 (200 X 450mm)
Scale 1:50



SEC 06-06
Scale 1:25



BM 07 (200 X 450mm)
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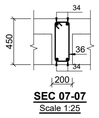
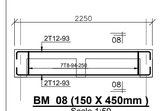
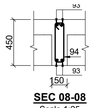


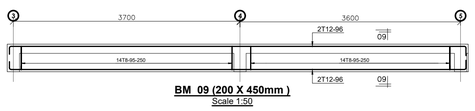
SEC 07-07
Scale 1:25



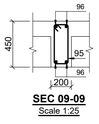
BM 08 (150 X 450mm)
Scale 1:50



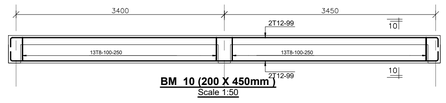
SEC 08-08
Scale 1:25



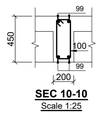
BM 09 (200 X 450mm)
Scale 1:50



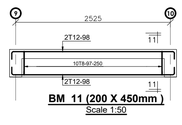
SEC 09-09
Scale 1:25



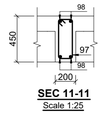
BM 10 (200 X 450mm)
Scale 1:50



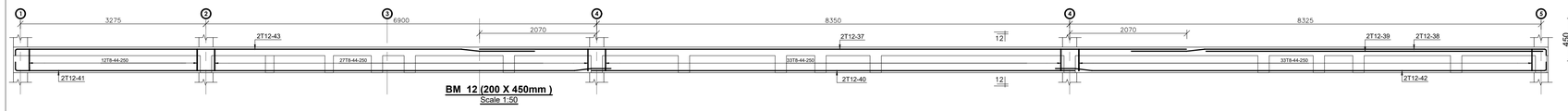
SEC 10-10
Scale 1:25



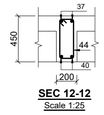
BM 11 (200 X 450mm)
Scale 1:50



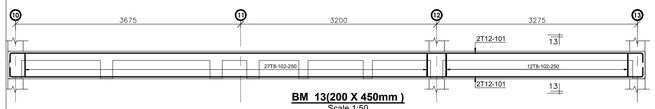
SEC 11-11
Scale 1:25



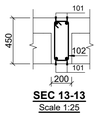
BM 12 (200 X 450mm)
Scale 1:50



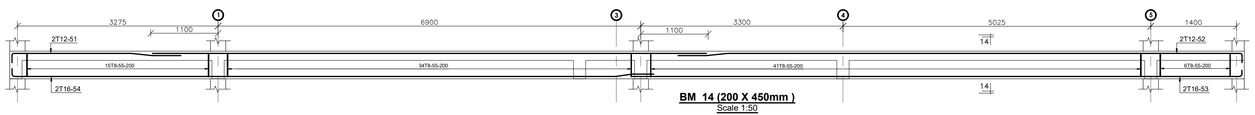
SEC 12-12
Scale 1:25



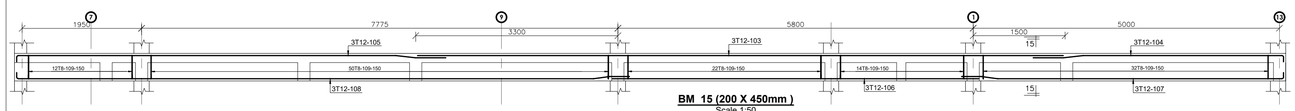
BM 13(200 X 450mm)
Scale 1:50



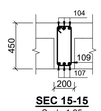
SEC 13-13
Scale 1:25



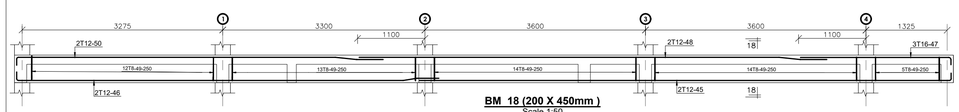
BM 14 (200 X 450mm)
Scale 1:50



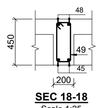
BM 15 (200 X 450mm)
Scale 1:50



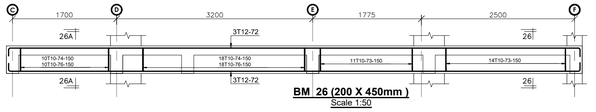
SEC 15-15
Scale 1:25



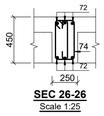
BM 18 (200 X 450mm)
Scale 1:50



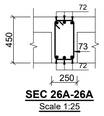
SEC 18-18
Scale 1:25



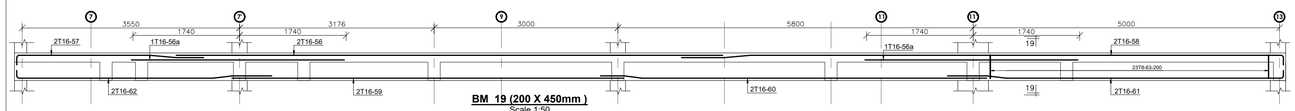
BM 26 (200 X 450mm)
Scale 1:50



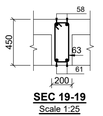
SEC 26-26
Scale 1:25



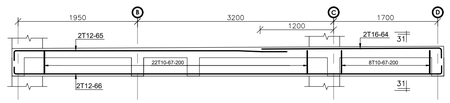
SEC 26A-26A
Scale 1:25



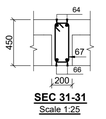
BM 19 (200 X 450mm)
Scale 1:50



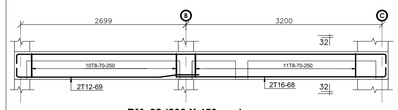
SEC 19-19
Scale 1:25



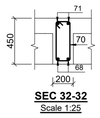
BM 31 (200 X 450mm)
Scale 1:50



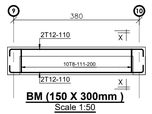
SEC 31-31
Scale 1:25



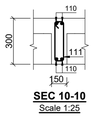
BM 32 (200 X 450mm)
Scale 1:50



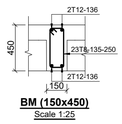
SEC 32-32
Scale 1:25



BM (150 X 300mm)
Scale 1:50



SEC 10-10
Scale 1:25



BM (150x450)
Scale 1:25

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

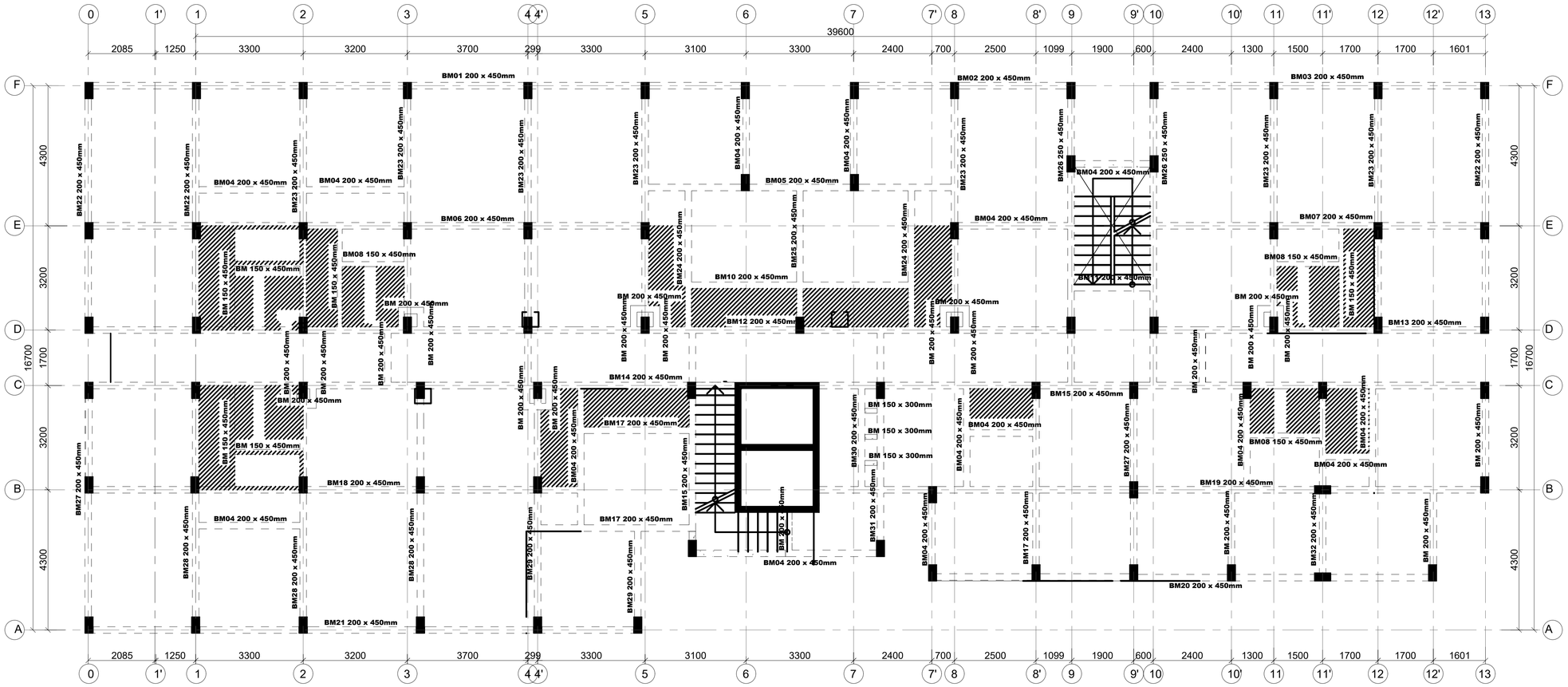
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 6.2B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
TYPICAL FLOOR SLAB BEAMS RC DETAILS

Revisions		
No.	Description	Date



ROOF TERRACE FLOOR SLAB REBAR DETAILS
150 MM THICK SLAB

NOTE:

-Terrace floor slab to be waterproofed with physical barrier waterproofing membrane such as APP or equivalent.

-APP membrane to be protected using screed and concrete interlocking tiles

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

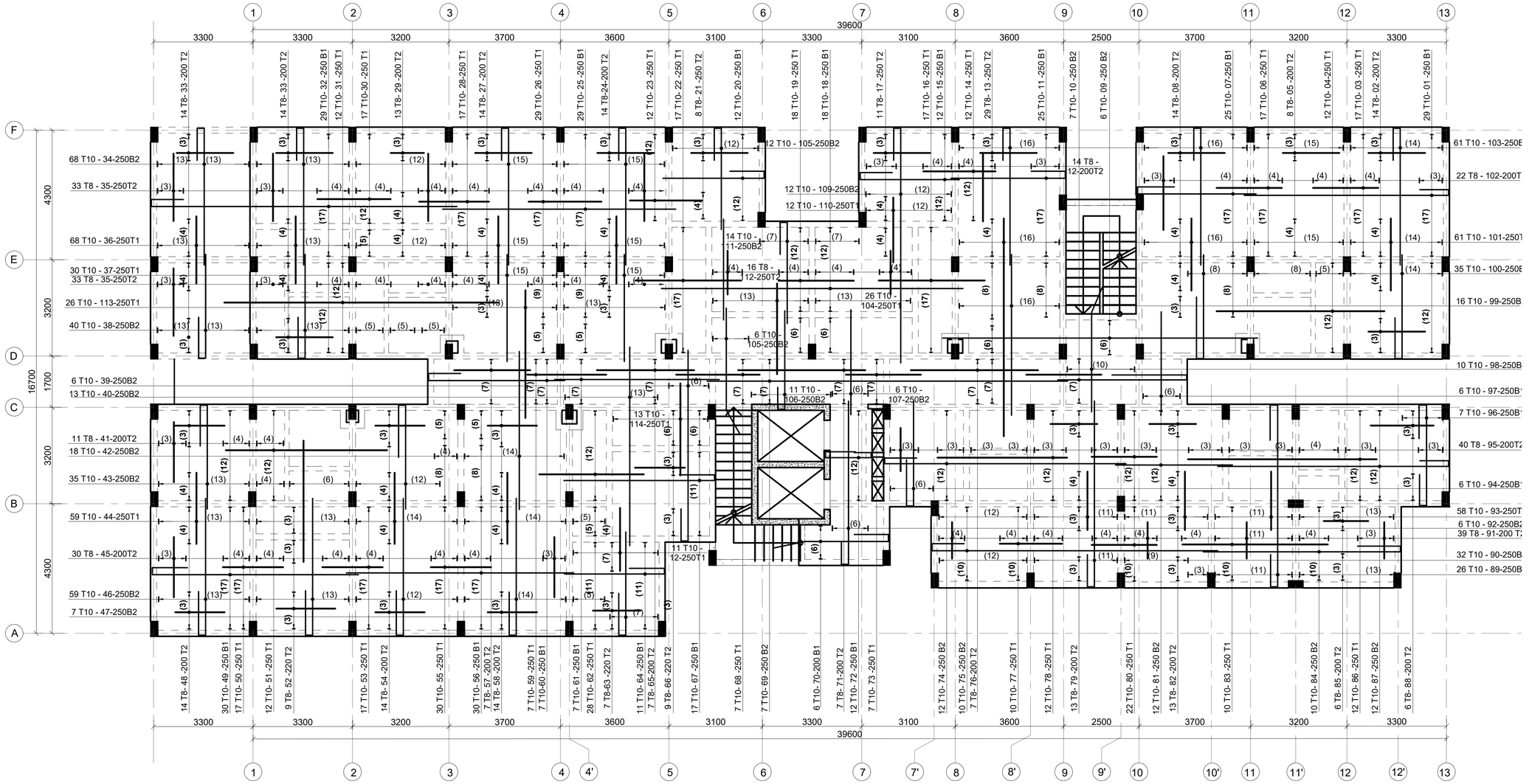
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 7.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
ROOF TERRACE FLOOR SLAB LAYOUT DETAILS

Revisions		
No.	Description	Date



ROOF TERRACE FLOOR SLAB REBAR DETAILS
150 MM THICK SLAB

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

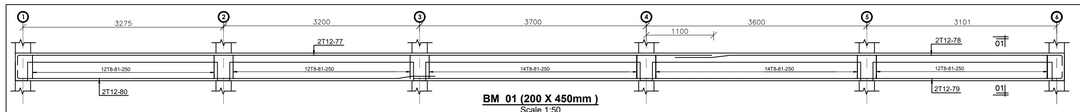
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 7.1B*

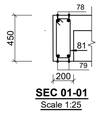
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
ROOF TERRACE FLOOR SLAB REBAR DETAILS

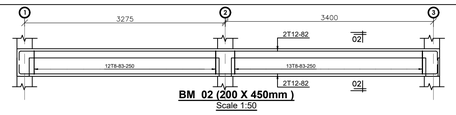
Revisions		
No.	Description	Date



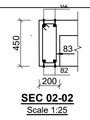
BM 01 (200 X 450mm)
Scale 1:50



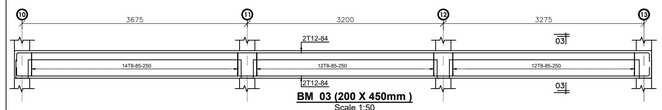
SEC 01-01
Scale 1:25



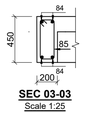
BM 02 (200 X 450mm)
Scale 1:50



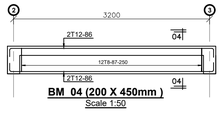
SEC 02-02
Scale 1:25



BM 03 (200 X 450mm)
Scale 1:50



SEC 03-03
Scale 1:25



BM 04 (200 X 450mm)
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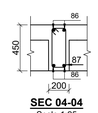
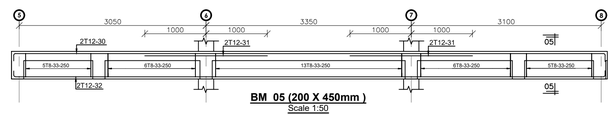
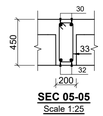


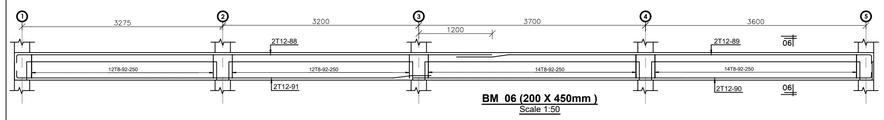
SEC 04-04
Scale 1:25



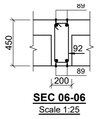
BM 05 (200 X 450mm)
Scale 1:50



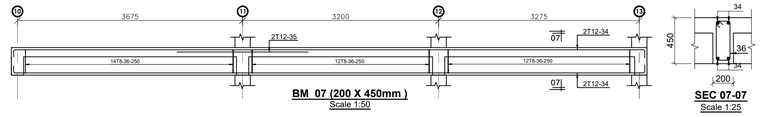
SEC 05-05
Scale 1:25



BM 06 (200 X 450mm)
Scale 1:50

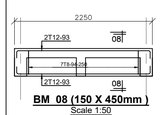


SEC 06-06
Scale 1:25

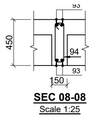


BM 07 (200 X 450mm)
Scale 1:50

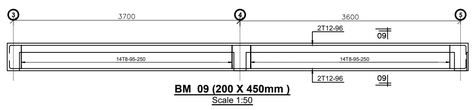
SEC 07-07
Scale 1:25



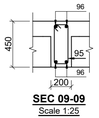
BM 08 (150 X 450mm)
Scale 1:50



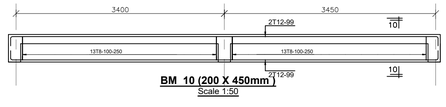
SEC 08-08
Scale 1:25



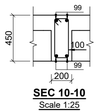
BM 09 (200 X 450mm)
Scale 1:50



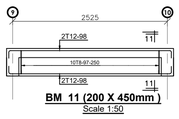
SEC 09-09
Scale 1:25



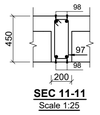
BM 10 (200 X 450mm)
Scale 1:50



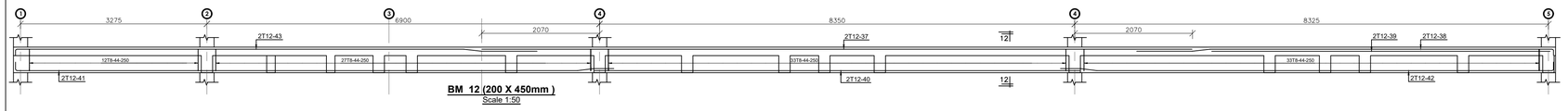
SEC 10-10
Scale 1:25



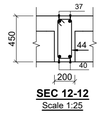
BM 11 (200 X 450mm)
Scale 1:50



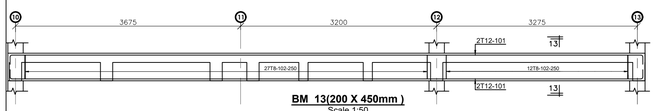
SEC 11-11
Scale 1:25



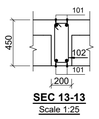
BM 12 (200 X 450mm)
Scale 1:50



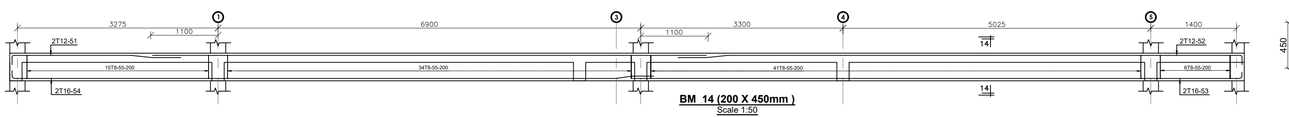
SEC 12-12
Scale 1:25



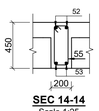
BM 13(200 X 450mm)
Scale 1:50



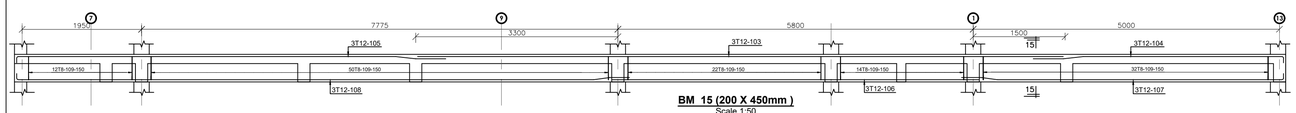
SEC 13-13
Scale 1:25



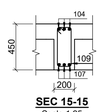
BM 14 (200 X 450mm)
Scale 1:50



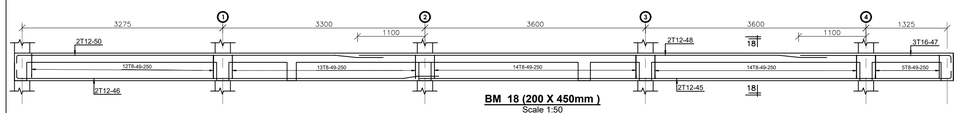
SEC 14-14
Scale 1:25



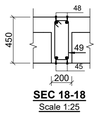
BM 15 (200 X 450mm)
Scale 1:50



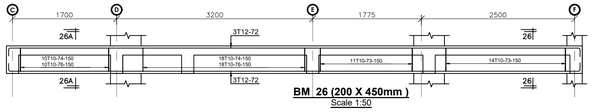
SEC 15-15
Scale 1:25



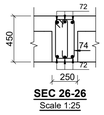
BM 18 (200 X 450mm)
Scale 1:50



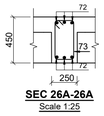
SEC 18-18
Scale 1:25



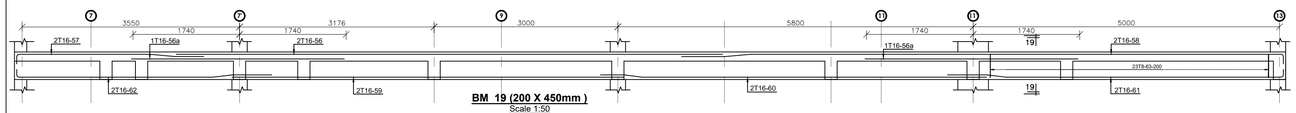
BM 26 (200 X 450mm)
Scale 1:50



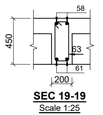
SEC 26-26
Scale 1:25



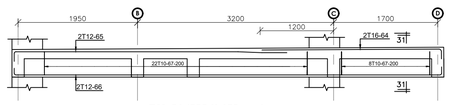
SEC 26A-26A
Scale 1:25



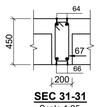
BM 19 (200 X 450mm)
Scale 1:50



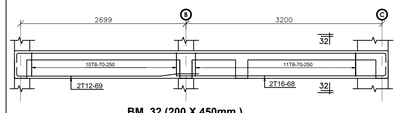
SEC 19-19
Scale 1:25



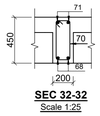
BM 31 (200 X 450mm)
Scale 1:50



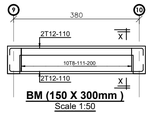
SEC 31-31
Scale 1:25



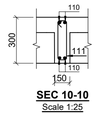
BM 32 (200 X 450mm)
Scale 1:50



SEC 32-32
Scale 1:25



BM (150 X 300mm)
Scale 1:50



SEC 10-10
Scale 1:25

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

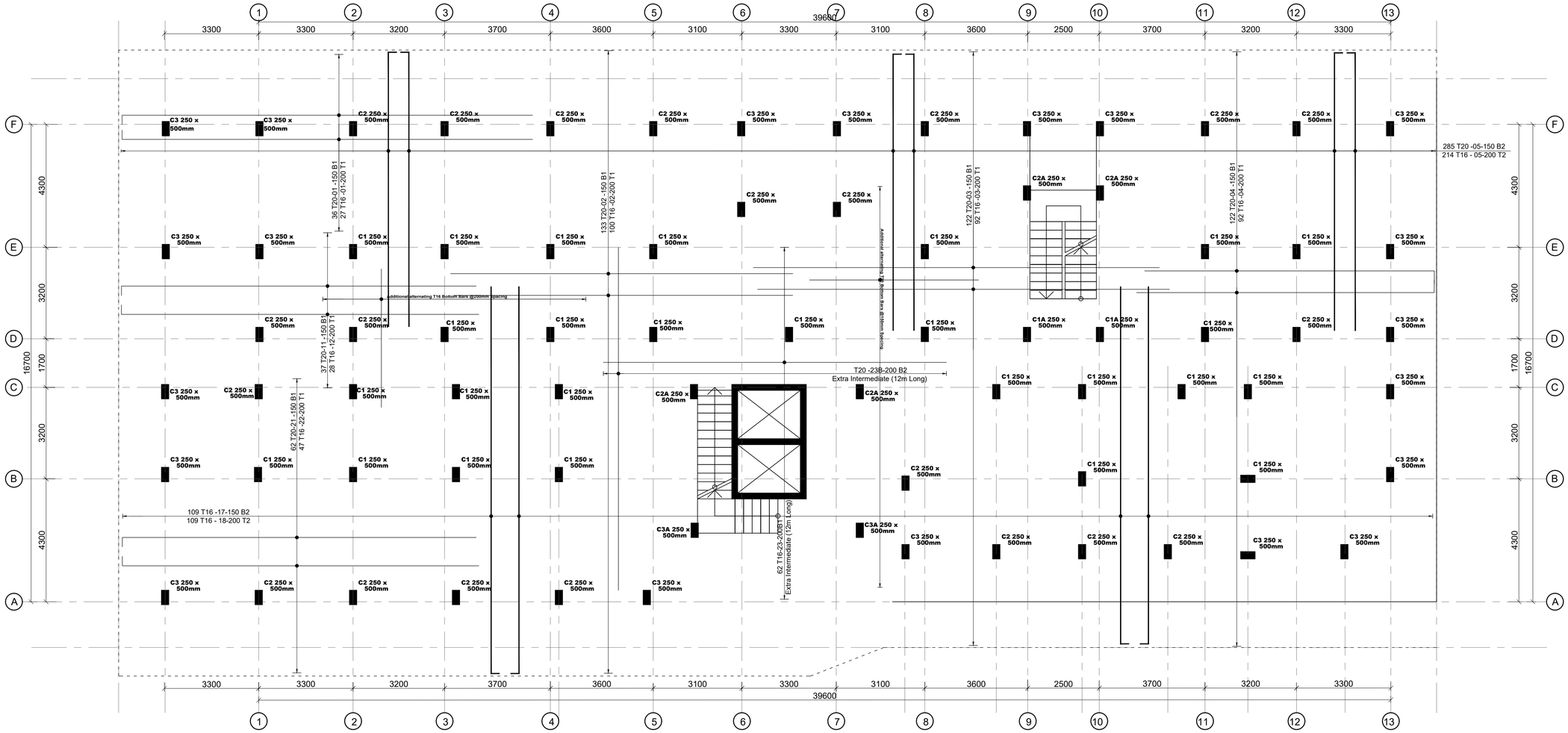
STRUCTURAL ENGINEER:

Designed by: *JMN*	Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT	
Date: *13th March 2024*	Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 7.2B*	

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
ROOF TERRACE FLOOR BEAMS REBAR DETAILS

Revisions		
No.	Description	Date



FOUNDATION RAFT REBAR DETAILS
-750 MM THK RAFT SLAB
SCALE 1:75

NOTE: RAFT FORMATION SURFACE TO BE COMPACTED PRIOR TO LAYING OF RAFT BLINDING

	ELEMENT	Kg/m3
	FOUNDATION	36
	COLUMNS	193
	SLAB	66
	BEAMS	62
	GROUND BEAMS	103
	STAIRCASE 1	166
	STAIRCASE 2	121
	LIFT	88
	SLAB OVER STAIRCASE 1	112
	BEAM OVER STAIRCASE 1	95
	SLAB OVER STAIRCASE 2	122
	BEAMS OVER STAIRCASE 2	108

NOTE:
Soil bearing capacity
120KN/m2

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

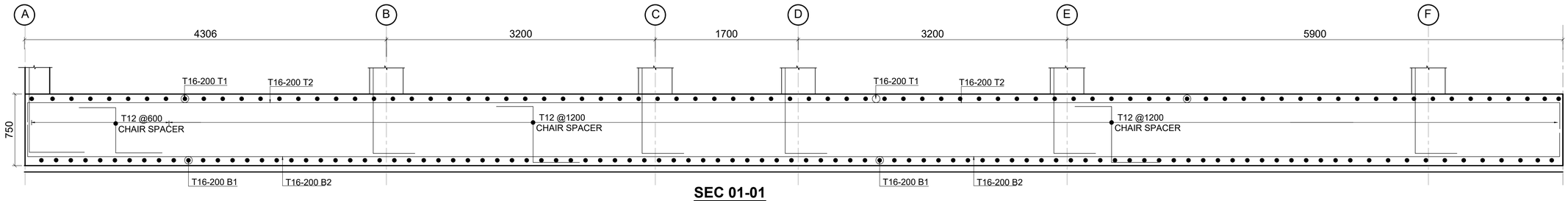
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 1.0B*

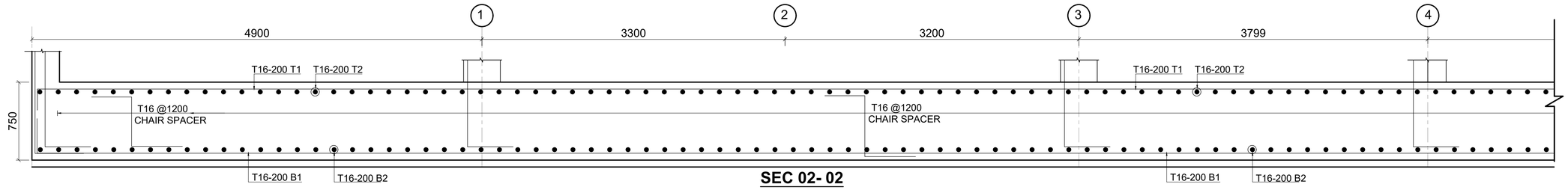
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
FOUNDATION RAFT RC DETAILS

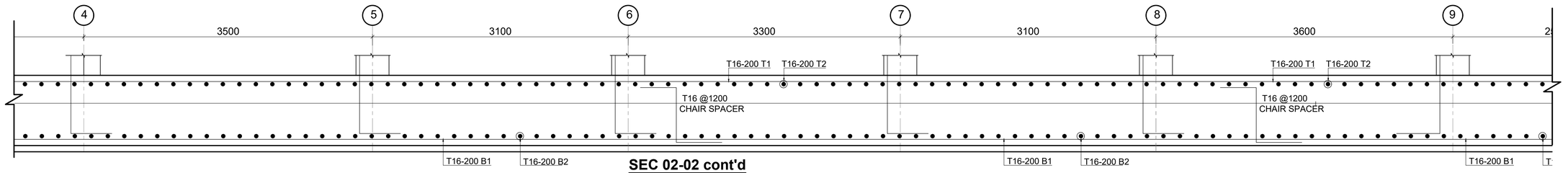
Revisions		
No.	Description	Date



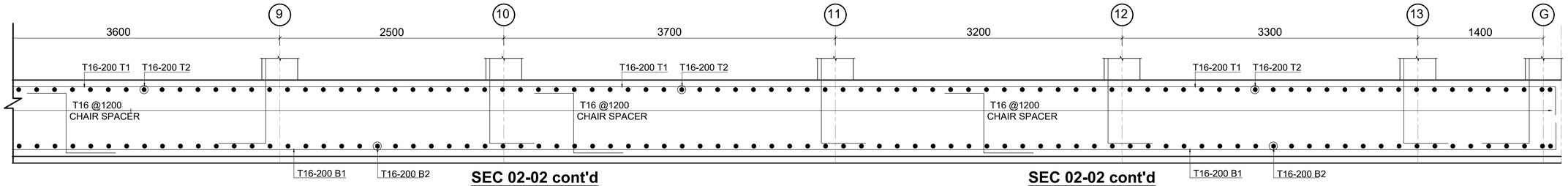
SEC 01-01



SEC 02- 02



SEC 02-02 cont'd



SEC 02-02 cont'd

SEC 02-02 cont'd

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

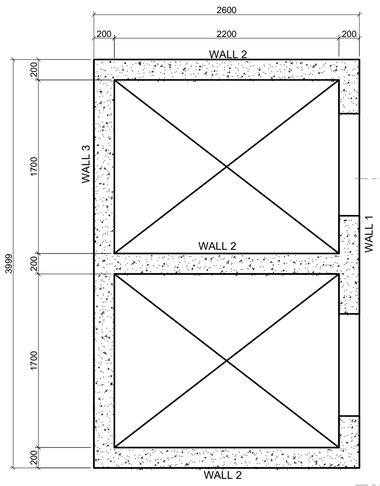
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 1.1B*

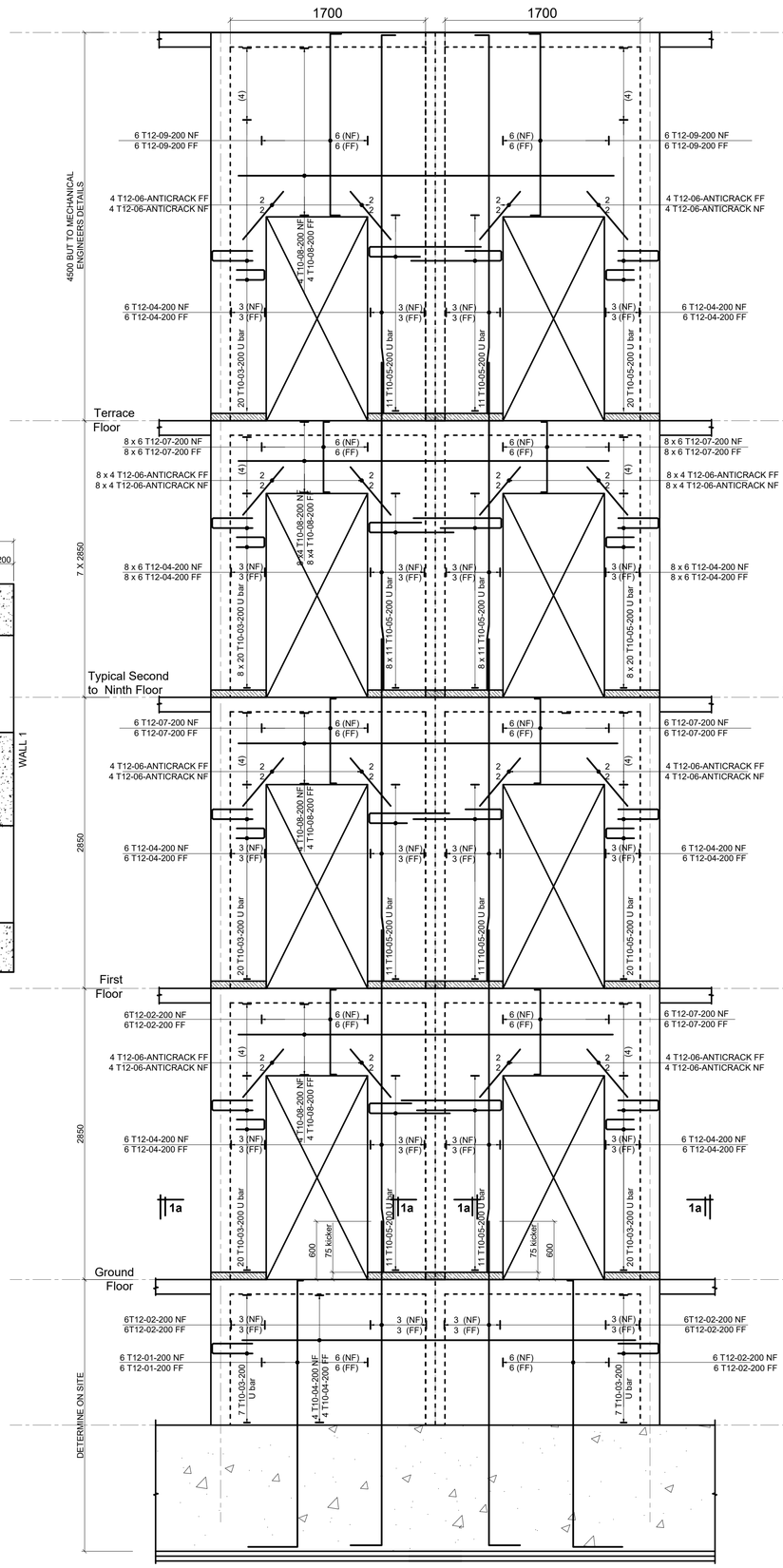
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
RAFT SECTION RC DETAILS

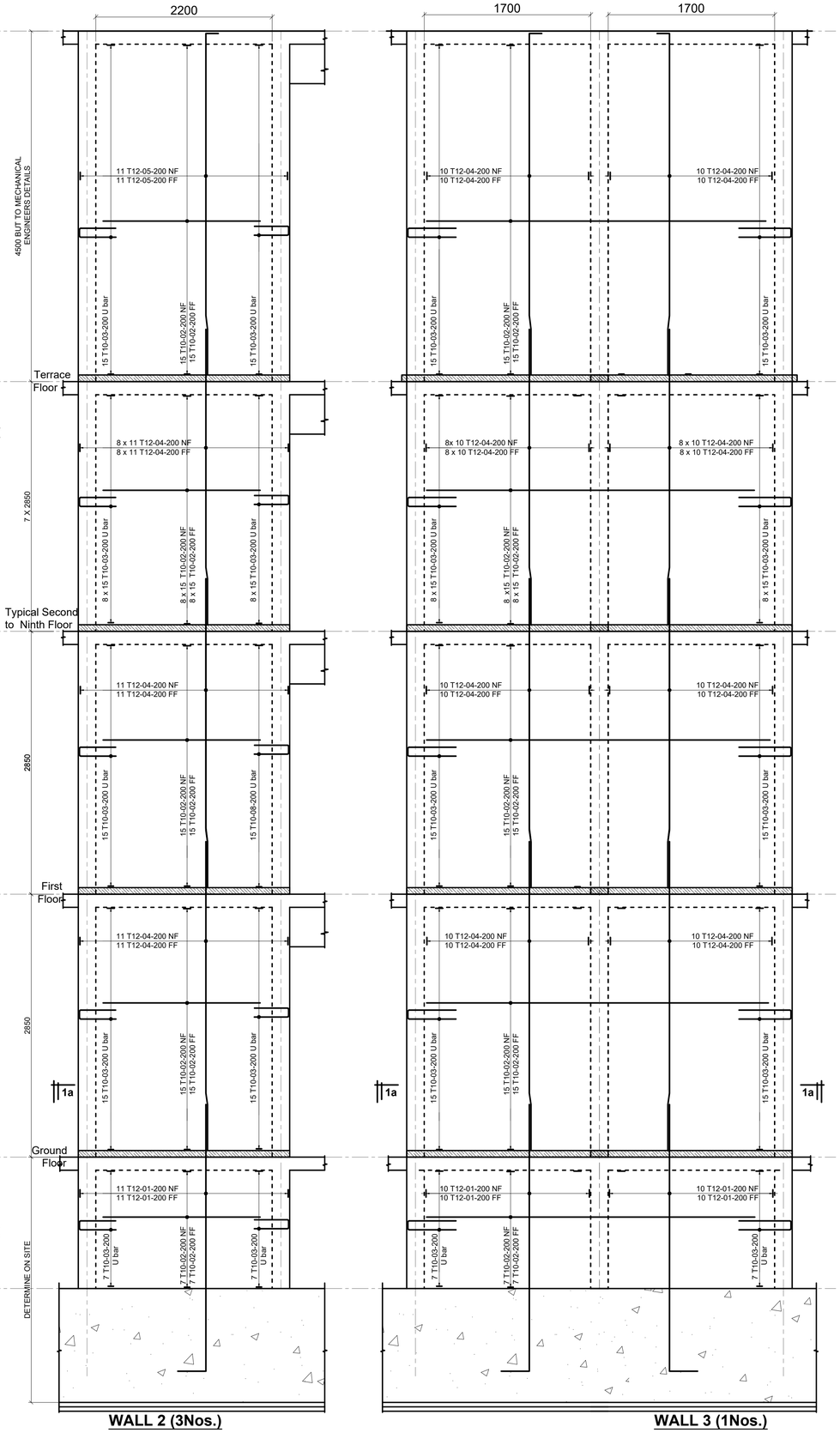
Revisions

No.	Description	Date





WALL 1 (1No.)



WALL 2 (3Nos.)

WALL 3 (1Nos.)

Revisions		
No.	Description	Date

Project: PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title: LIFT SHAFT RC DETAILS

Designed by: JMN | Checked by: JMN

Approved by:SECRETARY, HOUSING DEPARTMENT

Date: 13th March 2024 | Scale: As shown

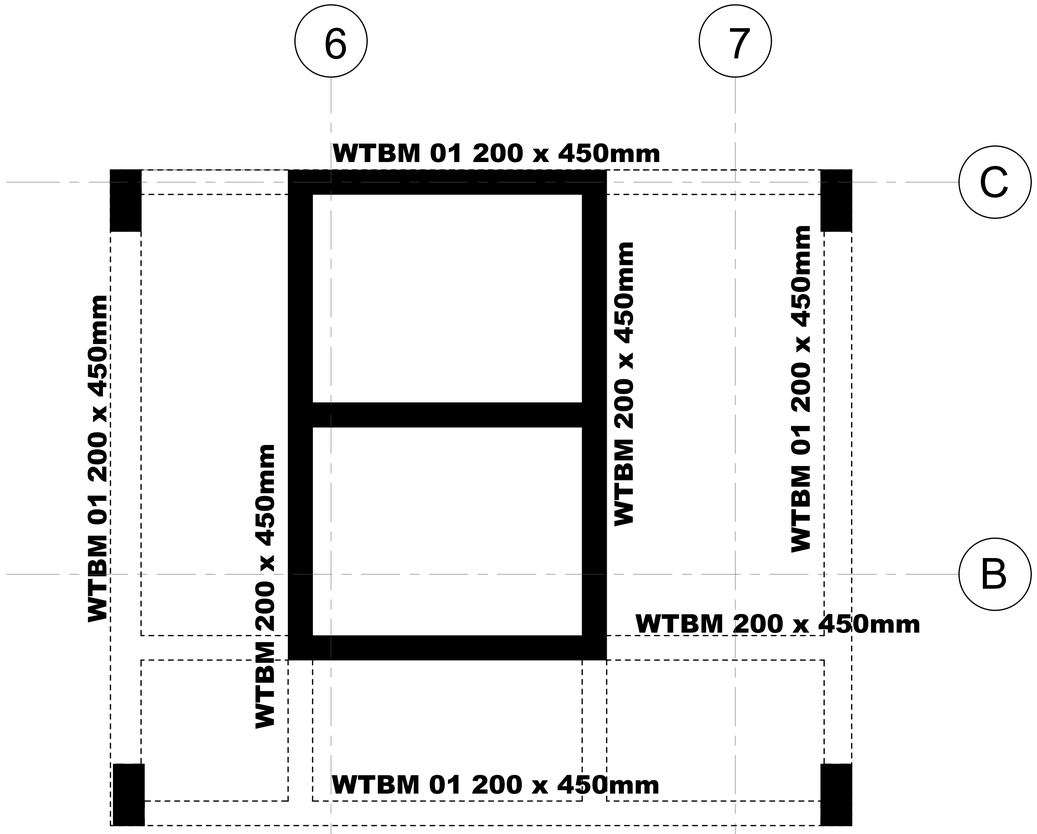
Drawing Number: AHP-G+9-BLKB 2.08

STRUCTURAL ENGINEER:

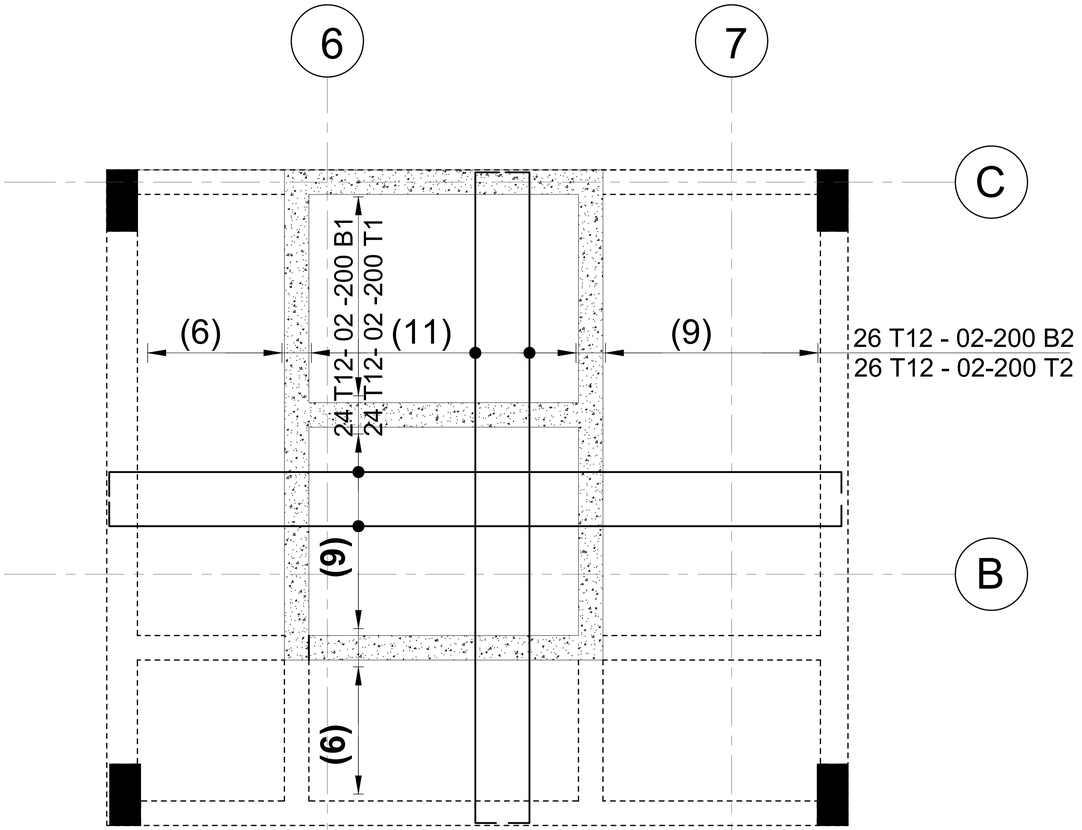
Client: MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

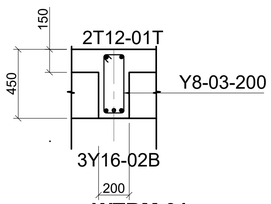
NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. All figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.
6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face, B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns -40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds as 6mm fillet.
10. All structural steel to be painted with anti-rust primmer paint.



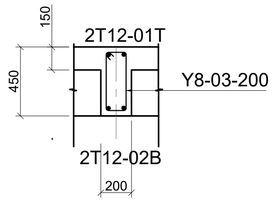
SLAB LAYOUT ABOVE LIFT & STAIRCASE 2
SCALE 1:25



RC SLAB ABOVE LIFT & STAIRCASE 2
SCALE 1:25



WTBM 01
(200X450mm)



WTBM
(200X450mm)

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

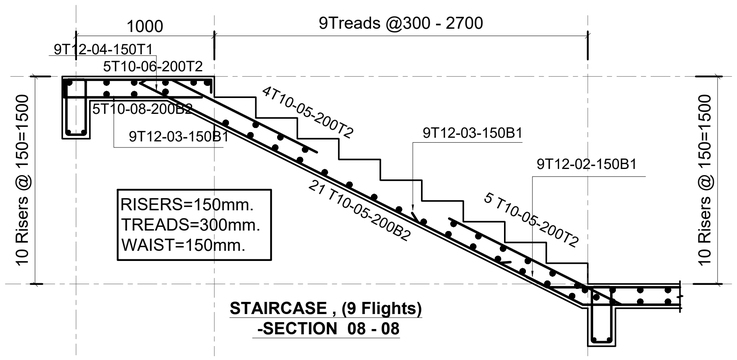
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 2.1B*

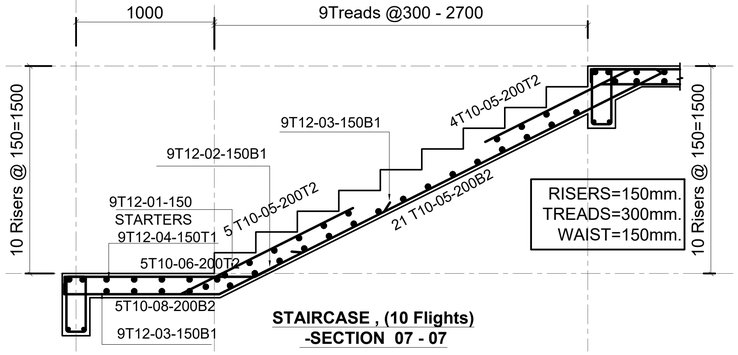
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
SLAB OVER LIFT SHAFT RC DETAILS

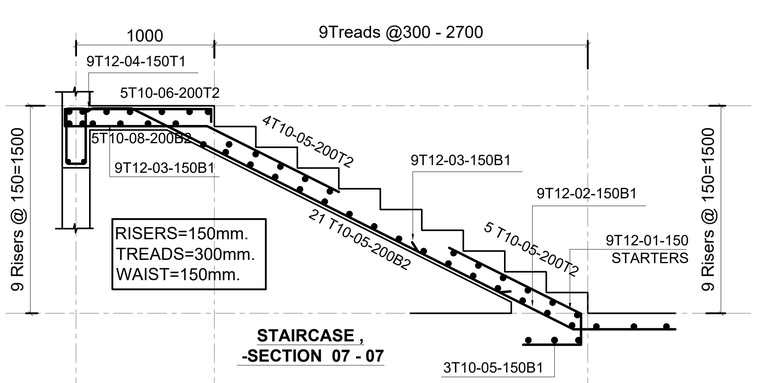
Revisions		
No.	Description	Date



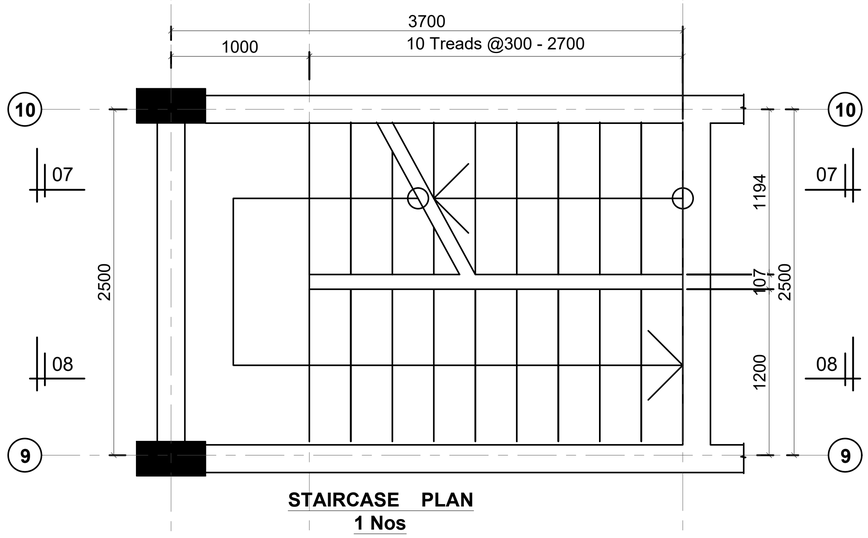
STAIRCASE , (9 Flights)
-SECTION 08 - 08



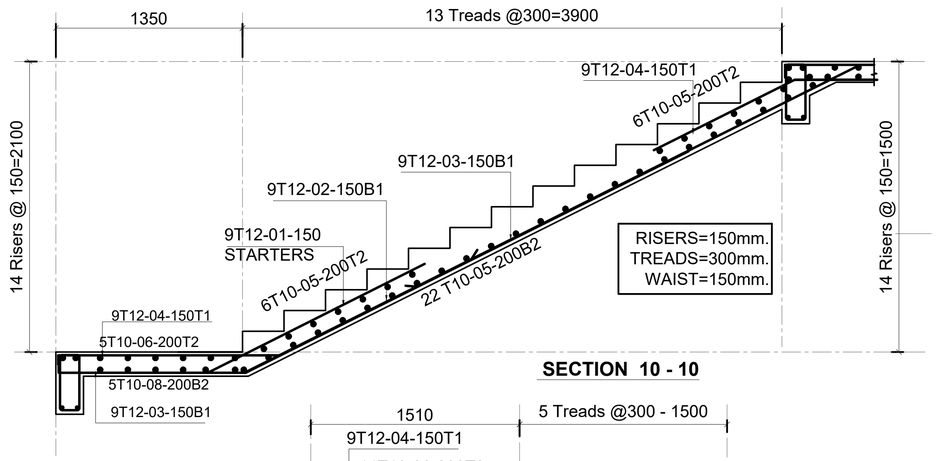
STAIRCASE , (10 Flights)
-SECTION 07 - 07



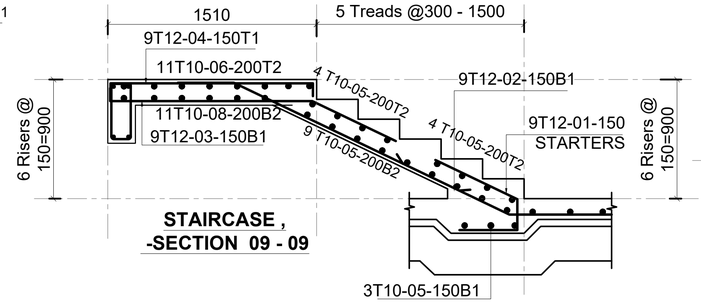
STAIRCASE ,
-SECTION 07 - 07



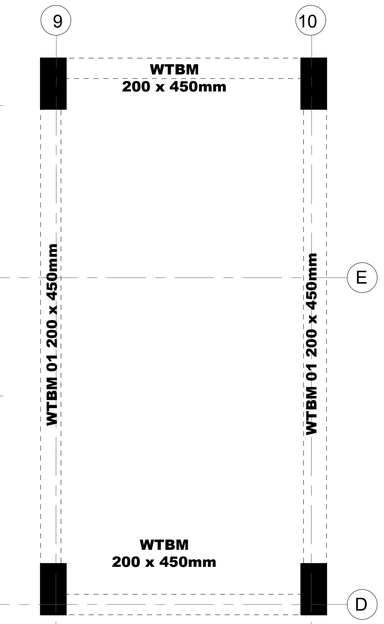
1 Nos



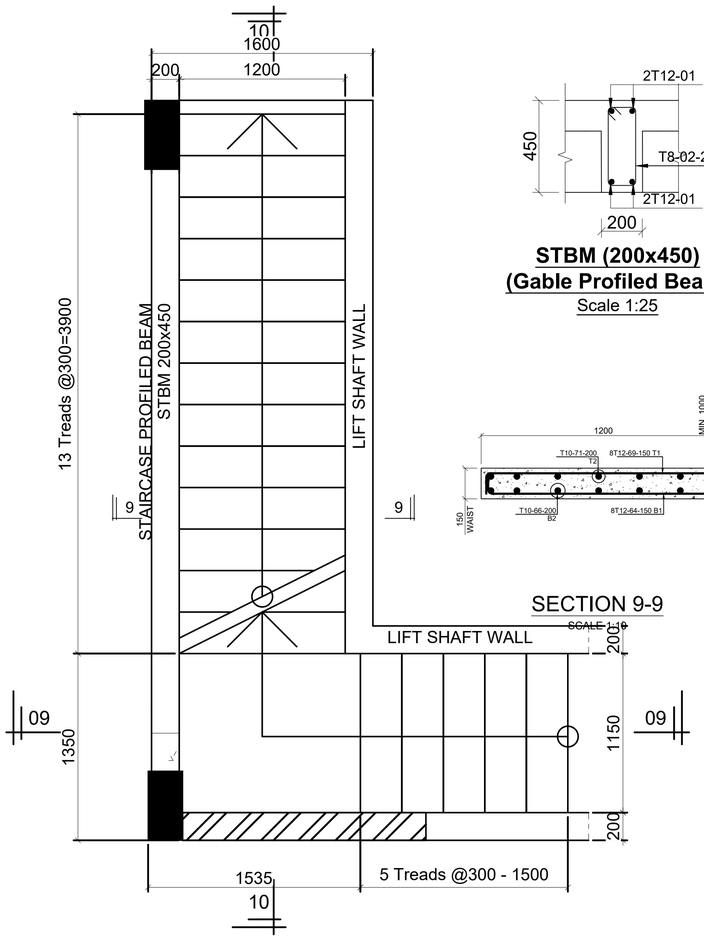
SECTION 10 - 10

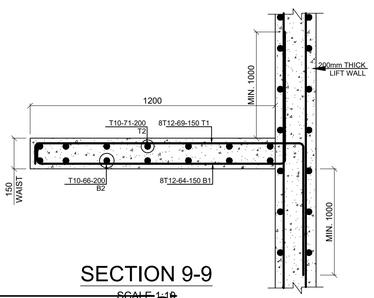


STAIRCASE ,
-SECTION 09 - 09

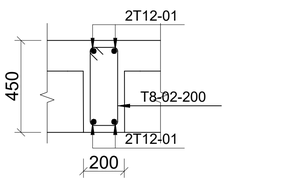


SLAB LAYOUT ABOVE STAIRCASE 1
SCALE 1:25

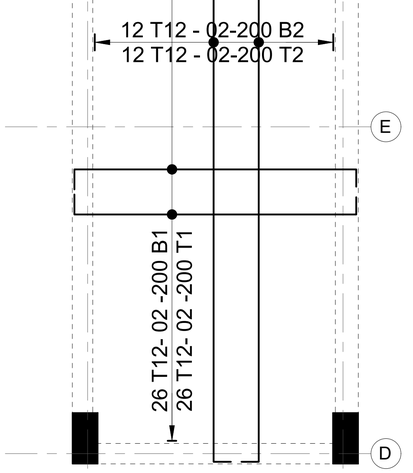




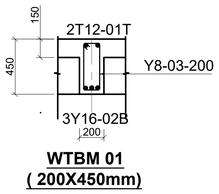
SECTION 9-9
SCALE 1:10



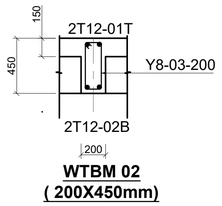
STBM (200x450)
(Gable Profiled Beam)
Scale 1:25



RC SLAB ABOVE STAIRCASE 1
SCALE 1:25



WTBM 01
(200X450mm)



WTBM 02
(200X450mm)

NOTES:
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.
6. Symbols: T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement: Slabs - 20mm. Beams - 25mm.Columns -40mm. Foundations -50mm
8. All structural steel be grade 43A.
9. All structural steel to be painted with anti-rust primmer paint.
10. All structural steel to be painted with anti-rust primmer paint.

Revisions		
No.	Description	Date

Project: PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title: STAIRCASE RC DETAILS

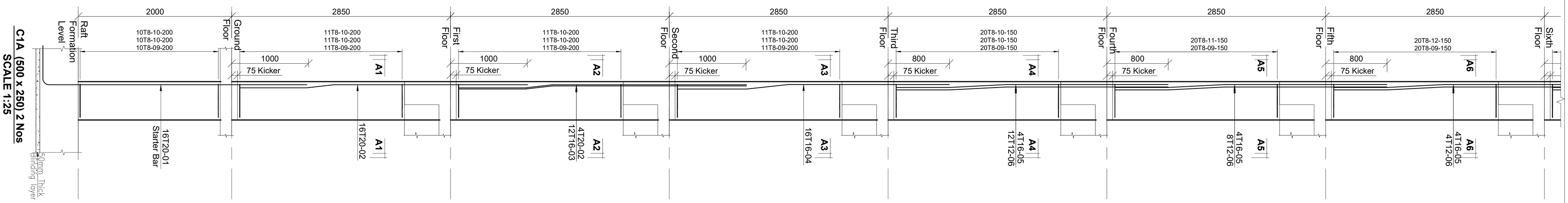
Designed by: JMN | Checked by: JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: 13th March 2024 | Scale: As shown
Drawing Number: AHP-G+9-BLK8 3.08

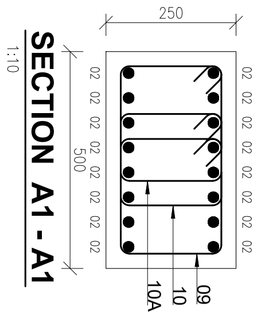
STRUCTURAL ENGINEER:

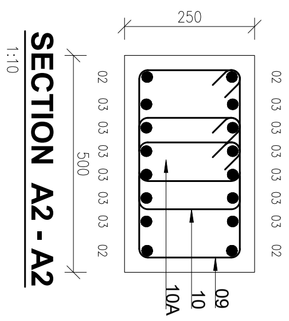
Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

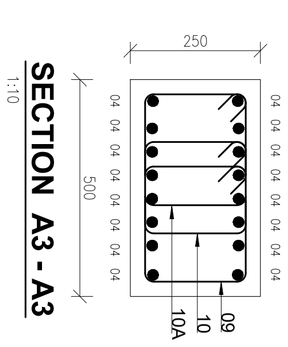
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

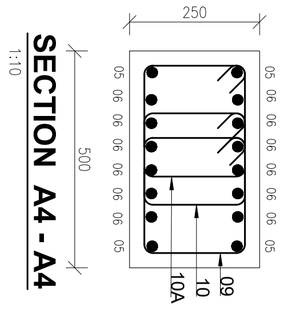
C1A (500 x 250) 2 Nos
SCALE 1:25

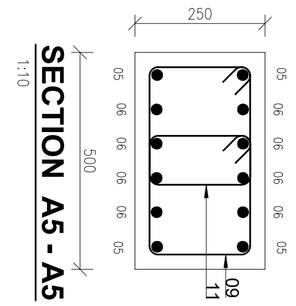


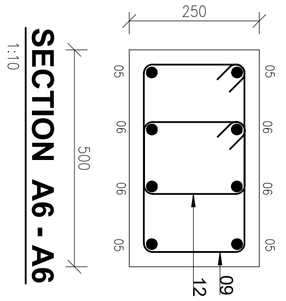


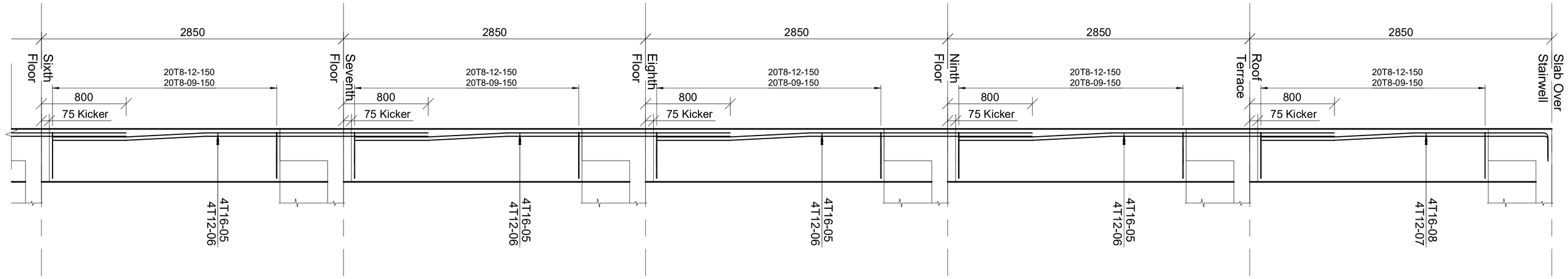












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7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
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9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

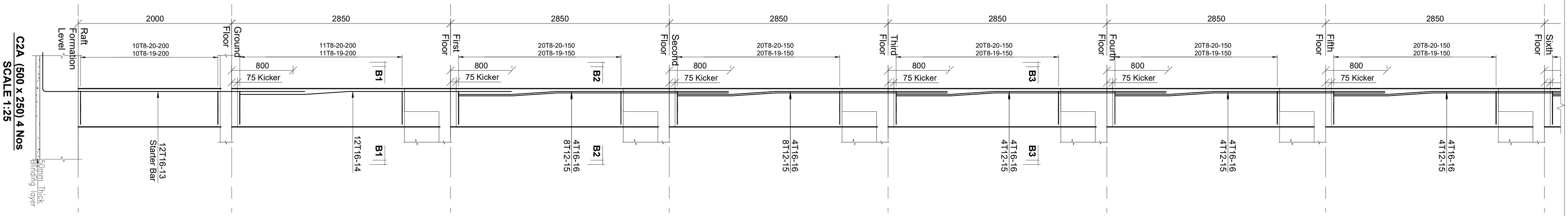
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.0B*

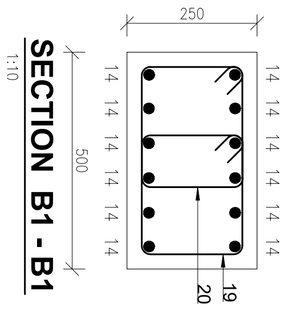
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C1A RC DETAILS

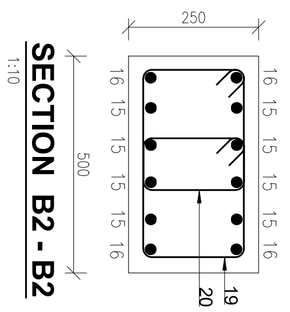
Revisions		
No.	Description	Date

C2A (500 x 250) 4 Nos
SCALE 1:25





SECTION B1 - B1
1:10



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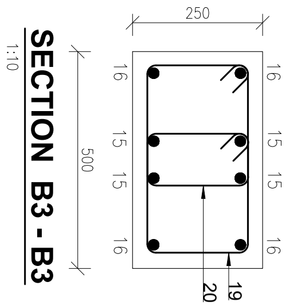

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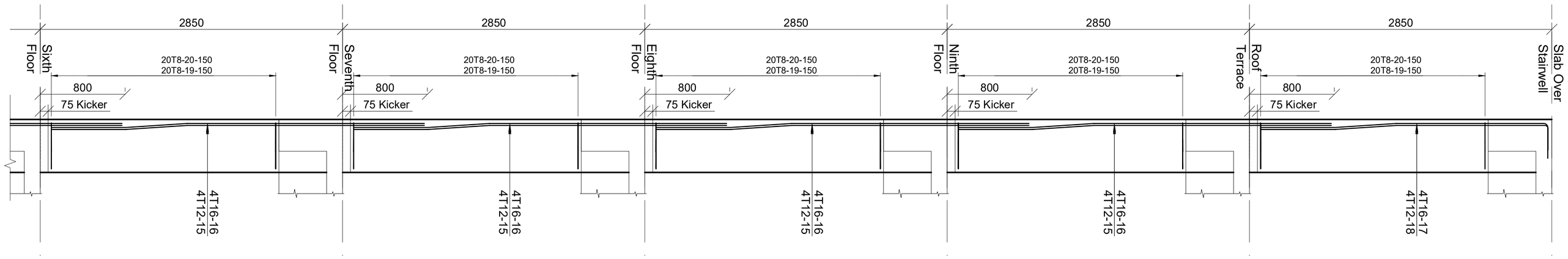

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STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
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Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.1B*

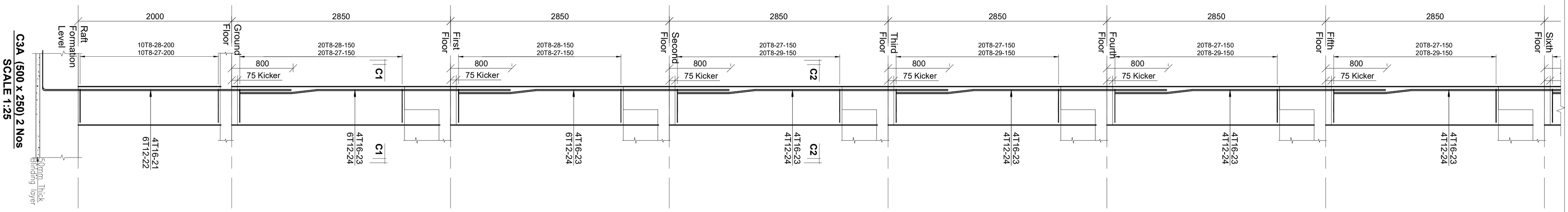
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

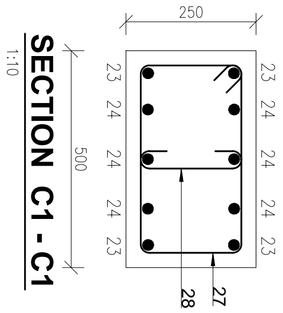
Title
COLUMN C2A RC DETAILS

Revisions

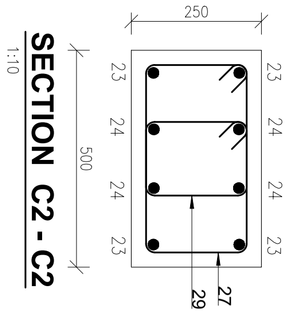
No.	Description	Date

C3A (500 x 250) 2 Nos
SCALE 1:25

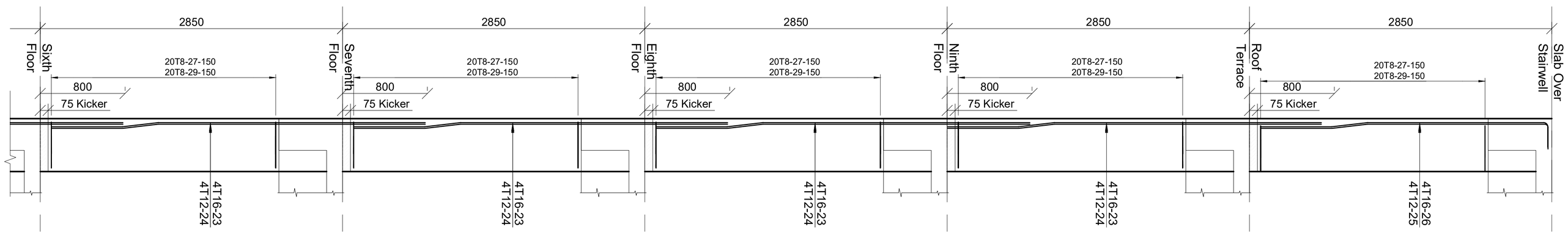




SECTION C1 - C1
1:10



SECTION C2 - C2
1:10



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Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.2B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C3A RC DETAILS

Revisions		
No.	Description	Date

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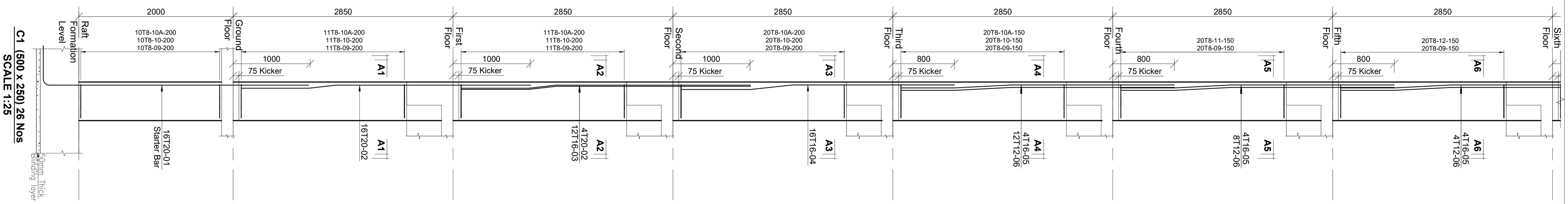
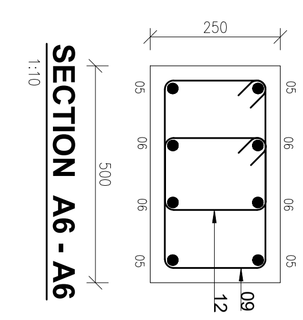
SCALE 1:25





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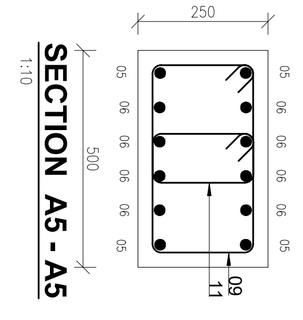

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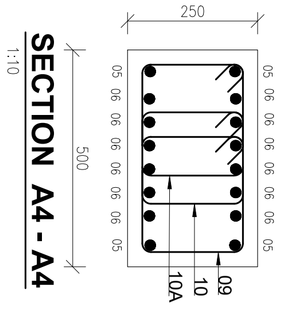

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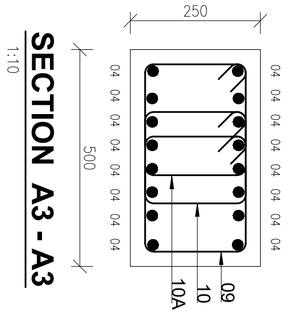

SECTION A3 - A3
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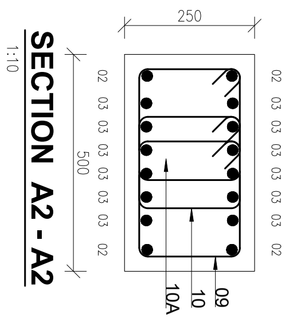

SECTION A2 - A2
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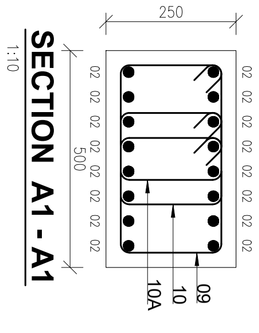

SECTION A1 - A1
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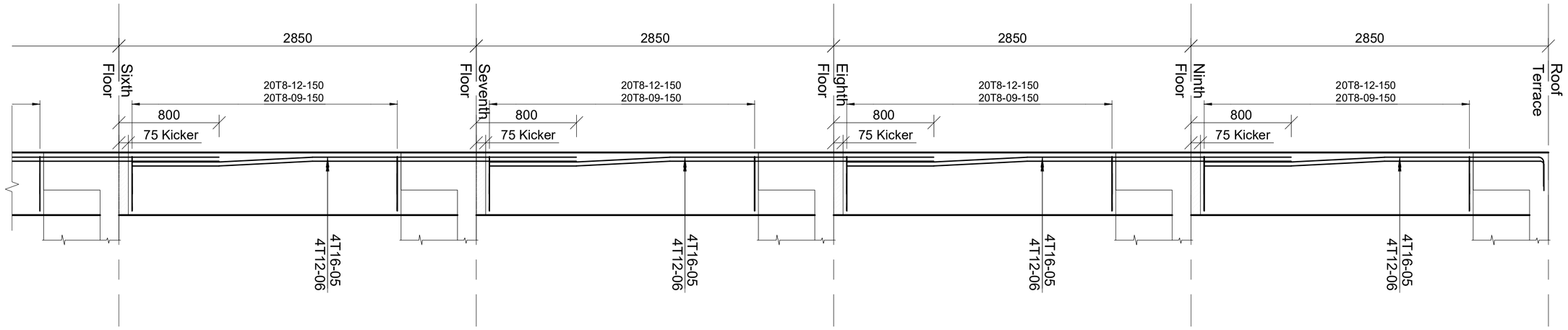

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Client
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STRUCTURAL ENGINEER:

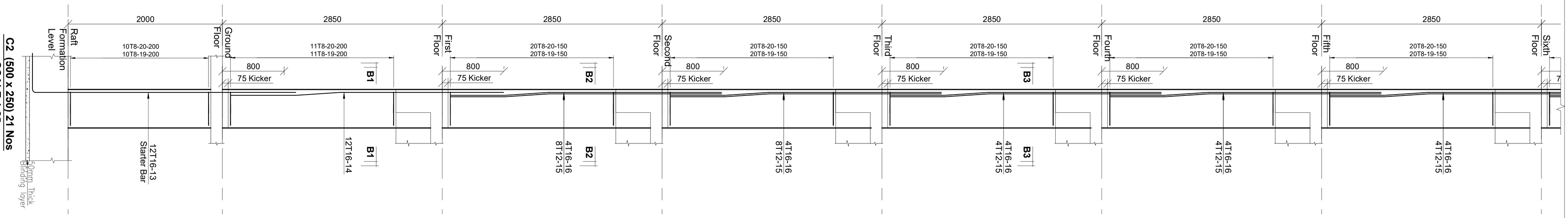
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.3B*

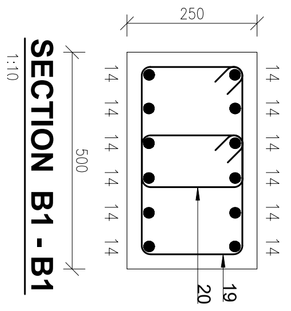
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C1 RC DETAILS

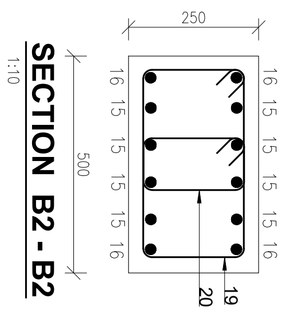
Revisions		
No.	Description	Date

C2 (500 x 250) 21 Nos
SCALE 1:25

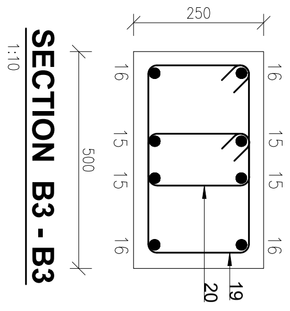




SECTION B1 - B1
1:10



SECTION B2 - B2
1:10



SECTION B3 - B3
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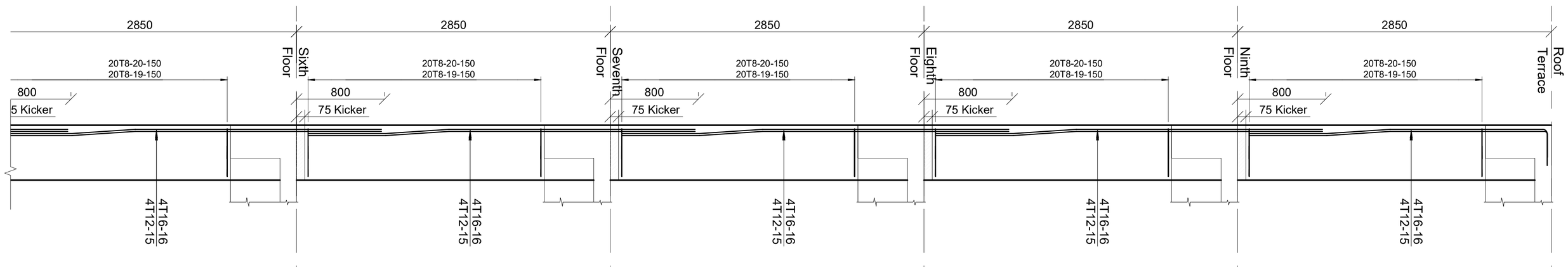

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Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

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Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.4B*

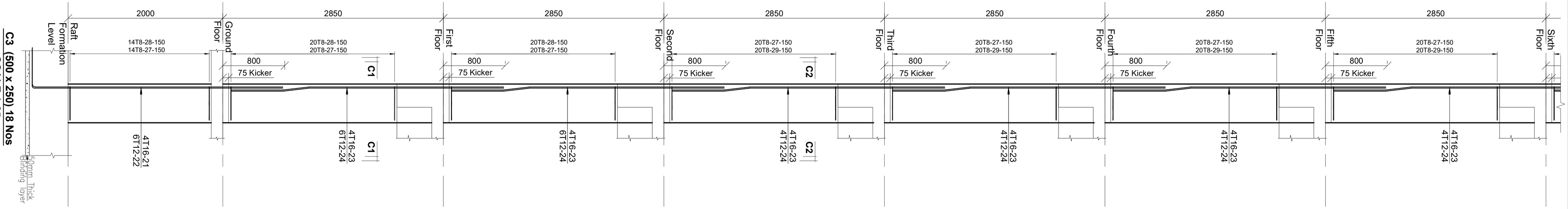
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

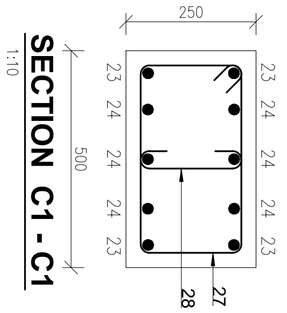
Title
COLUMN C2 RC DETAILS

Revisions

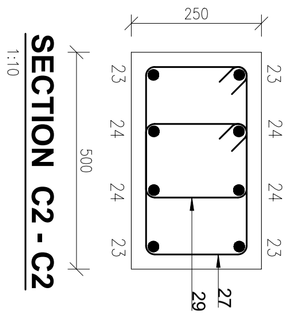
No.	Description	Date

C3 (500 x 250) 18 Nos
SCALE 1:25

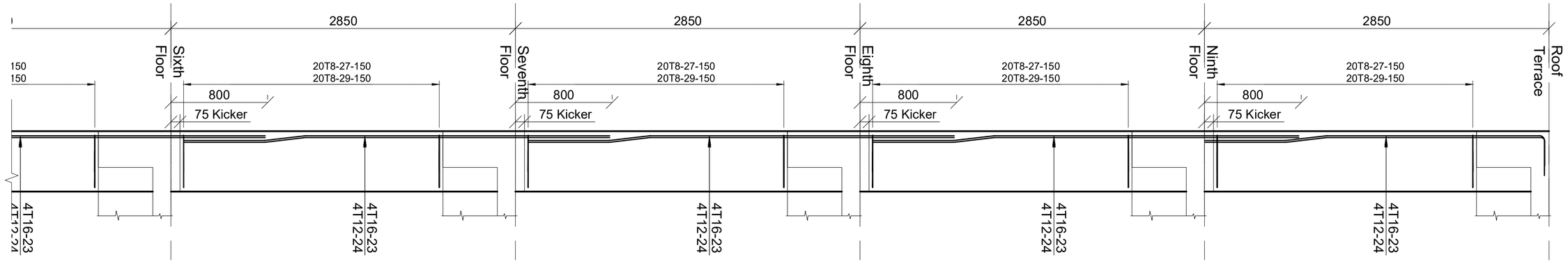




SECTION C1 - C1
1:10



SECTION C2 - C2
1:10



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STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
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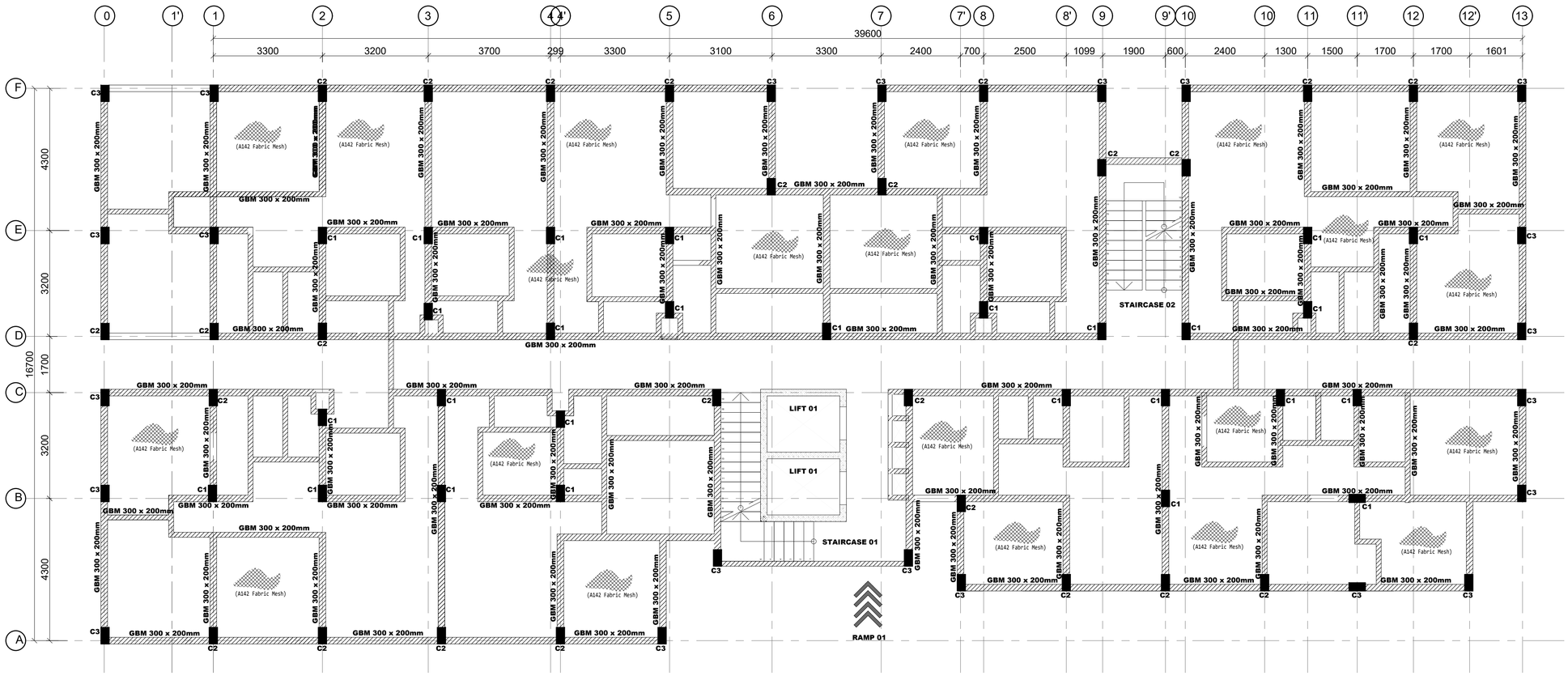
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.5B*

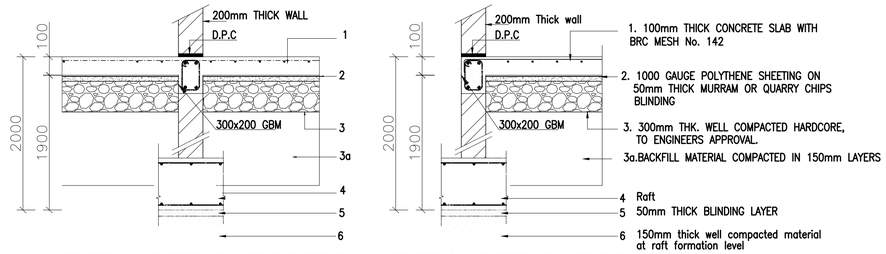
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C3 RC DETAILS

Revisions		
No.	Description	Date

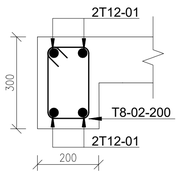


GROUND FLOOR LAYOUT
(100mm Thick Solid Slab With BRC Mesh A142 on top)
SCALE 1:75



TYPICAL INTERNAL FOUNDATION WALLING SECTION
1:25

TYPICAL INTERNAL FOUNDATION WALLING SECTION
1:25



GBM (300 X 200mm)
Scale 1:10

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6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

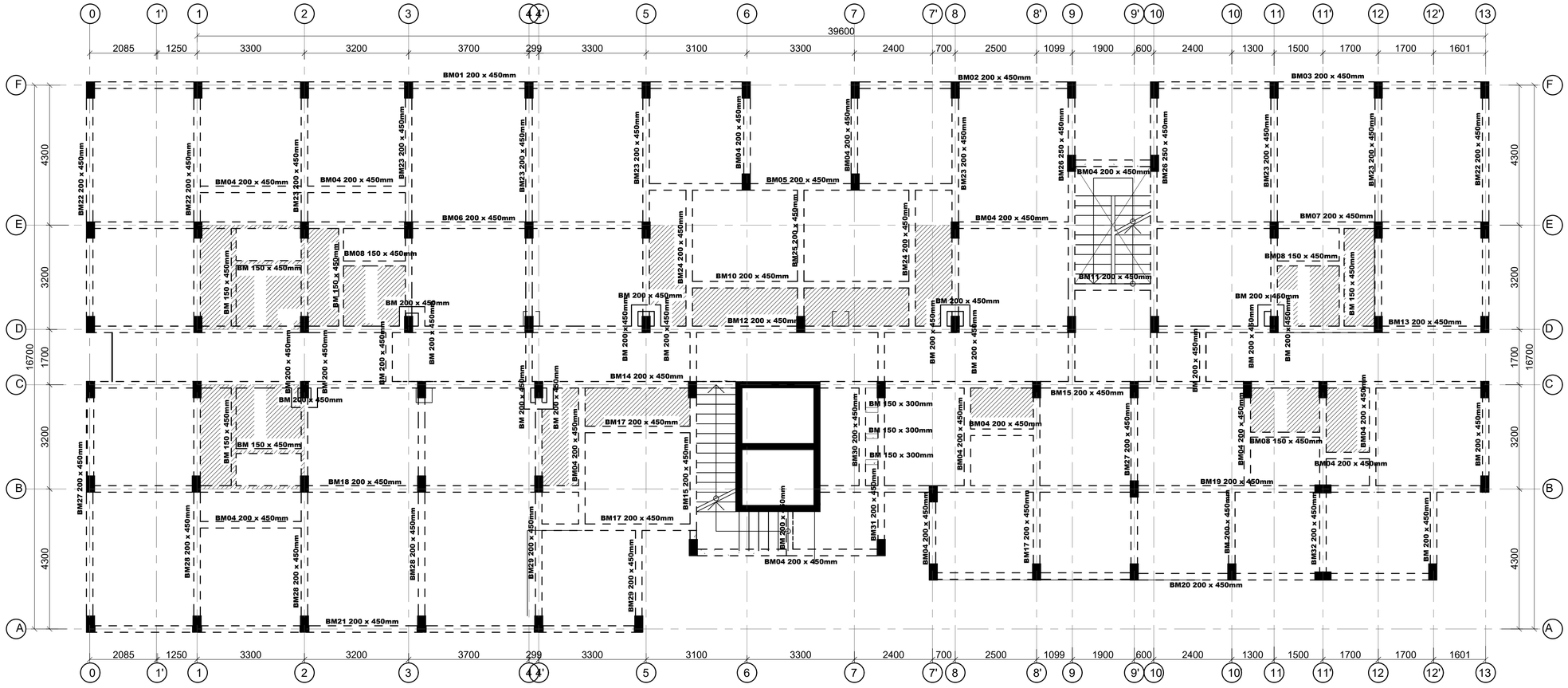
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 5.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
GROUND FLOOR LAYOUT DETAILS

Revisions		
No.	Description	Date



TYPICAL FLOOR SLAB LAYOUT
130 MM THICK SOLID SLAB AND 150 MM THICK SLAB IN WET AREAS(HATCHED)
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

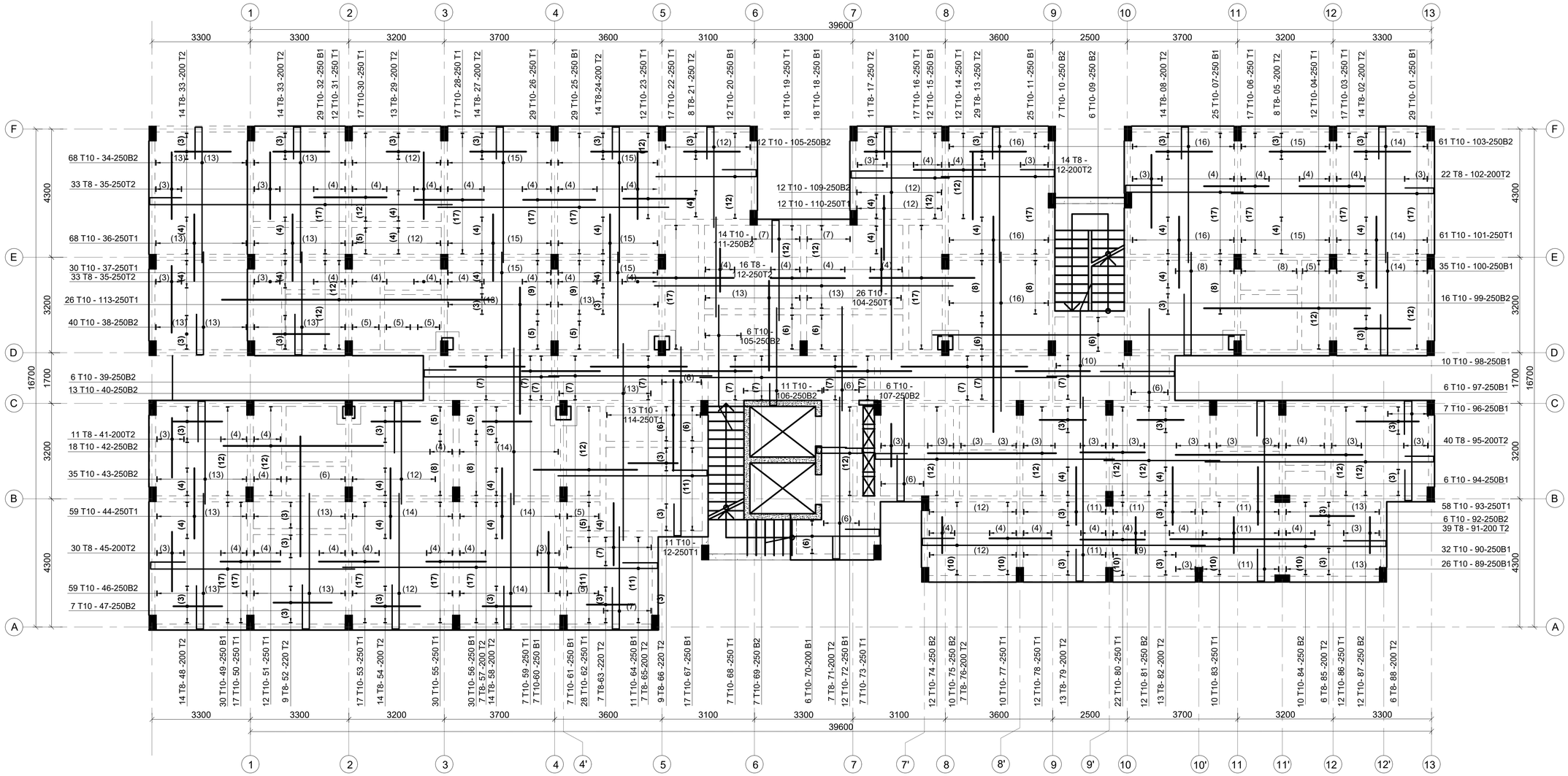
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 6.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
TYPICAL FLOOR SLAB LAYOUT DETAILS

Revisions		
No.	Description	Date



TYPICAL FLOOR SLAB REBAR DETAILS
130 MM THICK SOLID SLAB AND 150 MM THICK SLAB IN WET AREAS REBAR DETAILS
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

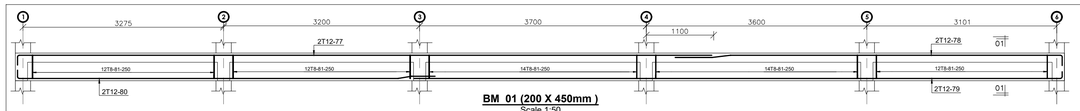
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 6.1B*

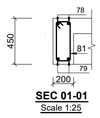
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
TYPICAL FLOOR SLAB REBAR DETAILS

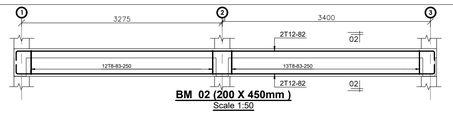
Revisions		
No.	Description	Date



BM 01 (200 X 450mm)
Scale 1:50

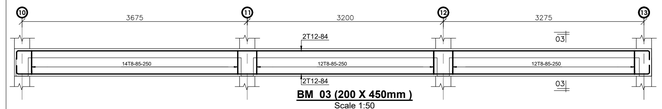


SEC 01-01
Scale 1:25

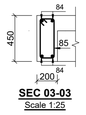


BM 02 (200 X 450mm)
Scale 1:50

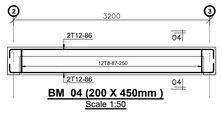
SEC 02-02
Scale 1:25



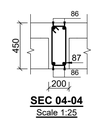
BM 03 (200 X 450mm)
Scale 1:50



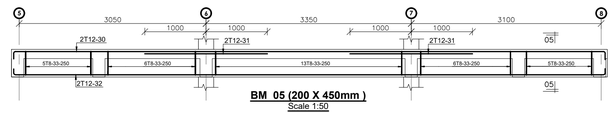
SEC 03-03
Scale 1:25



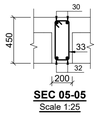
BM 04 (200 X 450mm)
Scale 1:50



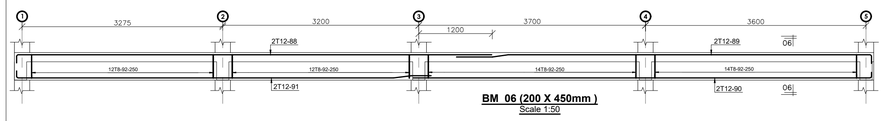
SEC 04-04
Scale 1:25



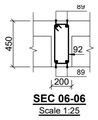
BM 05 (200 X 450mm)
Scale 1:50



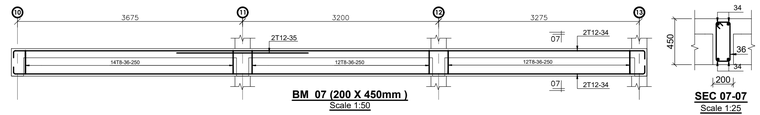
SEC 05-05
Scale 1:25



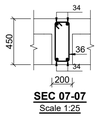
BM 06 (200 X 450mm)
Scale 1:50



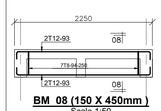
SEC 06-06
Scale 1:25



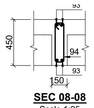
BM 07 (200 X 450mm)
Scale 1:50



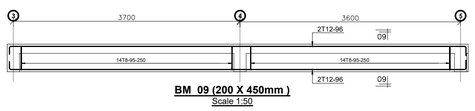
SEC 07-07
Scale 1:25



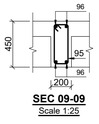
BM 08 (150 X 450mm)
Scale 1:50



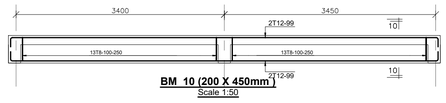
SEC 08-08
Scale 1:25



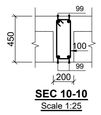
BM 09 (200 X 450mm)
Scale 1:50



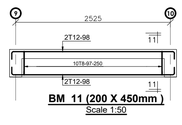
SEC 09-09
Scale 1:25



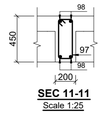
BM 10 (200 X 450mm)
Scale 1:50



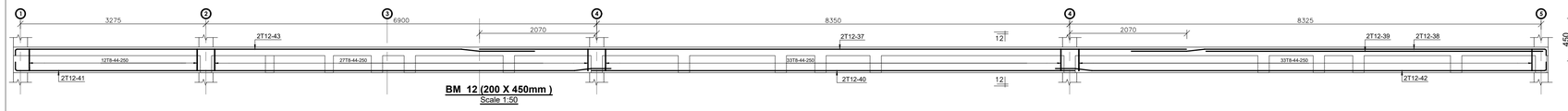
SEC 10-10
Scale 1:25



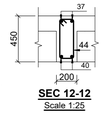
BM 11 (200 X 450mm)
Scale 1:50



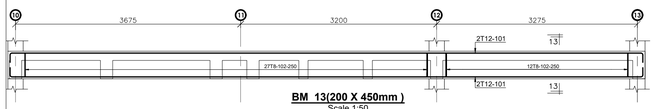
SEC 11-11
Scale 1:25



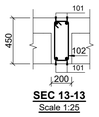
BM 12 (200 X 450mm)
Scale 1:50



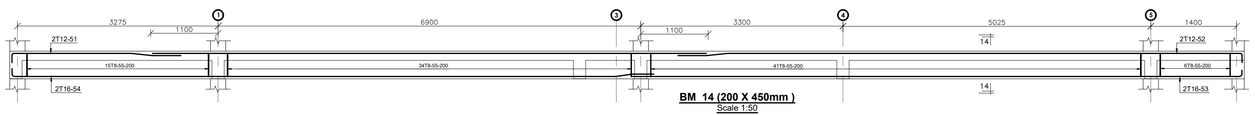
SEC 12-12
Scale 1:25



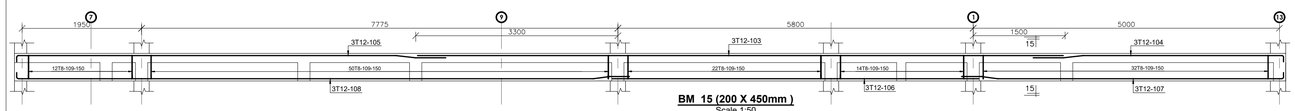
BM 13(200 X 450mm)
Scale 1:50



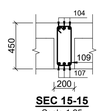
SEC 13-13
Scale 1:25



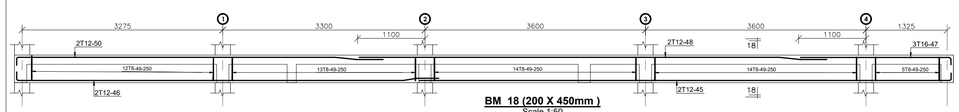
BM 14 (200 X 450mm)
Scale 1:50



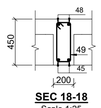
BM 15 (200 X 450mm)
Scale 1:50



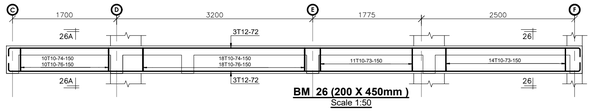
SEC 15-15
Scale 1:25



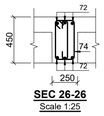
BM 18 (200 X 450mm)
Scale 1:50



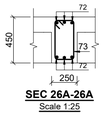
SEC 18-18
Scale 1:25



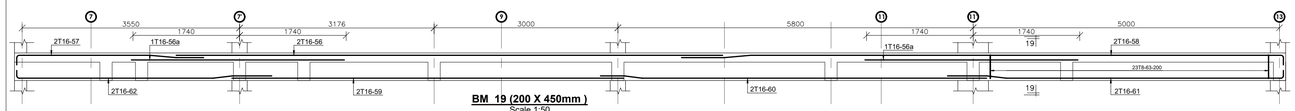
BM 26 (200 X 450mm)
Scale 1:50



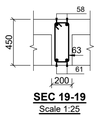
SEC 26-26
Scale 1:25



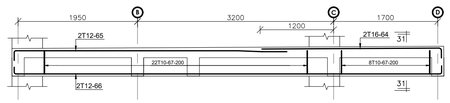
SEC 26A-26A
Scale 1:25



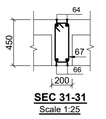
BM 19 (200 X 450mm)
Scale 1:50



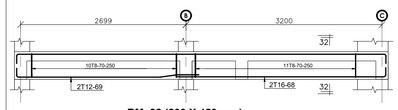
SEC 19-19
Scale 1:25



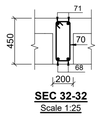
BM 31 (200 X 450mm)
Scale 1:50



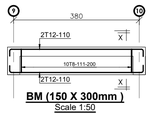
SEC 31-31
Scale 1:25



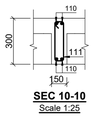
BM 32 (200 X 450mm)
Scale 1:50



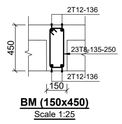
SEC 32-32
Scale 1:25



BM (150 X 300mm)
Scale 1:50



SEC 10-10
Scale 1:25



BM (150x450)
Scale 1:25

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

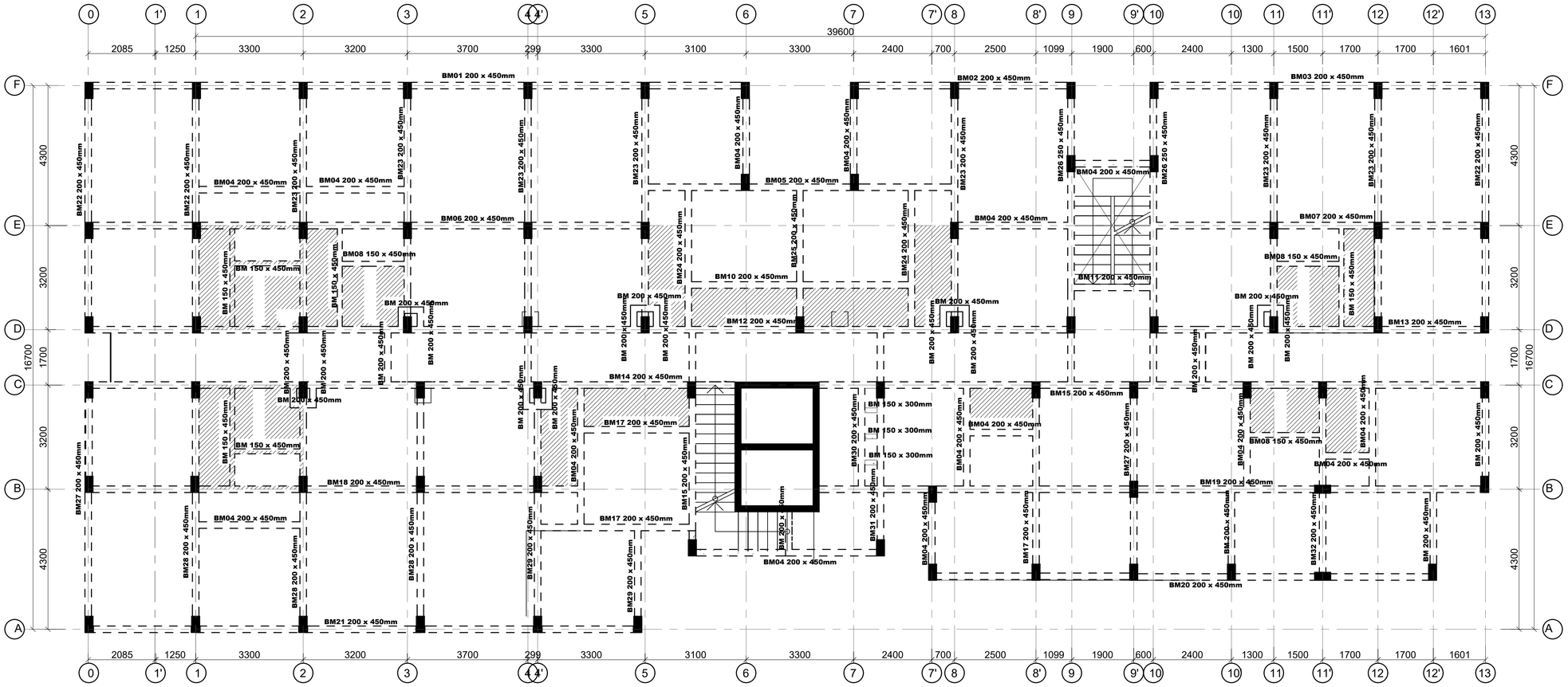
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 6.2B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
TYPICAL FLOOR SLAB BEAMS RC DETAILS

Revisions		
No.	Description	Date



ROOF TERRACE FLOOR SLAB REBAR DETAILS
150 MM THICK SLAB

NOTE:

-Terrace floor slab to be waterproofed with physical barrier waterproofing membrane such as APP or equivalent.

-APP membrane to be protected using screed and concrete interlocking tiles

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

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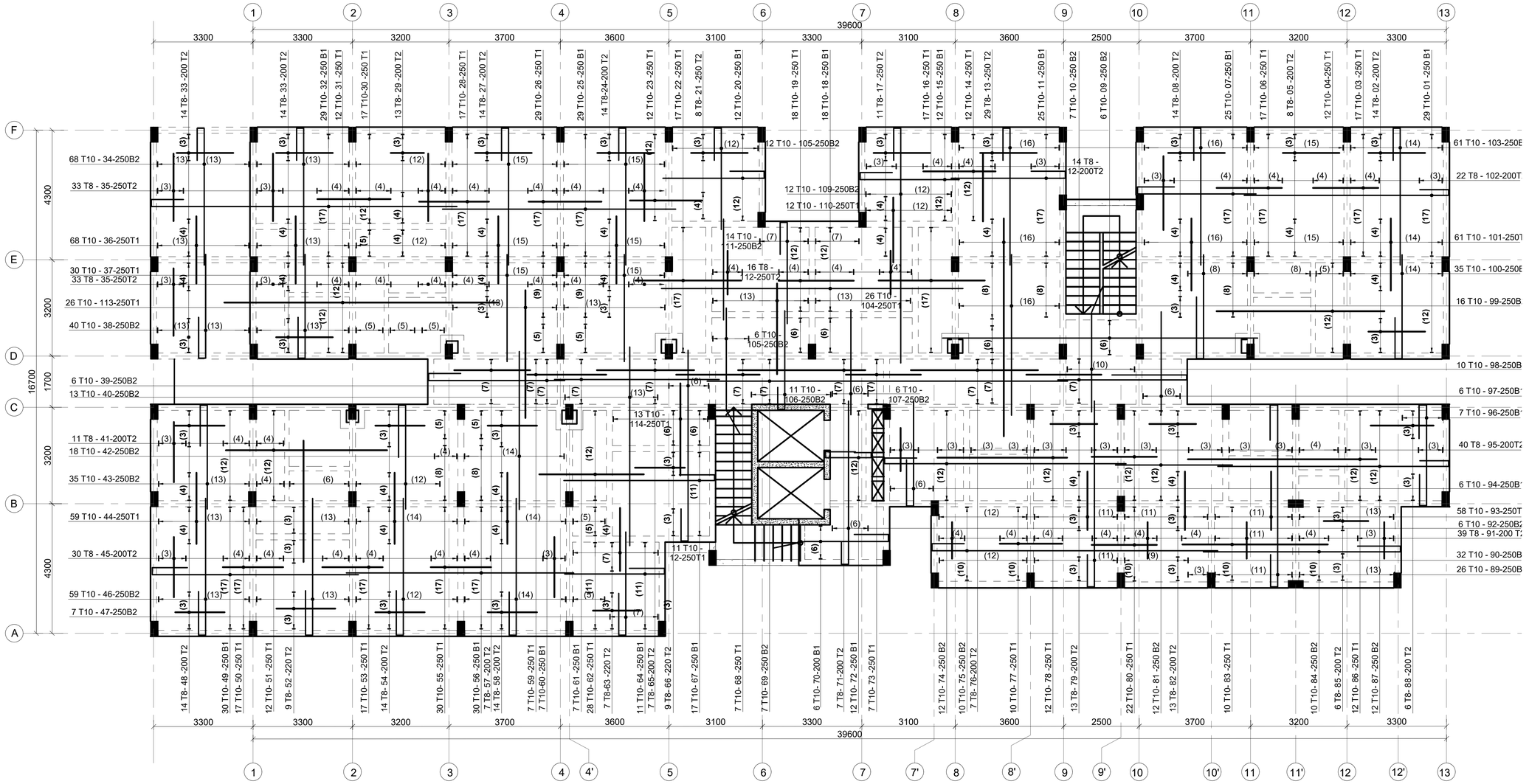
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
ROOF TERRACE FLOOR SLAB LAYOUT DETAILS

Revisions		
No.	Description	Date



ROOF TERRACE FLOOR SLAB REBAR DETAILS
150 MM THICK SLAB

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

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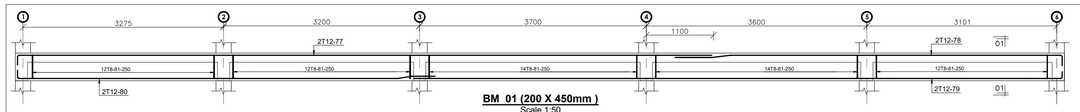
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
ROOF TERRACE FLOOR SLAB REBAR DETAILS

Revisions		
No.	Description	Date



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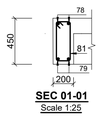

SEC 01-01
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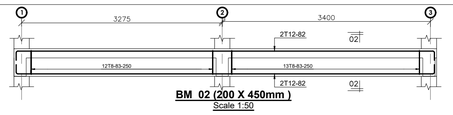

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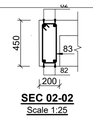

SEC 02-02
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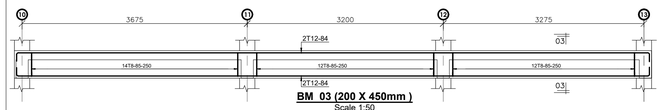

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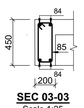
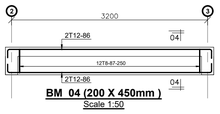


SEC 03-03
Scale 1:25



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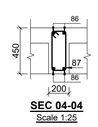

SEC 04-04
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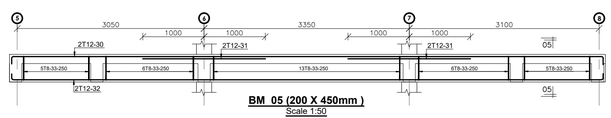

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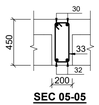

SEC 05-05
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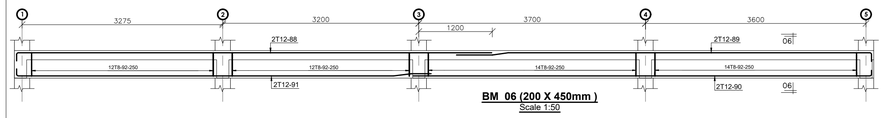

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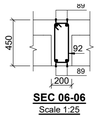

SEC 06-06
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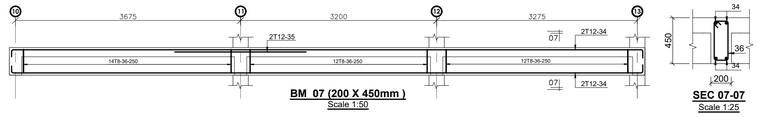
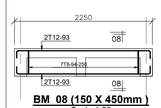
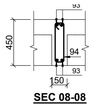


BM 07 (200 X 450mm)
Scale 1:50

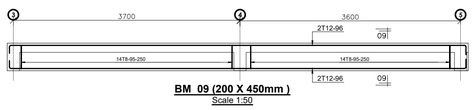
SEC 07-07
Scale 1:25



BM 08 (150 X 450mm)
Scale 1:50



SEC 08-08
Scale 1:25



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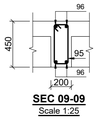
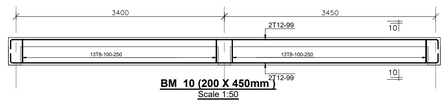
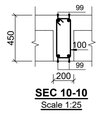
Scale 1:50



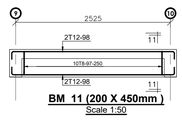
SEC 09-09
Scale 1:25



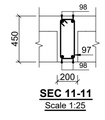
BM 10 (200 X 450mm)
Scale 1:50



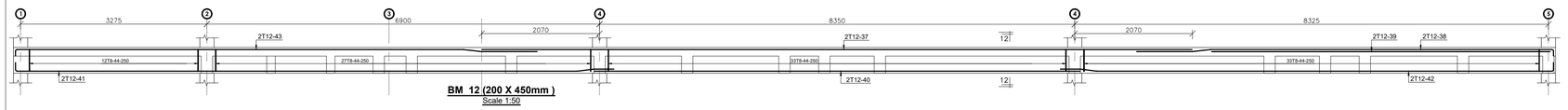
SEC 10-10
Scale 1:25



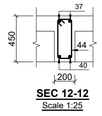
BM 11 (200 X 450mm)
Scale 1:50



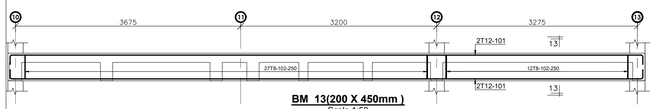
SEC 11-11
Scale 1:25



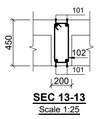
BM 12 (200 X 450mm)
Scale 1:50



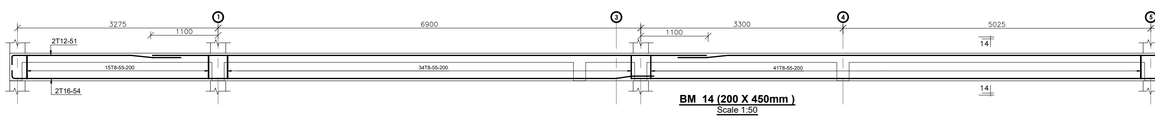
SEC 12-12
Scale 1:25



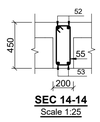
BM 13(200 X 450mm)
Scale 1:50



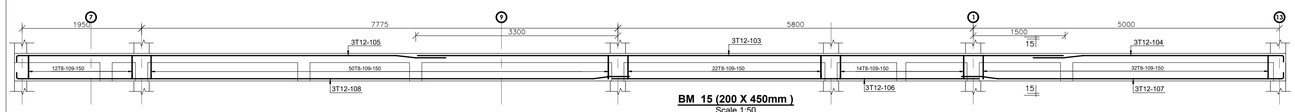
SEC 13-13
Scale 1:25



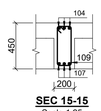
BM 14 (200 X 450mm)
Scale 1:50



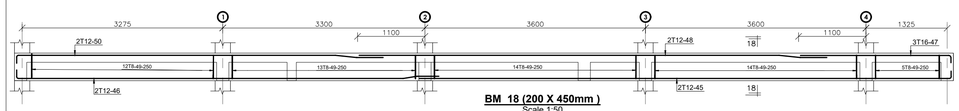
SEC 14-14
Scale 1:25



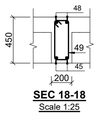
BM 15 (200 X 450mm)
Scale 1:50



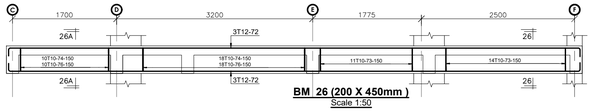
SEC 15-15
Scale 1:25



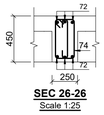
BM 18 (200 X 450mm)
Scale 1:50



SEC 18-18
Scale 1:25



BM 26 (200 X 450mm)
Scale 1:50



SEC 26-26
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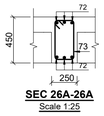

SEC 26A-26A
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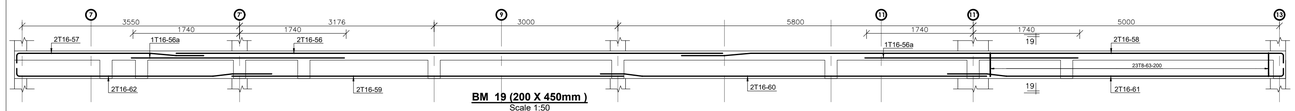
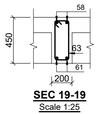
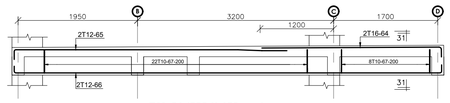


BM 19 (200 X 450mm)
Scale 1:50



SEC 19-19
Scale 1:25



BM 31 (200 X 450mm)
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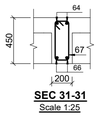
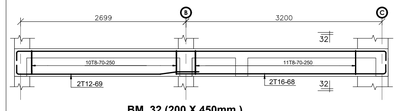


SEC 31-31
Scale 1:25



BM 32 (200 X 450mm)
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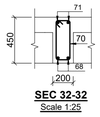
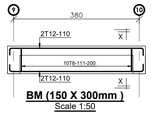
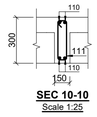


SEC 32-32
Scale 1:25



BM (150 X 300mm)
Scale 1:50



SEC 10-10
Scale 1:25

NOTES
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6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

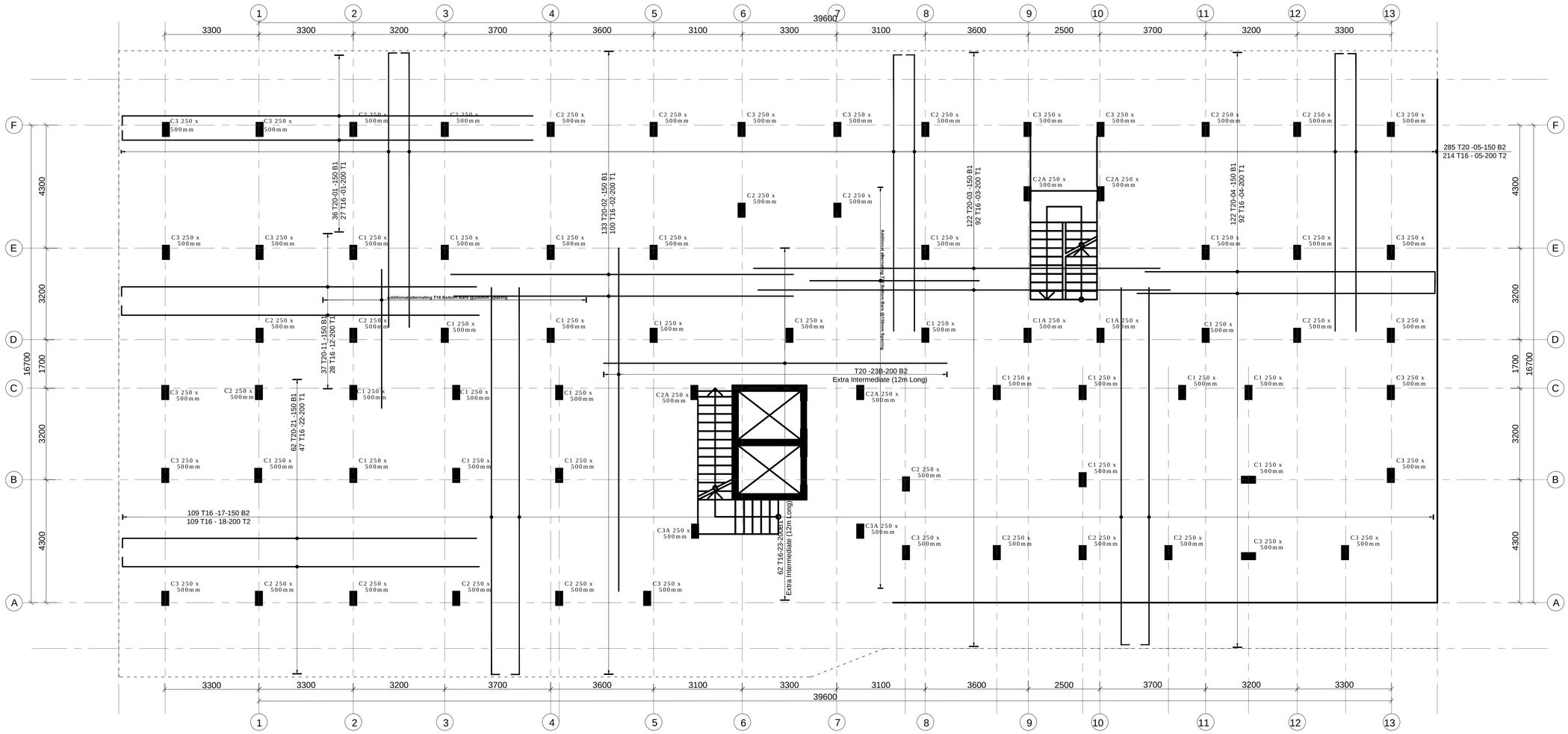
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 7.2B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
ROOF TERRACE FLOOR BEAMS REBAR DETAILS

Revisions		
No.	Description	Date



FOUNDATION RAFT REBAR DETAILS
-750 MM THK RAFT SLAB
SCALE 1:75

NOTE: RAFT FORMATION SURFACE TO BE COMPACTED PRIOR TO LAYING OF RAFT BLINDING

	ELEMENT	Kg/m3
	RAFT	33
	COLUMNS	193
	SLAB	66
	BEAMS	62
	GROUND BEAMS	103
	STAIRCASE 1	166
	STAIRCASE 2	121
	LIFT	88
	SLAB OVER STAIRCASE 1	112
	BEAM OVER STAIRCASE 1	95
	SLAB OVER STAIRCASE 2	122
	BEAMS OVER STAIRCASE 2	108

NOTE:
Soil bearing capacity 150KN/m2

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

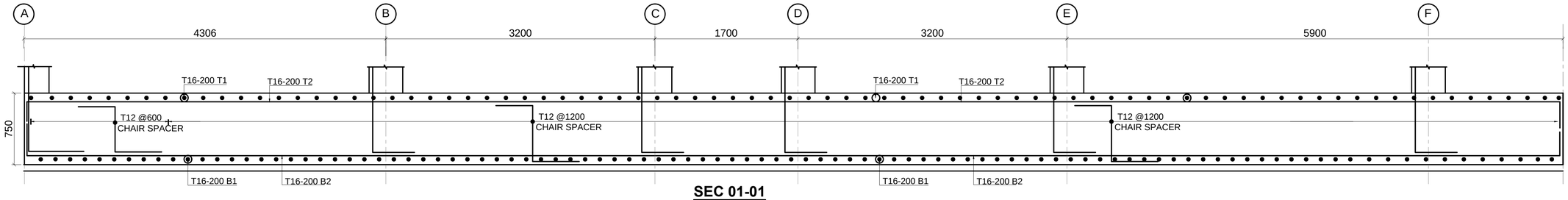
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 1.0B*

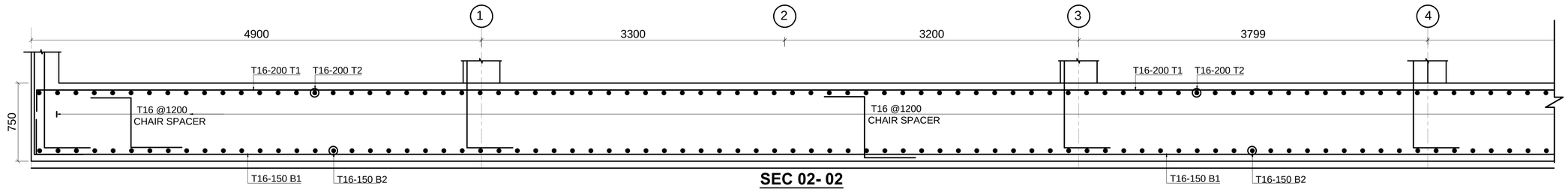
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
FOUNDATION RAFT RC DETAILS

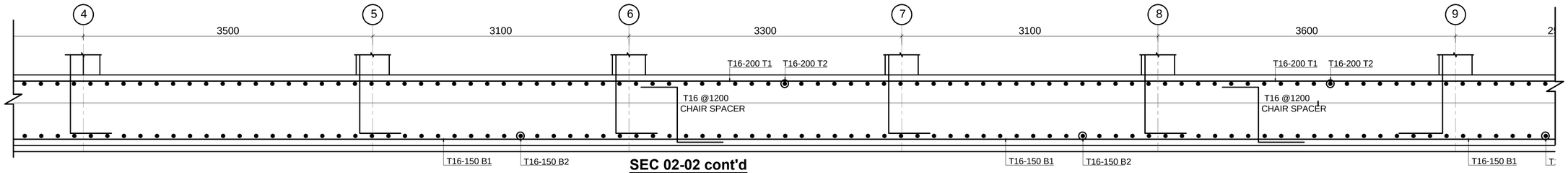
Revisions		
No.	Description	Date



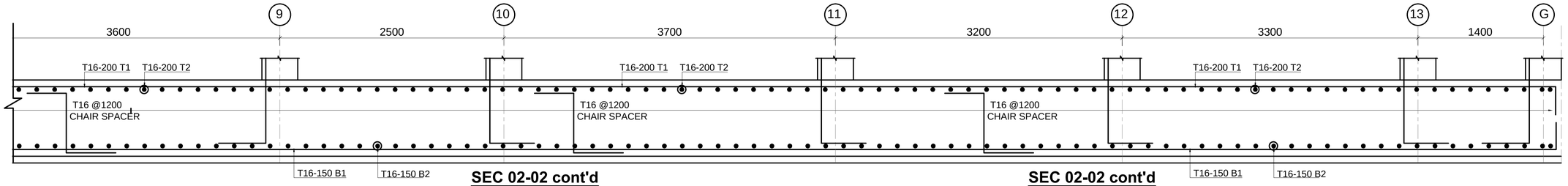
SEC 01-01



SEC 02- 02



SEC 02-02 cont'd



SEC 02-02 cont'd

SEC 02-02 cont'd

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 1.1B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
RAFT SECTION RC DETAILS

Revisions		
No.	Description	Date

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any discrepancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9 All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

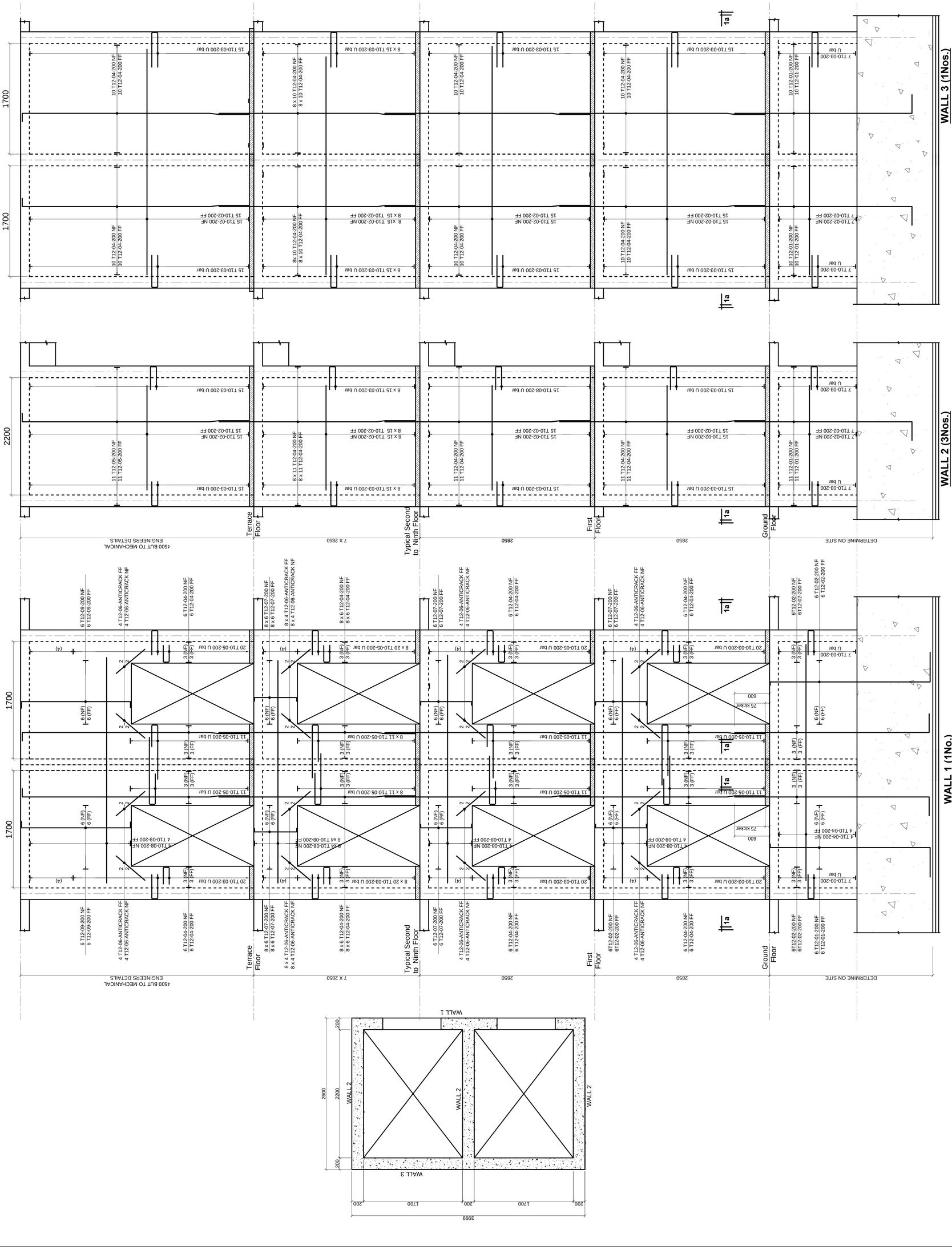
Designed by: JMN | Checked by: JMN
Date: 13th March 2024 | Scale: As shown
Approved by:SECRETARY, HOUSING DEPARTMENT
Drawing Number: AHP-G-9-BLKB 2.08

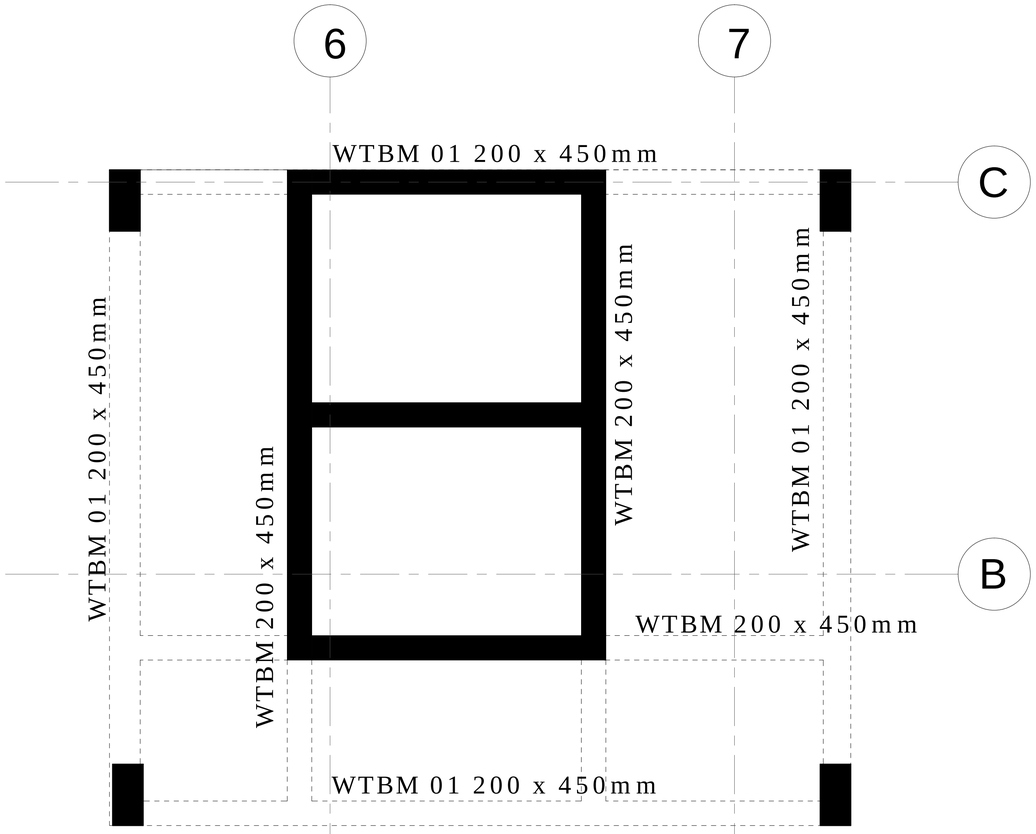
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
LIFT SHAFT RC DETAILS

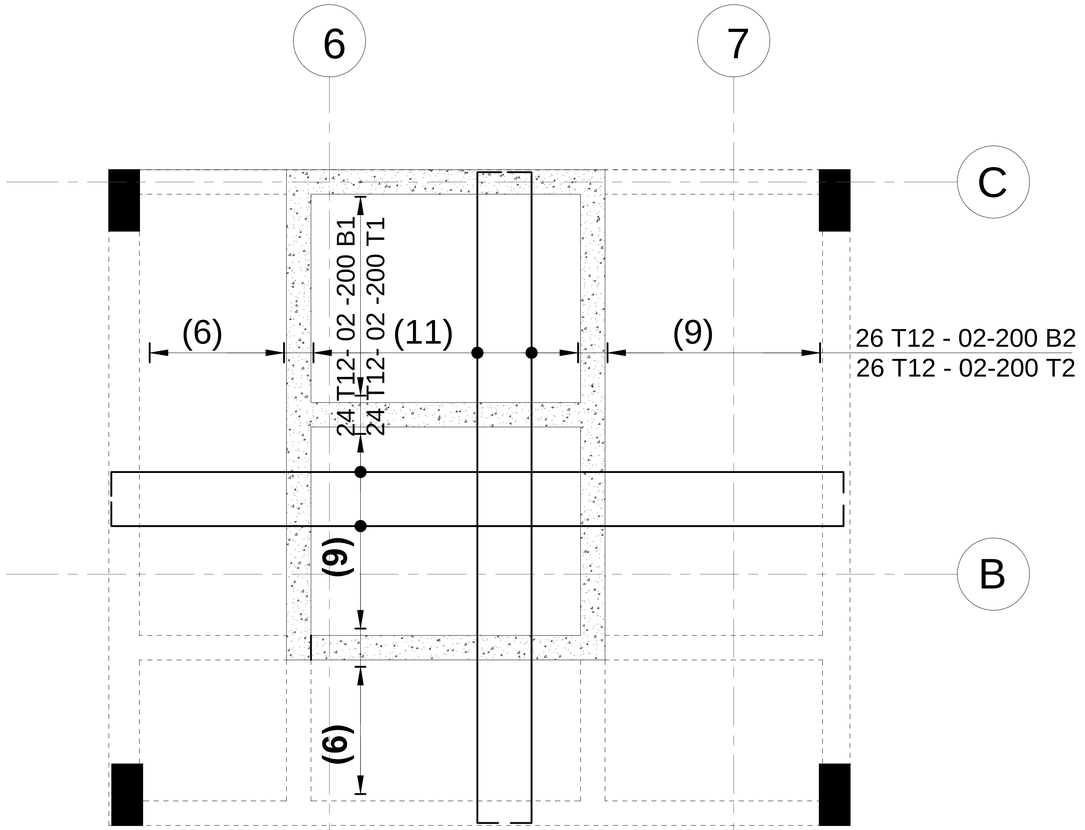
No.	Description	Date

Revisions

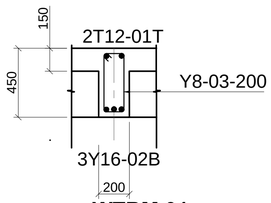




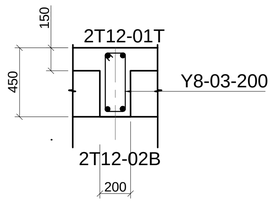
SLAB LAYOUT ABOVE LIFT & STAIRCASE 2
SCALE 1:25



RC SLAB ABOVE LIFT & STAIRCASE 2
SCALE 1:25



WTBM 01
(200X450mm)



WTBM
(200X450mm)

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

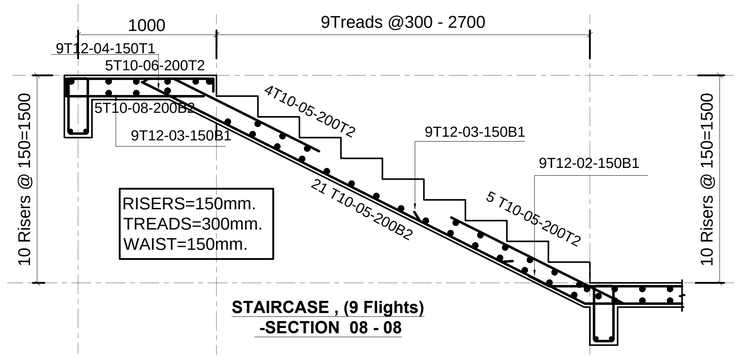
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 2.1B*

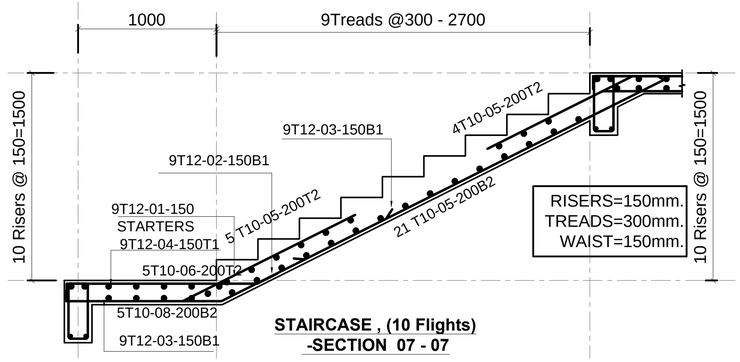
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
SLAB OVER LIFT SHAFT RC DETAILS

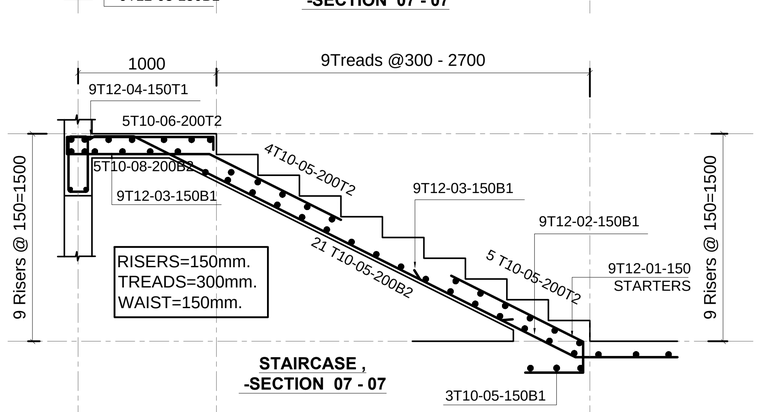
Revisions		
No.	Description	Date



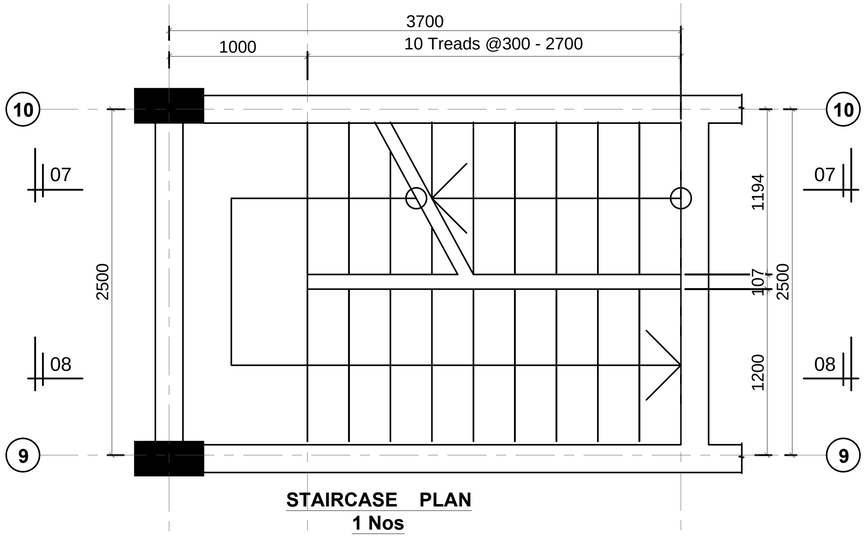
STAIRCASE , (9 Flights)
-SECTION 08 - 08



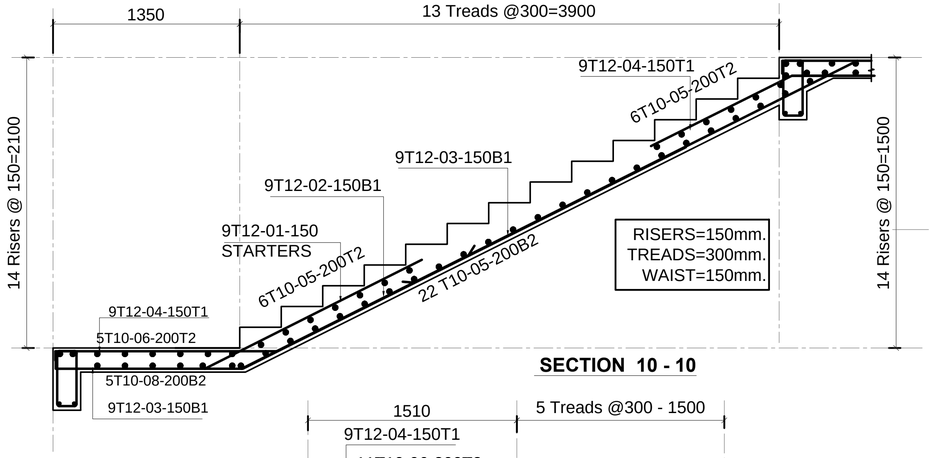
STAIRCASE , (10 Flights)
-SECTION 07 - 07



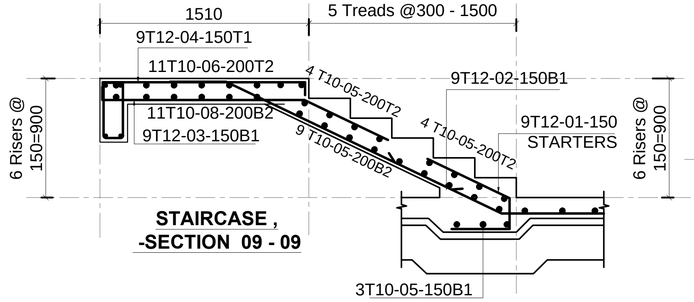
STAIRCASE ,
-SECTION 07 - 07



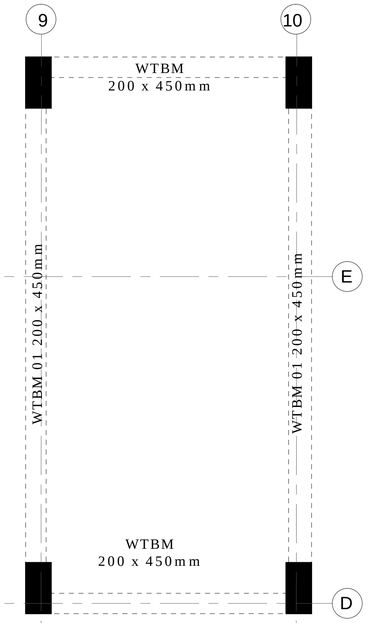
1 Nos



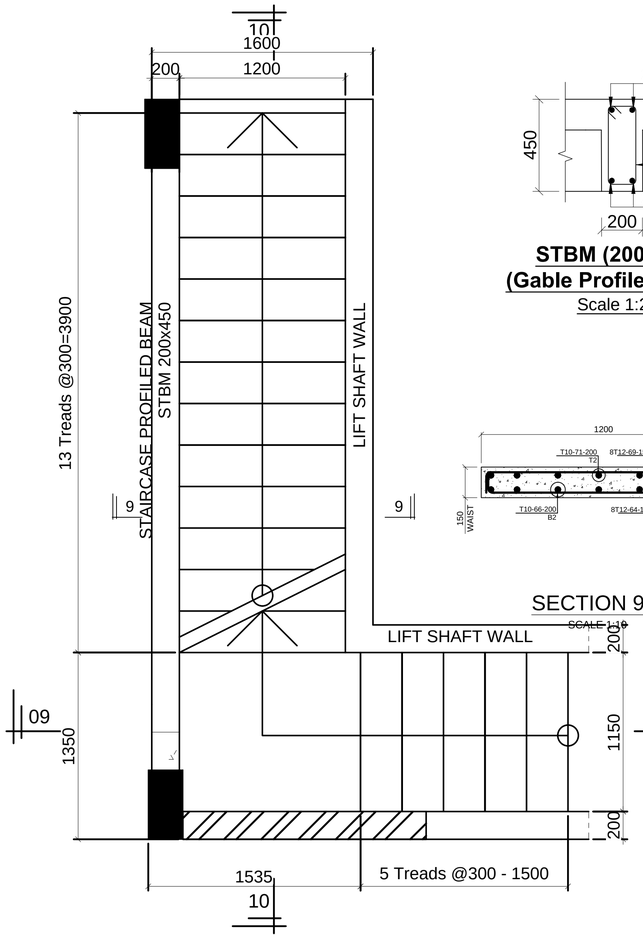
SECTION 10 - 10

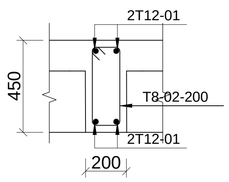


STAIRCASE ,
-SECTION 09 - 09

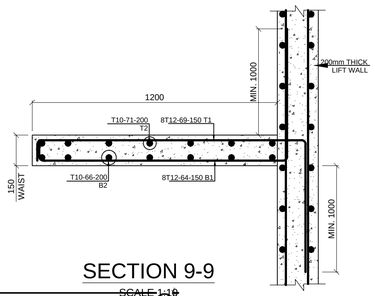


SLAB LAYOUT ABOVE STAIRCASE 1
SCALE 1:25

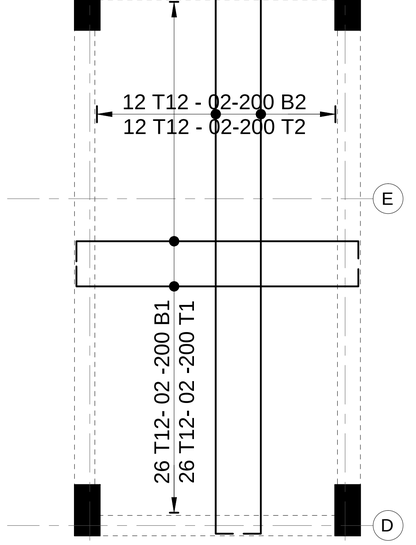




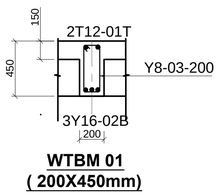
STBM (200x450)
(Gable Profiled Beam)
Scale 1:25



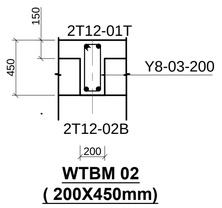
SECTION 9-9
SCALE 1:10



RC SLAB ABOVE STAIRCASE 1
SCALE 1:25



WTBM 01
(200X450mm)



WTBM 02
(200X450mm)

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Do not scale drawings. Refer to figured dimensions where indicated.
5. Any discrepancy, inconsistencies to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 ; T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Revisions
No. | Description | Date

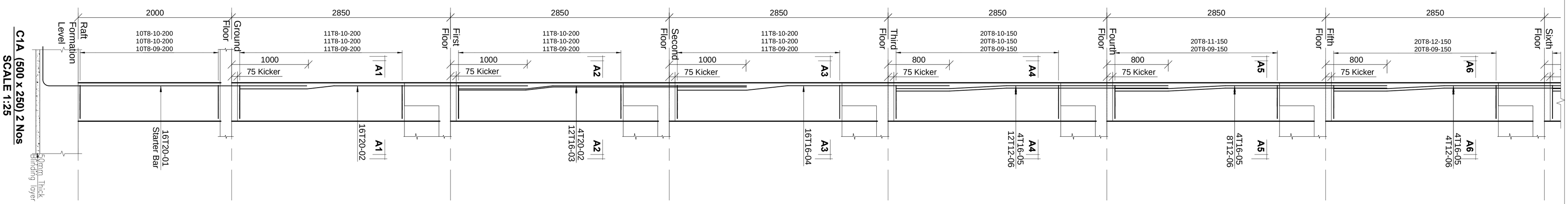
Project: PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS
Title: STAIRCASE RC DETAILS

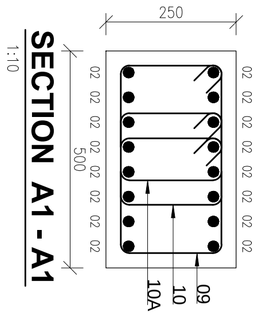
Designed by: JMN | Checked by: JMN
Approved by: SECRETARY, HOUSING DEPARTMENT
Date: 13th March 2024 | Scale: As shown
Drawing Number: AHP-G-9-BLKB 3.08

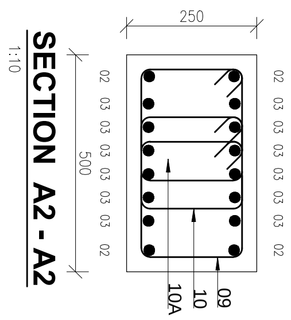
STRUCTURAL ENGINEER:

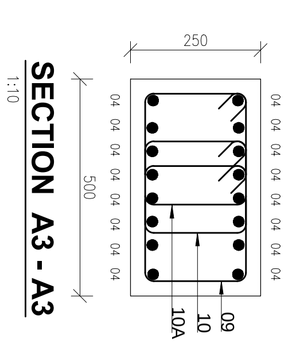
Client: MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

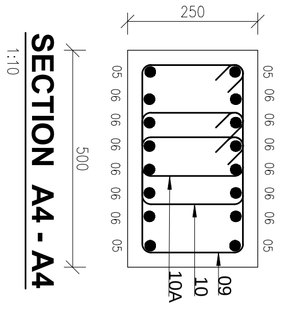
C1A (500 x 250) 2 Nos
SCALE 1:25

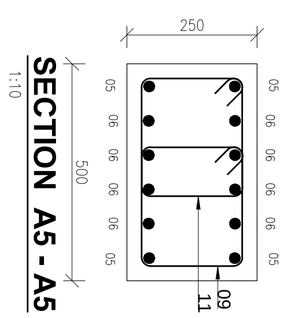


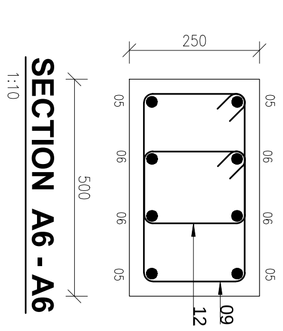


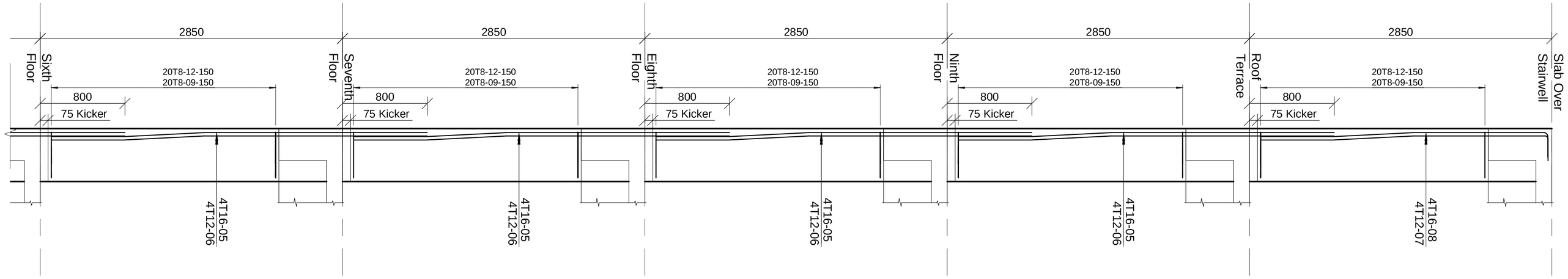












NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

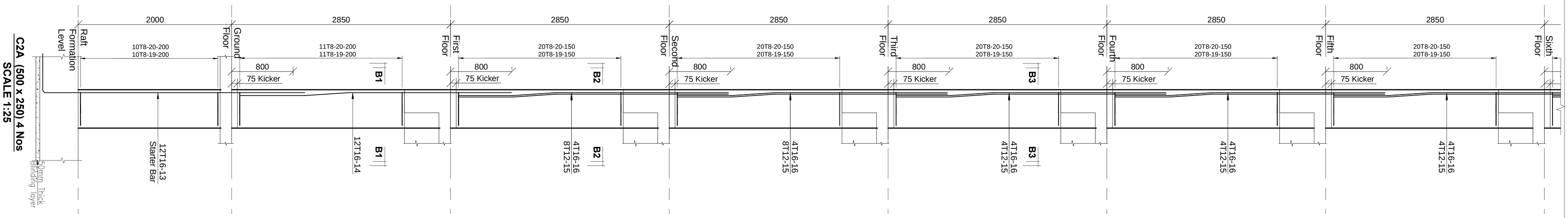
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.0B*

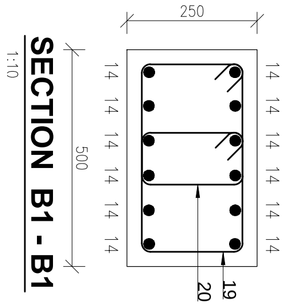
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C1A RC DETAILS

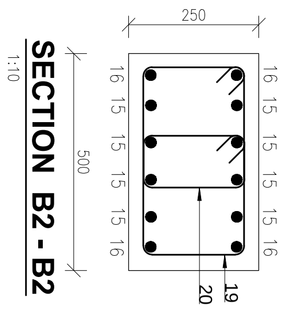
Revisions		
No.	Description	Date

C2A (500 x 250) 4 Nos
SCALE 1:25

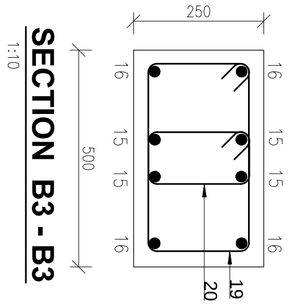




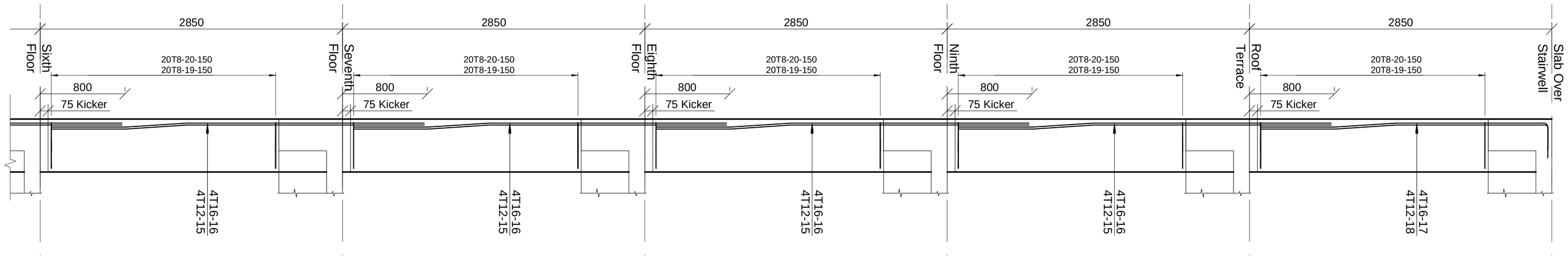
SECTION B1 - B1
1:10



SECTION B2 - B2
1:10



SECTION B3 - B3
1:10



NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.1B*

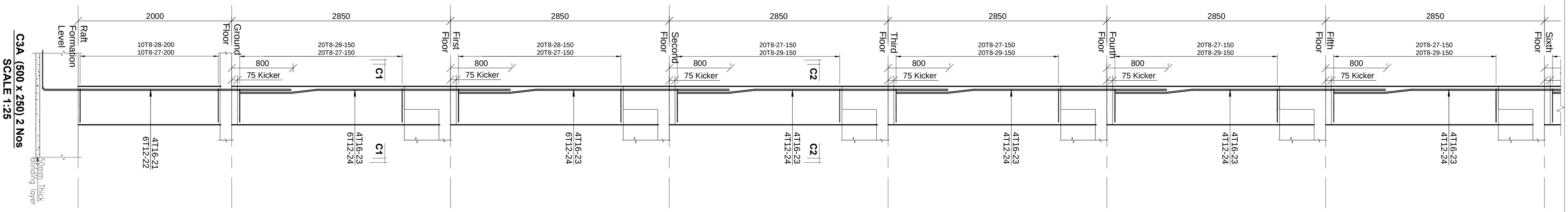
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

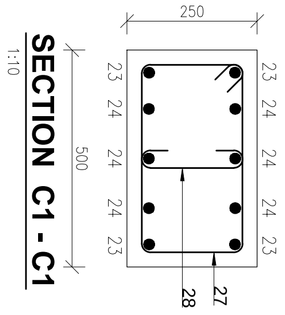
Title
COLUMN C2A RC DETAILS

Revisions

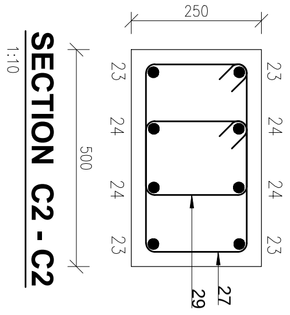
No.	Description	Date

C3A (500 x 250) 2 Nos
SCALE 1:25

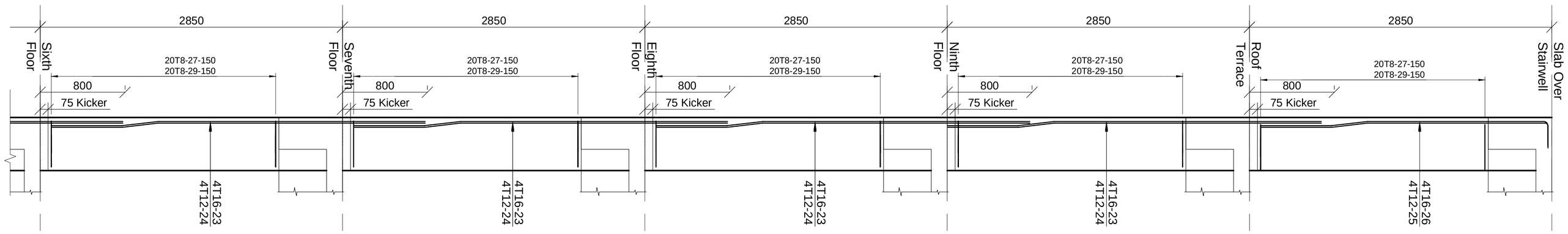




SECTION C1 - C1
1:10



SECTION C2 - C2
1:10



NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

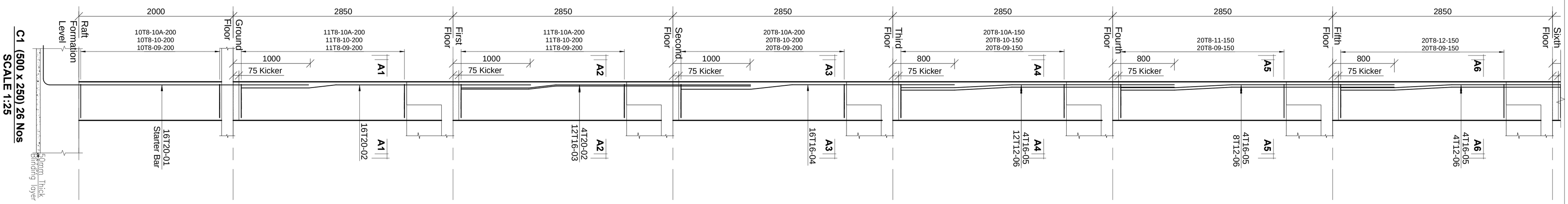
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.2B*

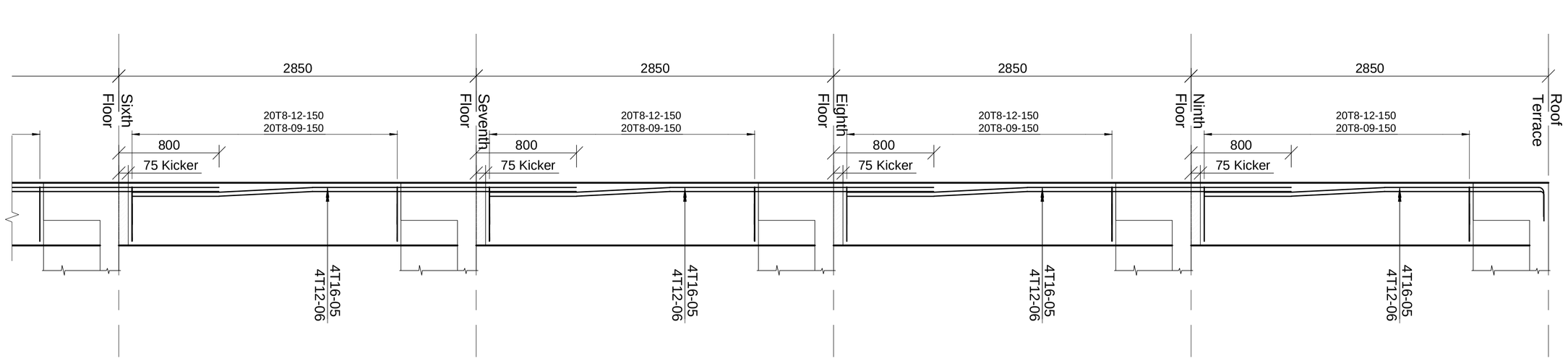
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

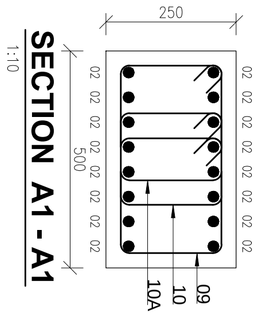
Title
COLUMN C3A RC DETAILS

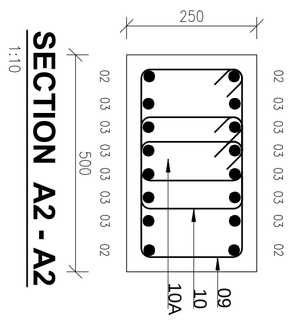
Revisions		
No.	Description	Date

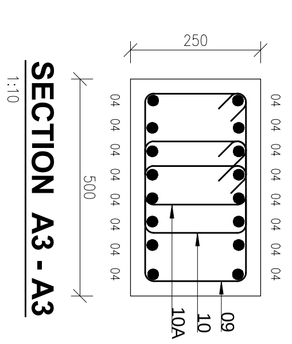
C1 (500 x 250) 26 Nos
SCALE 1:25

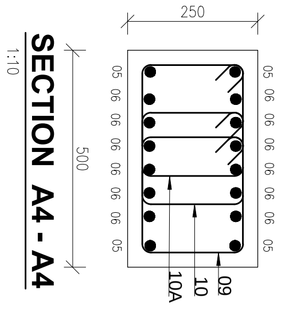


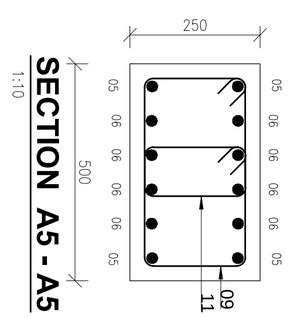


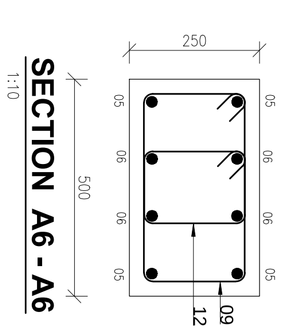












NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

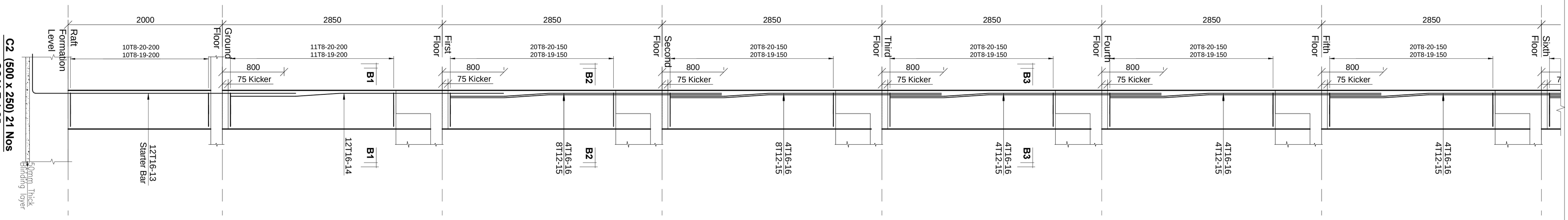
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.3B*

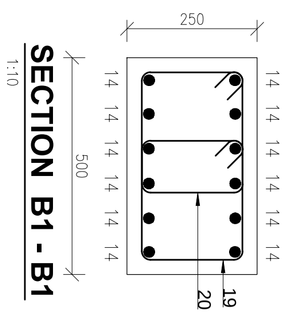
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C1 RC DETAILS

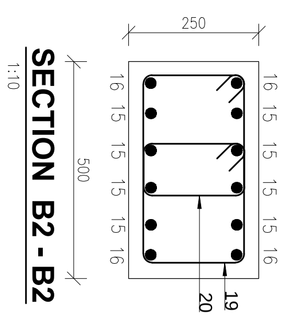
Revisions		
No.	Description	Date

C2 (500 x 250) 21 Nos
SCALE 1:25

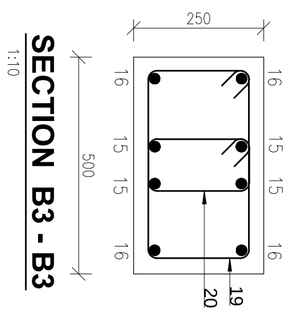




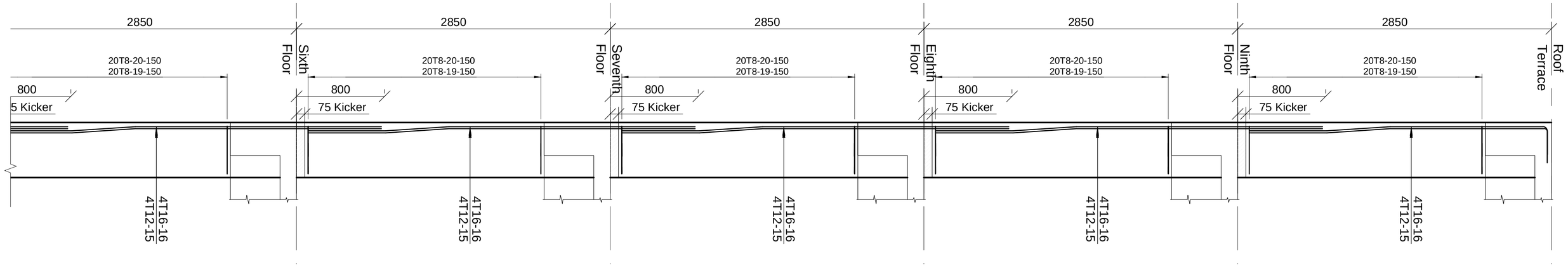
SECTION B1 - B1
1:10



SECTION B2 - B2
1:10



SECTION B3 - B3
1:10



NOTES
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6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

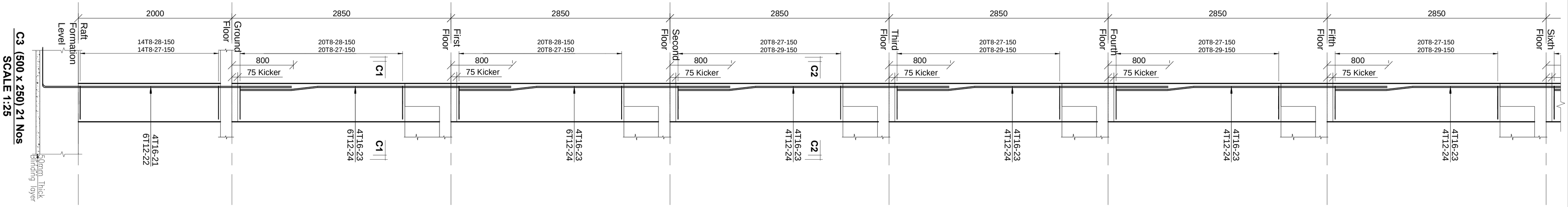
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.4B*

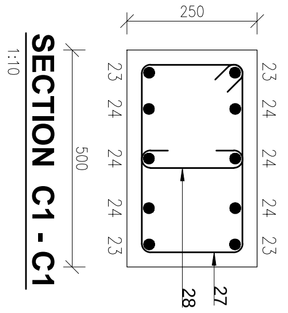
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C2 RC DETAILS

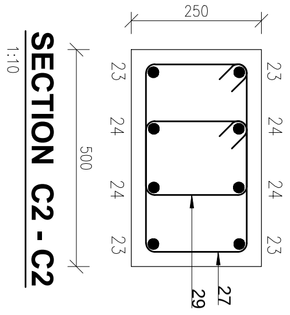
Revisions		
No.	Description	Date

C3 (500 x 250) 21 Nos
SCALE 1:25

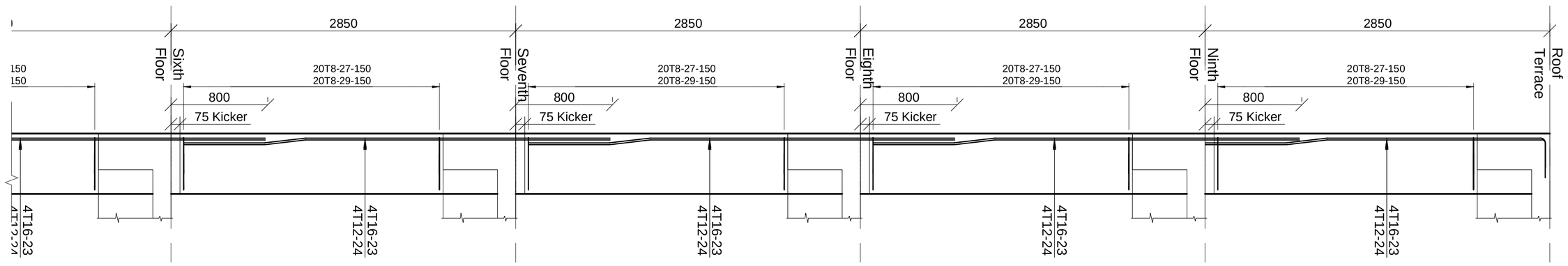




SECTION C1 - C1
1:10



SECTION C2 - C2
1:10



NOTES
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B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

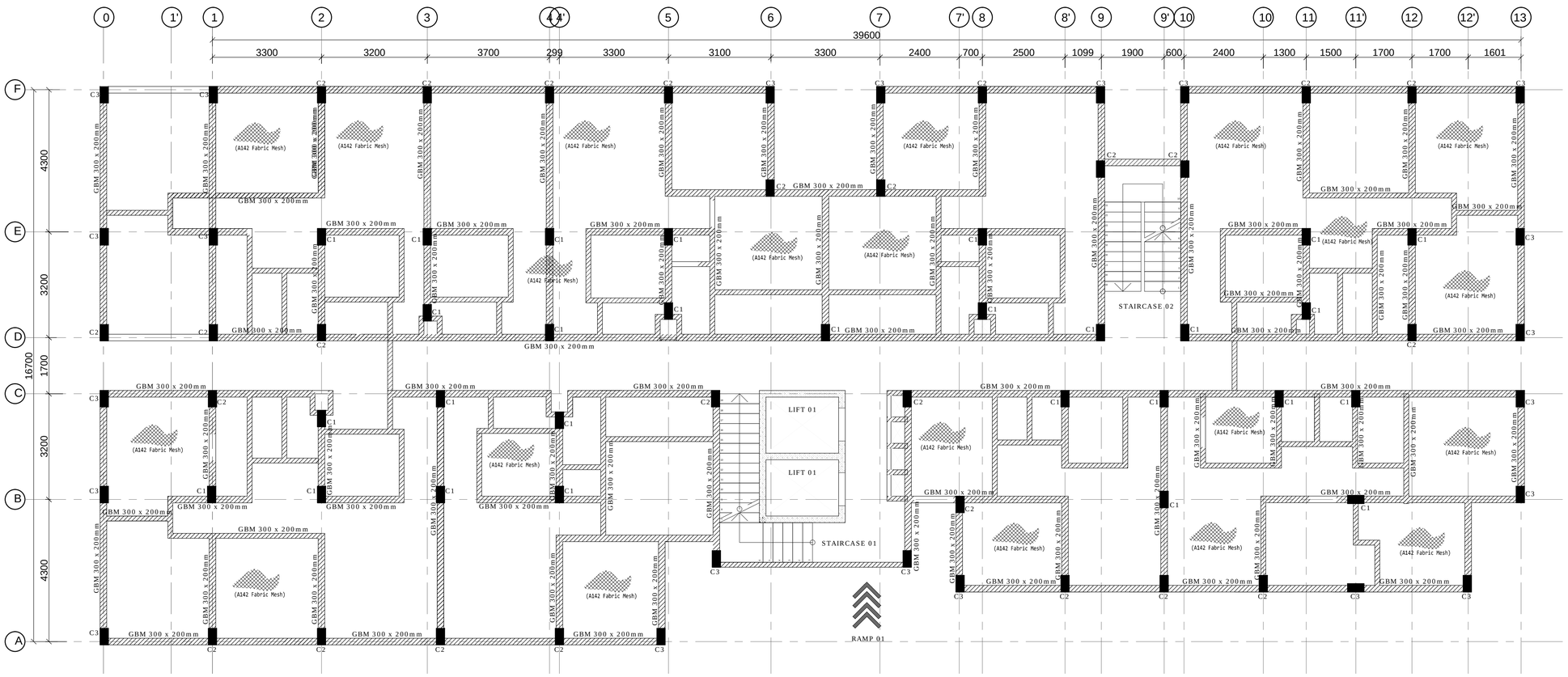
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.5B*

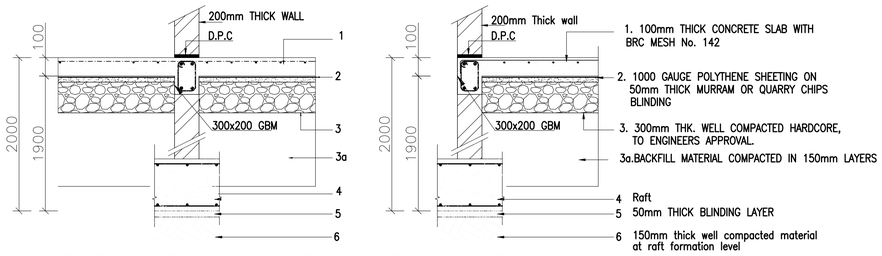
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C3 RC DETAILS

Revisions		
No.	Description	Date

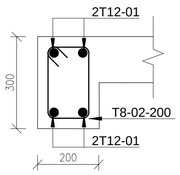


GROUND FLOOR LAYOUT
(100mm Thick Solid Slab With BRC Mesh A142 on top)
SCALE 1:75



TYPICAL INTERNAL FOUNDATION WALLING SECTION
1:25

TYPICAL INTERNAL FOUNDATION WALLING SECTION
1:25



GBM (300 X 200mm)
Scale 1:10

NOTES
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Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

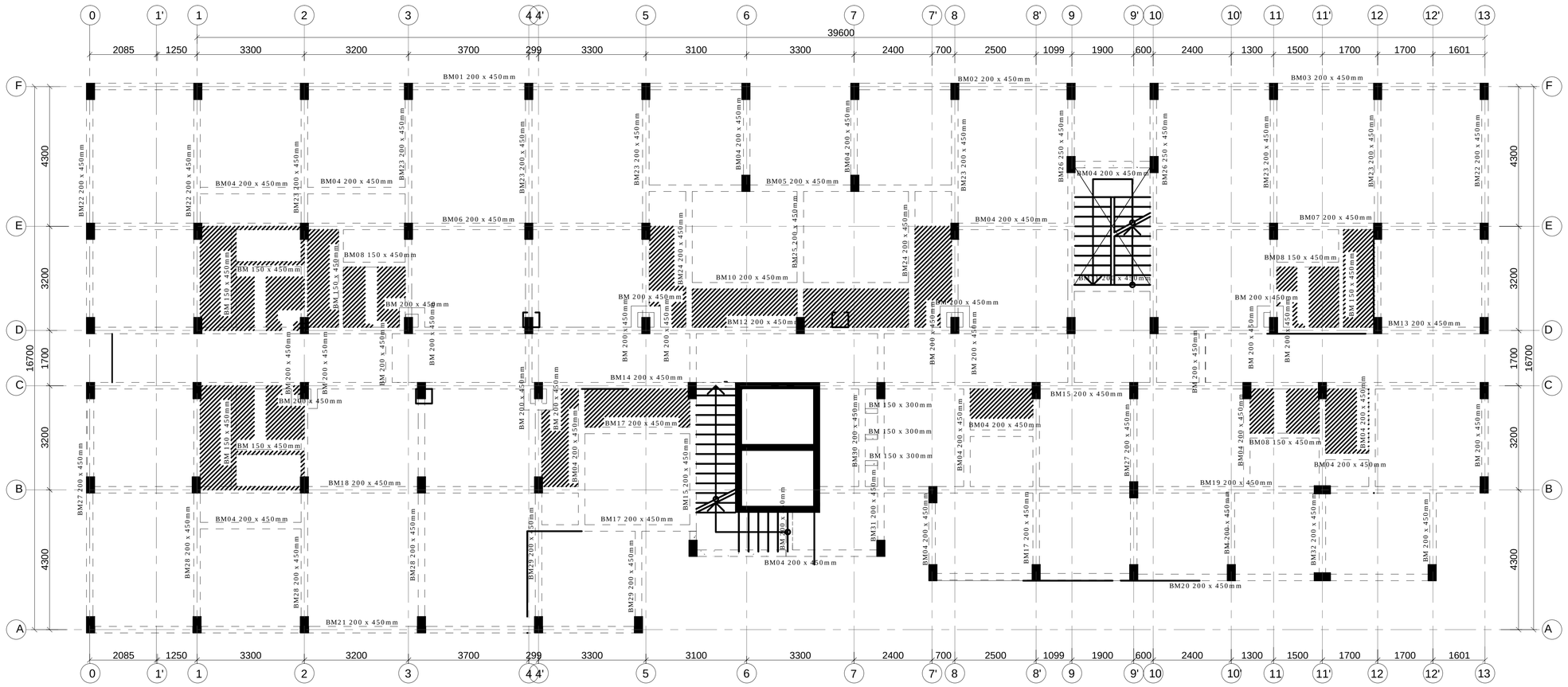
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 5.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
GROUND FLOOR LAYOUT DETAILS

Revisions		
No.	Description	Date



TYPICAL FLOOR SLAB LAYOUT
130 MM THICK SOLID SLAB AND 150 MM THICK SLAB IN WET AREAS(HATCHED)
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
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B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
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10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

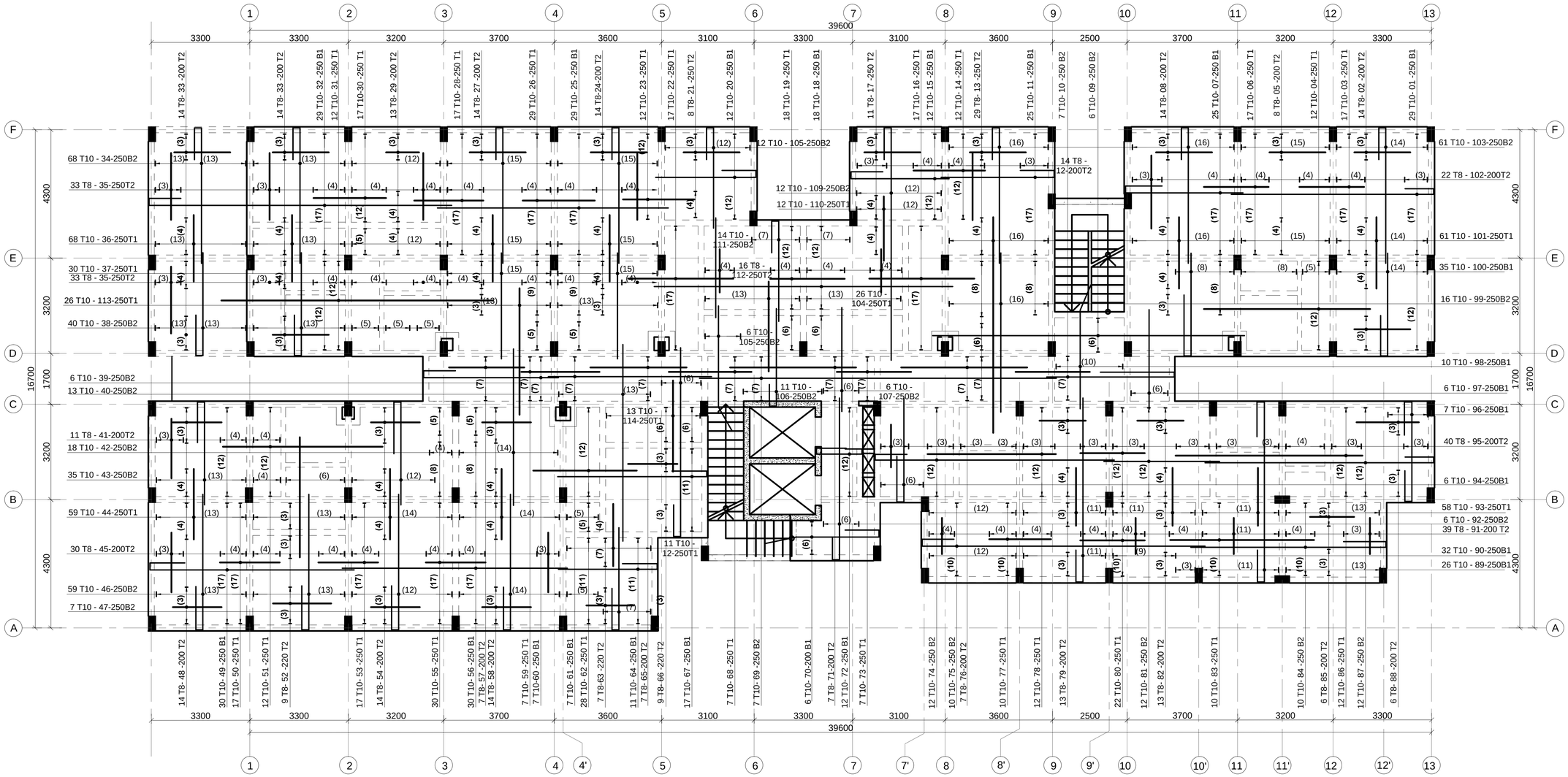
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 6.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
TYPICAL FLOOR SLAB LAYOUT DETAILS

Revisions

No.	Description	Date



TYPICAL FLOOR SLAB REBAR DETAILS
130 MM THICK SOLID SLAB AND 150 MM THICK SLAB IN WET AREAS REBAR DETAILS
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
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3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
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10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

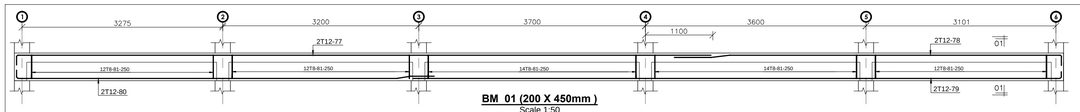
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 6.1B*

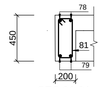
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
TYPICAL FLOOR SLAB REBAR DETAILS

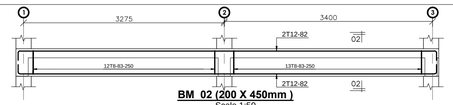
Revisions		
No.	Description	Date



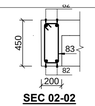
BM 01 (200 X 450mm)
Scale 1:50



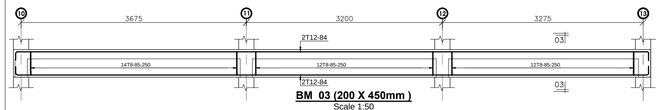
SEC 01-01
Scale 1:25



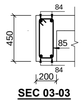
BM 02 (200 X 450mm)
Scale 1:50



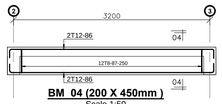
SEC 02-02
Scale 1:25



BM 03 (200 X 450mm)
Scale 1:50

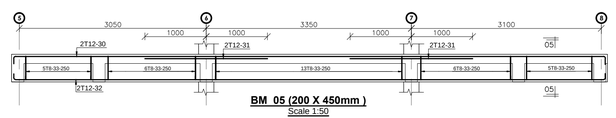


SEC 03-03
Scale 1:25

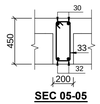


BM 04 (200 X 450mm)
Scale 1:50

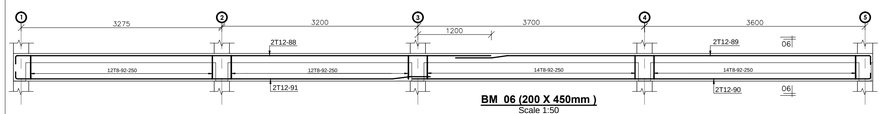
SEC 04-04
Scale 1:25



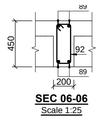
BM 05 (200 X 450mm)
Scale 1:50



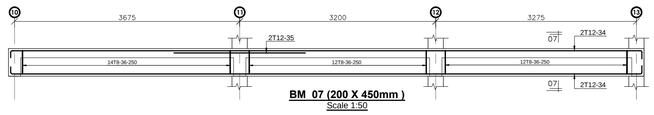
SEC 05-05
Scale 1:25



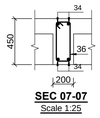
BM 06 (200 X 450mm)
Scale 1:50



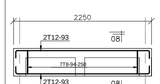
SEC 06-06
Scale 1:25



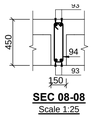
BM 07 (200 X 450mm)
Scale 1:50



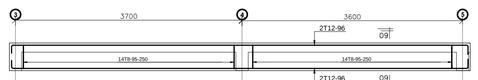
SEC 07-07
Scale 1:25



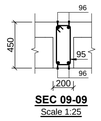
BM 08 (150 X 450mm)
Scale 1:50



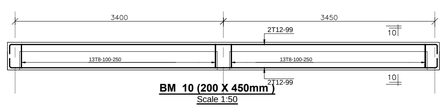
SEC 08-08
Scale 1:25



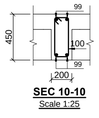
BM 09 (200 X 450mm)
Scale 1:50



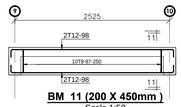
SEC 09-09
Scale 1:25



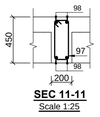
BM 10 (200 X 450mm)
Scale 1:50



SEC 10-10
Scale 1:25



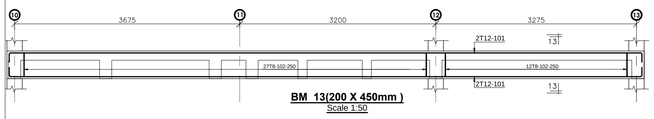
BM 11 (200 X 450mm)
Scale 1:50



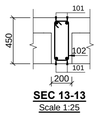
SEC 11-11
Scale 1:25

BM 12 (200 X 450mm)
Scale 1:50

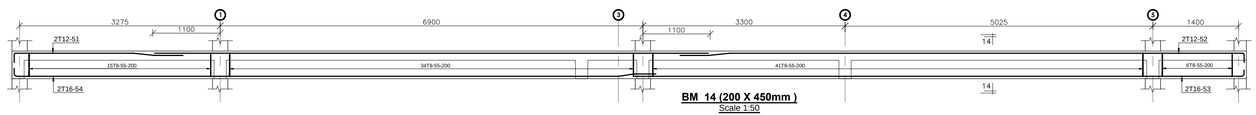
SEC 12-12
Scale 1:25



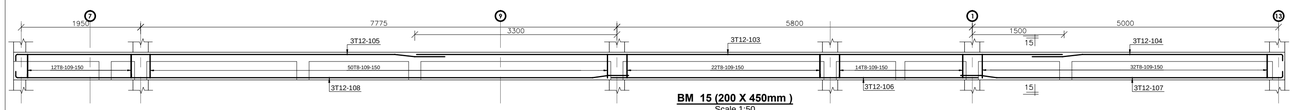
BM 13(200 X 450mm)
Scale 1:50



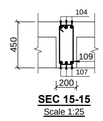
SEC 13-13
Scale 1:25



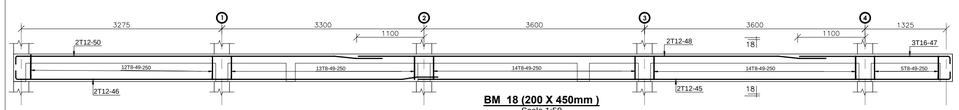
BM 14 (200 X 450mm)
Scale 1:50



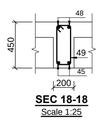
BM 15 (200 X 450mm)
Scale 1:50



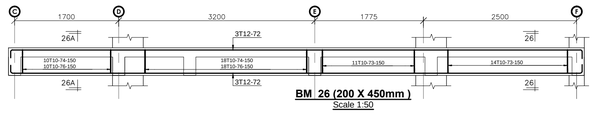
SEC 15-15
Scale 1:25



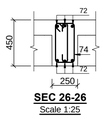
BM 18 (200 X 450mm)
Scale 1:50



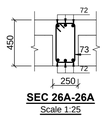
SEC 18-18
Scale 1:25



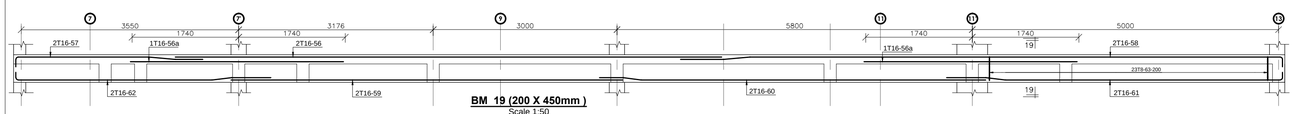
BM 26 (200 X 450mm)
Scale 1:50



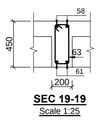
SEC 26-26
Scale 1:25



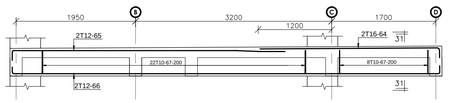
SEC 26A-26A
Scale 1:25



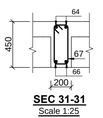
BM 19 (200 X 450mm)
Scale 1:50



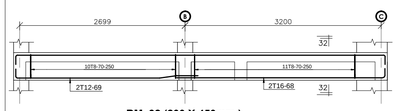
SEC 19-19
Scale 1:25



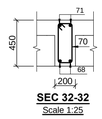
BM 31 (200 X 450mm)
Scale 1:50



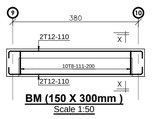
SEC 31-31
Scale 1:25



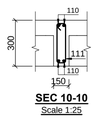
BM 32 (200 X 450mm)
Scale 1:50



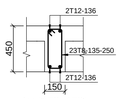
SEC 32-32
Scale 1:25



BM (150 X 300mm)
Scale 1:50



SEC 10-10
Scale 1:25



BM (150x450)
Scale 1:25

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

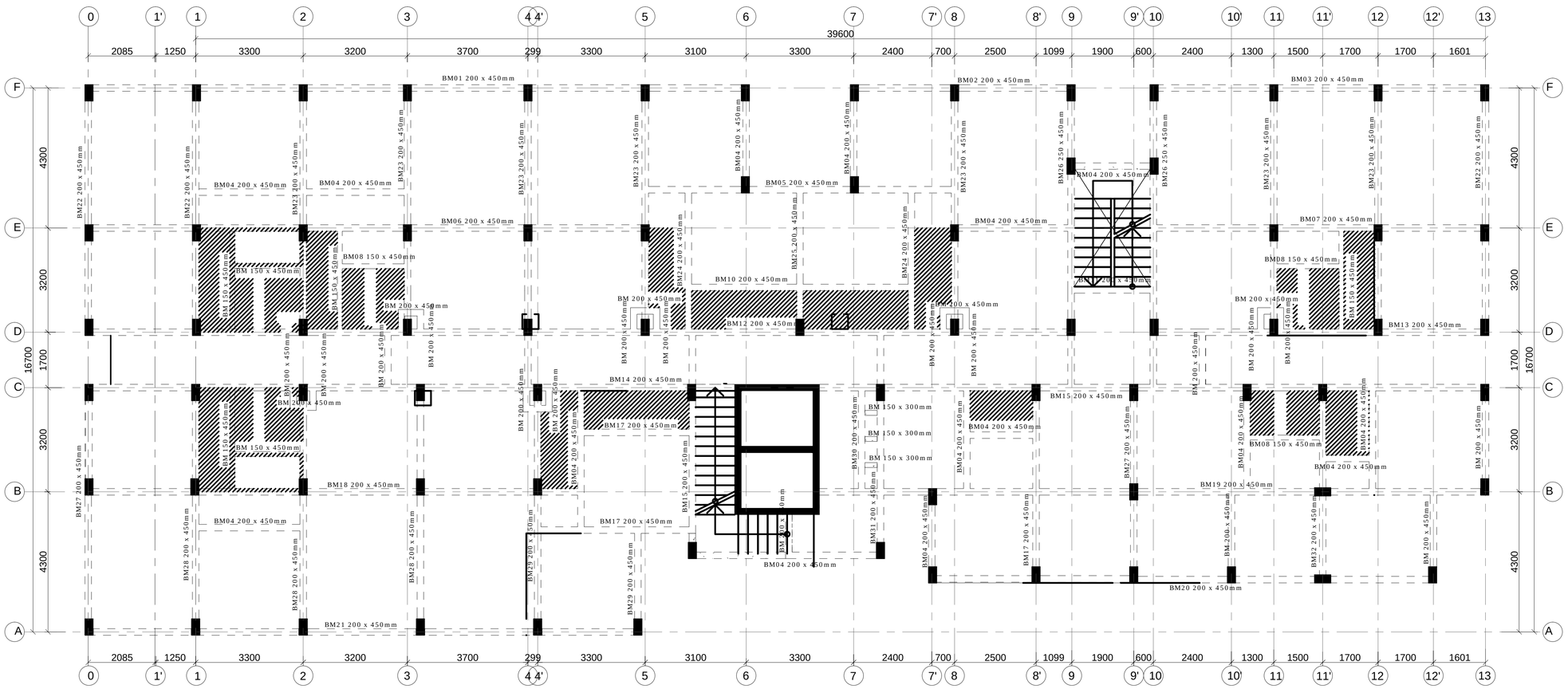
STRUCTURAL ENGINEER:

Designed by: *JMN*	Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT	
Date: *13th March 2024*	Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 6.2B*	

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
TYPICAL FLOOR SLAB BEAMS RC DETAILS

Revisions		
No.	Description	Date



ROOF TERRACE FLOOR SLAB REBAR DETAILS
150 MM THICK SLAB

NOTE:
-Terrace floor slab to be waterproofed with physical barrier waterproofing membrane such as APP or equivalent.

-APP membrane to be protected using screed and concrete interlocking tiles

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

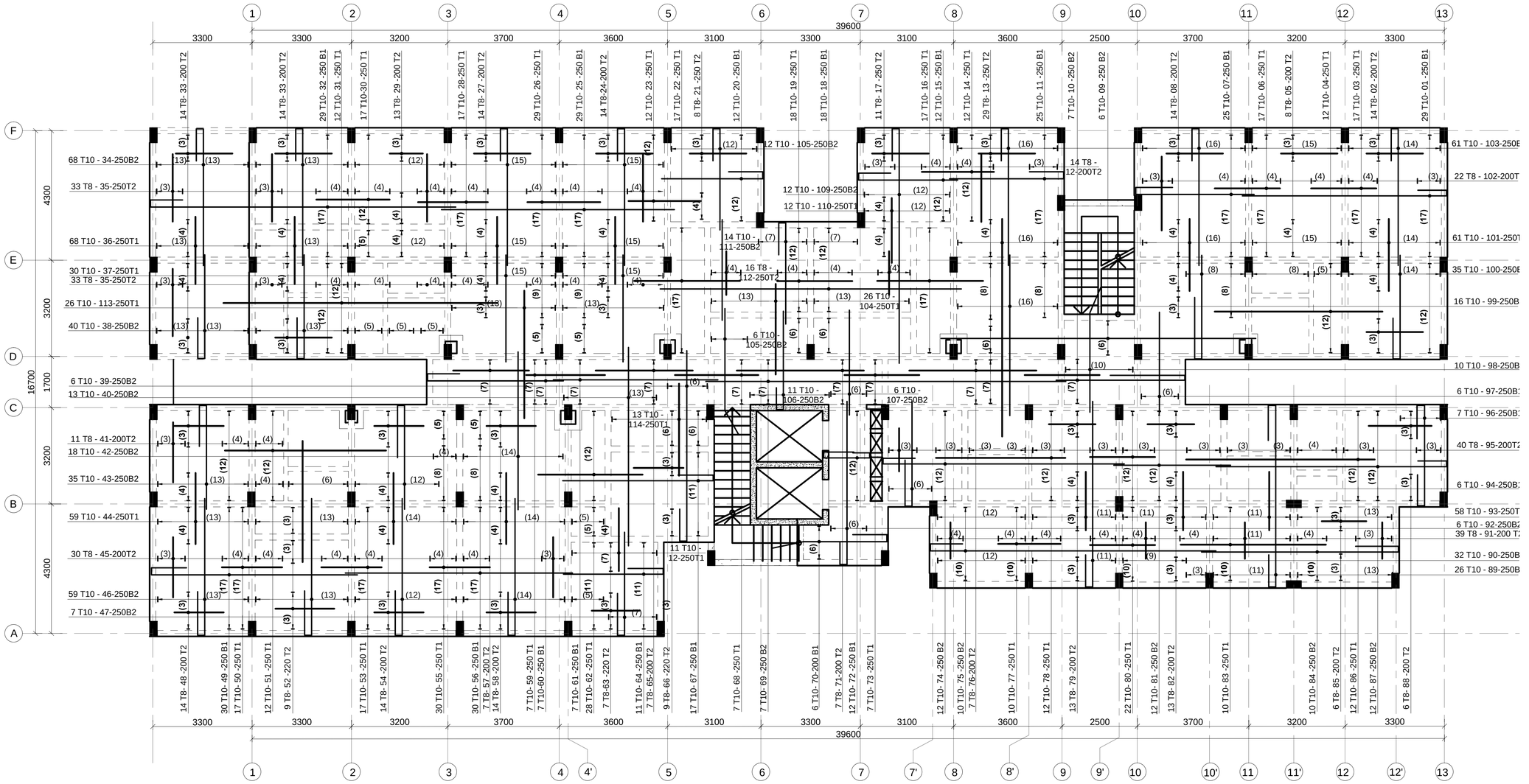
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 7.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
ROOF TERRACE FLOOR SLAB LAYOUT DETAILS

Revisions		
No.	Description	Date



ROOF TERRACE FLOOR SLAB REBAR DETAILS
150 MM THICK SLAB

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

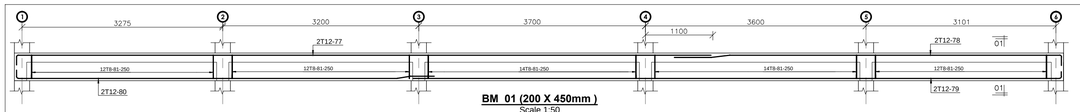
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 7.1B*

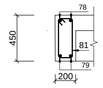
Project: PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title: ROOF TERRACE FLOOR SLAB REBAR DETAILS

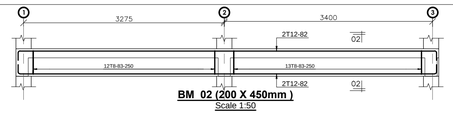
Revisions		
No.	Description	Date



BM 01 (200 X 450mm)
Scale 1:50

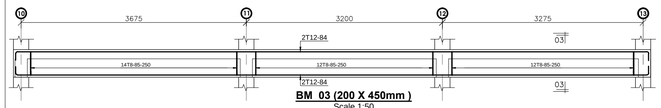


SEC 01-01
Scale 1:25



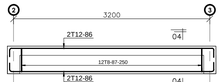
BM 02 (200 X 450mm)
Scale 1:50

SEC 02-02
Scale 1:25



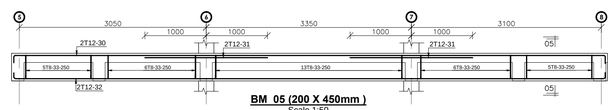
BM 03 (200 X 450mm)
Scale 1:50

SEC 03-03
Scale 1:25

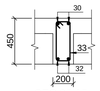


BM 04 (200 X 450mm)
Scale 1:50

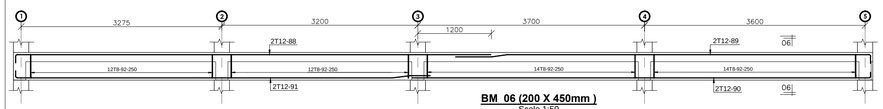
SEC 04-04
Scale 1:25



BM 05 (200 X 450mm)
Scale 1:50

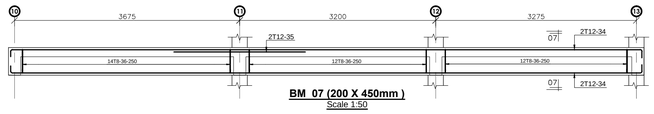


SEC 05-05
Scale 1:25

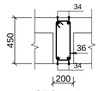


BM 06 (200 X 450mm)
Scale 1:50

SEC 06-06
Scale 1:25

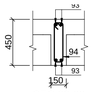


BM 07 (200 X 450mm)
Scale 1:50

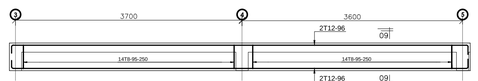


SEC 07-07
Scale 1:25

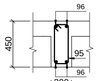
BM 08 (150 X 450mm)
Scale 1:50



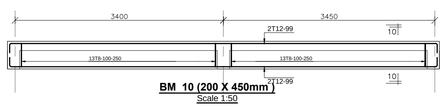
SEC 08-08
Scale 1:25



BM 09 (200 X 450mm)
Scale 1:50

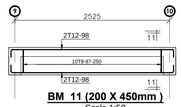


SEC 09-09
Scale 1:25

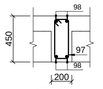


BM 10 (200 X 450mm)
Scale 1:50

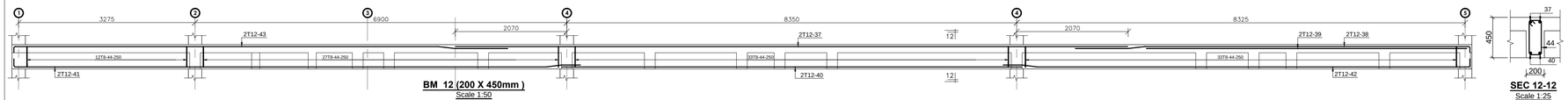
SEC 10-10
Scale 1:25



BM 11 (200 X 450mm)
Scale 1:50

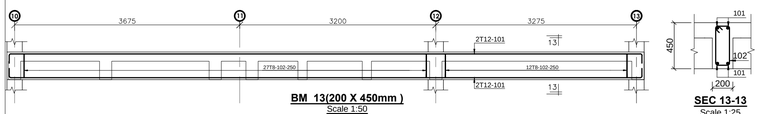


SEC 11-11
Scale 1:25



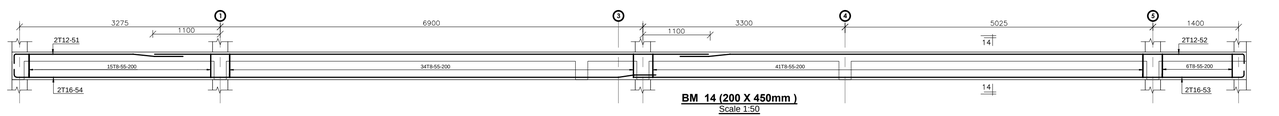
BM 12 (200 X 450mm)
Scale 1:50

SEC 12-12
Scale 1:25

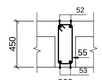


BM 13(200 X 450mm)
Scale 1:50

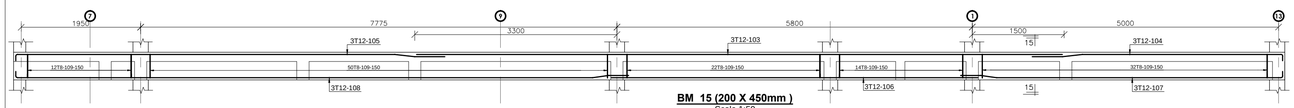
SEC 13-13
Scale 1:25



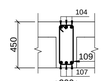
BM 14 (200 X 450mm)
Scale 1:50



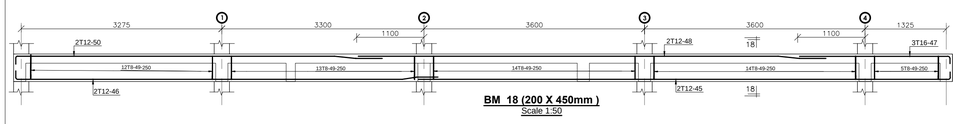
SEC 14-14
Scale 1:25



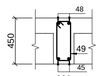
BM 15 (200 X 450mm)
Scale 1:50



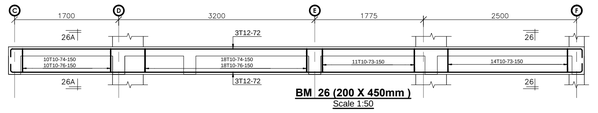
SEC 15-15
Scale 1:25



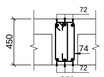
BM 18 (200 X 450mm)
Scale 1:50



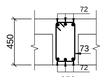
SEC 18-18
Scale 1:25



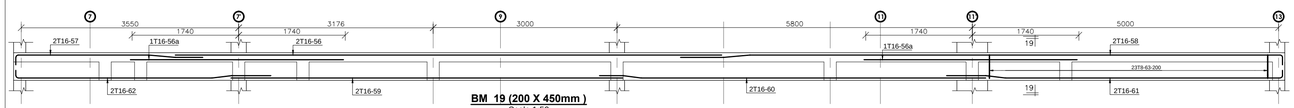
BM 26 (200 X 450mm)
Scale 1:50



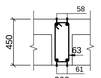
SEC 26-26
Scale 1:25



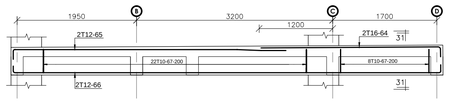
SEC 26A-26A
Scale 1:25



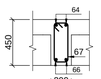
BM 19 (200 X 450mm)
Scale 1:50



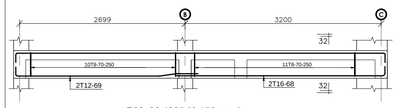
SEC 19-19
Scale 1:25



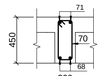
BM 31 (200 X 450mm)
Scale 1:50



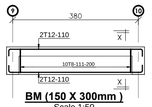
SEC 31-31
Scale 1:25



BM 32 (200 X 450mm)
Scale 1:50



SEC 32-32
Scale 1:25



BM (150 X 300mm)
Scale 1:50

SEC 10-10
Scale 1:25

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

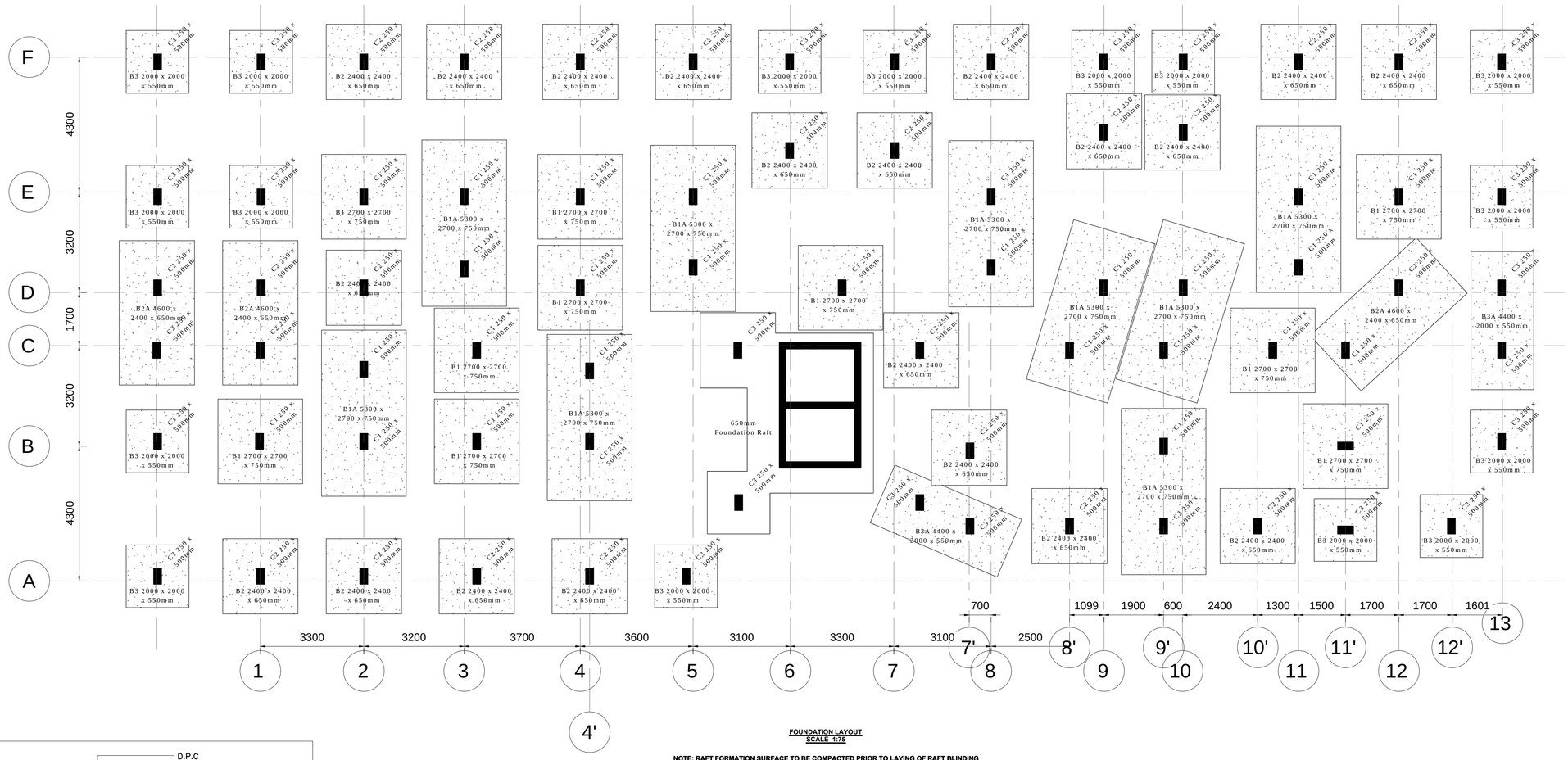
STRUCTURAL ENGINEER:

Designed by: *JMN*	Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT	
Date: *13th March 2024*	Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 7.2B*	

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
ROOF TERRACE FLOOR BEAMS REBAR DETAILS

Revisions		
No.	Description	Date

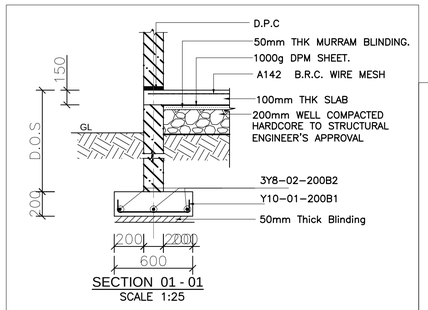


FOUNDATION LAYOUT
SCALE 1:75

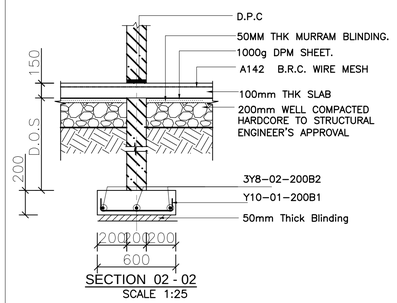
NOTE: RAFT FORMATION SURFACE TO BE COMPACTED PRIOR TO LAYING OF RAFT BLINDING

	ELEMENT	Kg/m3
	RAFT	41
	COLUMNS	193
	SLAB	66
	BEAMS	62
	GROUND BEAMS	103
	STAIRCASE 1	166
	STAIRCASE 2	121
	LIFT	88
	SLAB OVER STAIRCASE 1	112
	BEAM OVER STAIRCASE 1	95
	SLAB OVER STAIRCASE 2	122
	BEAMS OVER STAIRCASE 2	108

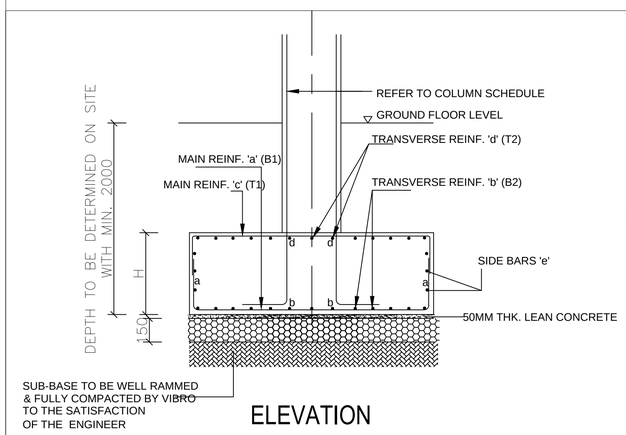
NOTE:
Soil bearing capacity 300KN/m3



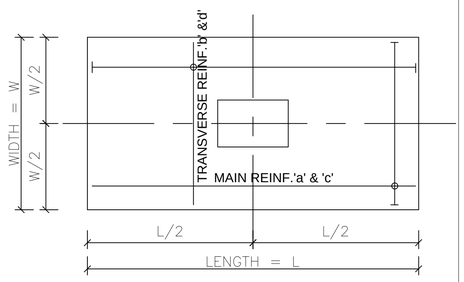
SECTION 01 - 01
SCALE 1:25



SECTION 02 - 02
SCALE 1:25



ELEVATION



PLAN

TYPICAL RC FOOTINGS DETAILS

SCALE 1:25

NOTE :
- REINFORCEMENT 'a' & 'c' IS THE LONGTUDINAL REBARS THAT PARALLEL TO THE LENGTH OF FOOTING
- REINFORCEMENT 'b' & 'd' IS THE TRANSVERSE REBARS THAT PERPENDICULAR TO THE LENGTH OF FOOTING
- 'a' or 'b' whichever is heavier rebar is to be placed at the bottom outter face
- 'c' or 'd' whichever is heavier rebar is to be placed at the top outter face

FOOTING SCHEDULE

NOTE : GRADE OF CONCRETE FOR ALL FOOTINGS TO BE 25 N/mm2

FOOTING TYPE	FOOTING SIZE			REINFORCEMENT				
	W	L	H	a (B1)	b (B2)	c (T1)	d (T2)	e
B1	2700	2700	750	T16-150	T16-150	-	-	2T12
B1A	2700	5300	750	T16-150	T16-150	T16-200	T16-200	2T12
B2	2400	2400	650	T16-200	T16-200	-	-	2T12
B2A	4600	2400	650	T16-200	T16-200	T16-200	T16-200	2T12
B3	2000	2000	550	T16-200	T16-200	-	-	-
LIFT BASE	As Per dim.		650	T16-200	T16-200	T12-150	T12-150	2T12

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face, B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

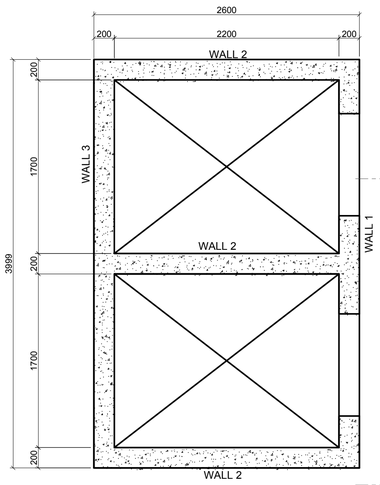
STRUCTURAL ENGINEER:

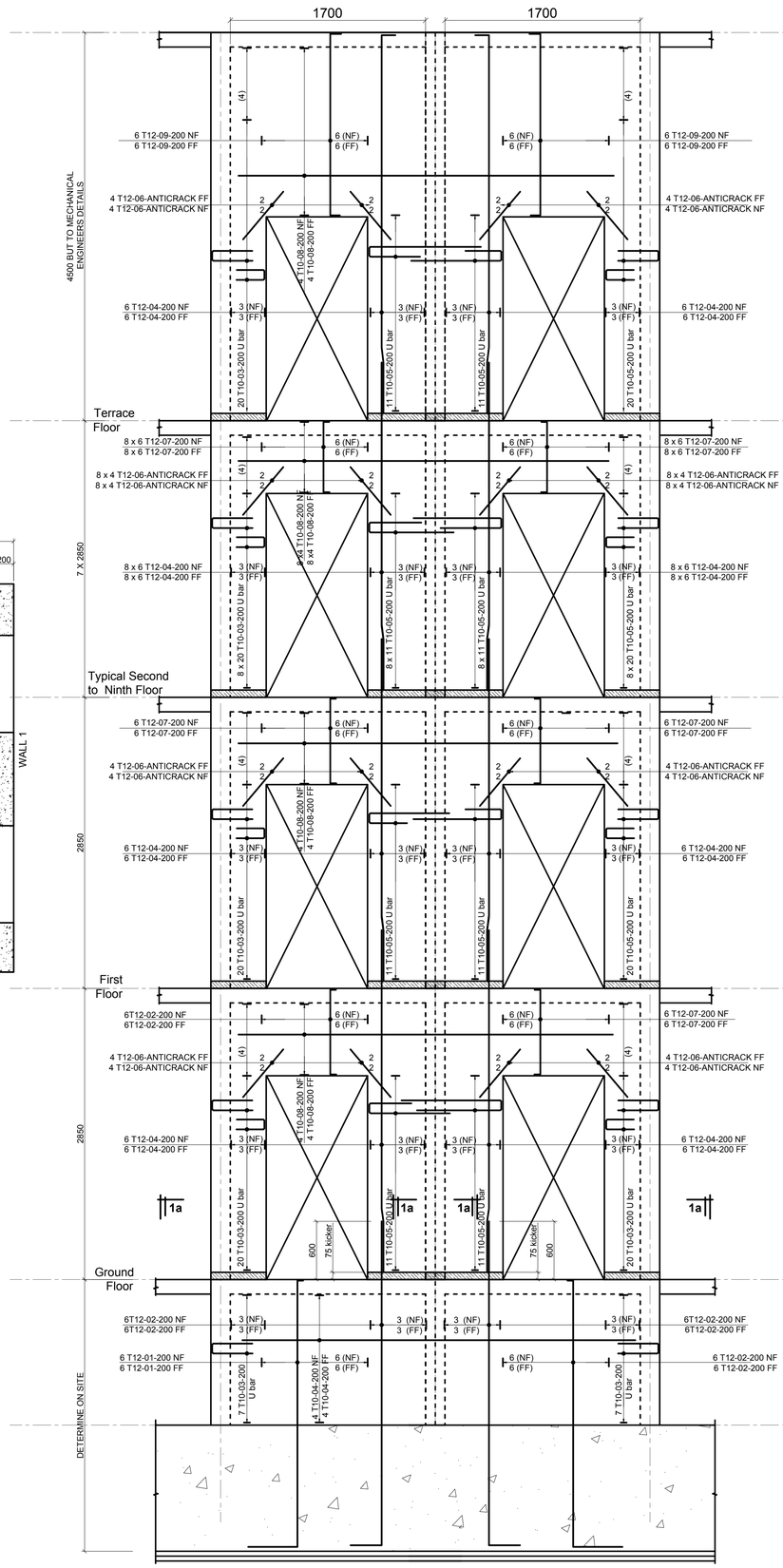
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 1.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

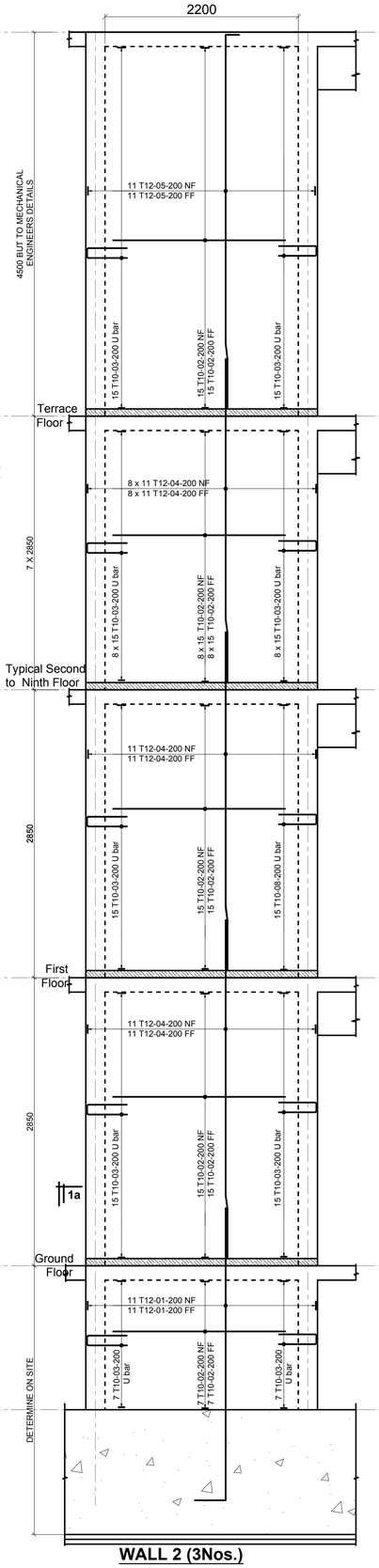
Title
FOUNDATION LAYOUT

Revisions		
No.	Description	Date

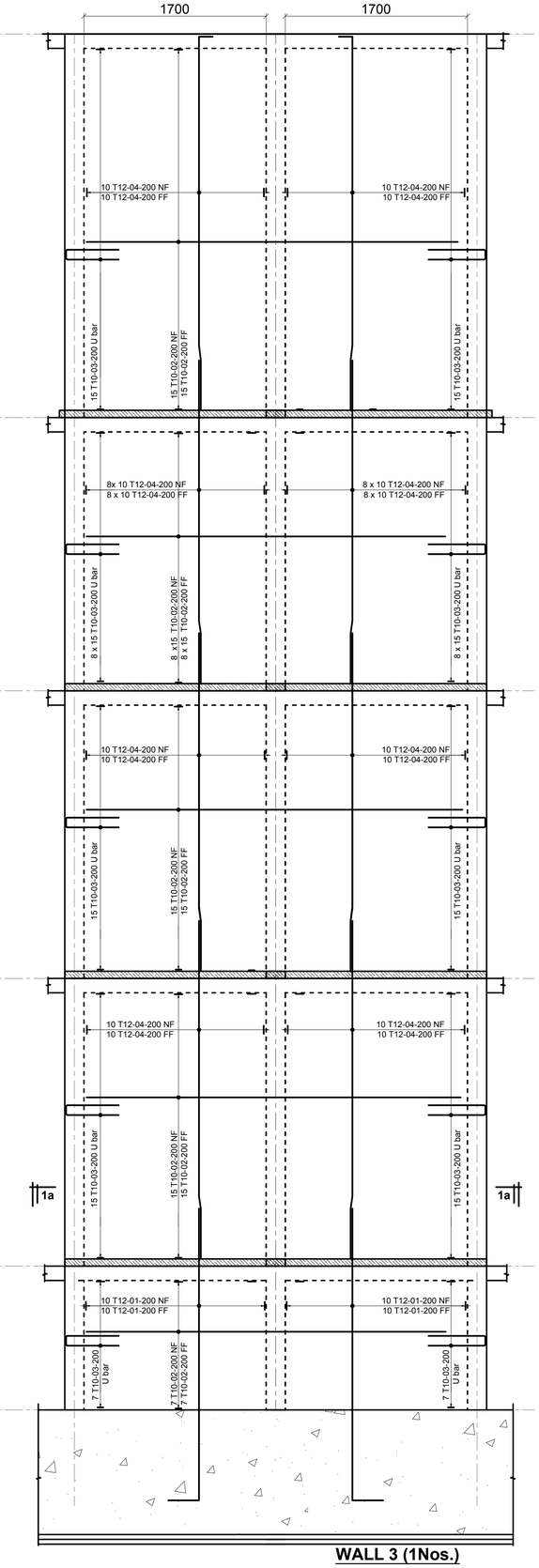




WALL 1 (1No.)



WALL 2 (3Nos.)



WALL 3 (1Nos.)

NOTES:
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. All figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 T - Top face, B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns -40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds as 6mm fillet.
10. All structural steel to be painted with anti-rust primmer paint.

Revisions		
No.	Description	Date

Project: PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

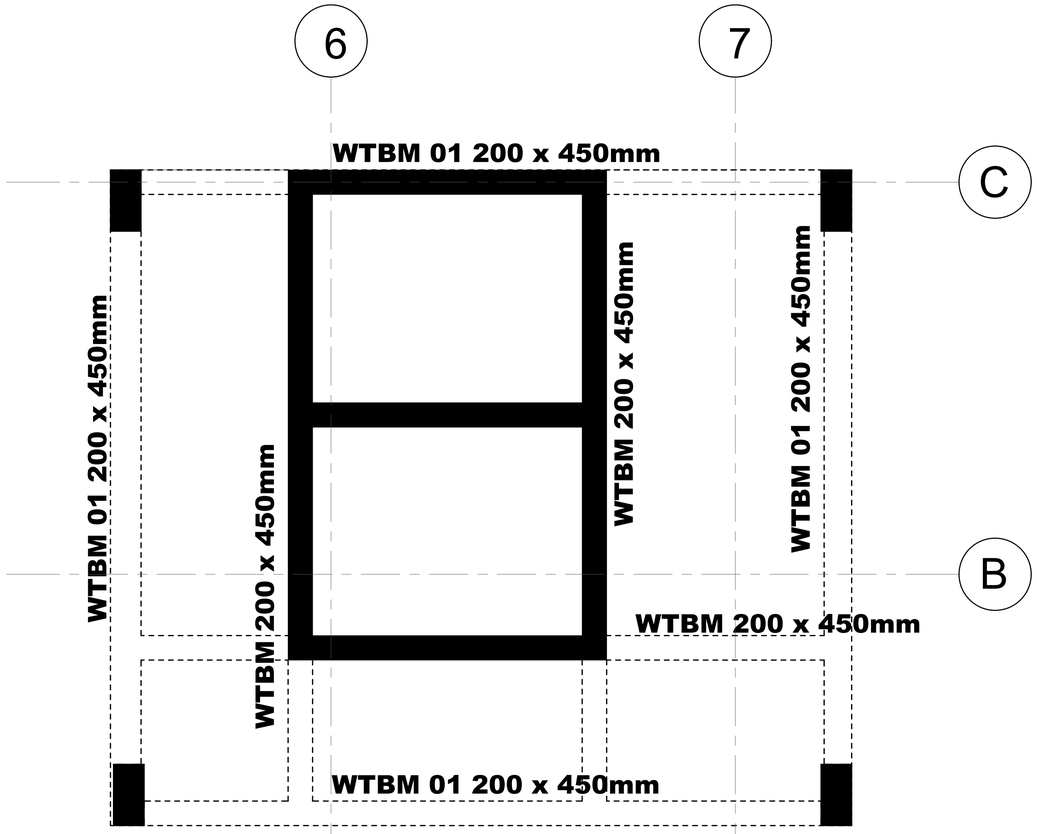
Title: LIFT SHAFT RC DETAILS

Designed by: JMN | Checked by: JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: 13th March 2024 | Scale: As shown
Drawing Number: AHP-G-9-BLK8 2.08

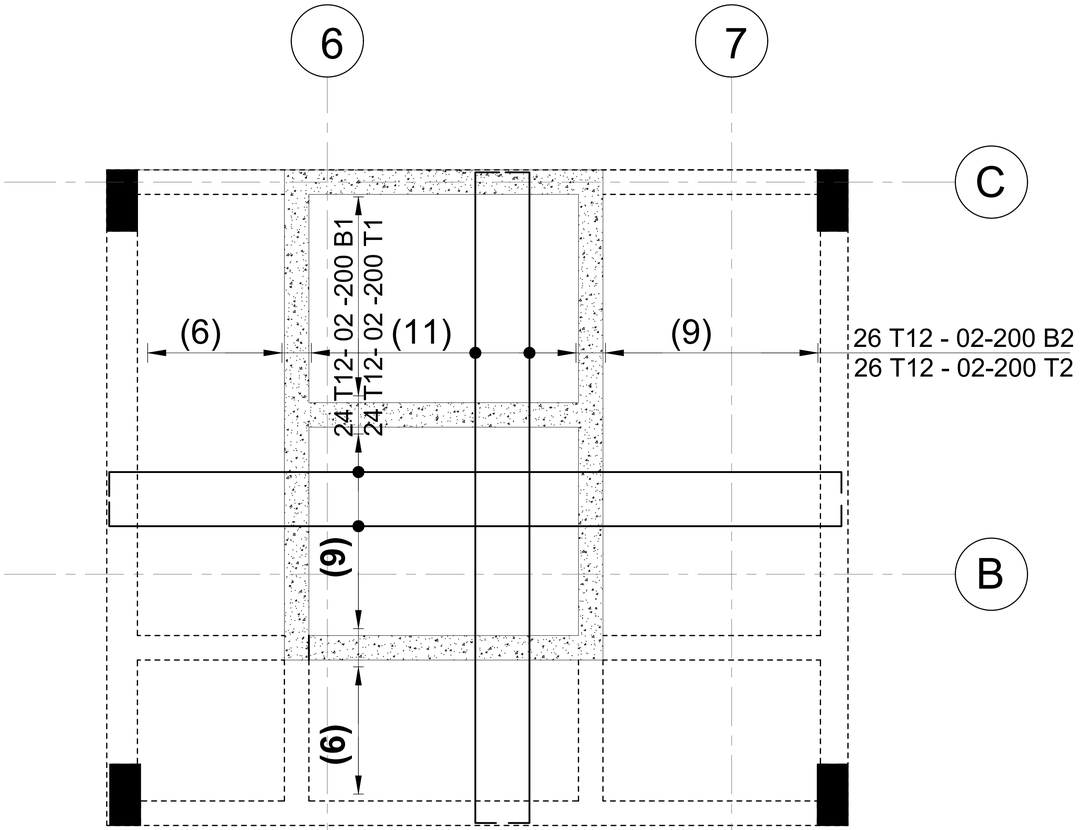
STRUCTURAL ENGINEER:

Client: MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

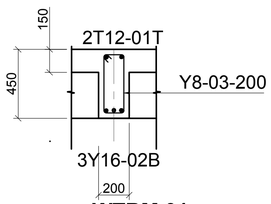
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT



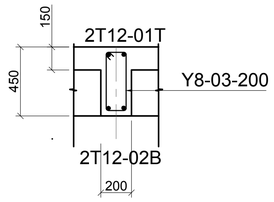
SLAB LAYOUT ABOVE LIFT & STAIRCASE 2
SCALE 1:25



RC SLAB ABOVE LIFT & STAIRCASE 2
SCALE 1:25



WTBM 01
(200X450mm)



WTBM
(200X450mm)

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

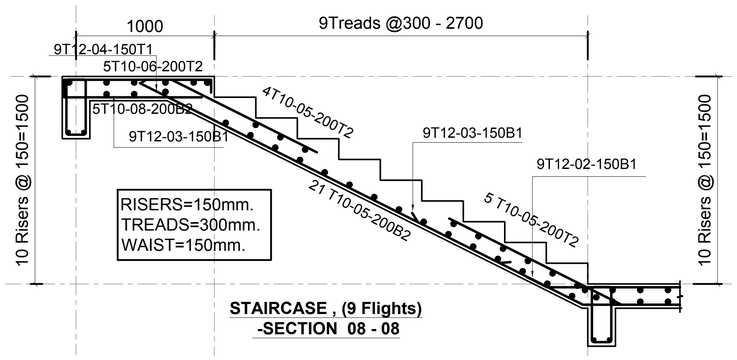
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 2.1B*

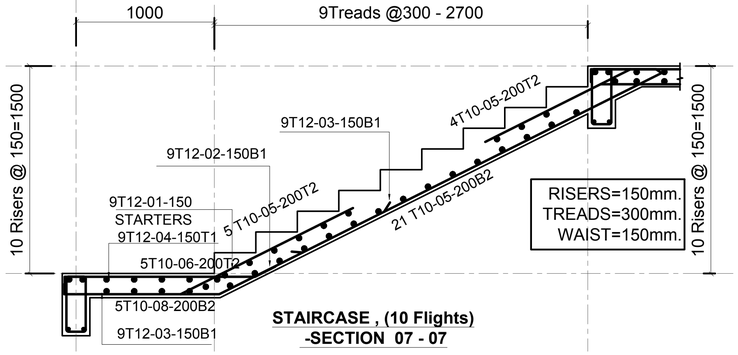
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
SLAB OVER LIFT SHAFT RC DETAILS

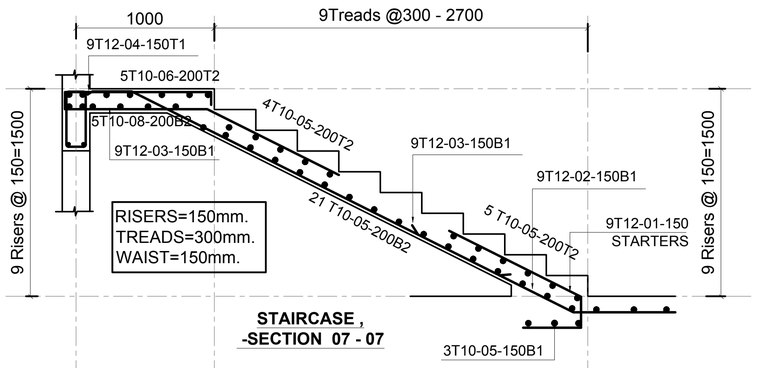
Revisions		
No.	Description	Date



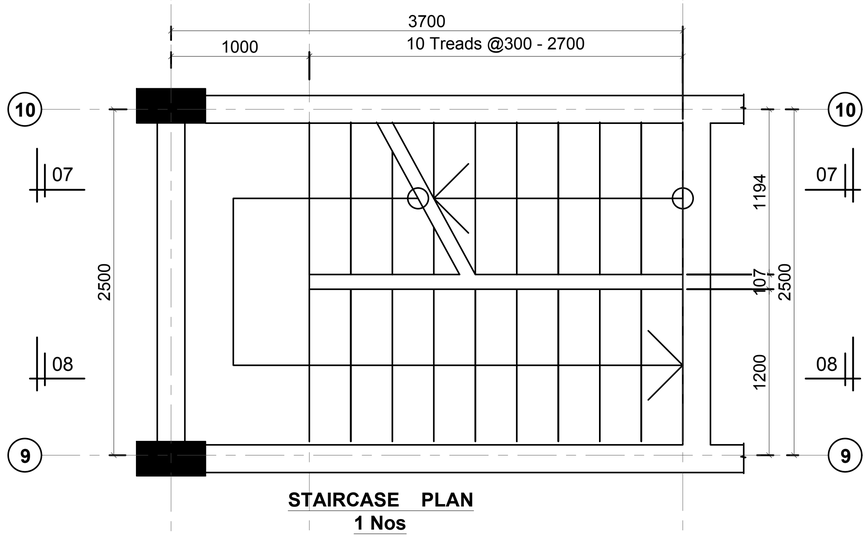
STAIRCASE , (9 Flights)
-SECTION 08 - 08



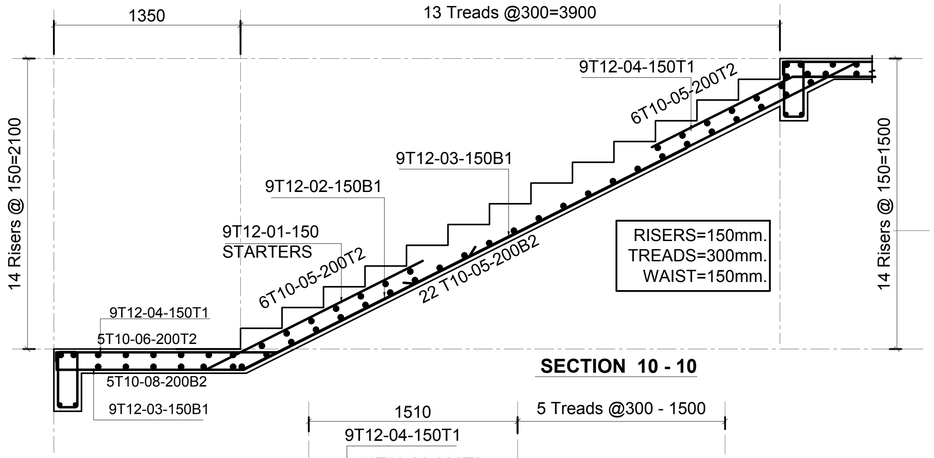
STAIRCASE , (10 Flights)
-SECTION 07 - 07



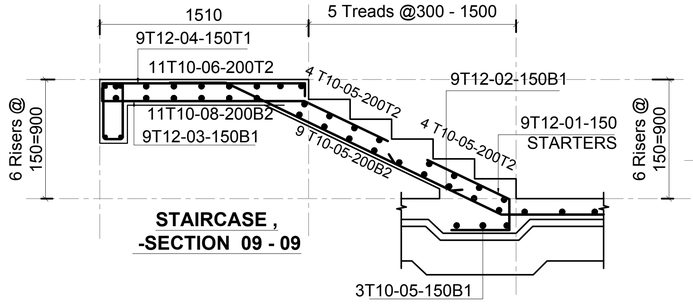
STAIRCASE ,
-SECTION 07 - 07



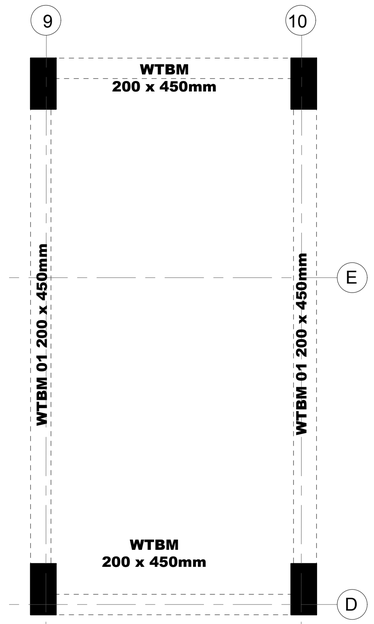
STAIRCASE PLAN
1 Nos



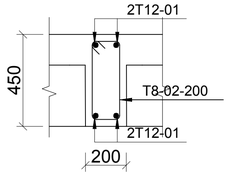
SECTION 10 - 10



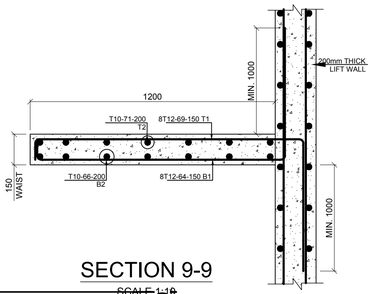
STAIRCASE ,
-SECTION 09 - 09



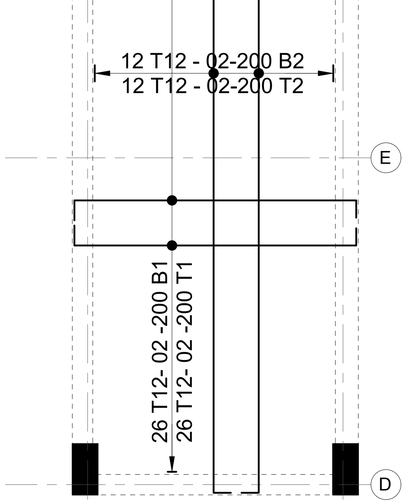
SLAB LAYOUT ABOVE STAIRCASE 1
SCALE 1:25



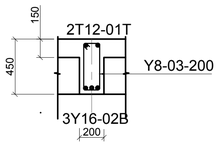
STBM (200x450)
(Gable Profiled Beam)
Scale 1:25



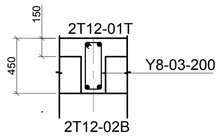
SECTION 9-9
SCALE 1:10



RC SLAB ABOVE STAIRCASE 1
SCALE 1:25



WTBM 01
(200X450mm)



WTBM 02
(200X450mm)

NOTES:
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.
6. Symbols: T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement: Slabs - 20mm. Beams - 25mm.Columns -40mm. Foundations -50mm
8. All structural steel be grade 43A.
9. All studs are shear links.
10. All structural steel to be painted with anti-rust primmer paint.

Revisions

No.	Description	Date

Project: PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title: STAIRCASE RC DETAILS

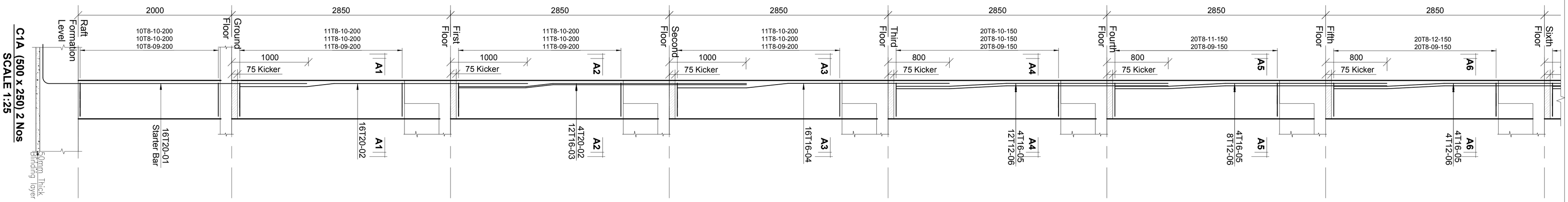
Designed by: JMN | Checked by: JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: 13th March 2024 | Scale: As shown
Drawing Number: AHP-G+9-BLK8 3.0B

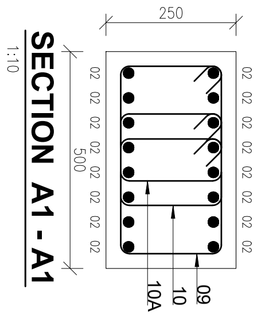
STRUCTURAL ENGINEER:

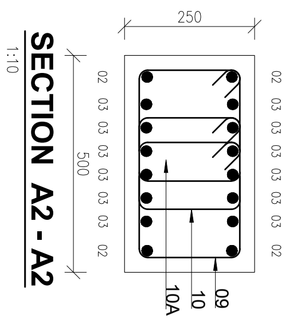
Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

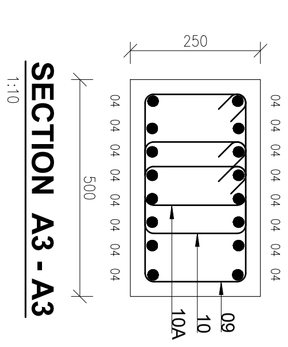
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

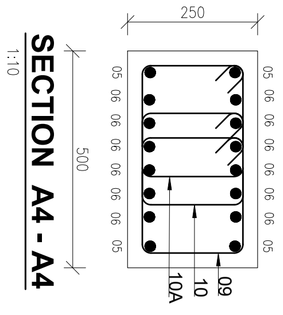
C1A (500 x 250) 2 Nos
SCALE 1:25

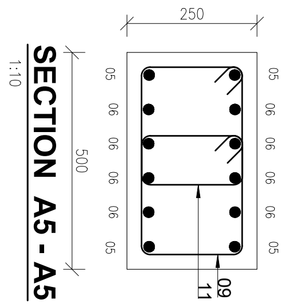


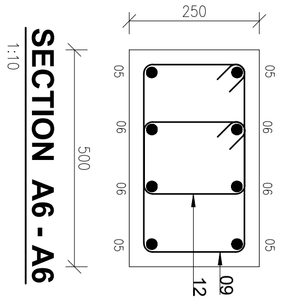


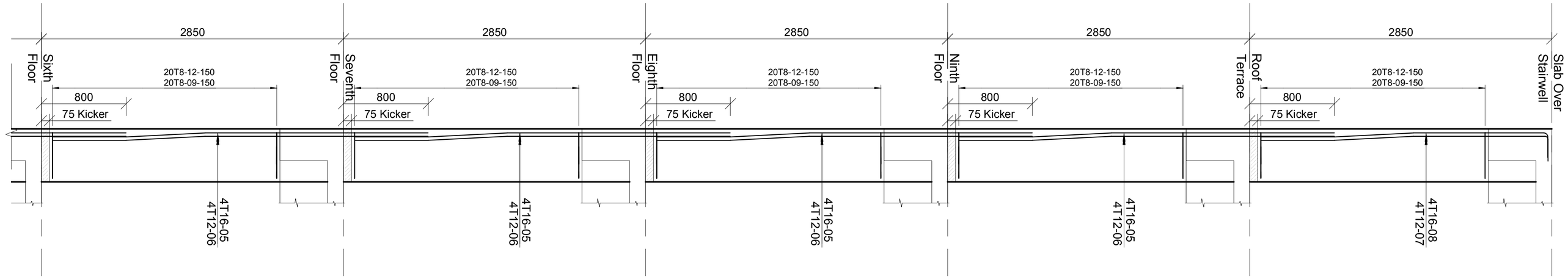












NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

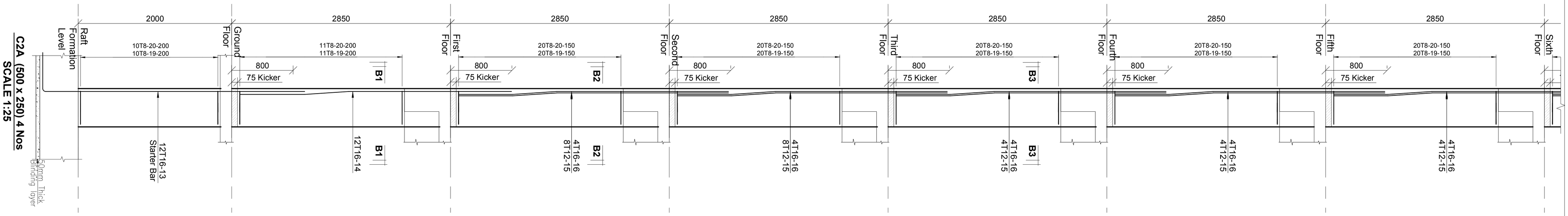
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.0B*

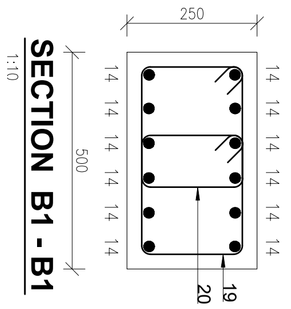
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C1A RC DETAILS

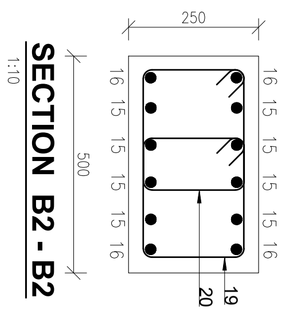
Revisions		
No.	Description	Date

C2A (500 x 250) 4 Nos
SCALE 1:25

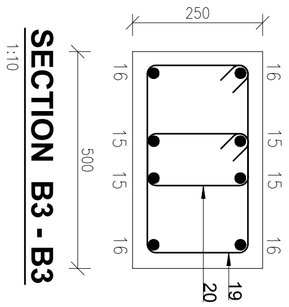




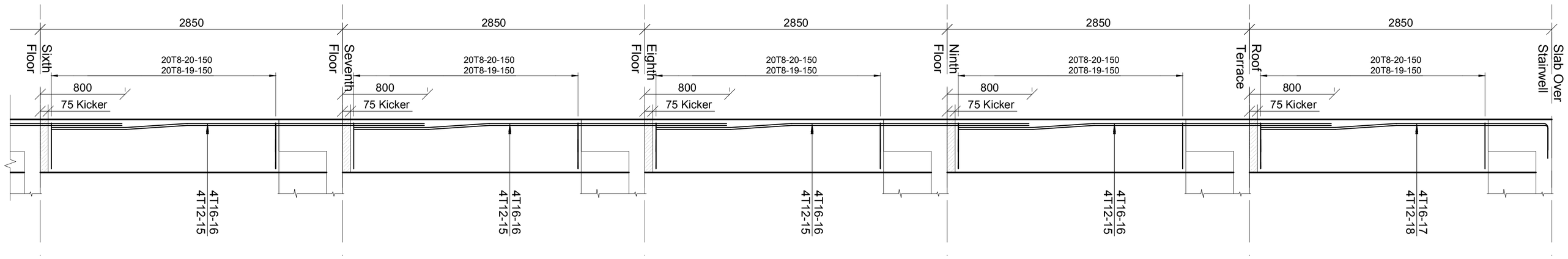
SECTION B1 - B1
1:10



SECTION B2 - B2
1:10



SECTION B3 - B3
1:10



NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: *JMN*	Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT	
Date: *13th March 2024*	Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.1B*	

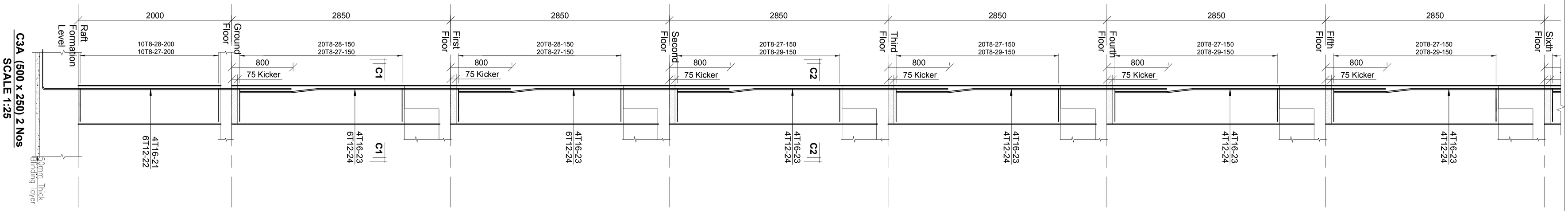
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

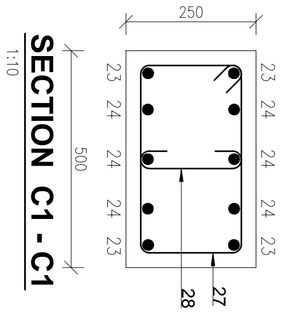
Title
COLUMN C2A RC DETAILS

Revisions

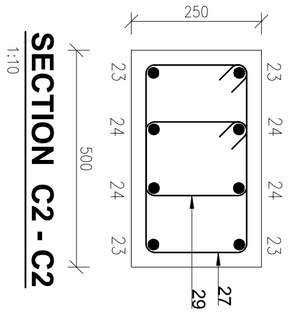
No.	Description	Date

C3A (500 x 250) 2 Nos
SCALE 1:25

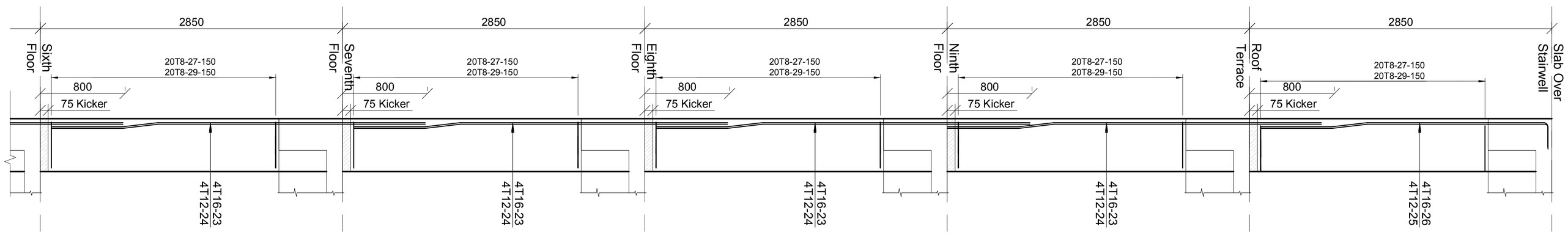




SECTION C1 - C1
1:10



SECTION C2 - C2
1:10



NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

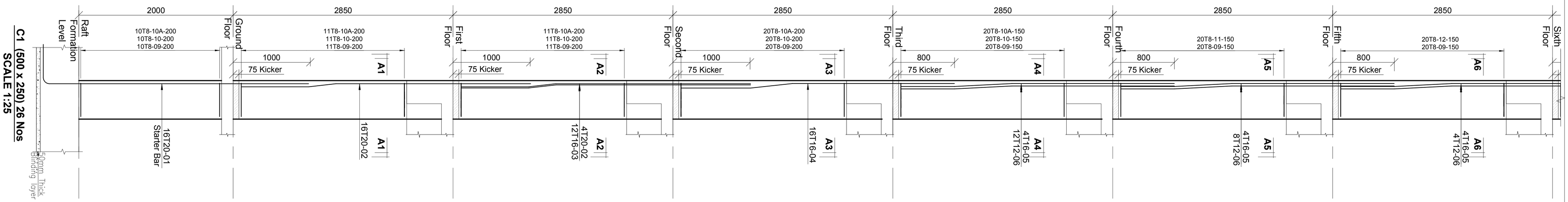
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.2B*

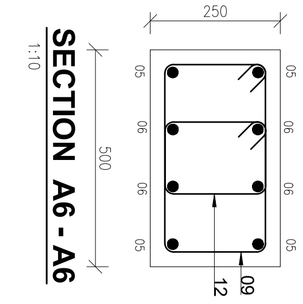
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C3A RC DETAILS

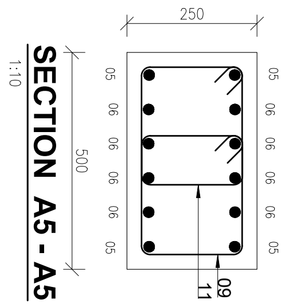
Revisions		
No.	Description	Date

C1 (500 x 250) 26 Nos
SCALE 1:25





SECTION A6 - A6
1:10



SECTION A5 - A5
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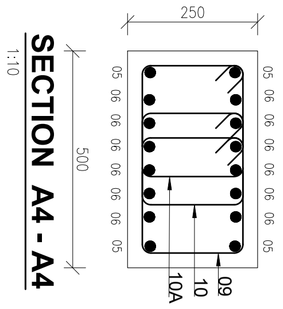
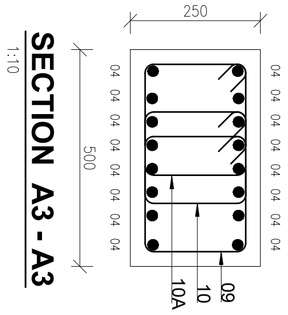
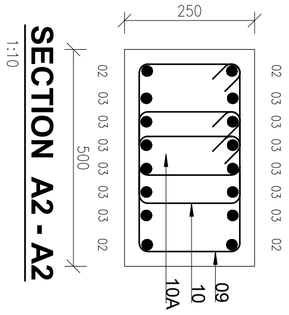


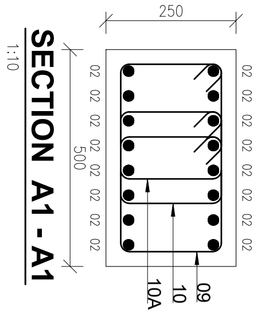
SECTION A4 - A4
1:10



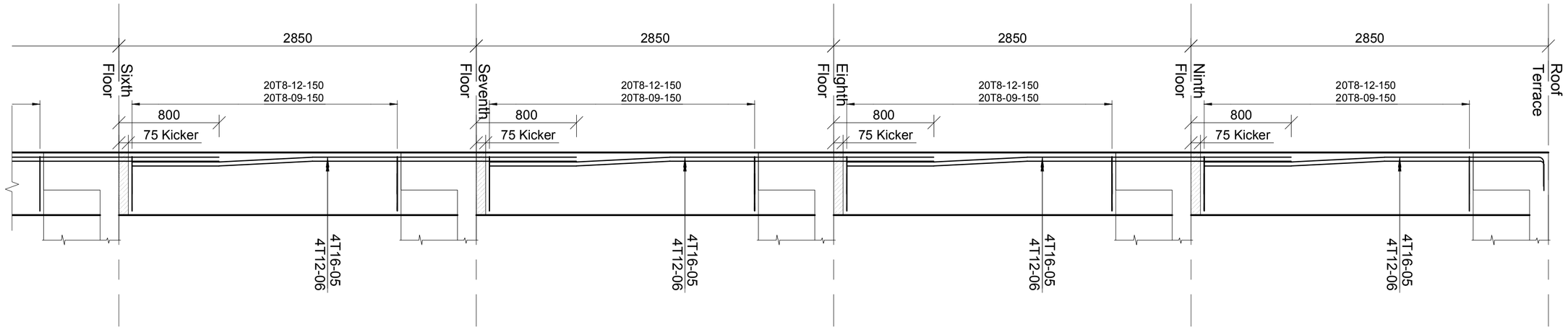
SECTION A3 - A3
1:10



SECTION A2 - A2
1:10



SECTION A1 - A1
1:10



NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

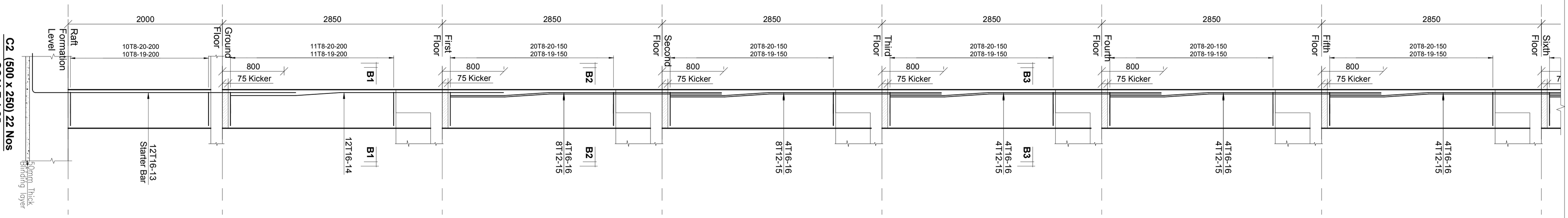
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.3B*

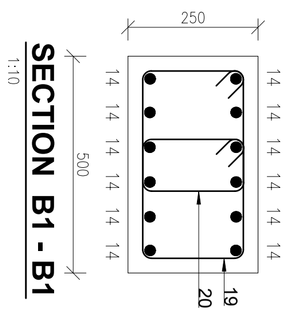
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C1 RC DETAILS

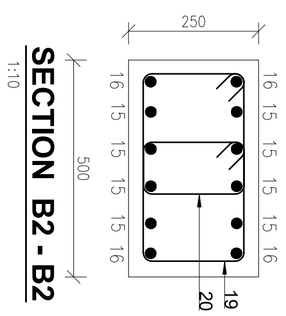
Revisions		
No.	Description	Date

C2 (500 x 250) 22 Nos
SCALE 1:25

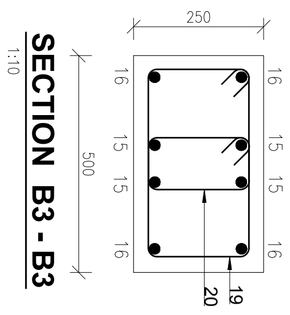




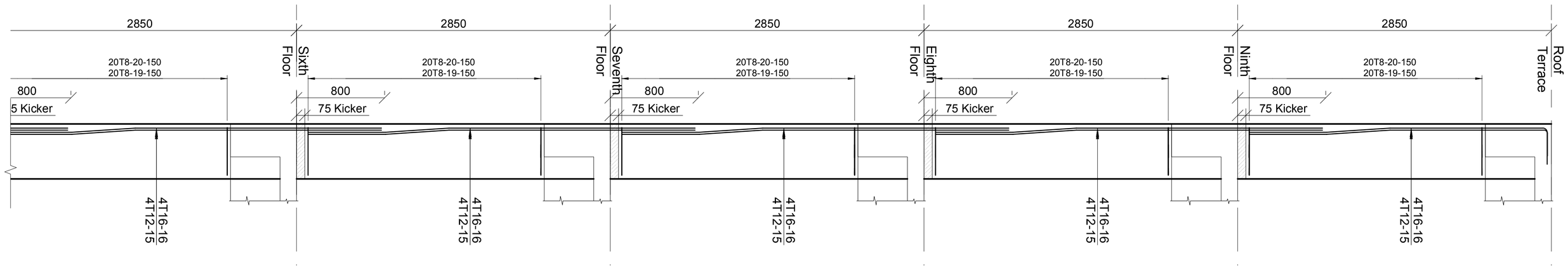
SECTION B1 - B1
1:10



SECTION B2 - B2
1:10



SECTION B3 - B3
1:10



NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.4B*

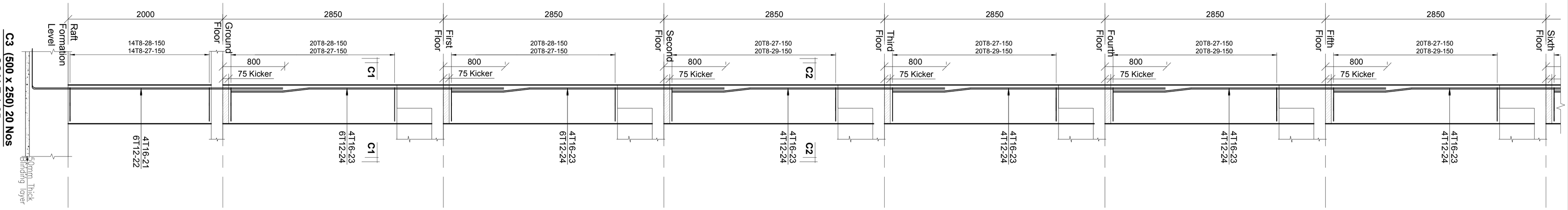
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

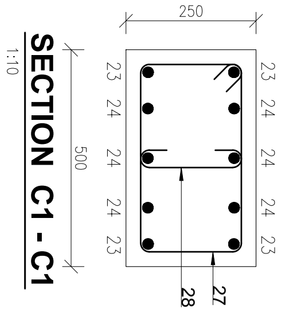
Title
COLUMN C2 RC DETAILS

Revisions

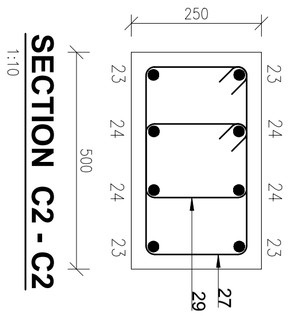
No.	Description	Date

C3 (500 x 250) 20 Nos
SCALE 1:25

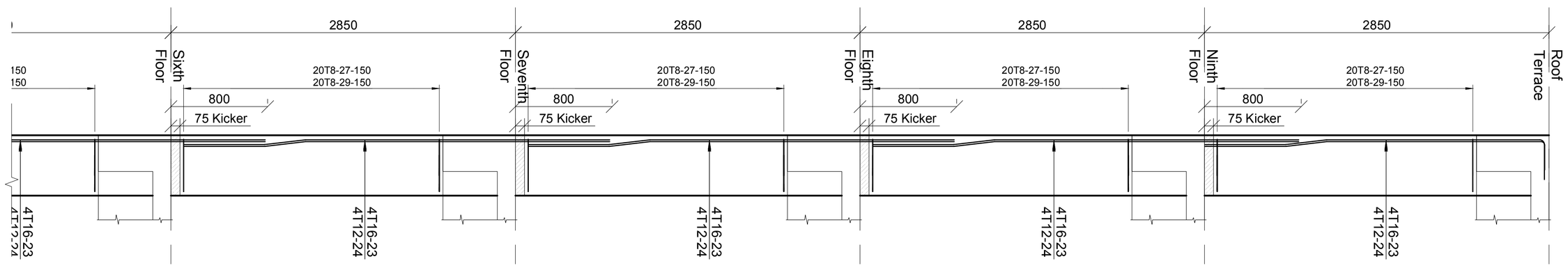




SECTION C1 - C1
1:10



SECTION C2 - C2
1:10



NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

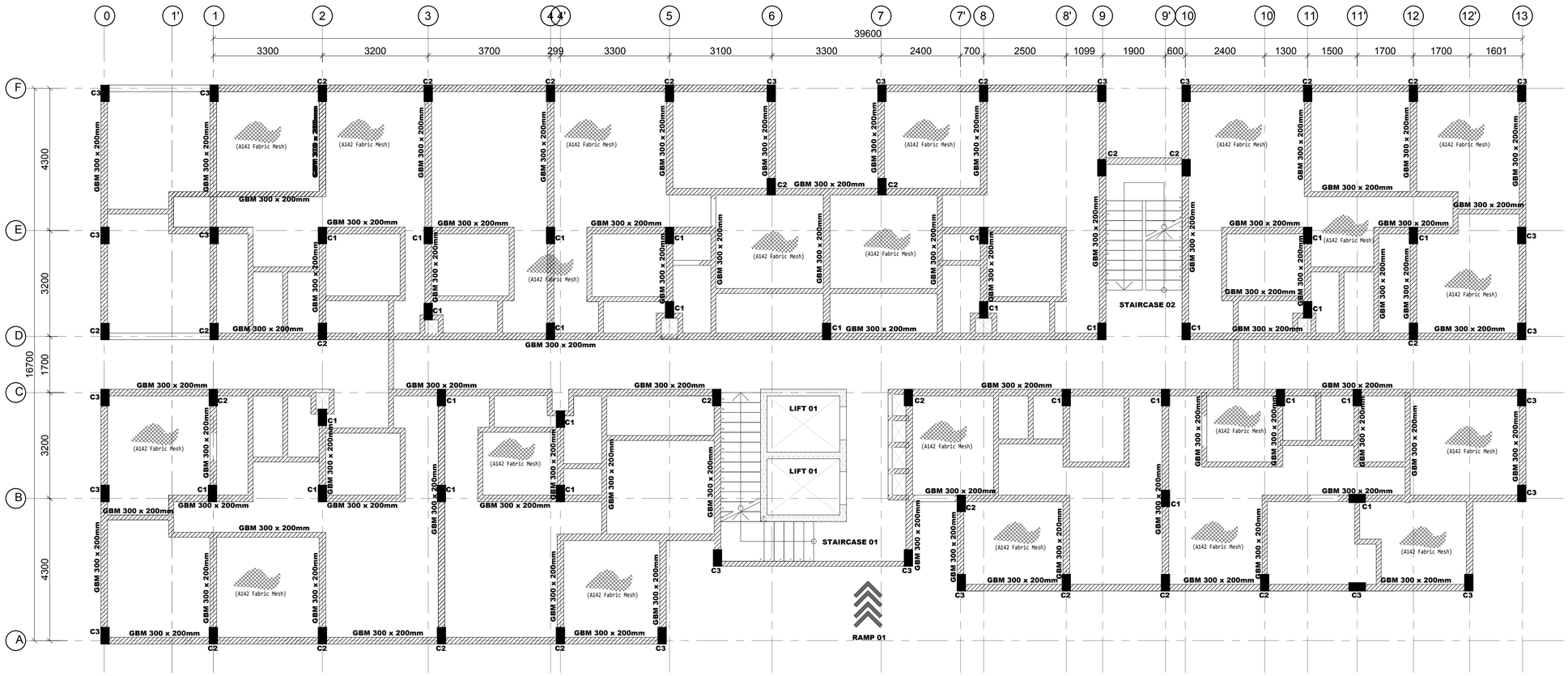
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.5B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C3 RC DETAILS

Revisions		
No.	Description	Date



GROUND FLOOR LAYOUT
(100mm Thick Solid Slab With BRC Mesh A142 on top)
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

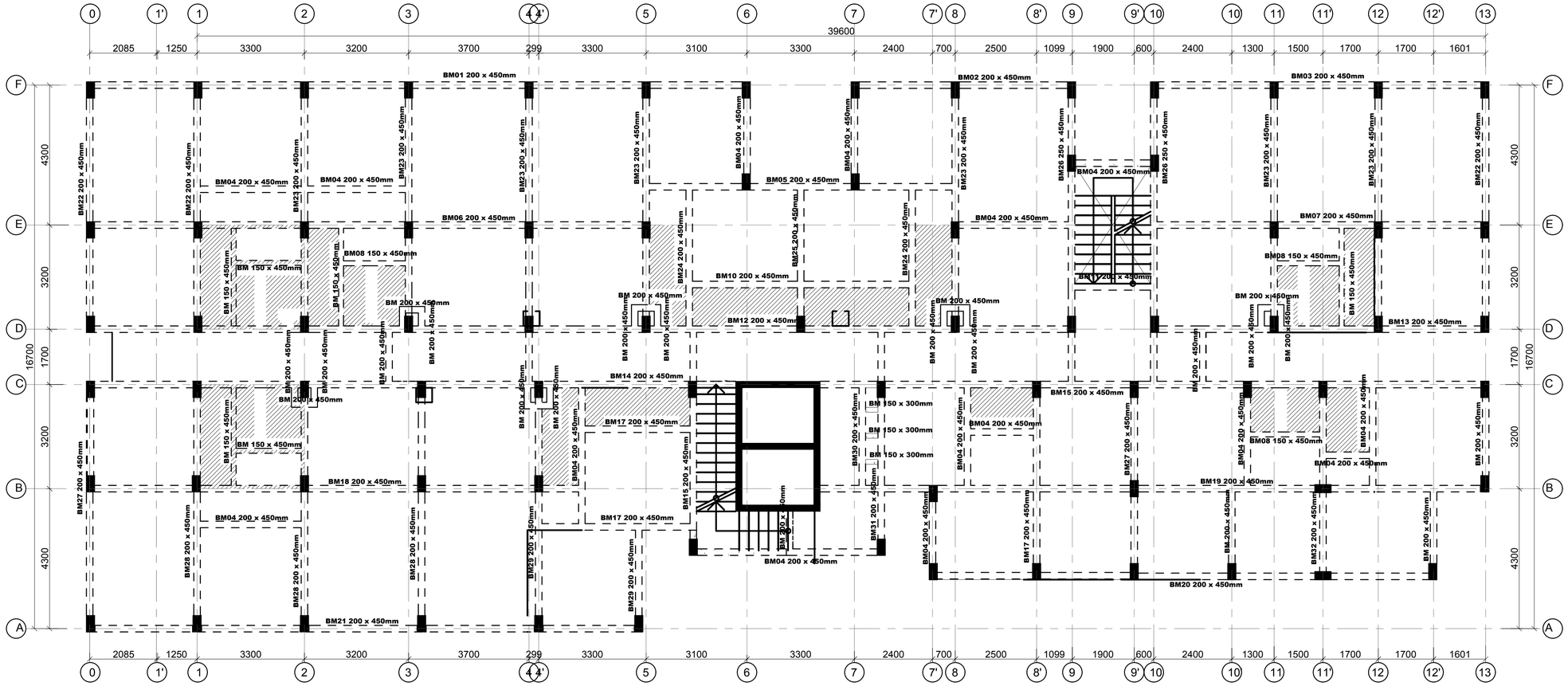
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 5.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
GROUND FLOOR LAYOUT DETAILS

Revisions

No.	Description	Date



TYPICAL FLOOR SLAB LAYOUT
130 MM THICK SOLID SLAB AND 150 MM THICK SLAB IN WET AREAS(HATCHED)
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

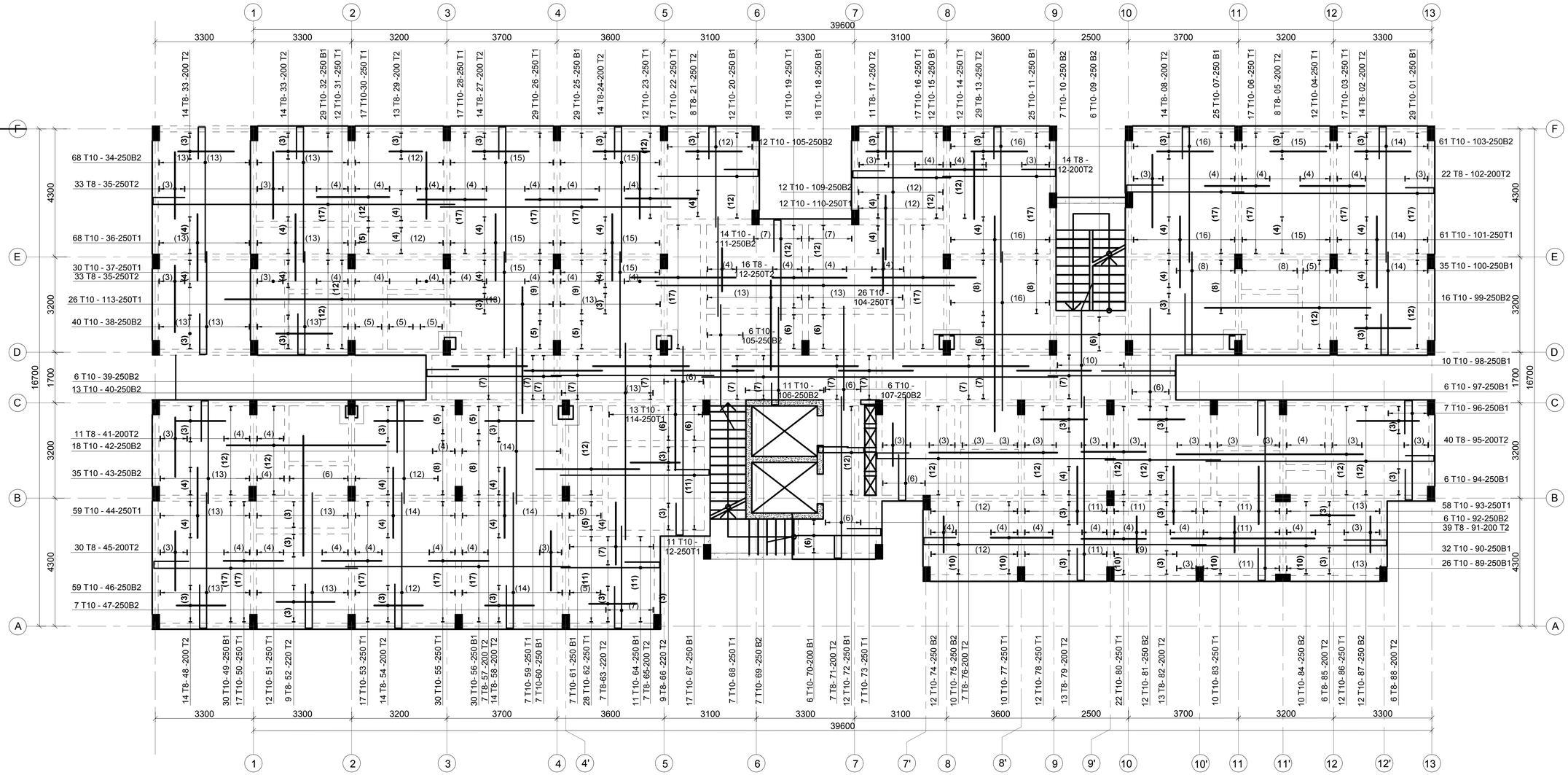
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 6.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
TYPICAL FLOOR SLAB LAYOUT DETAILS

Revisions		
No.	Description	Date



TYPICAL FLOOR SLAB REBAR DETAILS
130 MM THICK SOLID SLAB AND 150 MM THICK SLAB IN WET AREAS REBAR DETAILS
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

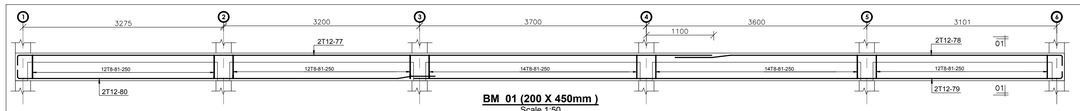
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 6.1B*

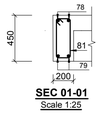
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
TYPICAL FLOOR SLAB REBAR DETAILS

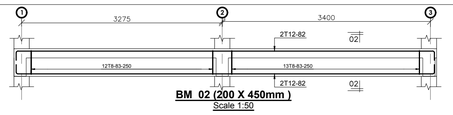
Revisions		
No.	Description	Date



BM 01 (200 X 450mm)
Scale 1:50

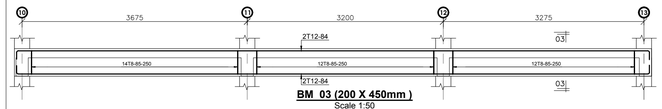


SEC 01-01
Scale 1:25

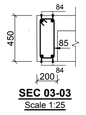


BM 02 (200 X 450mm)
Scale 1:50

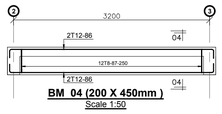
SEC 02-02
Scale 1:25



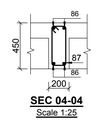
BM 03 (200 X 450mm)
Scale 1:50



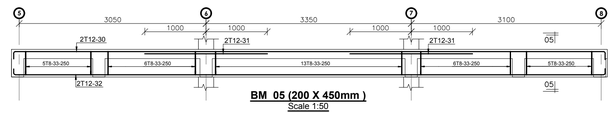
SEC 03-03
Scale 1:25



BM 04 (200 X 450mm)
Scale 1:50



SEC 04-04
Scale 1:25



BM 05 (200 X 450mm)
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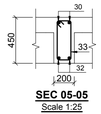

SEC 05-05
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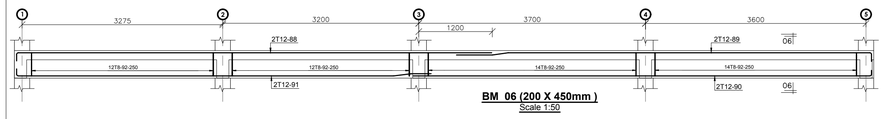

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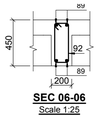
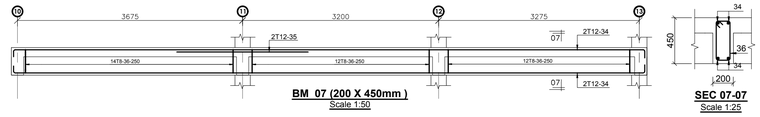


SEC 06-06
Scale 1:25



BM 07 (200 X 450mm)
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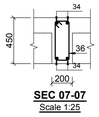
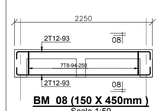
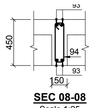


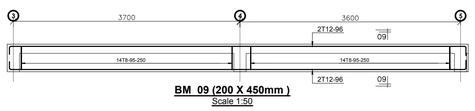
SEC 07-07
Scale 1:25



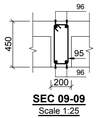
BM 08 (150 X 450mm)
Scale 1:50



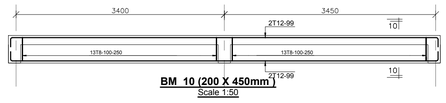
SEC 08-08
Scale 1:25



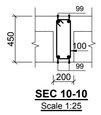
BM 09 (200 X 450mm)
Scale 1:50



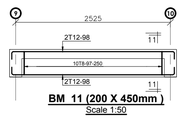
SEC 09-09
Scale 1:25



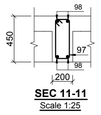
BM 10 (200 X 450mm)
Scale 1:50



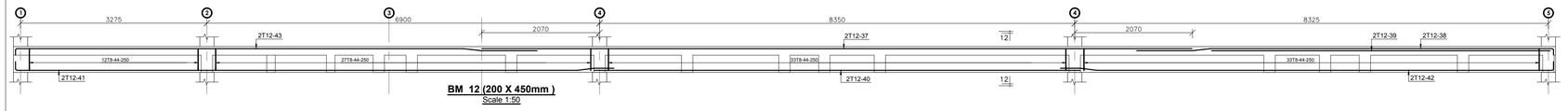
SEC 10-10
Scale 1:25



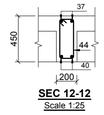
BM 11 (200 X 450mm)
Scale 1:50



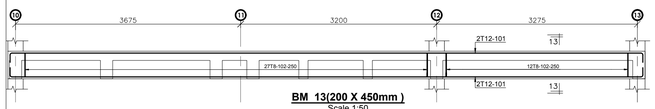
SEC 11-11
Scale 1:25



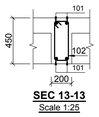
BM 12 (200 X 450mm)
Scale 1:50



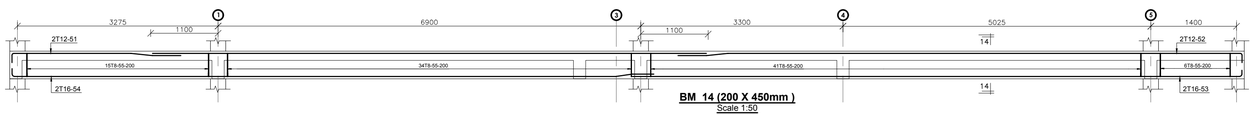
SEC 12-12
Scale 1:25



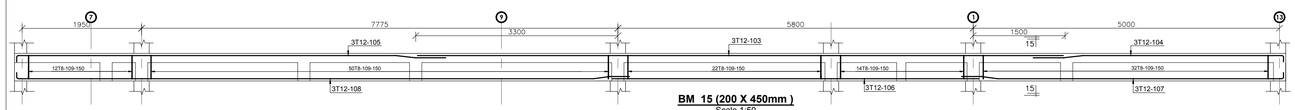
BM 13(200 X 450mm)
Scale 1:50



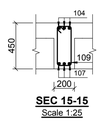
SEC 13-13
Scale 1:25



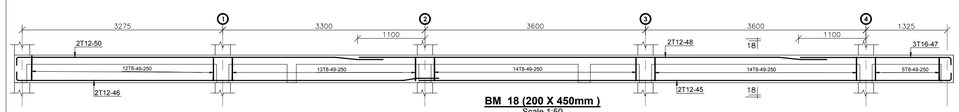
BM 14 (200 X 450mm)
Scale 1:50



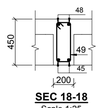
BM 15 (200 X 450mm)
Scale 1:50



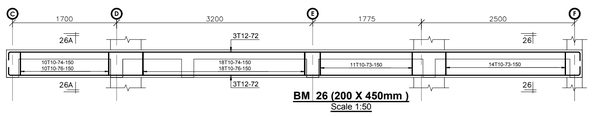
SEC 15-15
Scale 1:25



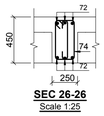
BM 18 (200 X 450mm)
Scale 1:50



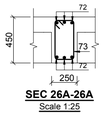
SEC 18-18
Scale 1:25



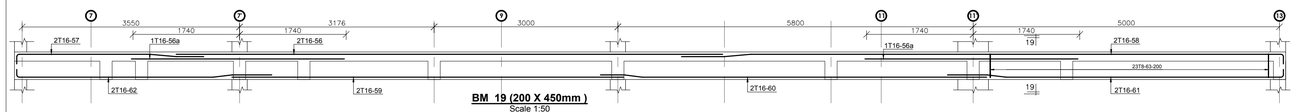
BM 26 (200 X 450mm)
Scale 1:50



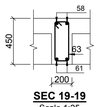
SEC 26-26
Scale 1:25



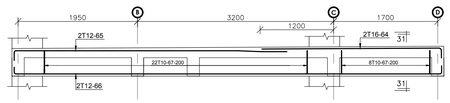
SEC 26A-26A
Scale 1:25



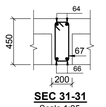
BM 19 (200 X 450mm)
Scale 1:50



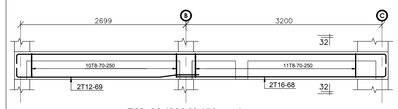
SEC 19-19
Scale 1:25



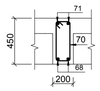
BM 31 (200 X 450mm)
Scale 1:50



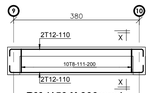
SEC 31-31
Scale 1:25



BM 32 (200 X 450mm)
Scale 1:50

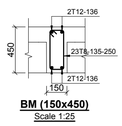


SEC 32-32
Scale 1:25



BM (150 X 300mm)
Scale 1:50

SEC 10-10
Scale 1:25



BM (150x450)
Scale 1:25

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

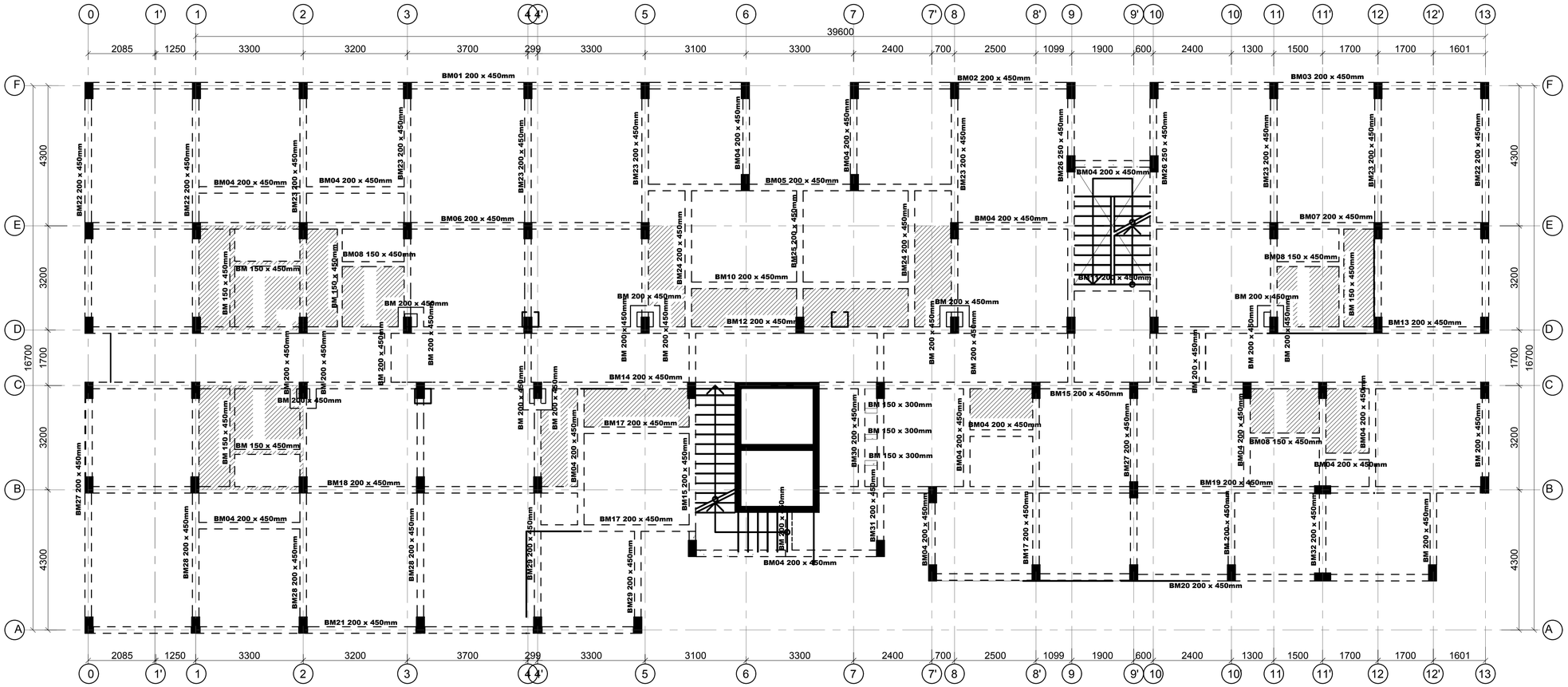
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 6.2B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
TYPICAL FLOOR SLAB BEAMS RC DETAILS

Revisions		
No.	Description	Date



ROOF TERRACE FLOOR SLAB REBAR DETAILS
150 MM THICK SLAB

NOTE:

-Terrace floor slab to be waterproofed with physical barrier waterproofing membrane such as APP or equivalent.

-APP membrane to be protected using screed and concrete interlocking tiles

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

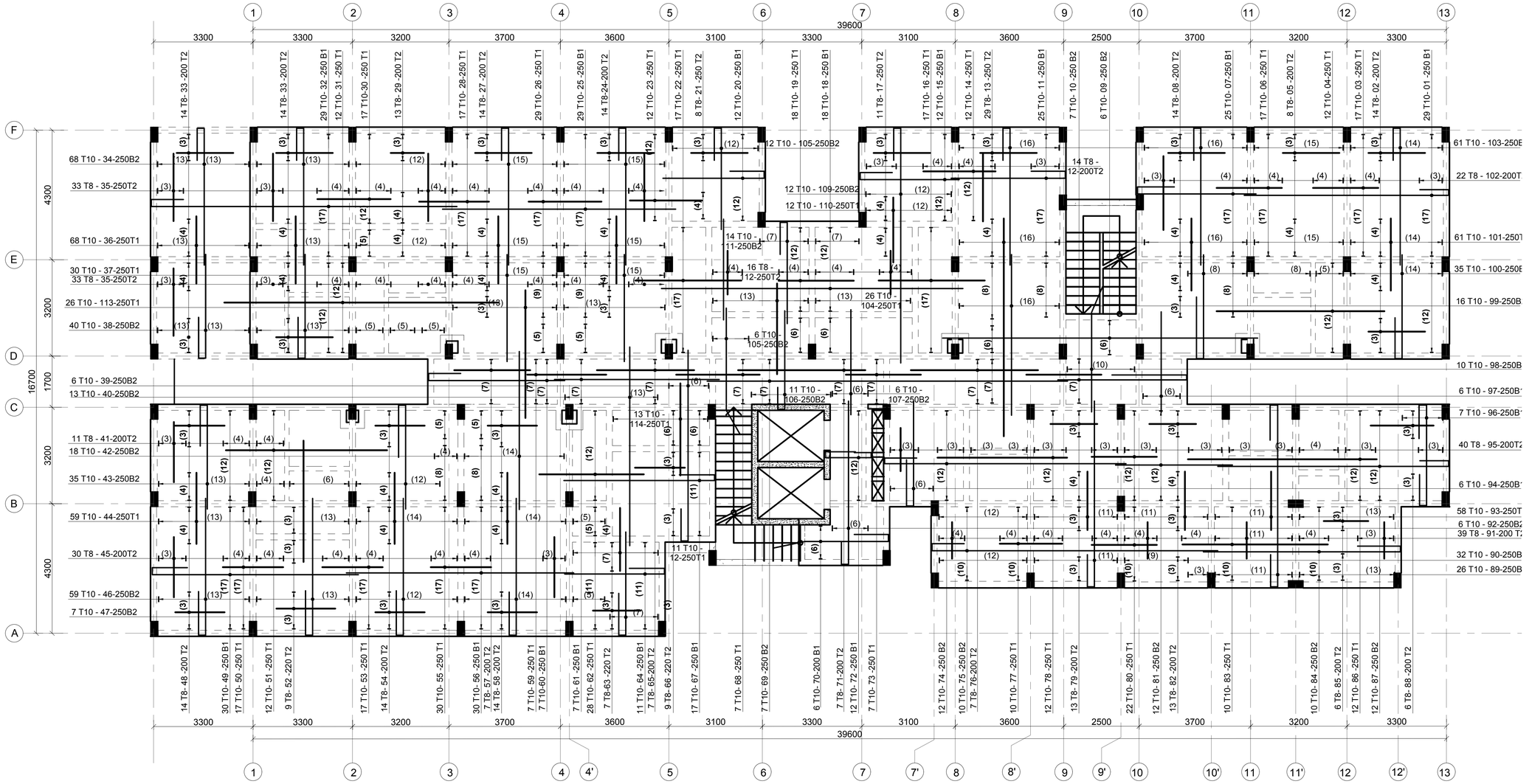
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 7.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
ROOF TERRACE FLOOR SLAB LAYOUT DETAILS

Revisions		
No.	Description	Date



ROOF TERRACE FLOOR SLAB REBAR DETAILS
150 MM THICK SLAB

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

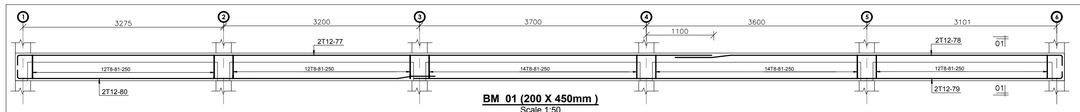
Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

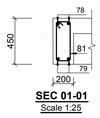
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 7.1B*

Project: PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS)
Title: ROOF TERRACE FLOOR SLAB REBAR DETAILS

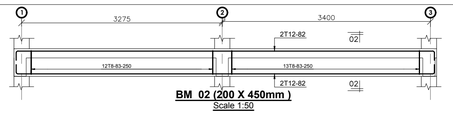
Revisions		
No.	Description	Date



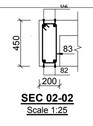
BM 01 (200 X 450mm)
Scale 1:50



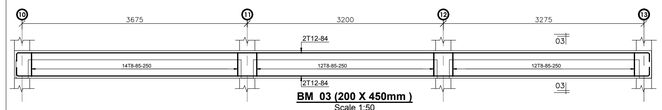
SEC 01-01
Scale 1:25



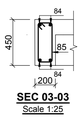
BM 02 (200 X 450mm)
Scale 1:50



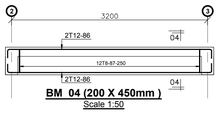
SEC 02-02
Scale 1:25



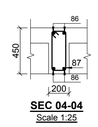
BM 03 (200 X 450mm)
Scale 1:50



SEC 03-03
Scale 1:25



BM 04 (200 X 450mm)
Scale 1:50



SEC 04-04
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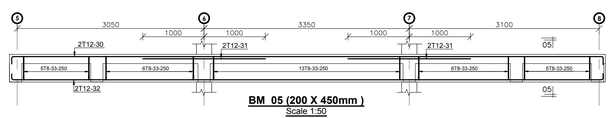
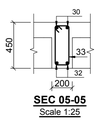
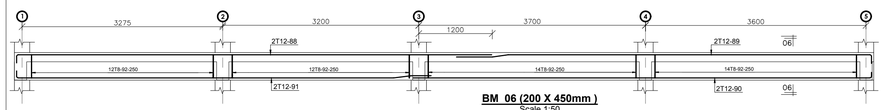


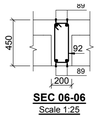
BM 05 (200 X 450mm)
Scale 1:50



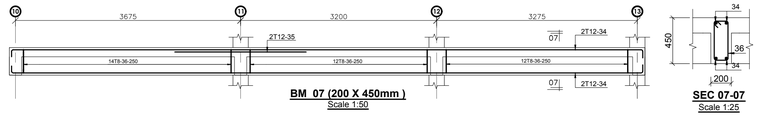
SEC 05-05
Scale 1:25



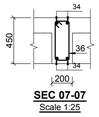
BM 06 (200 X 450mm)
Scale 1:50



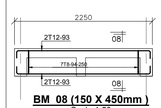
SEC 06-06
Scale 1:25



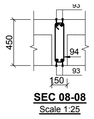
BM 07 (200 X 450mm)
Scale 1:50



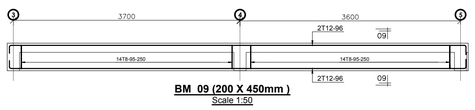
SEC 07-07
Scale 1:25



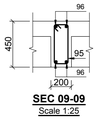
BM 08 (150 X 450mm)
Scale 1:50



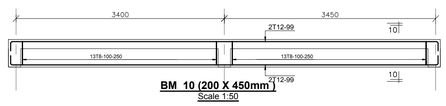
SEC 08-08
Scale 1:25



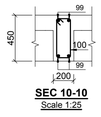
BM 09 (200 X 450mm)
Scale 1:50



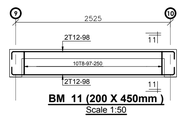
SEC 09-09
Scale 1:25



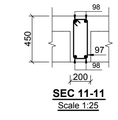
BM 10 (200 X 450mm)
Scale 1:50



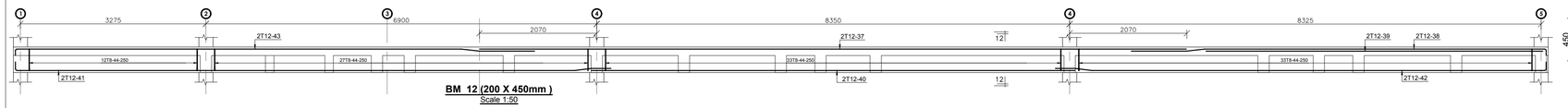
SEC 10-10
Scale 1:25



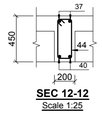
BM 11 (200 X 450mm)
Scale 1:50



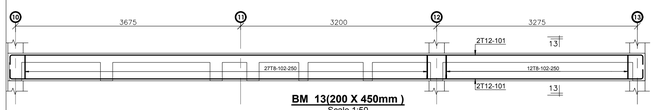
SEC 11-11
Scale 1:25



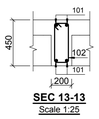
BM 12 (200 X 450mm)
Scale 1:50



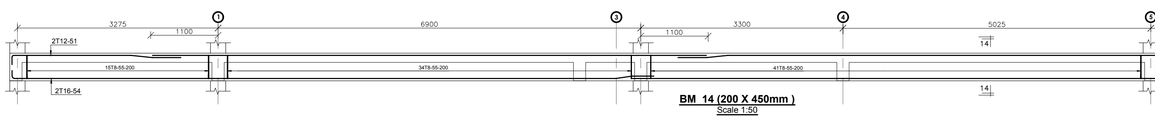
SEC 12-12
Scale 1:25



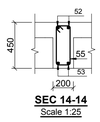
BM 13(200 X 450mm)
Scale 1:50



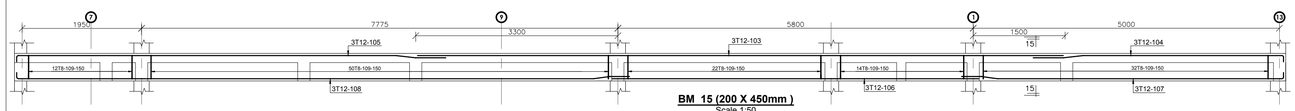
SEC 13-13
Scale 1:25



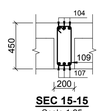
BM 14 (200 X 450mm)
Scale 1:50



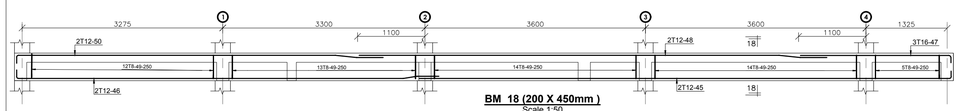
SEC 14-14
Scale 1:25



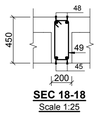
BM 15 (200 X 450mm)
Scale 1:50



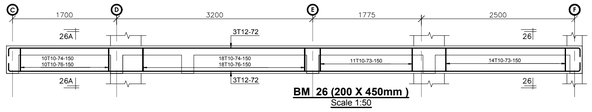
SEC 15-15
Scale 1:25



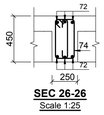
BM 18 (200 X 450mm)
Scale 1:50



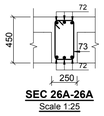
SEC 18-18
Scale 1:25



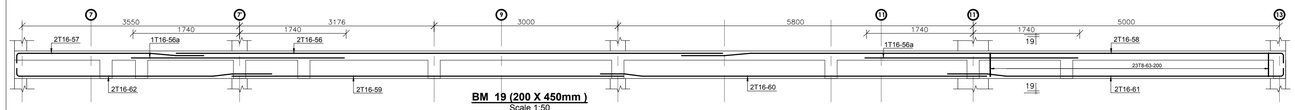
BM 26 (200 X 450mm)
Scale 1:50



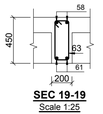
SEC 26-26
Scale 1:25



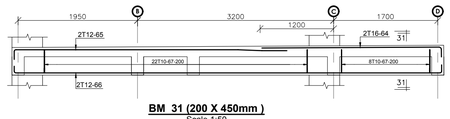
SEC 26A-26A
Scale 1:25



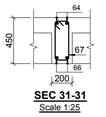
BM 19 (200 X 450mm)
Scale 1:50



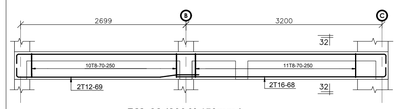
SEC 19-19
Scale 1:25



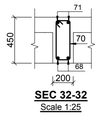
BM 31 (200 X 450mm)
Scale 1:50



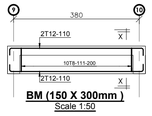
SEC 31-31
Scale 1:25



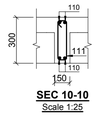
BM 32 (200 X 450mm)
Scale 1:50



SEC 32-32
Scale 1:25



BM (150 X 300mm)
Scale 1:50



SEC 10-10
Scale 1:25

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 7.2B*

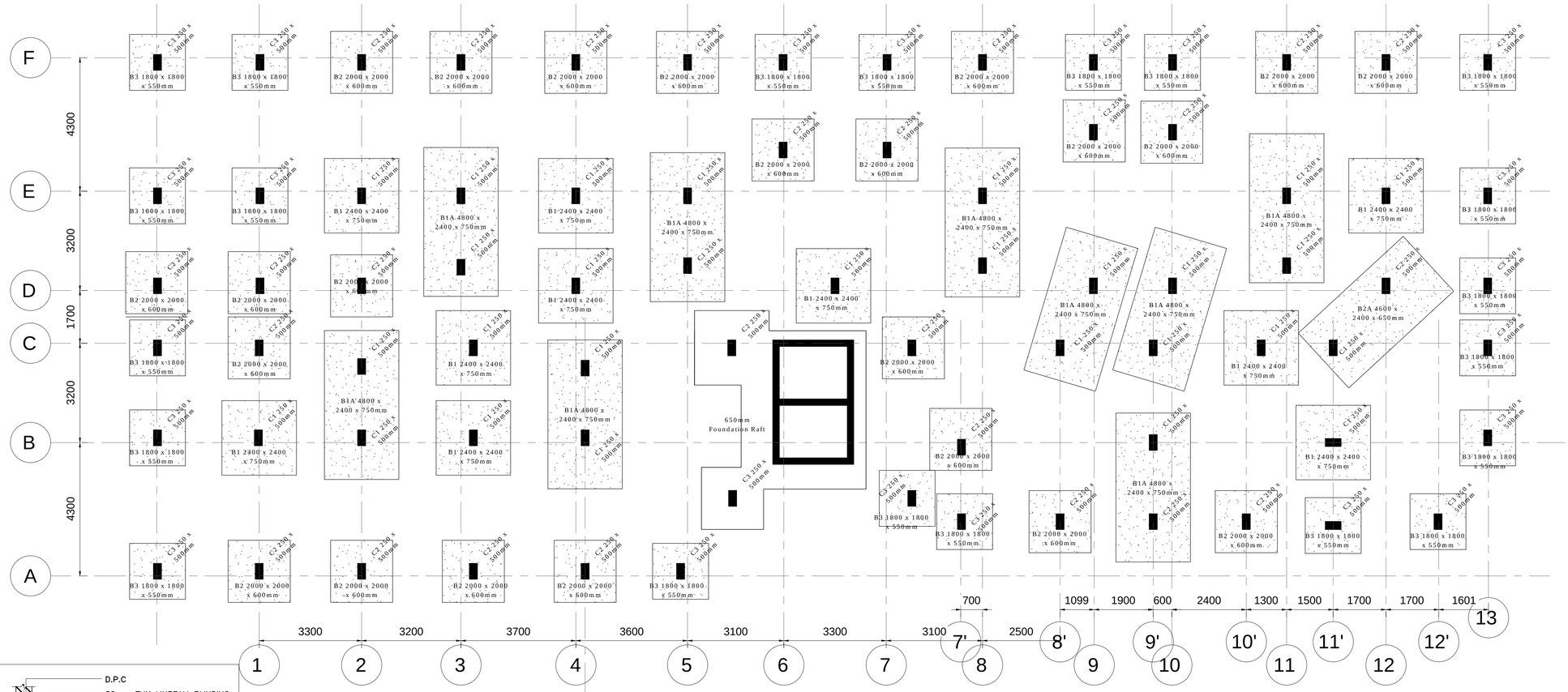
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

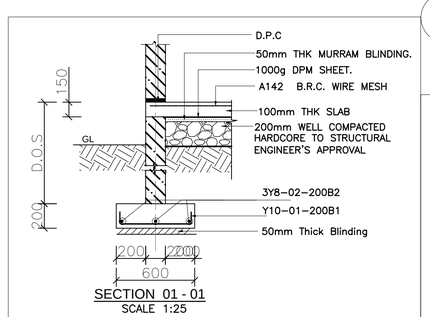
Title
ROOF TERRACE FLOOR BEAMS REBAR DETAILS

Revisions		
No.	Description	Date

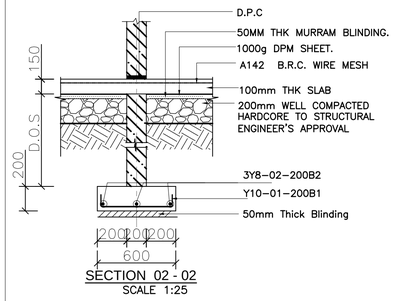
	ELEMENT	Kg/m3
	COLUMN BASES	41
	COLUMNS	193
	SLAB	66
	BEAMS	62
	GROUND BEAMS	103
	STAIRCASE 1	166
	STAIRCASE 2	121
	LIFT	88
	SLAB OVER STAIRCASE 1	112
	BEAM OVER STAIRCASE 1	95
	SLAB OVER STAIRCASE 2	123
	BEAMS OVER STAIRCASE 2	108

NOTE:
Soil bearing capacity 400KN/m3

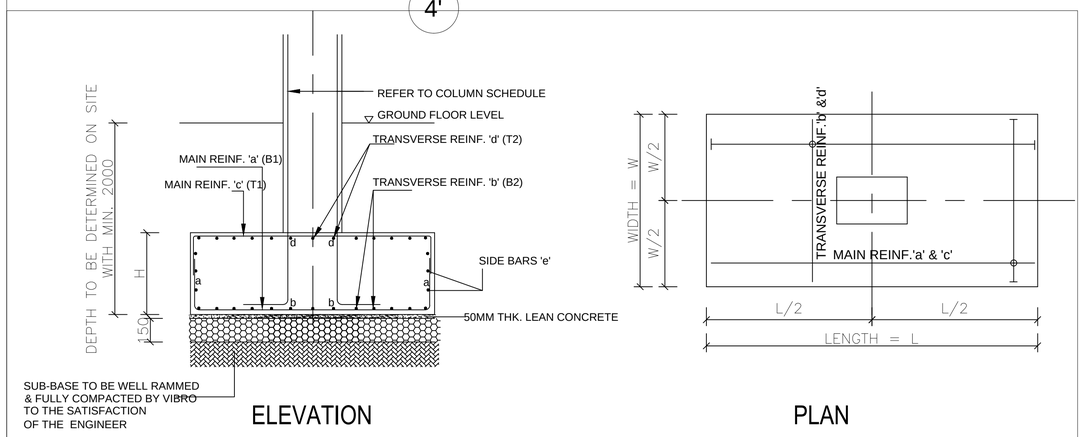




SECTION 01 - 01
SCALE 1:25



SECTION 02 - 02
SCALE 1:25



ELEVATION

PLAN

TYPICAL RC FOOTINGS DETAILS

SCALE 1:25

NOTE :
- REINFORCEMENT 'a' & 'c' IS THE LONGTUDINAL REBARS THAT PARALLEL TO THE LENGTH OF FOOTING
- REINFORCEMENT 'b' & 'd' IS THE TRANSVERSE REBARS THAT PERPENDICULAR TO THE LENGTH OF FOOTING
- 'a' or 'b' whichever is heavier rebar is to be placed at the bottom outter face
- 'c' or 'd' whichever is heavier rebar is to be placed at the top outter face

FOOTING SCHEDULE

NOTE : GRADE OF CONCRETE FOR ALL FOOTINGS TO BE 25 N/mm2

FOOTING TYPE	FOOTING SIZE			REINFORCEMENT				
	W	L	H	a (B1)	b (B2)	c (T1)	d (T2)	e
B1	2400	2400	750	T16-150	T16-150	-	-	2T12
B1A	2400	4800	750	T16-150	T16-150	T16-150	T16-150	2T12
B2	2000	2000	600	T16-200	T16-200	-	-	2T12
B2A	4600	2400	650	T16-200	T16-200	T16-200	T16-200	2T12
B3	1800	1800	550	T16-200	T16-200	-	-	2T12
LIFT BASE	As per Dim.		650	T16-200	T16-200	T12-200	T12-200	2T12

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face, B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

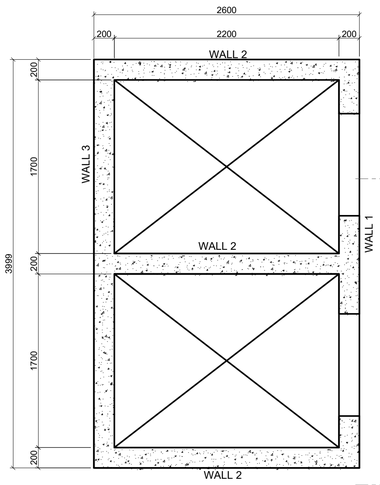
STRUCTURAL ENGINEER:

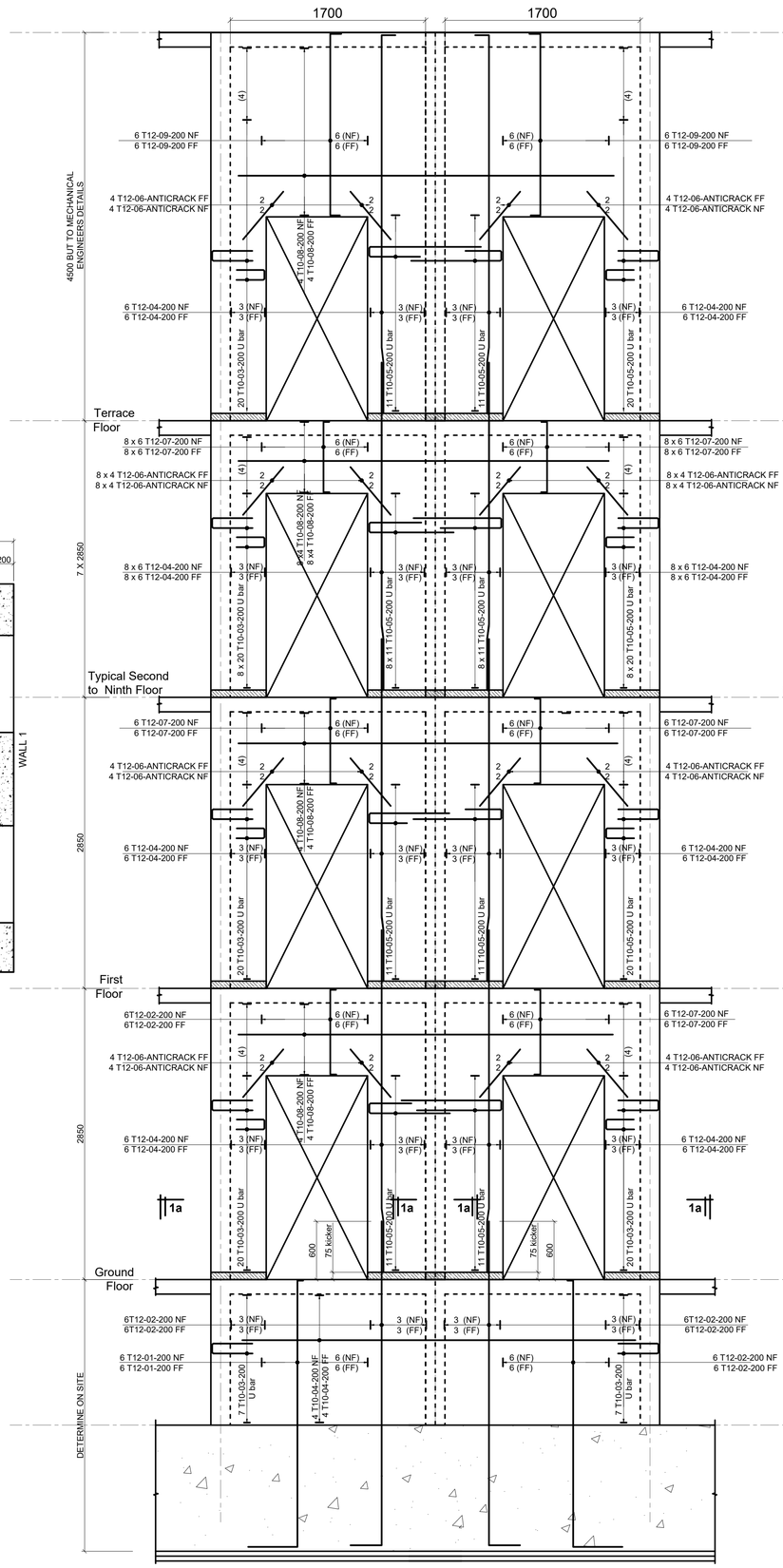
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 1.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

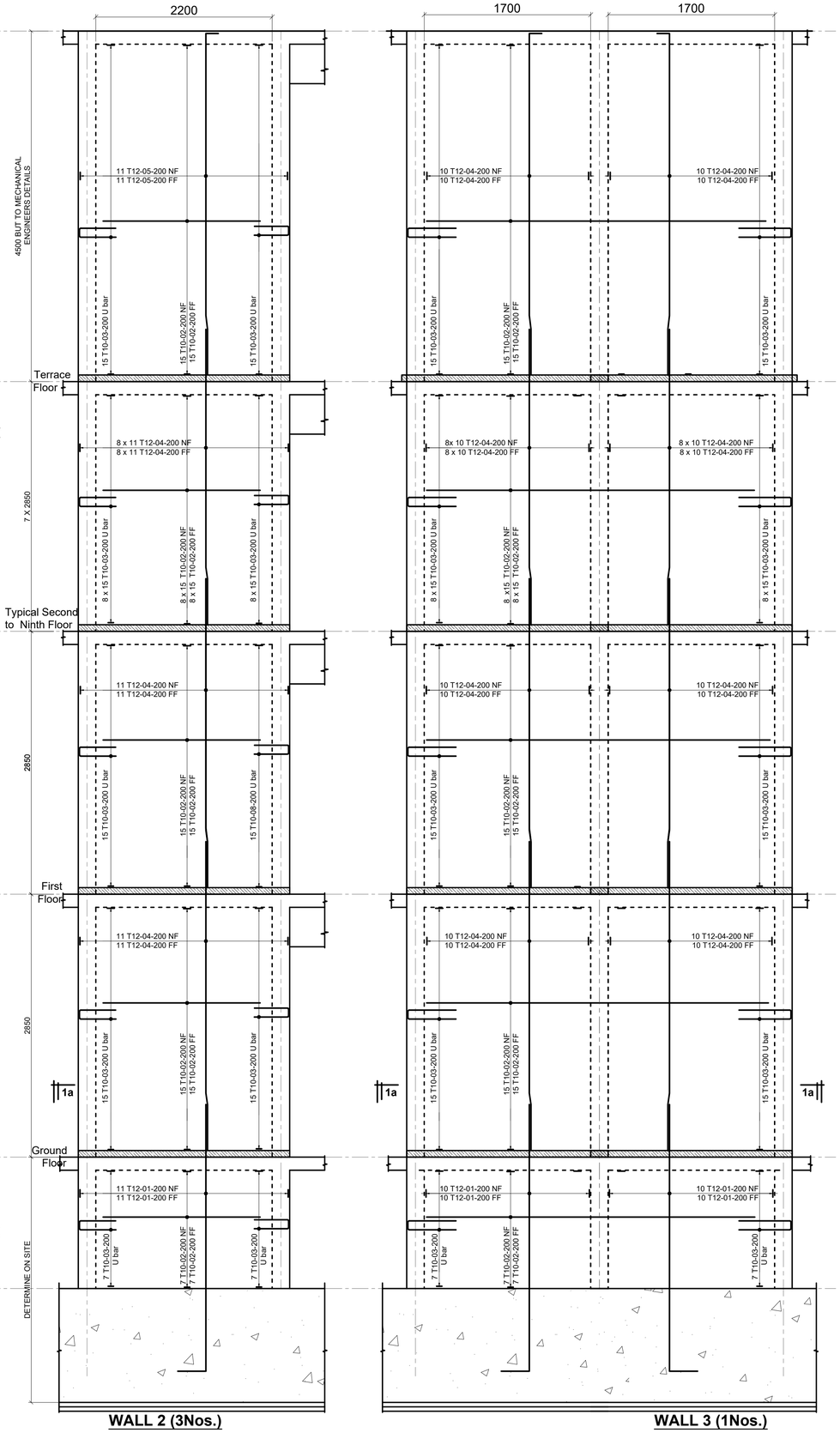
Title
FOUNDATION LAYOUT

Revisions		
No.	Description	Date





WALL 1 (1No.)



WALL 2 (3Nos.)

WALL 3 (1Nos.)

No.	Revisions Description	Date

Project: PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title: LIFT SHAFT RC DETAILS

Designed by: JMN | Checked by: JMN

Approved by:SECRETARY, HOUSING DEPARTMENT

Date: 13th March 2024 | Scale: As shown

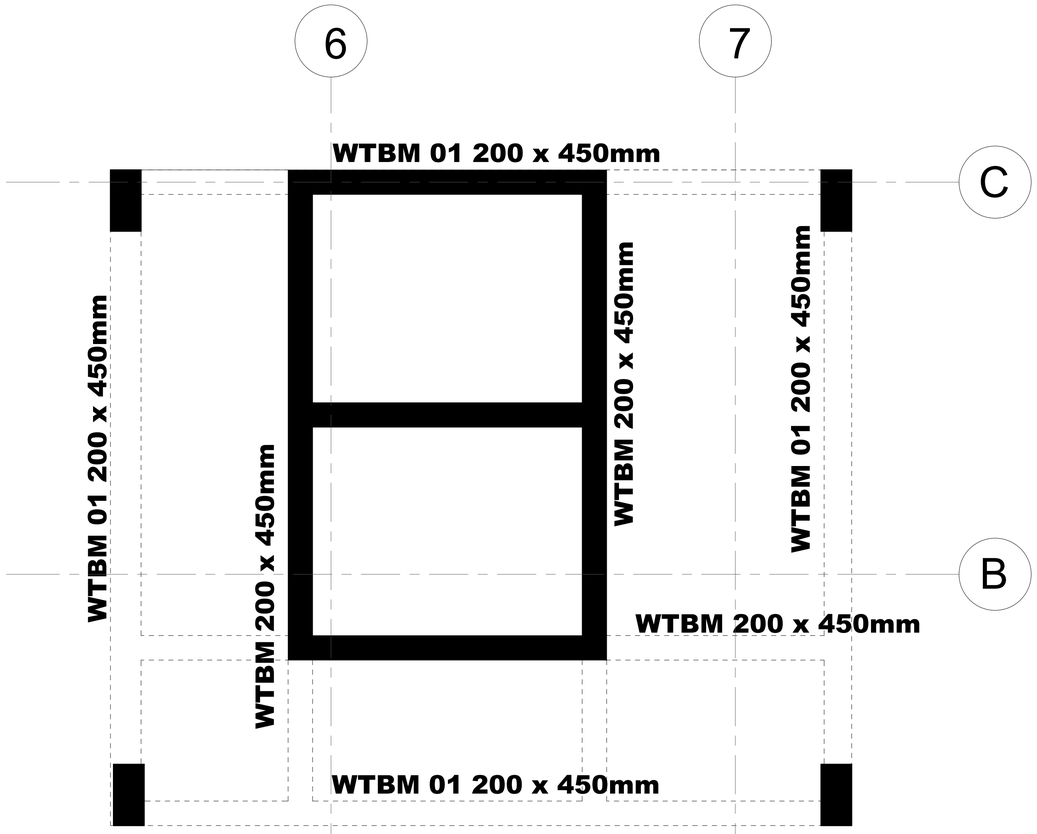
Drawing Number: AHP-G+9-BLKB 2.08

STRUCTURAL ENGINEER:

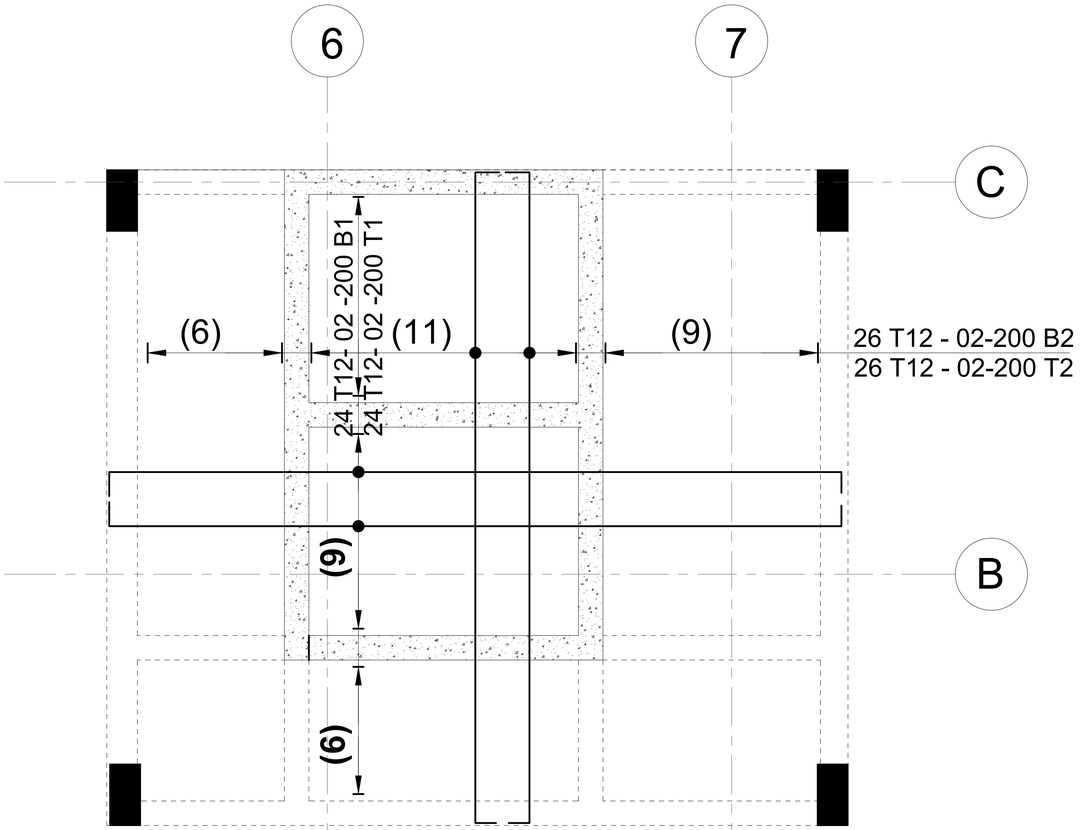
Client: MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

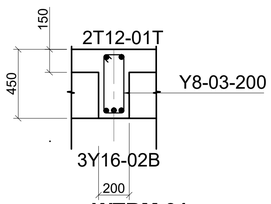
NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. All figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.
6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face, B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns -40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds as 6mm fillet.
10. All structural steel to be painted with anti-rust primmer paint.



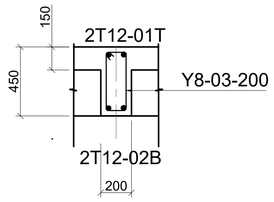
SLAB LAYOUT ABOVE LIFT & STAIRCASE 2
SCALE 1:25



RC SLAB ABOVE LIFT & STAIRCASE 2
SCALE 1:25



WTBM 01
(200X450mm)



WTBM
(200X450mm)

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
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7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

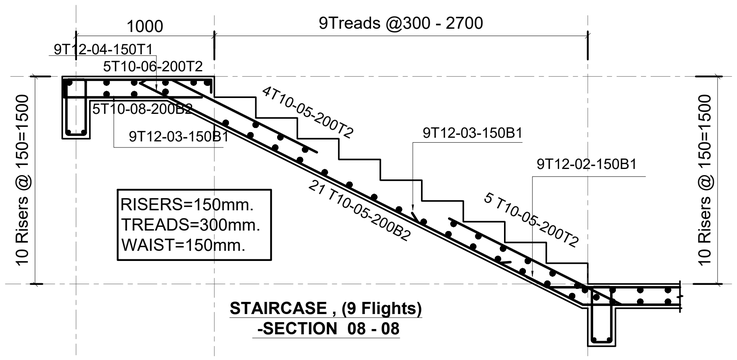
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 2.1B*

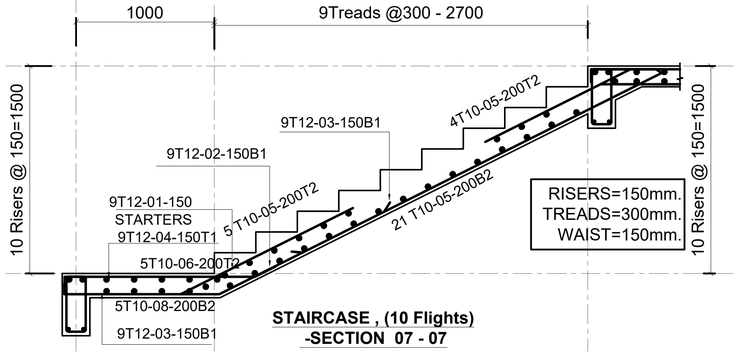
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
SLAB OVER LIFT SHAFT RC DETAILS

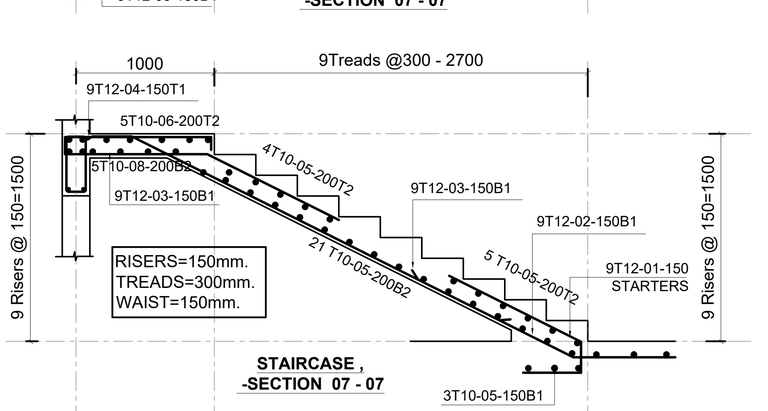
Revisions		
No.	Description	Date



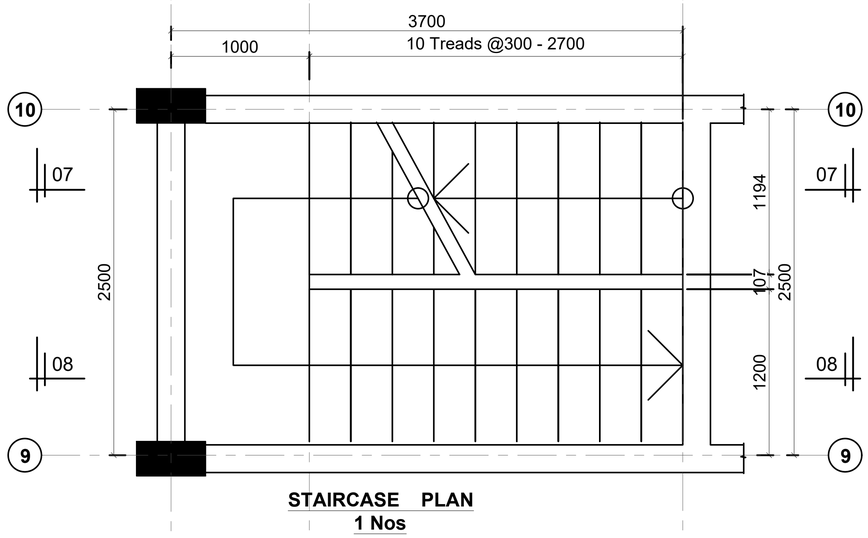
STAIRCASE , (9 Flights)
-SECTION 08 - 08



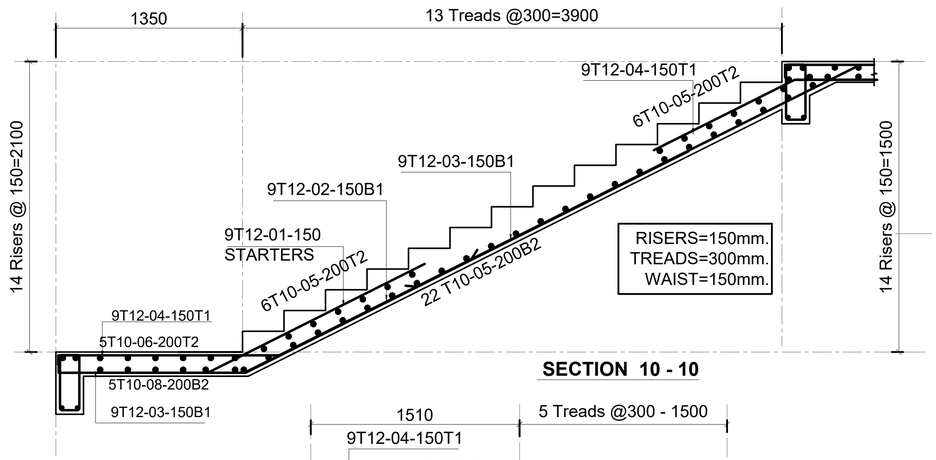
STAIRCASE , (10 Flights)
-SECTION 07 - 07



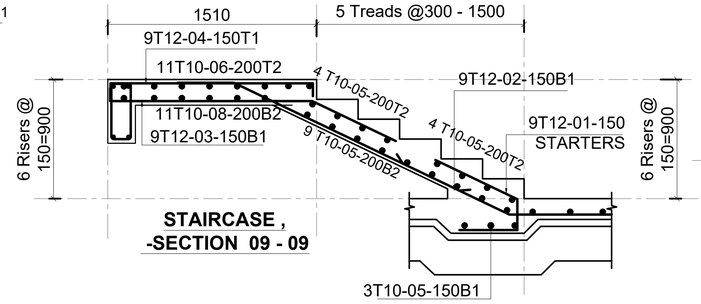
STAIRCASE ,
-SECTION 07 - 07



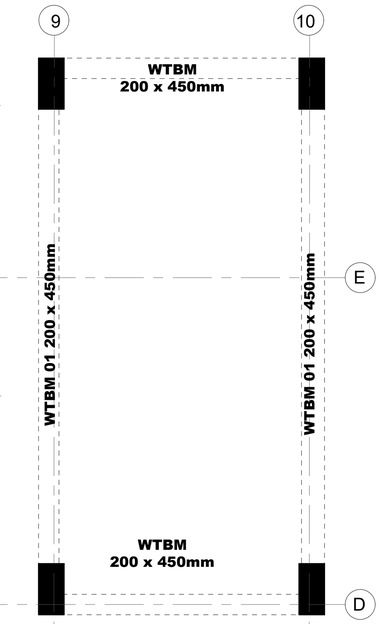
1 Nos



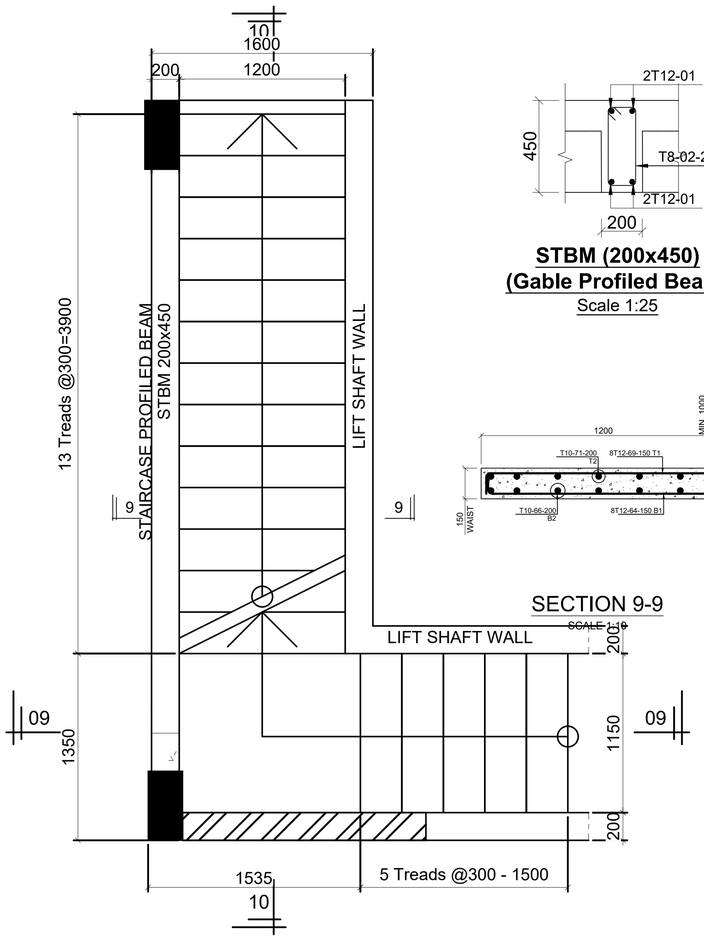
SECTION 10 - 10

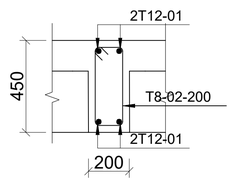


STAIRCASE ,
-SECTION 09 - 09

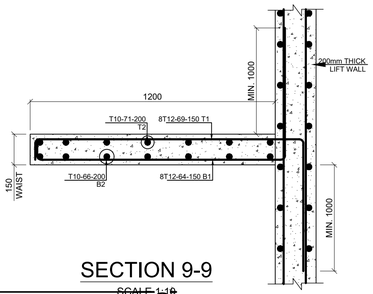


SLAB LAYOUT ABOVE STAIRCASE 1
SCALE 1:25

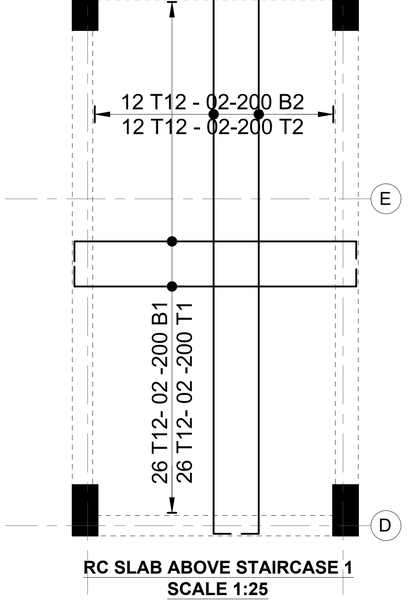




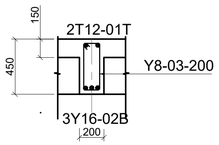
STBM (200x450)
(Gable Profiled Beam)
Scale 1:25



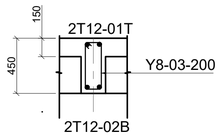
SECTION 9-9
SCALE 1:10



RC SLAB ABOVE STAIRCASE 1
SCALE 1:25



WTBM 01
(200X450mm)



WTBM 02
(200X450mm)

No.	Revisions Description	Date

Project: PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title: STAIRCASE RC DETAILS

Designed by: JMN | Checked by: JMN
Approved by: SECRETARY, HOUSING DEPARTMENT
Date: 13th March 2024 | Scale: As shown
Drawing Number: AHP-G+9-BLK8 3.0B

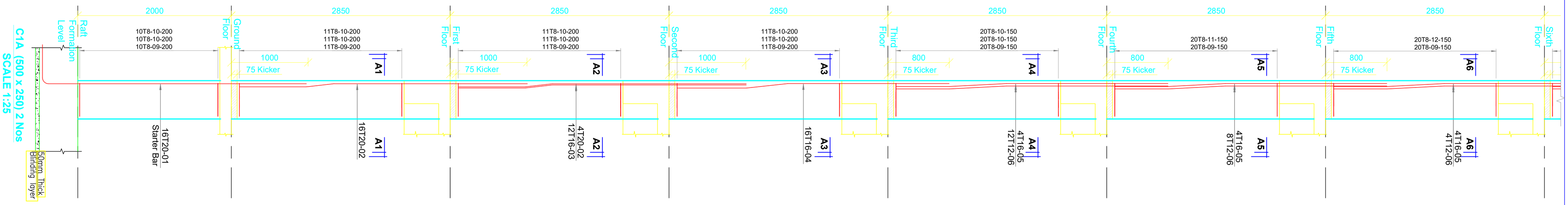
STRUCTURAL ENGINEER:

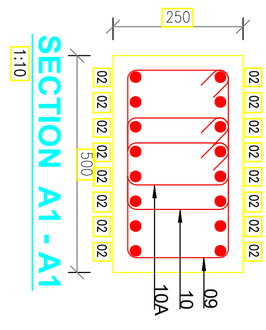
Client: MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

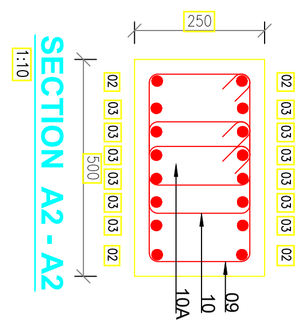
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

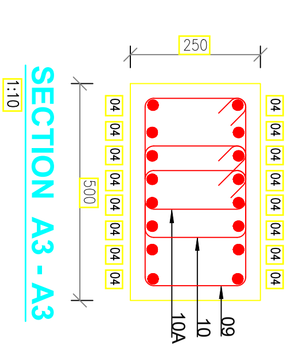
NOTES:
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.
6. Symbols: T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement: Slabs - 20mm. Beams - 25mm.Columns -40mm. Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are fillet welds.
10. All structural steel to be painted with anti-rust primmer paint.

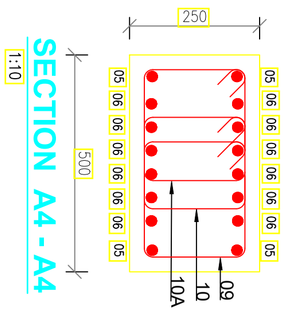
C1A (500 x 250) 2 Nos
SCALE 1:25

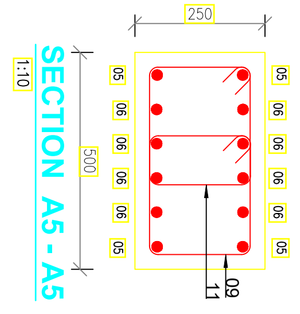


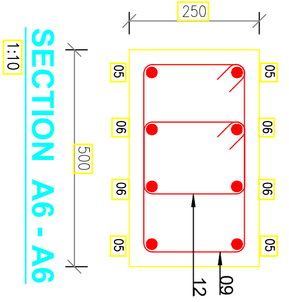


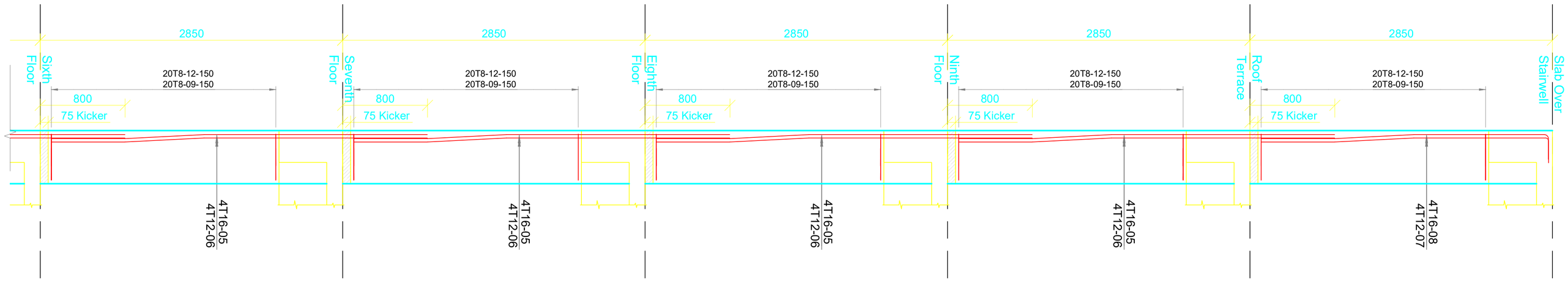












NOTES
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3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

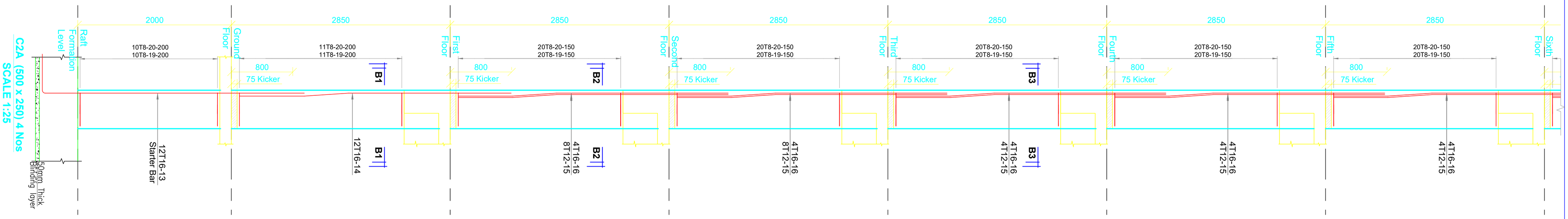
STRUCTURAL ENGINEER:

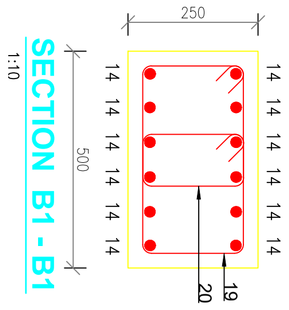
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.0B*

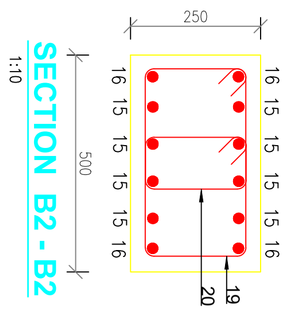
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

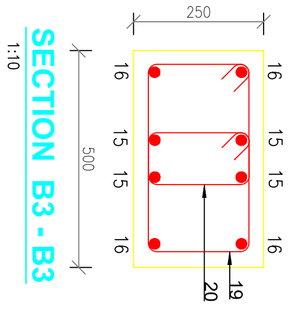
Title
COLUMN C1A RC DETAILS

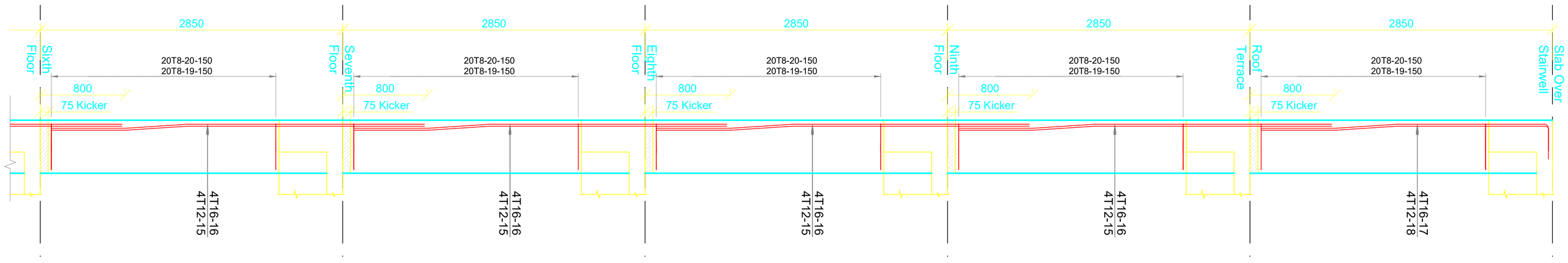
Revisions		
No.	Description	Date











NOTES
1. All dimensions are in millimetres unless otherwise stated.
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3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.1B*

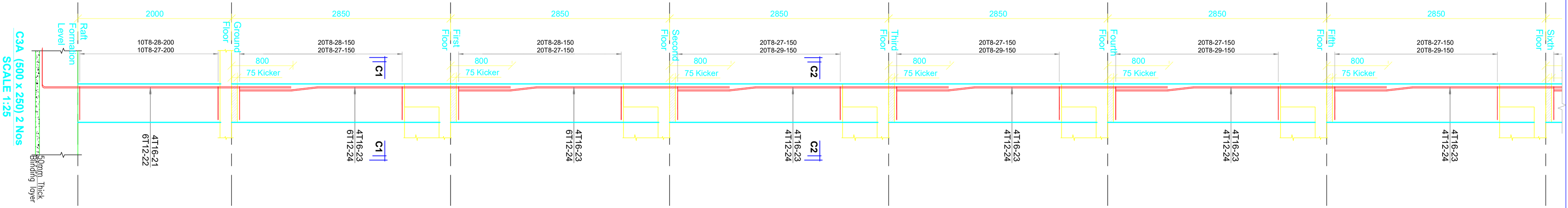
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

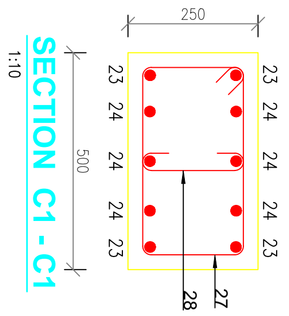
Title
COLUMN C2A RC DETAILS

Revisions

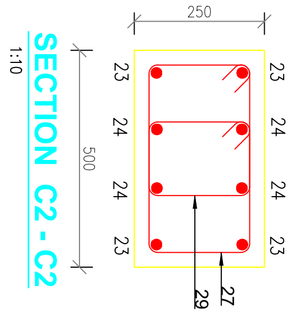
No.	Description	Date

C3A (500 x 250) 2 Nos
SCALE 1:25

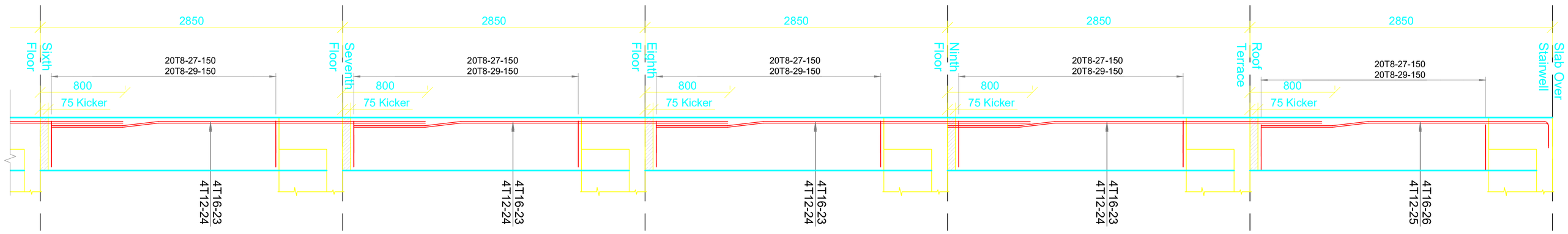




SECTION C1 - C1
1:10



SECTION C2 - C2
1:10



NOTES
1. All dimensions are in millimetres unless otherwise stated.
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4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.2B*

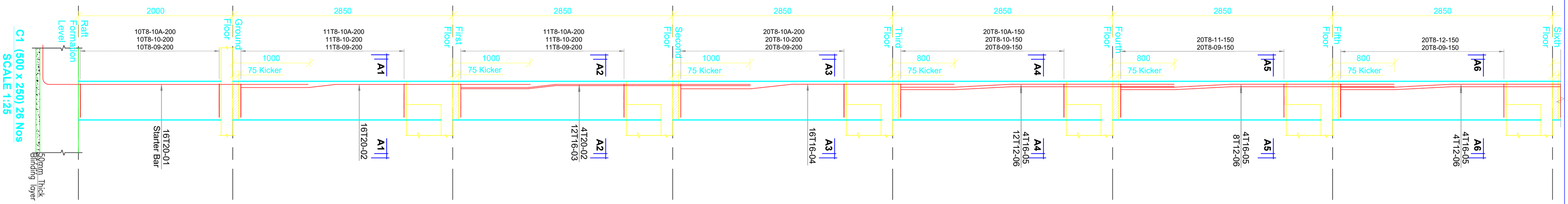
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

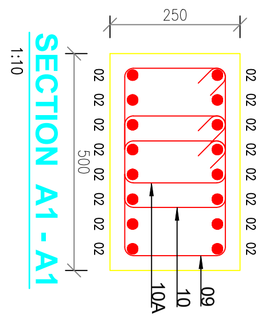
Title
COLUMN C3A RC DETAILS

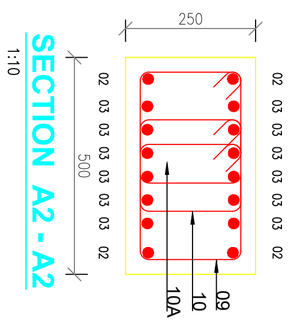
Revisions

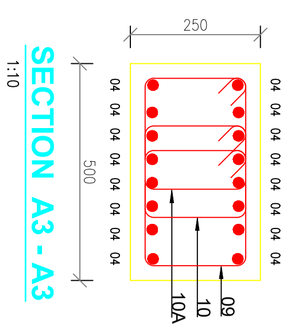
No.	Description	Date

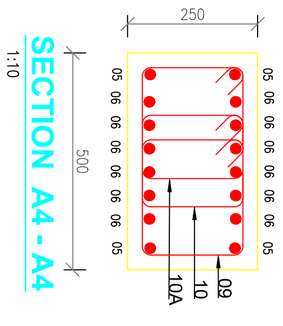
C1 (500 x 250) 26 Nos
SCALE 1:25

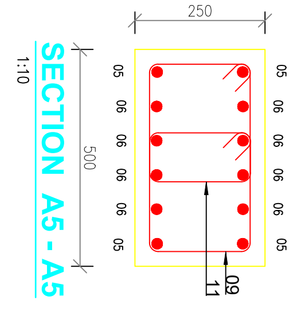


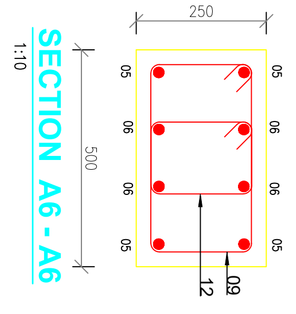


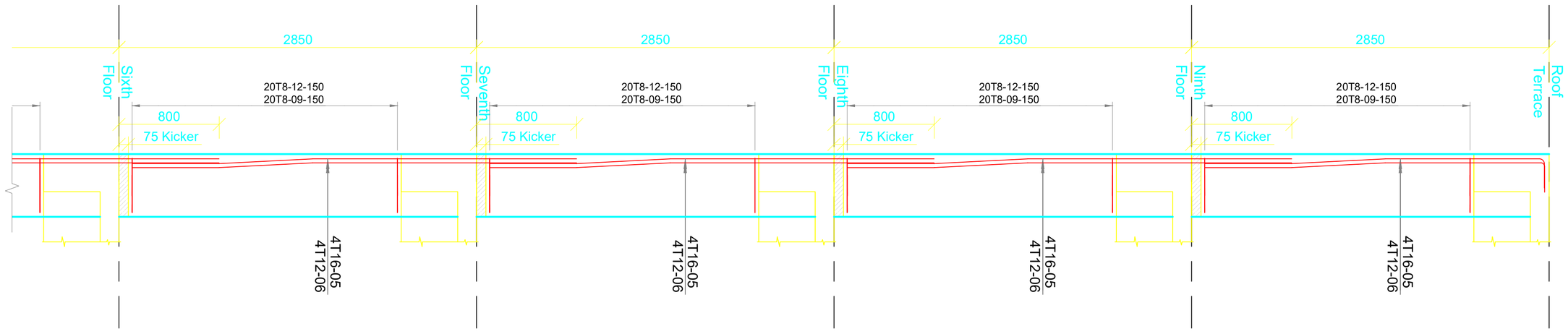












NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

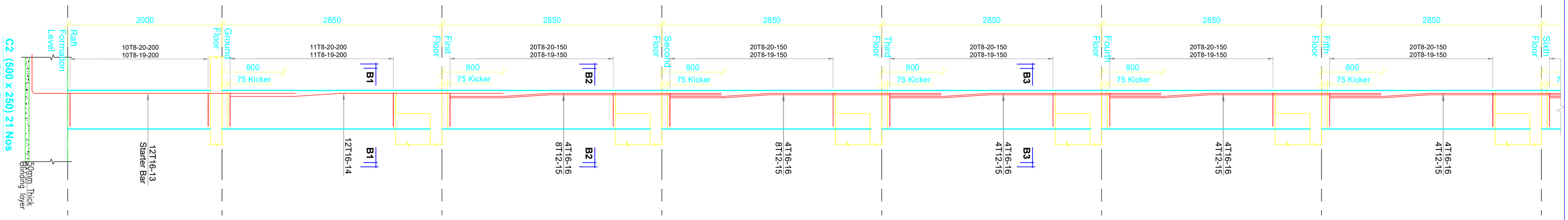
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.3B*

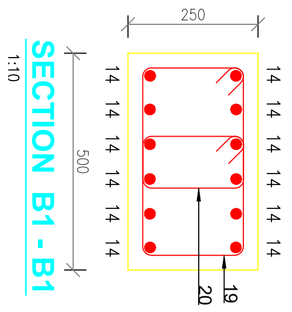
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C1 RC DETAILS

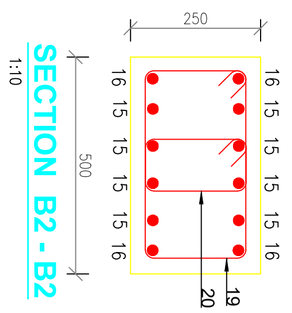
Revisions		
No.	Description	Date

C2 (500 x 250) 21 Nos
SCALE 1:25

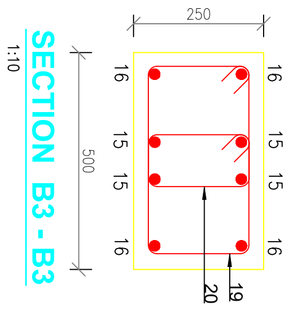




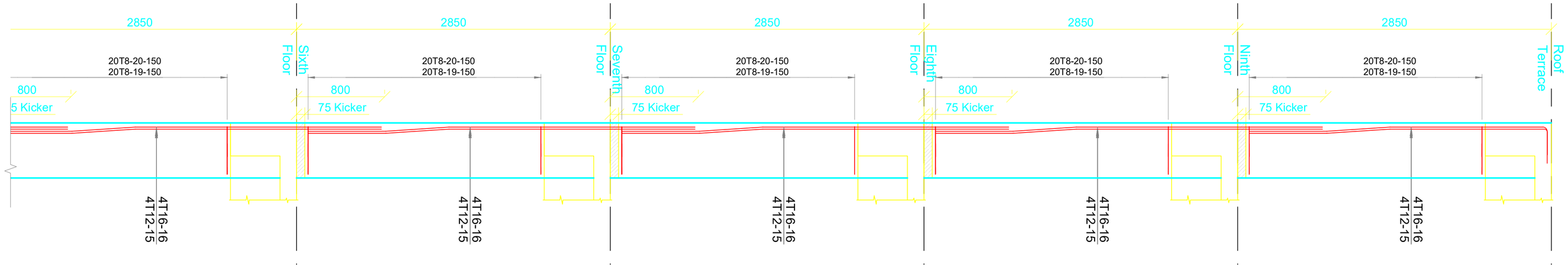
SECTION B1 - B1
1:10



SECTION B2 - B2
1:10



SECTION B3 - B3
1:10



NOTES
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7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

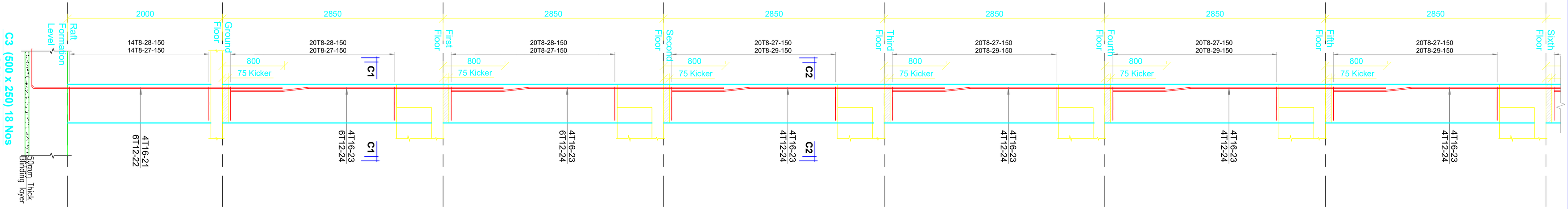
Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.4B*

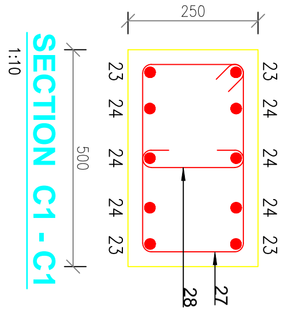
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C2 RC DETAILS

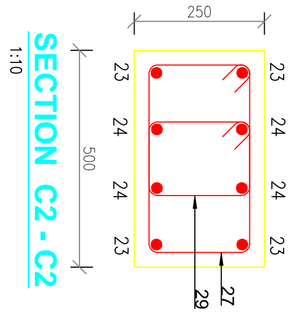
Revisions		
No.	Description	Date

C3 (500 x 250) 18 Nos
SCALE 1:25

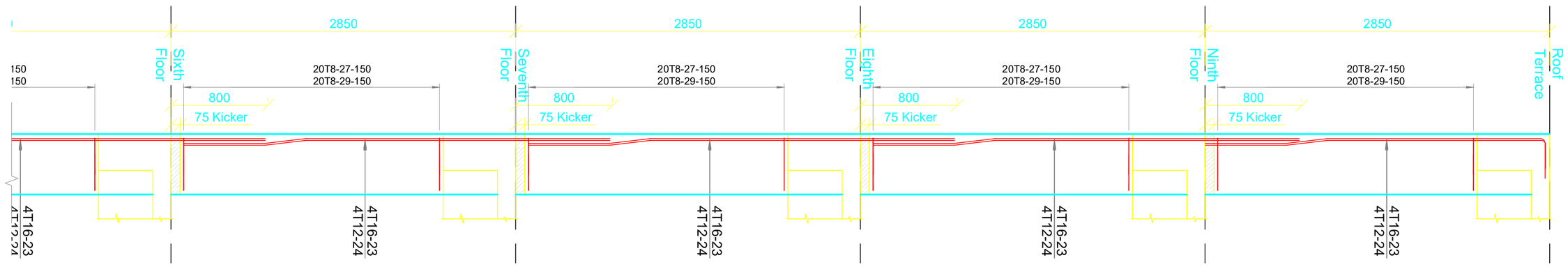




SECTION C1 - C1
1:10



SECTION C2 - C2
1:10



NOTES
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6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

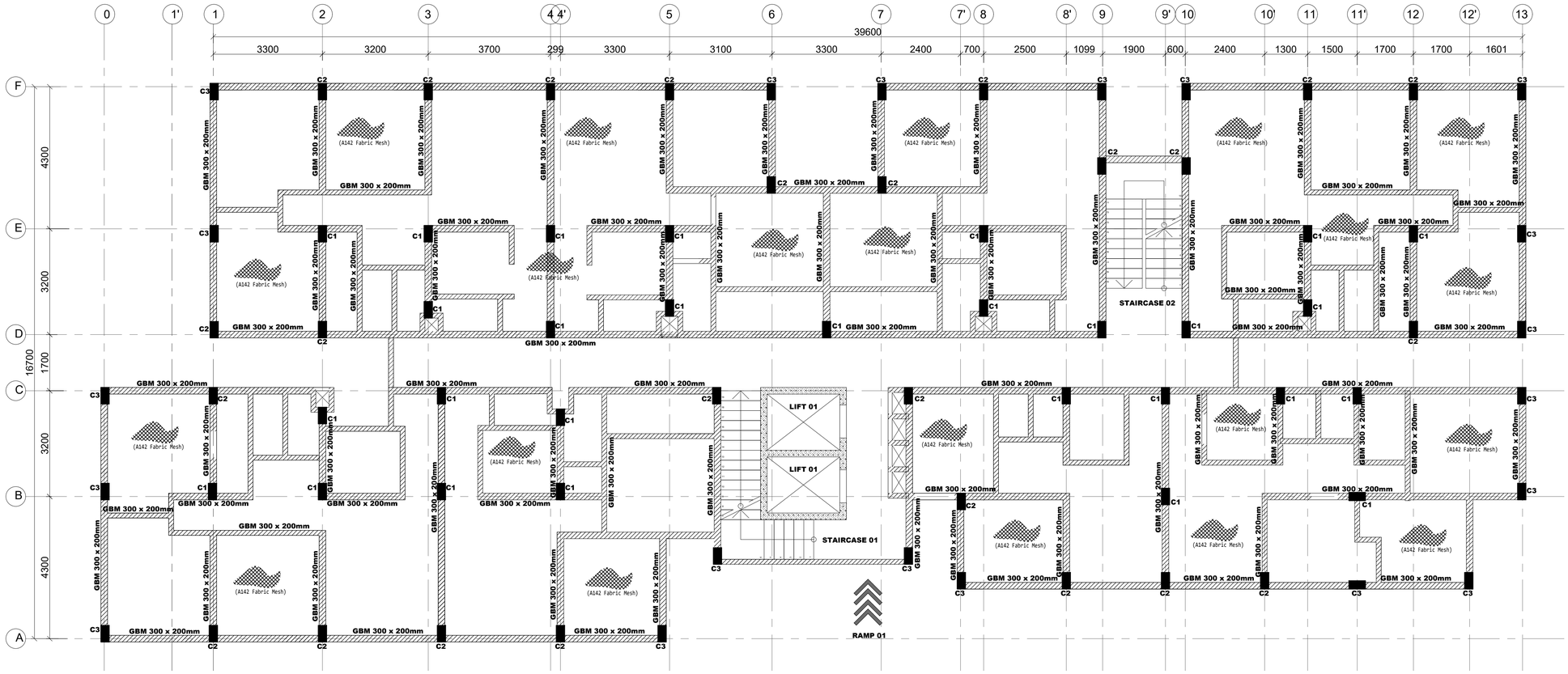
STRUCTURAL ENGINEER:

Designed by: *JMN*	Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT	
Date: *13th March 2024*	Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 4.5B*	

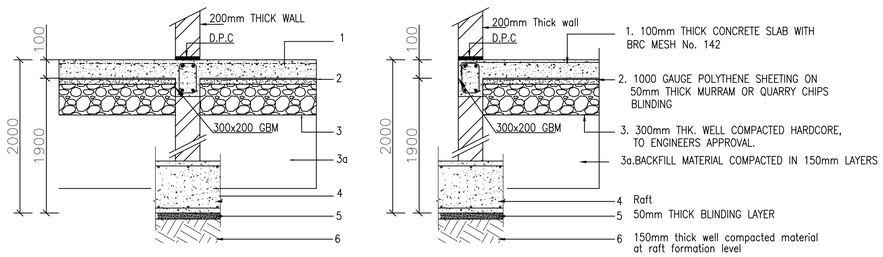
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
COLUMN C3 RC DETAILS

Revisions		
No.	Description	Date

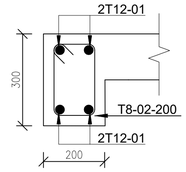


GROUND FLOOR LAYOUT
(100mm Thick Solid Slab With BRC Mesh A142 on top)
SCALE 1:75



TYPICAL INTERNAL FOUNDATION WALLING SECTION
1:25

TYPICAL INTERNAL FOUNDATION WALLING SECTION
1:25



GBM (300 X 200mm)
Scale 1:10

NOTES
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3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
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9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

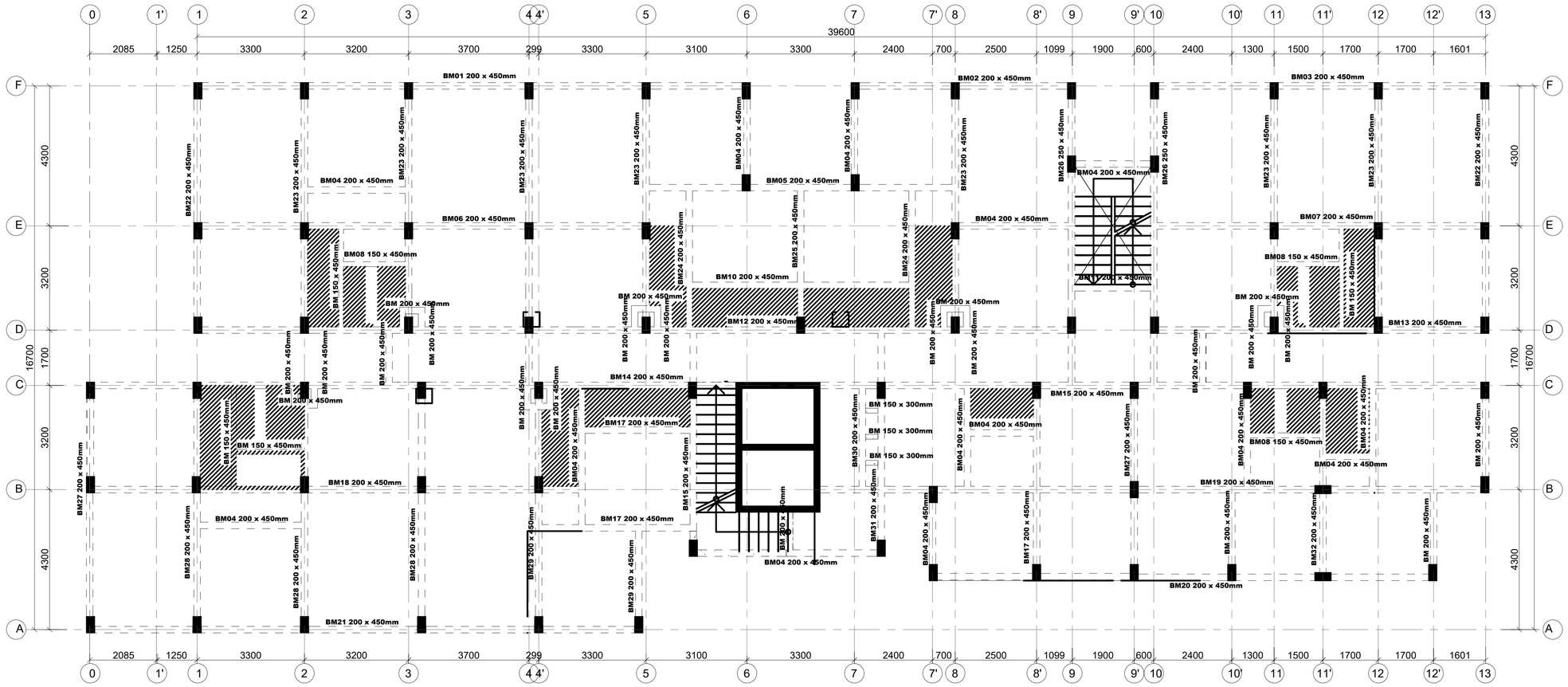
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 5.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
GROUND FLOOR LAYOUT DETAILS

Revisions		
No.	Description	Date



TYPICAL FLOOR SLAB LAYOUT
130 MM THICK SOLID SLAB AND 150 MM THICK SLAB IN WET AREAS(HATCHED)
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
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3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
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Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

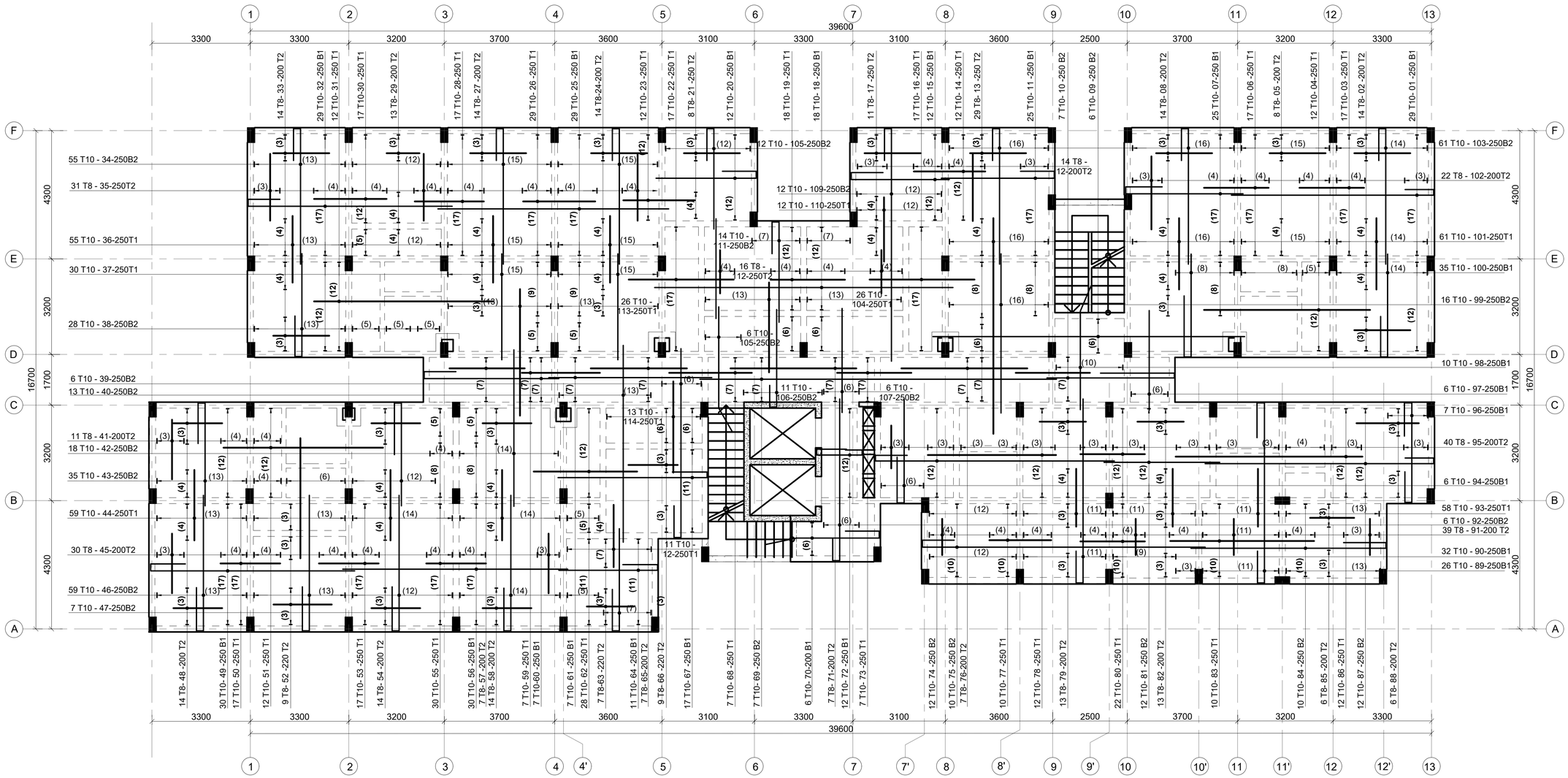
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 6.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
TYPICAL FLOOR SLAB LAYOUT DETAILS

Revisions		
No.	Description	Date



TYPICAL FLOOR SLAB REBAR DETAILS
130 MM THICK SOLID SLAB AND 150 MM THICK SLAB IN WET AREAS REBAR DETAILS
SCALE 1:75

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

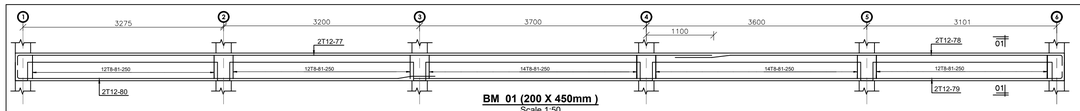
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 6.1B*

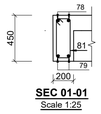
Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
TYPICAL FLOOR SLAB REBAR DETAILS

Revisions		
No.	Description	Date



BM 01 (200 X 450mm)
Scale 1:50



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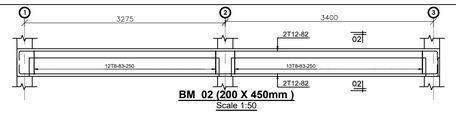
Scale 1:25



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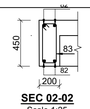

SEC 02-02
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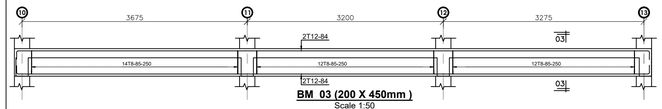

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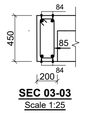

SEC 03-03
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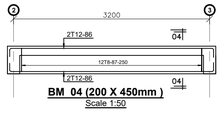

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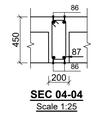

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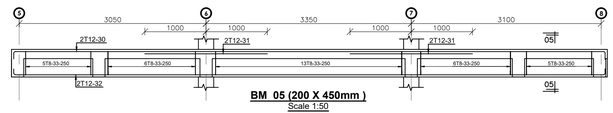

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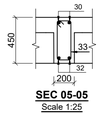
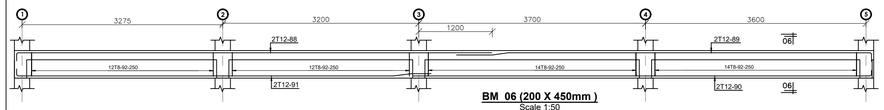


SEC 05-05
Scale 1:25



BM 06 (200 X 450mm)
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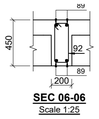

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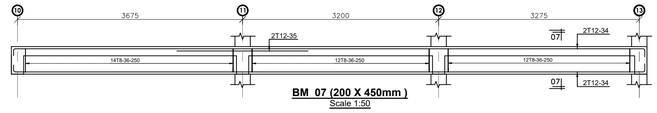

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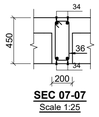
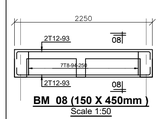


SEC 07-07
Scale 1:25



BM 08 (150 X 450mm)
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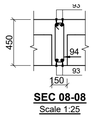
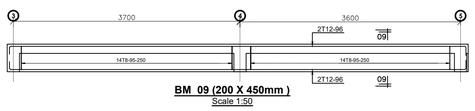
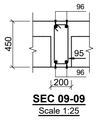


SEC 08-08
Scale 1:25



BM 09 (200 X 450mm)
Scale 1:50



SEC 09-09
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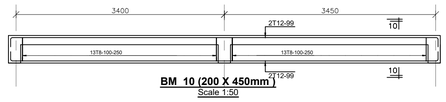
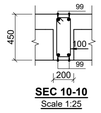
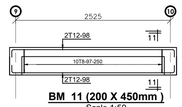


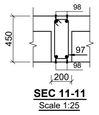
BM 10 (200 X 450mm)
Scale 1:50



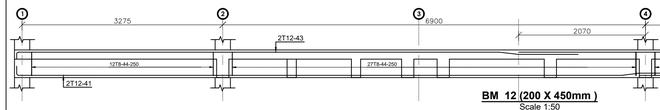
SEC 10-10
Scale 1:25



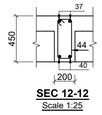
BM 11 (200 X 450mm)
Scale 1:50



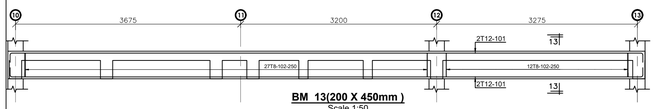
SEC 11-11
Scale 1:25



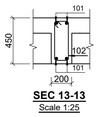
BM 12 (200 X 450mm)
Scale 1:50



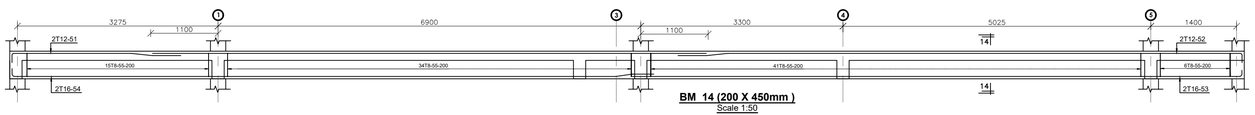
SEC 12-12
Scale 1:25



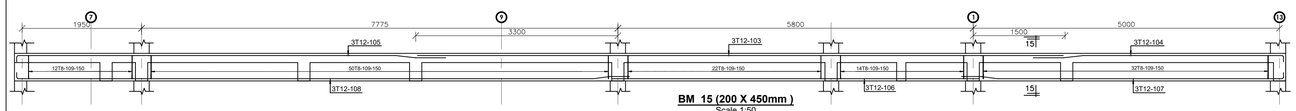
BM 13(200 X 450mm)
Scale 1:50



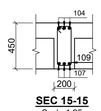
SEC 13-13
Scale 1:25



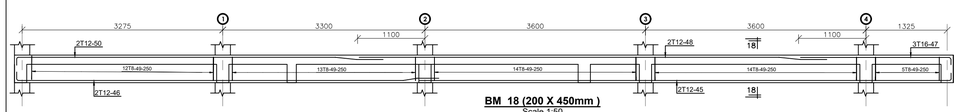
BM 14 (200 X 450mm)
Scale 1:50



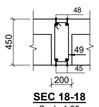
BM 15 (200 X 450mm)
Scale 1:50



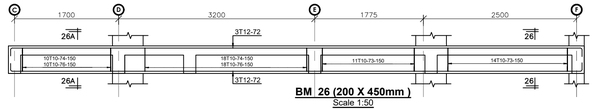
SEC 15-15
Scale 1:25



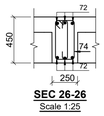
BM 18 (200 X 450mm)
Scale 1:50



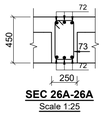
SEC 18-18
Scale 1:25



BM 26 (200 X 450mm)
Scale 1:50



SEC 26-26
Scale 1:25



SEC 26A-26A
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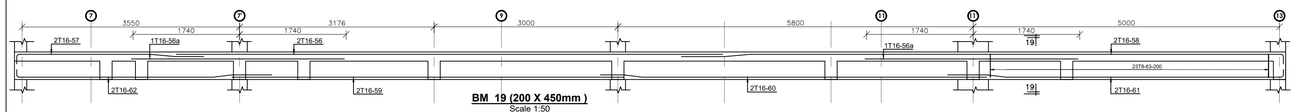
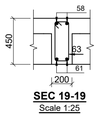
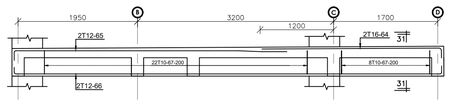


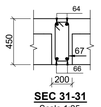
BM 19 (200 X 450mm)
Scale 1:50



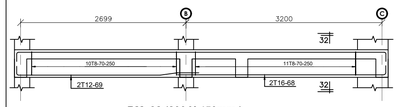
SEC 19-19
Scale 1:25



BM 31 (200 X 450mm)
Scale 1:50



SEC 31-31
Scale 1:25



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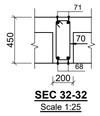
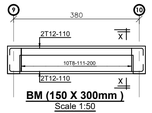
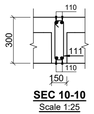


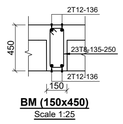
SEC 32-32
Scale 1:25



BM (150 X 300mm)
Scale 1:50



SEC 10-10
Scale 1:25



BM (150x450)
Scale 1:25

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

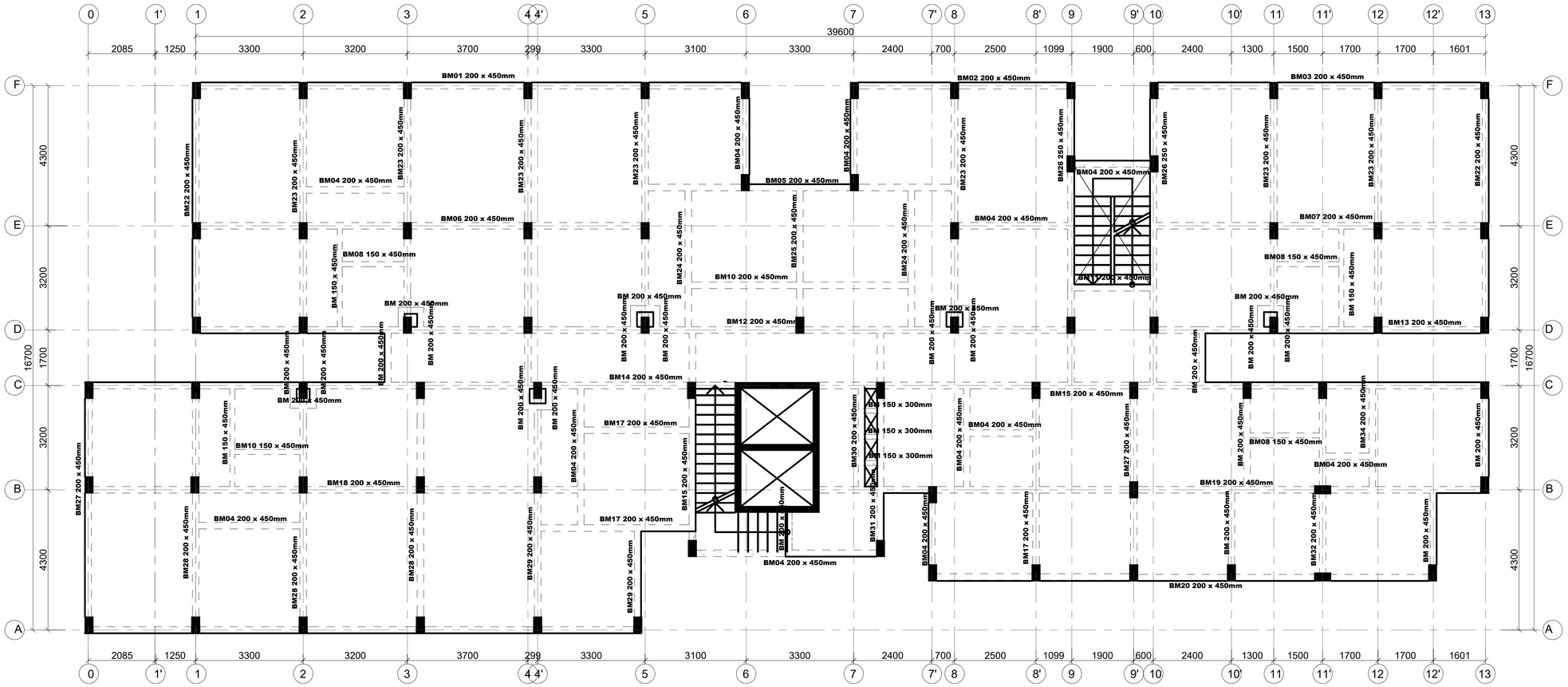
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 6.2B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
TYPICAL FLOOR SLAB BEAMS RC DETAILS

Revisions		
No.	Description	Date



ROOF TERRACE FLOOR SLAB REBAR DETAILS
150 MM THICK SLAB

NOTE:
-Terrace floor slab to be waterproofed with physical barrier waterproofing membrane such as APP or equivalent.

-APP membrane to be protected using screed and concrete interlocking tiles

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

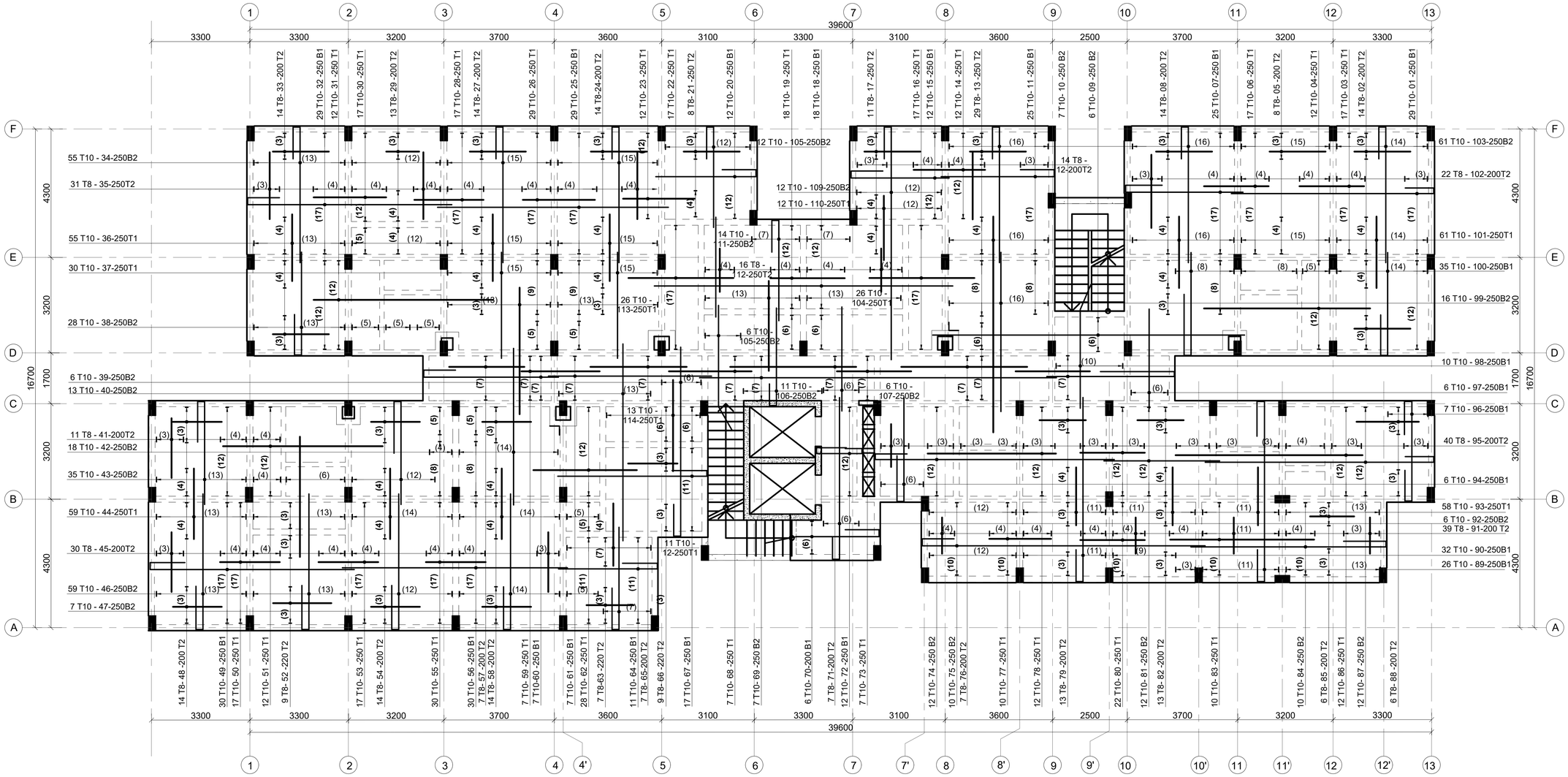
STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 7.0B*

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
ROOF TERRACE FLOOR SLAB LAYOUT DETAILS

Revisions		
No.	Description	Date



ROOF TERRACE FLOOR SLAB REBAR DETAILS
150 MM THICK SLAB

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face B - Bottom face
7. Cover to reinforcement; Slabs - 20mm, Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

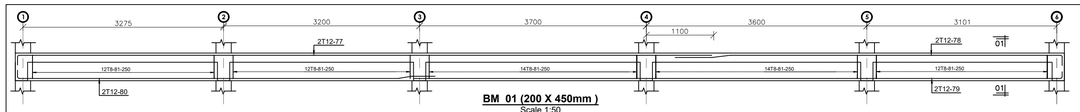
Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT
STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: *JMN* | Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT
Date: *13th March 2024* | Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 7.1B*

Project: PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS
Title: ROOF TERRACE FLOOR SLAB REBAR DETAILS

Revisions		
No.	Description	Date



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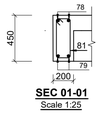

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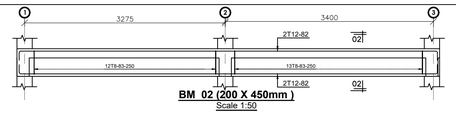

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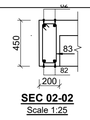

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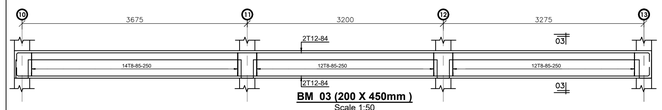

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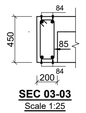

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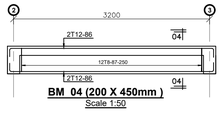

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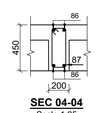

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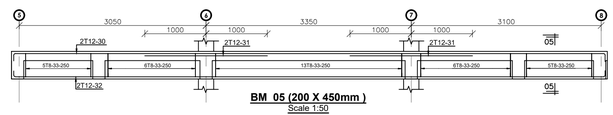

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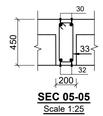

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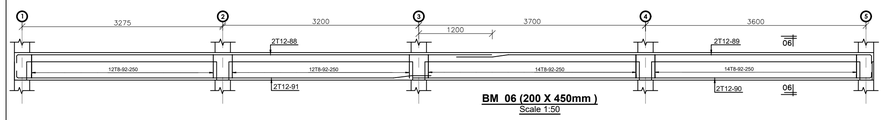

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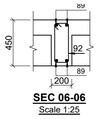

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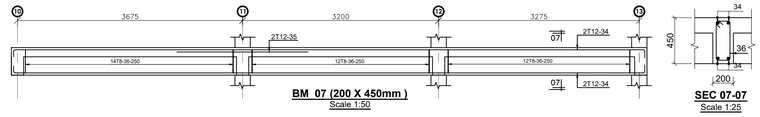

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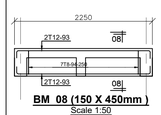
SEC 07-07
Scale 1:25



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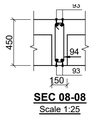

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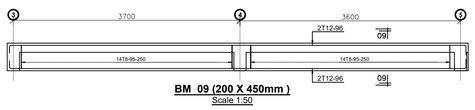

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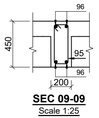

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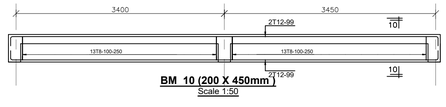

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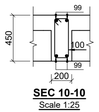

SEC 10-10
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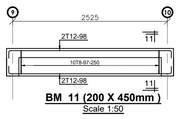

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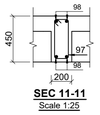
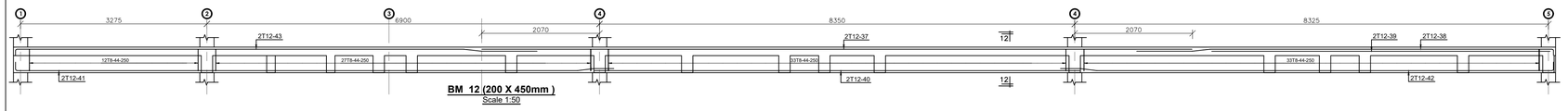


SEC 11-11
Scale 1:25



BM 12 (200 X 450mm)
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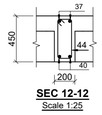

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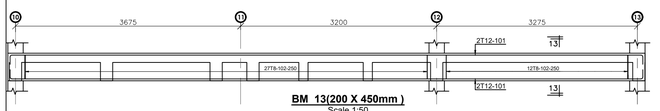

BM 13(200 X 450mm)
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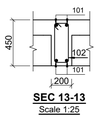

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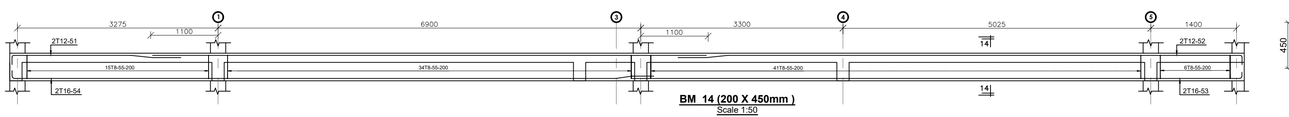
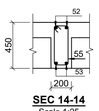


BM 14 (200 X 450mm)
Scale 1:50



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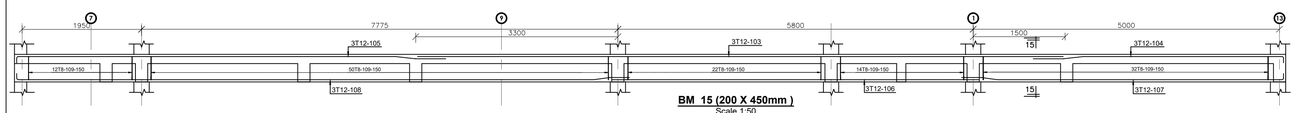
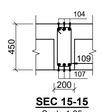


BM 15 (200 X 450mm)
Scale 1:50



SEC 15-15
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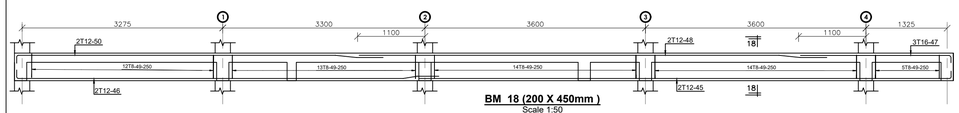

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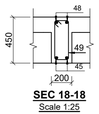
Scale 1:50



SEC 18-18
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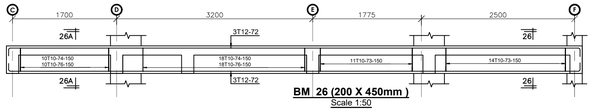

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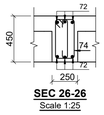
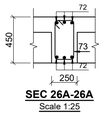
Scale 1:50



SEC 26-26
Scale 1:25



SEC 26A-26A
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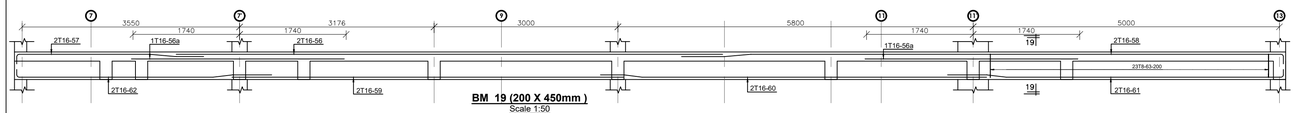

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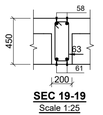
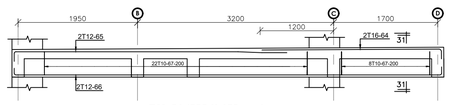
Scale 1:50



SEC 19-19
Scale 1:25



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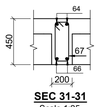

SEC 31-31
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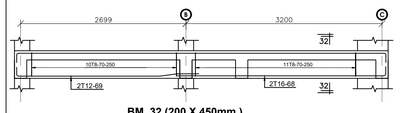

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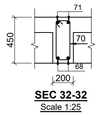

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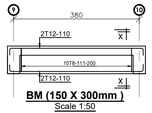

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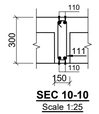

SEC 10-10
Scale 1:25

NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. All reinforcements must be checked and approved by project structural engineer prior to concreting.
3. All reinforced concrete to be Class 25 mix and blinding concrete to be Class 15 mix.
4. Only figured dimensions to be taken from this drawing.
5. Any descripancy indimensions to be reported to the project consultants i.e architect or engineer.

6. Symbols; T-TMT Rebars to B S 4 461 : T - Top face
B - Bottom face
7. Cover to reinforcement; Slabs - 20mm,
Beams - 25mm,Columns - 40mm, Foundations -50mm
8. All structural steel be grade 43A.
9. All welds are 6mm thick.
10. All structural steel to be painted with anti-rust primmer paint.

Client
MINISTRY OF LANDS, PUBLIC WORKS, HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

STRUCTURAL ENGINEER:

Designed by: *JMN*	Checked by:JMN
Approved by:SECRETARY, HOUSING DEPARTMENT	
Date: *13th March 2024*	Scale: *As shown*
Drawing Number: *AHP-G+9-BLKB 7.2B*	

Project
PROPOSED AFFORDABLE HOUSING DEVELOPMENT (BLOCK TYPE B MARKET UNITS

Title
ROOF TERRACE FLOOR BEAMS REBAR DETAILS

Revisions		
No.	Description	Date

PROPOSED CONSTRUCT + FINANCE OF PROPOSED CONSTRUCTION OF A MIXED USE AHP DEVELOPMENT (G+9)

MECHANICAL DRAWINGS

PLUMBING, DRAINAGE & FIRE FIGHTING

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: Resedential Building

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: BAHATI

DRAWING TITLE :

COVER PAGE

SCALE : NTS

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

SGOK.png

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

GENERAL NOTES FOR DOMESTIC WATER SERVICES

1. ALL DIMENSIONS ARE IN METRIC MILLIMETERS. ALL SANITARY FIXTURES AND SINKS SHALL BE PROVIDED WITH ANGLE VALVES.

2. HOT AND COLD WATER CONNECTIONS TO EACH SANITARY APPLIANCE SHALL INCLUDE CHROME PLATED ANGLE VALVE FOR ISOLATION AND THE ISOLATING VALVE FOR BATH TUB AND SHOWER SHALL BE LOCATED ABOVE THE FALSE CEILING.

3. THE PIPE DIAMETER INDICATED ON THE DRAWING ARE NOMINAL AND THE ACTUAL DIAMETER OF THE PIPES SHALL BE AS PER THE EQUIVALENT PIPE DIAMETERS DETAIL AND AS SPECIFIED.

4. THE DOMESTIC WATER INSTALLATION SHALL CARRIED OUT TO COMPLY WITH THE LATEST LOCAL AUTHORITY REQUIREMENT INCLUDING:

   a. WATER SUPPLY REGULATIONS
   b. ALL OTHER LOCAL REGULATIONS HAVING JURISDICTION ON THE WORK

5. THE TYPES, MATERIALS AND SIZES OF PIPES TO BE USED ARE STATED IN THE SCHEDULE OF MATERIALS.

6. PIPE FITTINGS AND ALL OTHER MATERIALS USED IN THE PLUMBING MUST BE OF TYPE APPROVED BY THE LOCAL WATER DEPARTMENT AND RELEVANT AUTHORITY.

7. ALL VALVES ARE TO BE LOCATED SUCH THAT IT CAN BE READILY BY THE MAINTENANCE PERSONNEL. ACCESS PANEL TO ENGINEERS APPROVAL SHALL BE PROVIDED WHERE NECESSARY.

8. ALL COLD WATER PIPES SHOWN ON THE PLAN SHALL BE ROUTED AT THE CEILING OF THE RESPECTIVE PLAN UNLESS OTHERWISE STATED. ALL PIPE WORK SHALL BE CONCEALED IN PIPE SHAFT/WALLS/PARTITION OR RUN WITHIN FALSE CEILING SPACE UNLESS OTHERWISE NOTED.

9. AUTOMATIC AIR VENTS TO BE PROVIDED AT THE HIGHEST POINTS OF PIPING NETWORK.

10. ALL PIPES PASSING THROUGH RETAINING WALLS OR WATERTIGHT STRUCTURES SHALL BE MADE WATER-TIGHT WITH PUDDLE FLANGE AT THE POINT OF PENETRATION THROUGH STRUCTURES. PIPES PENETRATION THROUGH FIRE WALLS & FLOORS SHALL BE SEALED WITH FIRE PROOFING MATERIALS. PIPE SLEEVES ARE TO BE PROVIDED WHEREVER THERE IS PENETRATION THROUGH STRUCTURAL BEAM OR SLAB.

11. ALL DETAILS SHOWN ARE TO BE READ IN CONJUNCTION WITH ALL ISOLATION VALVES SHALL BE PROVIDED FOR INCOMING WATER SUPPLY LINE AT EVERY UNIT/COMMON AREA.

12. LOCATIONS AND SIZE OF SLEEVES FOR PIPE WILL BE SHOWN IN SHOP DRAWINGS.

STANDARD NOTES FOR BUILDING DRAINAGE

PIPING

- ☑ 1- MATERIALS SHALL BE TO APPROVAL AND THE INSTALLATION SHALL BE ACCORDING TO BS 5572.
- ☑ 2- ALL INTERNAL PIPING SHALL BE UPVC TO BS 4514 EXCEPT WASTE PIPING WHICH SHALL BE TO BS 5255. ALL U/G PIPING SHALL BE TO BS 4660.
- ☑ 3- NO BENDS SHALL BE ALLOWED IN HORIZONTAL PIPES RUNNING UNDERGROUND.

RODDING EYES

- ☑ 1- ACCESS POINTS SHOULD BE CAREFULLY SITED TO ALLOW THE SERVICE ENTRY FOR CLEANING AND TESTING.
- ☑ 2- ALL VERTICAL STACKS SHALL BE PROVIDED WITH RODDING EYES AT JUNCTIONS ON EVERY FLOOR.
- ☑ 3- ALL HORIZONTAL DRAINAGE PIPES SHALL HAVE RODDING EYES AT POINTS OF CHANGE OF DIRECTION IN PIPES AS REQUIRED FOR EFFECTIVE MAINTENANCE.
- ☑ 4- RODDING EYES SHALL BE PROVIDED WHERE MORE THAN ONE WC IS CONNECTED TO A HORIZONTAL SOIL PIPE.
- ☑ 5- RODDING EYE IS TO BE PROVIDED WHERE THE DISTANCE BETWEEN ONE WC AND STACK OR MANHOLE IS MORE THAN 5 METERS.

STACKS

- ☑ 1- THE UPPER LIMIT OF STACK LOADING SHALL NOT BE MORE THAN A QUARTER FULL.
- ☑ 2- FOR BUILDINGS OF LESS THAN 20 STORIES HEIGHT, APPLIANCES LOCATED ON GROUND FLOOR SHALL NOT BE CONNECTED TO VERTICAL STACK DISCHARGING AT GROUND LEVEL.
- ☑ 3- FOR BUILDINGS GREATER THAN 20 STORIES APPLIANCES LOCATED AT GR. FLOOR AND FIRST FLOOR SHALL NOT BE CONNECTED TO VERTICAL STACK DISCHARGING AT GROUND LEVEL.
- ☑ 4- CONNECTION FROM THE APPLIANCES LINES ON ANY FLOOR AND THE MAIN PIPE SHALL BE IN VERTICAL STAKES ONLY.
- ☐ 5- FOR ALL BENDS THAT ARE AT BASE OF STACKS, PROVIDE A 45 OR 90 DEGREES LONG RADIUS TYPE ELBOW.

VENT PIPES

- ☑ 1- IN SINGLE STACK SYSTEM, PROVIDE A SEPARATE VENTILATION FOR INDIVIDUAL CONNECTIONS FROM THE WC, FLOOR TRAP, SINK, ETC. ANY HORIZONTAL PIPE LONGER THAN 1.5 METERS FROM SUCH FIXTURES SHALL BE VENTED ON THE HIGH SIDE.
- ☑ 2- VENT PIPES FROM MANHOLES AND VERTICAL STACKS SHALL BE EXTENDED 2 METERS ABOVE THE ROOF, THE END OF WHICH SHALL BE FITTED WITH VENT COWLS.

RESTRICTIONS

- ☑ 1- THE DRAINAGE PIPES SHALL BE MADE NOT TO RUN THROUGH ELECTRIC ROOMS OR ELECTRIC SUB-STATIONS.
- ☑ 2- DIRECT CONNECTION OF WASTE SYSTEM FROM A FLOOR TRAP TO A FLOOR TRAP SHALL NOT BE PERMITTED.
- ☑ 3- NO DRAIN PIPES SHALL BE CAST INTO AN RCC STRUCTURAL ELEMENT WITHOUT PRIOR APPROVAL FROM STRUCTURAL ENG'R.
- ☑ 4- TO ALLOW THE DRAIN PIPES TO PASS THROUGH ANY STRUCTURAL ELEMENT IN BUILDING A CAST IRON SLEEVE IS FIRST FITTED WITHIN THE STRUCTURAL ELEMENT SUCH A BY PASS, THE SLEEVE SHALL OFFER A TOLERANCE OF AT LEAST 50 MM FOR EASE OF INSTALLATION OF THE PIPE. THE GAP BETWEEN THE PIPE AND THE SLEEVE SHALL THEN BE FILLED WITH SUITABLE SEALANT.
- ☑ 5- NOT TO PLACE UNDERGROUND PIPE LINE WITH TOP OF PIPE LESS THAN 600 MM BELOW FFL UNLESS CONCRETE STYLE 150 MM THICK SHALL BE PROVIDED AROUND TO PROTECT THE PIPE.
- ☑ 6- TYPICAL OUTLET SIZE (MM)

WATER CLOSET	100
WASH BASIN	50
KITCHEN SINK	50
FLOOR DRAIN	75
BATH TUB/SHOWER	40
WASHING M/C	40
BALCONY DRAIN	50

- ☑ 7- STACK SIZES SHALL BE AS FOLLOWS: –

UP TO GROUND PLUS SEVEN STORY	
SOIL PIPE	100
WASTE PIPE	100
VENT PIPE	75
RAIN WATER PIPE	100
BALCONY DRAIN PIPE	50
A/C DRAIN PIPE	32

- ☑ 8- STACK SIZES SHALL BE AS FOLLOWS: –

ABOVE SEVEN STORY	
SOIL PIPE	150
WASTE PIPE	150
VENT PIPE	100
RAIN WATER PIPE	100
BALCONY DRAIN PIPE	50
A/C DRAIN PIPE	32

C) MANHOLES

- ☑ 1- THE MANHOLE SCHEDULE SHALL BE ARRANGED IN THE MANNER SHOWN BELOW ,THE MANHOLE INVERT LEVEL (I L) , COVER LEVEL (C L) DEPTH AND DISTANCE BETWEEN MANHOLES SHALL BE REFERENCED FROM KENYA C , F.I.C USING KENYA DATUM AND ALL UNITS SHALL BE IN SYSTEM.
- ☑ 2- A SKETCH SHOWING THE RELATIVE LEVEL BETWEEN F.I.C AND BUILDING MANHOLES SHALL BE PROVIDED.
- ☑ 3- THE INVERT LEVEL OF THE EXTERNAL DRAINAGE SYSTEM SHALL BE DETERMINED BY THE CONSULTANT TAKING INTO CONSIDERATION THE DRAINAGE CONNECTION LEVEL TO MATCH THAT OF F.I.C, IN CASE OF N.O.C THE DEEP OF LAST MANHOLE SHALL BE LESS THAN 1200 MM.
- ☑ 4- THE DEPTH OF FIRST MANHOLE SHALL BE AT LEAST 450 MM.
- ☑ 5- SLOPES FOR HORIZONTAL RUNS SHALL BE AS FF:FOR 100 MM-1:60 FOR 150 MM-1:90 FOR 200 MM-1:120.
- ☑ 6- MANHOLES AND ACCESS CHAMBERS SHALL BE LAY OUT ACCORDING TO CONSULTANT'S SCHEME., COVERS PROVIDED SHALL BE SUITABLE FOR THE LOADS THEY ARE SUBJECTED TO, AND IN ACCORDANCE WITH BS 497.
- ☑ 7- ACUTE ANGLE CONNECTIONS SHALL NOT BE ALLOWED WITHIN JUNCTION MANHOLES.
- ☑ 8- AT A MH THE TOPS OF ALL SEWERS SHOULD BE AT THE SAME LEVEL SO THAT THE PIPES OF SMALLER DIAMETER ARE NOT FLOODED WHEN THE BIGGER PIPES ARE RUNNING FULL.
- ☑ 9- BACKDROP SHALL BE PROVIDED WHEN THE LEVEL DIFFERENCE BETWEEN INCOMING AND MAIN SEWER IS CONSIDERABLE.
- ☑ 10- AN INSPECTION CHAMBER / MANHOLE / GULLY TRAP CONSTRUCTED IN COVERED AREA SHALL BE DRY TYPE AND PROVIDED WITH RECESSED DOUBLE SEAL TYPE COVER.
- ☑ 11- ANY MANHOLE LOCATED IN GARAGE, DRIVEWAY OR OTHER TRAFFIC AREAS SHALL BE PROVIDED WITH HEAVY DUTY COVERS.
- ☑ 12- IF INSPECTION CHAMBERS / MANHOLES ARE IN AGRICULTURAL LAND, MANHOLE COVERS SHOULD BE RAISED 75 MM ABOVE THE NATURAL GROUND LEVEL.
- ☑ 13- DISTANCE BETWEEN MH TO MH SHALL NOT EXCEED 15 METERS IN VILLAS AND BUILDINGS.
- ☑ 14- MINIMUM REQUIREMENT FOR MANHOLE VENTING SHALL BE THE PROVISION OF VENT PIPE TO FIRST AND LAST MANHOLES OF DRAINAGE LINE. THESE VENT PIPES SHALL BE 100 MM BELOW COVER LEVEL.
- ☑ 15- THE SITING OF ANY MANHOLE SHALL BE KEPT AWAY FROM UNDERGROUND WATER TANK BY A DISTANCE NOT LESS THAN THE DEPTH OF THE WATER TANK.

SUMP PUMP

- ☑ 1- IN BASEMENT, SAND TRAP WITH PVC BUCKET SHALL BE PROVIDED JUST BEFORE END CONNECTION OF CAR PARK DRAIN TO THE SUMP PUMP PIT AND THE RAMP DRAIN CHANNEL.
- ☑ 2- IF A BASEMENT SUMP PUMP IS FOR RAIN WATER COLLECTION ONLY FROM BASEMENT, CONNECT ONE WASTE PIPE FROM THE NEAREST TOILET TO THE BASEMENT DRAINAGE LINE TO MAKE IT ALWAYS WET.
- ☑ 3- SUMP PUMP SERVICE ONLY THE BASEMENT DRAIN AND SEWERAGE.

MANHOLES CONSTRUCTION

- ☑ 1- ALL INSPECTION CHAMBERS/MANHOLES SHOULD BE BUILT ON BED OF CEMENT CONCRETE 1:4:6 THE THICKNESS OF THE CONCRETE SHALL BE 150MM FOR MANHOLES UP TO 1000MM DEEP AND 200MM FOR DEPTHS ABOVE 1000MM.
- ☑ 2- WHERE MANHOLE / INSPECTION CHAMBERS ARE CONSTRUCTED BELOW GROUND WATER TABLE , COMPLETE CONSTRUCTION SHALL BE EITHER IN WATERPROOFED RCC. OR IN G.R.P.
- ☑ 3- ALL MAIN LINE CHANNELS SHALL BE LOCATED IN THE CENTER OF THE MANHOLES.
- ☑ 4- BENCHING OF INCOMING BRANCHES SHOULD BE INCLINED TOWARDS THE MAIN DIRECTION OF FLOW .
- ☑ 5- DIAMETER OF SEMI-CIRCULAR CHANNEL IN THE BOTTOM OF MANHOLE SHALL BE EQUAL TO THAT OF THE INCOMING SEWER DIAMETER.
- ☑ 6- THE SIDES OF CHANNELS IN MANHOLE SHALL BE EXTENDED VERTICALLY TO THE SAME LEVEL OF THE SOFFIT OF THE PIPE.
- ☑ 7- THE BENCHING IN INSPECTION CHAMBER/ MANHOLES SHOULD HAVE SMOOTH SURFACE CEMENT PLASTER.
- ☑ 8- MANHOLES SIZES SHALL BE AS FOLLOWS:-

MANHOLES DEEP MM	MANHOLES SIZE MM	MANHOLES COVER MM	
UP TO 1300	600X600 ☐	600X600 ☐ FOR SEW	◯ FOR SWD
FROM 1301 TO 1700	800X800 ☐	600X600 ☐ FOR SEW	◯ FOR SWD
FROM 1701 TO 2500	1000 ◯	600X600 ☐ FOR SEW	◯ FOR SWD
FROM 2501 TO 4000	1500 ◯	600X600 ☐ FOR SEW	◯ FOR SWD

ALL 1000 & 1500 MANHOLE SHALL HAVE G.R.P. LININGS

F I C (THE LAST MANHOLE)

☑

PLATE, THIS MANHOLE SHALL HAVE ONLY ONE INCOMING CONNECTION AND WORK BY GRAVITY ONLY.

- ☑ 2- IN CASE OF THERE ARE NO PROPOSAL OF FUTURE CONNECTION FROM DRAINAGE DEPARTMENT. THE FUTURE CONNECTION SHALL BE IN LESS WIDTH ROAD AND THE MAX DEPTH SHALL BE 1200 MM.

D) MISCELLANEOUS

RAIN WATER DRAINAGE

- ☑ 1- THE DRAINAGE OF ROOFS AND PAVED AREAS SHALL BE ACCORDING TO BS 6367.
- ☑ 2- RAINWATER PIPES ARE NOT TO BE CONNECTED TO SEWER LINES.
- ☑ 3- ALL O.T.S, S (4X4M & LESS) SHOULD HAVE FLOOR TRAPS FOR RAINWATER CONNECTED TO THE NEAREST GULLY TRAP OR WASTE STACK. OTHER O.T.S,S SHALL HAVE RW DRAIN FOR RAIN WATER WHICH IS FREE DISCHARGE TO OUTSIDE.
- ☑ 4- FOR ALL AIR WELLS, ACCESS DOORS SHOULD BE PROVIDED AT THE LOWER LEVEL OF THE WELL .
- ☑ 5- FOR PROJECT HAVING LARGE RAIN CATCHMENT AREAS, RAIN WATER SCHEME SHALL BE DESIGNED TO BS 6367 APPROVAL.

PROVISION FOR FUTURE CONNECTION

- ☑ 1- SHOP FACILITIES IN BUILDINGS SHALL HAVE WASTE PIPE & VENT PIPE CONNECTION PROVISIONS FOR FUTURE WITH APPROVED GRATING AS PER DETAILS.

SYSTEM TEST

- ☑ 1- WATER AND AIR TESTS SHALL BE CARRIED OUT AFTER THE PIPES ARE INSTALLED AND CONSULTANT CERTIFICATE SHALL BE SUBMITTED TO ENGINEERS.

ABBREVIATIONS

ABBREV.	DESCRIPTIONS	ABBREV.	DESCRIPTIONS
AS	AS SHOWN	IC	INSPECTION CHAMBER
CCO	CEILING CLEANOUT	IV	ISOLATION VALVE
CO	CLEANOUT	KS	KITCHEN SINK
CV	CHECK VALVE	LVL.	LEVEL
CWR	COLD WATER SUPPLY	L/L	LOW LEVEL
CV	CHECK VALVE	MAX	MAXIMUM
CWL	COLD WATER LINE	NC	NORMALLY CLOSED
DWG.	DRAWING	NO.	NUMBER
FC	FLEXIBLE CONNECTION	O.C.	ON CENTER
FCO	FLOOR CLEANOUT	PBC	PRESSURE BREAK CHANNEL
FD	FLOOR DRAIN	PD	PARKING DRAIN
FFL	FINISHED FLOOR LINE	PCV	PUMP CONTROL VALVE
FT	FLOOR TRAP	PRV	PRESSURE REDUCING VALVE
FV	FLOAT VALVE	RD	ROOF DRAIN
F/A	FROM ABOVE	RWP	RAIN WATER PIPE
F/B	FROM BELOW	RWS	RAIN WATER STACK
F/A, T/B	FROM ABOVE TO BELOW	SP	SOIL PIPE
F/B, T/A	FROM BELOW TO ABOVE	SS	SOIL STACK
GD	GUTTER DRAIN	TYP.	TYPICAL
GRND.	GROUND	T/A	TO ABOVE
GT	GULLY TRAP	T/B	TO BELOW
GV	GATE VALVE	U/G	UNDERGROUND
HP	HORSEPOWER	U/S	UNDER SLAB
HWS	HOT WATER SUPPLY	VP	VENT PIPE
H/L	HIGH LEVEL	WP	WASTE PIPE
WB	WASH BASIN	WS	WASTE STACK
WC	WATER CLOSET	WM	WASHING MACHINE
WM	WATER METER		
W/	WITH		
YS	WYE STRAINER		

LEGENDS & SYMBOLS

SYMBOLS	DESCRIPTIONS	SYMBOLS	DESCRIPTIONS
	COLD WATER LINE		RAINWATER/BALCONY WASTE PIPE
IV	ISOLATION VALVE		VENT PIPE
	CHECK VALVE/PUMP CONTROL VALVE		WASTE/SOIL PIPE
	SURGE ANTICIPATING CONTROL VALVE		BALCONY/PARKING DRAIN
	PRESSURE REDUCING VALVE		FLOOR TRAP/DRAIN
	FLEXIBLE CONNECTION/VICTAULIC COUPLING	GT	GULLY TRAP
TAP TAP	TAPS/HOSE BIBB		ROOF DRAIN
	WATER METER		VENT STACK THRU ROOF (COWL)
	FLOAT VALVE		BALCONY DRAIN STACK
	PUMP		RAINWATER STACK
	MOTORIZED BUTTERFLY VALVE		SOIL STACK
	PRESSURE REDUCING VALVE		VENT STACK
	Y-STRAINER		CEILING CLEANOUT
	PRESSURE GAUGE		ELECTRIC DRIVEN PUMP
	HYDROPNEUMATIC TANK/PRESSURE VESSELS		FLOOR CLEANOUT
	FLOW	IC	INSPECTION CHAMBER
			OIL INTERCEPTOR

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD
☐ DETAILED ☑ TENDER
☐ SHOP DWG ☐ AS BUILT

PROJECT: Resedential Building

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

Water Supply & Drainage System General Notes, Abbreviations, Legend and Symbols

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL SERVICES.

2. ALL EQUIPMENT SHALL BE TO THE APPROVAL OF Local Occupational Safety & Health Services (OSHS)

3. THE SPRINKLER PIPE SIZE HAVE BEEN BASED ON HYDRAULIC CALCULATION. HOWEVER, CONTRACTOR SHALL SUBMIT THE HYDRAULIC CALCULATIONS FOR PIPE SIZES AT SHOP DRAWINGS STAGE.

4. FLOW SWITCHES LOCATED IN THE MAIN DISTRIBUTION PIPE SHALL BE LINKED TO THE MAIN FIRE DETECTION SYSTEM.

5. THE PUMP SET SHALL BE A PACKAGED SET SUPPLIED BY A SPECIALIST SUPPLIER, COMPLETE WITH ACCESSORIES & TESTED. SITE ASSEMBLED UNITS SHALL NOT BE ACCEPTABLE. THE ENTIRE SET SHALL BE UL/FM FACTORY ASSEMBLED.

6. ALL ZONE CONTROL VALVES SHALL HAVE TEST DRAIN PIPES CONNECTED TO NEAREST DRAIN POINT.

7. ALL SPRINKLER HEADS SHALL BE UL/FM APPROVED WITH THE FOLLOWING TYPES:

   a.IN ALL FALSE CEILING AREAS: ½" ORIFICE, ½" NOT, 154°F BRIGHT CHROME RECESSED TYPE.

   b.N CARPARKING AREAS: ½" ORIFICE, ½" NPT, 135°F BRONZE PENDENT TYPE.

   c.IN MECHANICAL FLOOR: ½" ORIFICE, ½" NPT, 154°F BRONZE UPRIGHT TYPE.

   d.IN GUEST BEDROOM: 17/32" ORIFICE, ½" NPT, 135°F BRIGHT CHROME, HORIZONTAL SIDE WALL.

   e.IN SAUNAS & STEAM ROOMS: ½" ORIFICE, ½" NPT, 286°F CORROSION RESISTANT, CHROME PENDENT TYPE/SIDE WALL.

TABLE (BASED ON LPC REGULATIONS)

SP.	TYPE OF OCCUPATION	HAZARD CLASSIFICATION	MAX-AREA COVERAGE (M^2)	MAX-AREA OF OPERATION (M^2)	MAX-DISTANCE BETWEEN SP HEAD (M^2)	DESIGN DENSITY OF DISCHARGE (MM/MIN)
1	OFFICES (AREA<126M²)	LIGHT	21	84	4.6	2.25
2	CAR PARKS	ORDINARY GROUP 1	12	72	4.0	5.0
3	KITCHEN/ LAUNDRY	ORDINARY GROUP 1	12	72	4.0	5.0
4	RESIDENTIAL/ HOTEL	LIGHT	21	84	4.6	2.25

9. CONTRACTOR SHALL COMPLY WITH ALL THE LOCAL OSHS AND ASHRAE STANDARDS

10. SPRINKLER AND STANDPIPE PIPEWORK SHALL BE GALVANIZED M.S. PIPE CONFORMING TO ASTM A53, HEAVY DUTY WITH G.I. MALEABLE SCREWED FITTINGS, UP TO SIZE 2" DIA.AND VICTAULIC G.I. FITTINGS SHALL BE FOR SIZES 2½" DIA AND ABOVE.

11. FIRE EQUIPMENTS SHALL BE HOUSED IN RECESSED ENCLOSURE WITH DOOR AS PER ARCHITECT'S DETAIL.

12. PROVIDE FIRE DAMPER IN THE AIR DUCT PENETRATING THE CONCRETE WALLS OR FIRE RATED WALLS. (BY A/C CONTRACTOR)

13. MAIN ENTRANCE DOORS FOR ALL OFFICES, FLATS, KITCHEN SHALL BE 1/2 HR. FIRE RESISTANT, METAL OR SOLID TEMPER OR APPROVED BY CIVIL DEFENCE.

14. DOORS FOR STAIRCASES AND ALL SERVICES ROOMS SHALL BE 2 HR. FIRE RESISTANT AND SELF CLOSING, METAL OR SOLID TEMPER .

15. THE FAHU UNITS, AHU UNITS, ETC. SHALL BE INTERLOCKED WITH THE FIRE ALARM SYSTEM & SHALL AUTOMATICALLY SWITCH OFF, A SIGNAL IS INITIATED IN THE RETURN AIR SMOKE PANEL.

16. ALL EQUIPMENT SHALL BE SUBJECTED TO THE APPROVAL OF KENYA CIVIL DEFENSE.

17. COMPARTMENTALIZATION OF THE BUILDING'S EACH FLOOR, STAIRCASE, CORRIDORS, KITCHENS, ETC. SHALL BE CONSIDERED AS A SEPARATE FIRE COMPARTMENT FOR THE PURPOSE OF FIRE ALARM SYSTEM DESIGN.

18. ALL HOLES, OPENINGS FOR THE CABLES, CABLE TRAYS, ETC. SHALL BE FITTED WITH SMOKE/FLAME PROOF FIRE BARRIER.

19. SPRINKLER ZONE CONTROL VALVES AND TAMPER SWITCHES SHALL BE INTER-LINKED WITH THE MAIN FIRE ALARM CONTROL PANEL.

20. BASEMENT FLOORS & CORRIDORS SHALL BE MECHANICALLY VENTILATED. BASEMENT AREAS SHALL BE EQUIPPED WITH MECHANICAL VENTILATION EQUIPMENTS AND SHALL BE OPERATED BY EMERGENCY POWER SUPPLY IN CASE OF FIRE. AS APPROVED BY LOCAL CIVIL DEFENSE AUTHORITY. (REFER TO A/C DRAWINGS FOR DETAILS)

21. FOR FIRE PUMPSET ARRANGEMENT, REFER TO THE RELEVANT DETAILS.

20. LOW LEVEL CUT-OFF SWITCH SHALL BE POSITIONED IN SUCH A WAY THAT A MINIMUM OF 227 CU. M. SHALL BE MAINTAINED FOR FIRE FIGHTING.

21. REPEATER PANEL SHALL BE PROVIDED AT THE SUITABLE LOCATION AS AGREED BY CIVIL DEFENSE AUTHORITY.

22. METAL GUARDS SHALL BE PROVIDED FOR EXPOSED PENDENT SPRINKLER HEADS ON RAMPS AND INSIDE EQUIPMENT ROOMS.

ABBREVIATIONS

ABBREV.	DESCRIPTIONS
AAV	AUTOMATIC AIR RELEASE VENT
APPROX.	APPROXIMATELY
AS	AS SHOWN
BSMT.	BASEMENT
CAP.	CAPACITY
CV	CHECK VALVE
C/W	COMPLETE WITH
DN	DOWN
ESR	ECCENTRIC REDUCTION REDUCER
FE	FIRE EXTINGUISHER
FFL	FINISHED FLOOR LINE
FH	FIRE HYDRANT
FHR	FIRE HOSE REEL
FJ	FLEXIBLE JOINT
FM	FLOW METER
FP	FIRE PUMP
HP	HYDRANT PIPE
FS	FLOW SWITCH
F/A	FROM ABOVE
F/B	FROM BELOW
G.I.	GALVANIZED IRON
W/	WITH
YS	WYE STRAINER
MM	MILLIMETER
GRND.	GROUND
RPM	REVOLUTION PER MINUTE
SM	SQUARE METER
THK.	THICKNESS
GV	GATE VALVE
HZ	HIGH ZONE
H/L	HIGH LEVEL
JP	JOCKEY PUMP
LV	LANDING VALVE
LVL.	LEVEL
MAX	MAXIMUM
MIN	MINIMUM
MZ	MID ZONE
NTS	NOT TO SCALE
O.C.	ON CENTER
PFE	PORTABLE FIRE EXTINGUISHER
PIV	POST INDICATOR VALVE
PRV	PRESSURE REDUCING VALVE
RN	RISER NIPPLE
SCHED	SCHEDULE
TYP	TYPICAL
T/A	TO ABOVE
T/B	TO BELOW
OS&Y	OPEN STEM AND YOKE

LEGENDS & SYMBOLS

SYMBOLS	DESCRIPTIONS
	23 KG CO2 WHEELED TYPE PORTABLE F.E.
	4.5 KG ABC DRY CHEMICAL F.E.
	4.5 KG CO2 PORTABLE F.E.
	AIR RELIEF VALVE
	BREECHING INLET 4 WAY (STAINLESS STEEL FACIA)
	CHECK VALVE
	FIRE HOSE REEL
	FIRE HYDRANT
	FLOOR CONTROL VALVE W/ SUPERVISORY SWITCH
	FLEXIBLE JOINT
M	FLOW METER
	OS & Y GATE VALVE WITH TAMPER SWITCH
	PRESSURE GAUGE
PRV	PRESSURE REDUCING VALVE
	ALARM CHECK VALVE
	ROOF MANIFOLD
	SPRINKLER HEAD UPRIGHT
	SPRINKLER HEAD PENDENT
	SPRINKLER HEAD SIDEWALL
	WYE STRAINER
	FIRE PUMP CONTROLLER UL LISTED & FM APPROVED WITH AUTO TRANSFER SWITCH
	FIRE PUMP (ELECTRIC) UL LISTED & FM APPROVED HORIZONTAL SPLIT CASE
	CLASS III SYSTEM-FIRE HOSE CABINET, FIRE HOSE REEL AND LANDING VALVE.

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DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: Resedential Building

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

Firefighting System General Notes, Abbreviations, Legend and Symbols

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

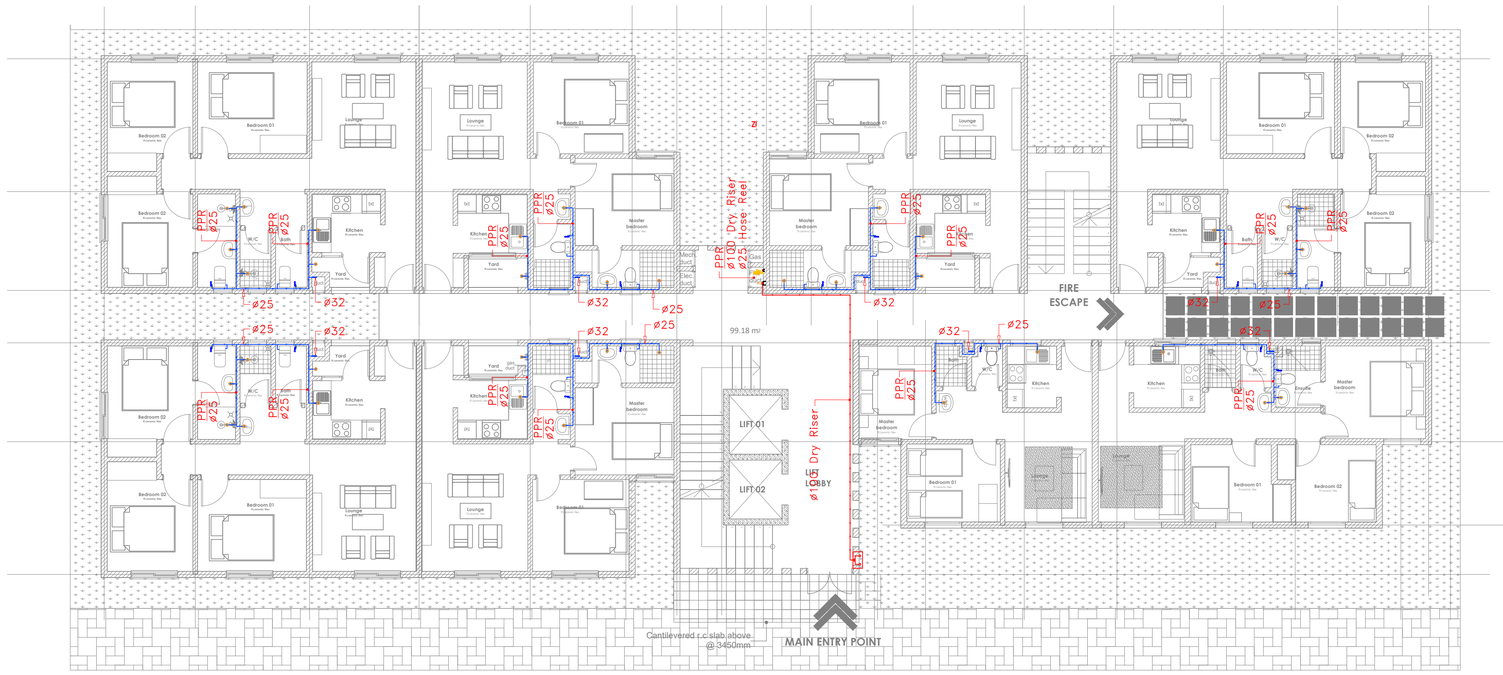
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_GROUND FLOOR PLAN

GROUN FLOOR AFFORDABLE + MARKET UNITS BLOCK TYPE B (G+9)

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☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT:

PROPOSED TYPICAL AFFORDABLE +MARKET UNITS BLOCK TYPE B G+9

CLIENT:STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

GROUND FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

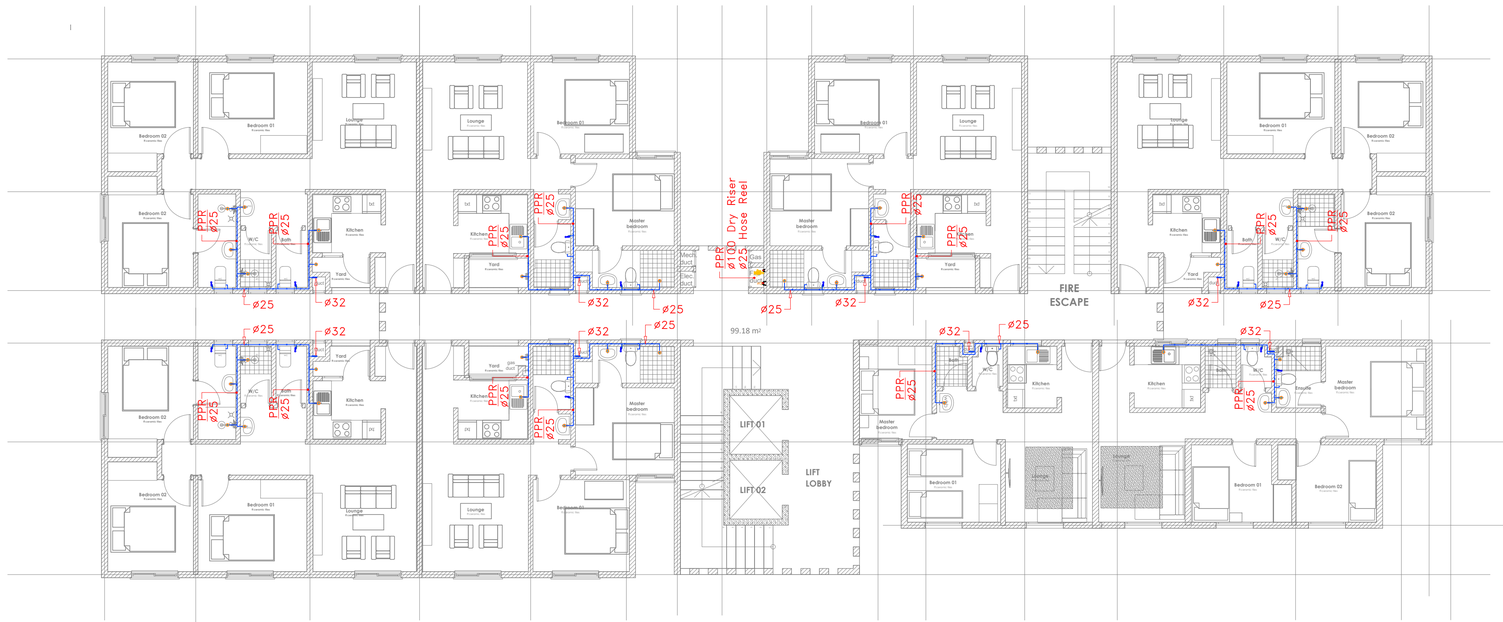
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_TYPICAL 1ST-9TH FLOOR LEVEL

TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B (G+9)

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DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT:

PROPOSED TYPICAL AFFORDABLE +MARKET UNITS BLOCK TYPE B G+9

CLIENT:STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

TYPICAL FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

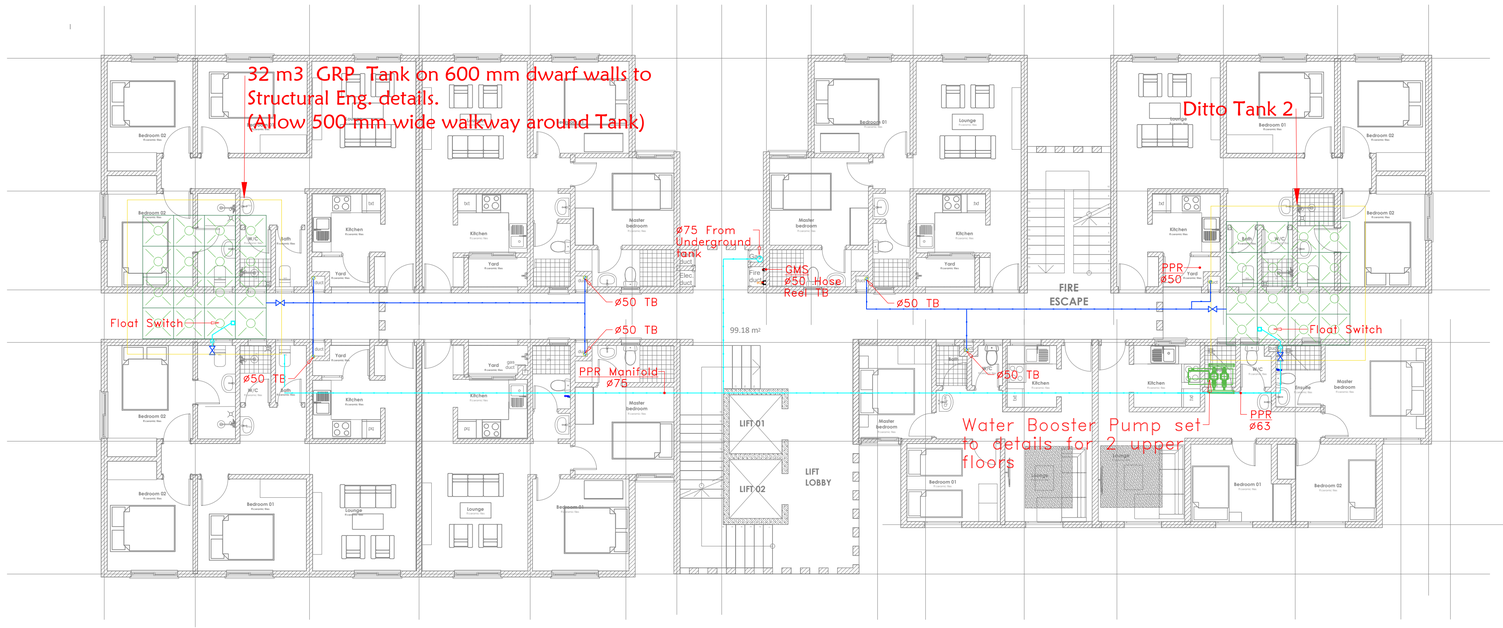
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_TYPICAL 1ST-9TH FLOOR LEVEL

ROOF AFFORDABLE + MARKET UNITS BLOCK TYPE B (G+9)

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT:

PROPOSED TYPICAL AFFORDABLE +MARKET UNITS BLOCK TYPE B G+9

CLIENT:STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

ROOF FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

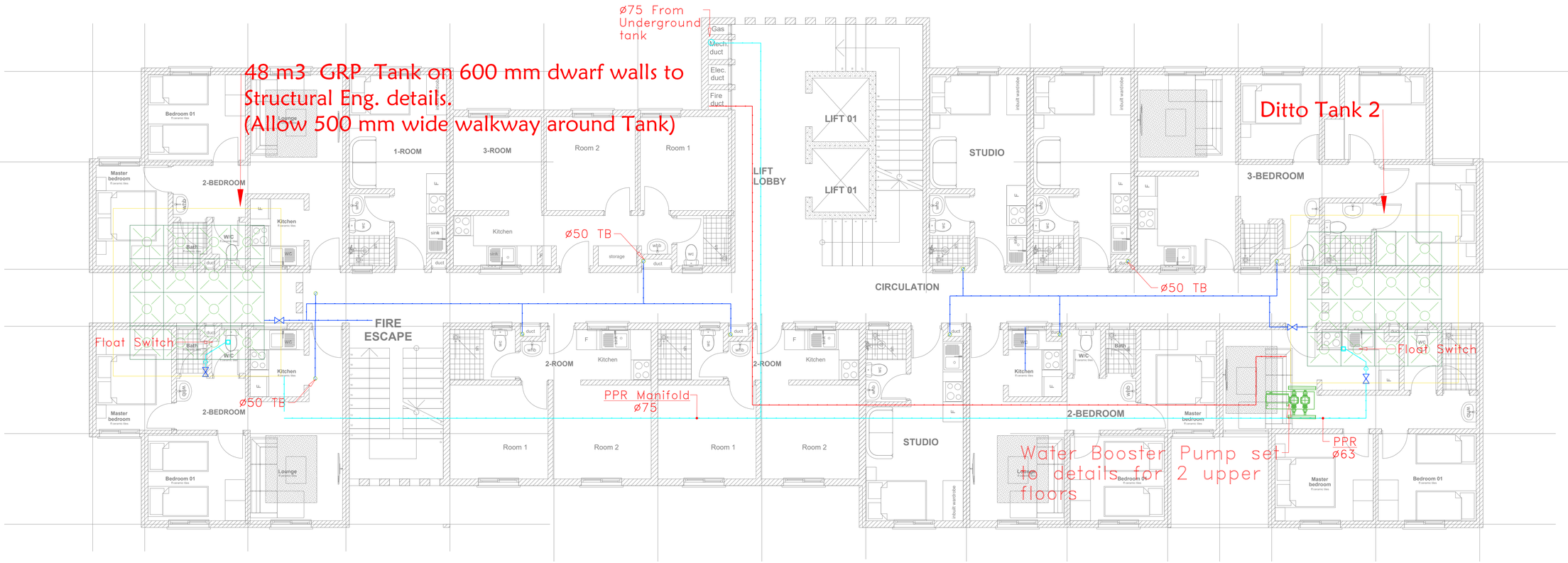
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL MIXED USE BLOCK TYPE C_TYPICAL 1ST-14TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	3	4	1

ROOF FLOOR SOCIAL+ AFFORDABLE UNITS BLOCK TYPE C

GENERAL NOTES

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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MIXED USE BLOCK TYPE C [G+9]

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

ROOF FLOOR WATER SUPPLY SOCIAL+ AFFORDABLE UNITS BLOCK TYPE C

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

PROPOSED TYPICAL MIXED USE BLOCK TYPE C_TYPICAL 1ST-14TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	3	4	1

TYPICAL FLOOR SOCIAL+ AFFORDABLE UNITS BLOCK TYPE C

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MIXED USE BLOCK TYPE C [G+9]

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

TYPICAL FLOOR WATER SUPPLY SOCIAL+ AFFORDABLE UNITS BLOCK TYPE C

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

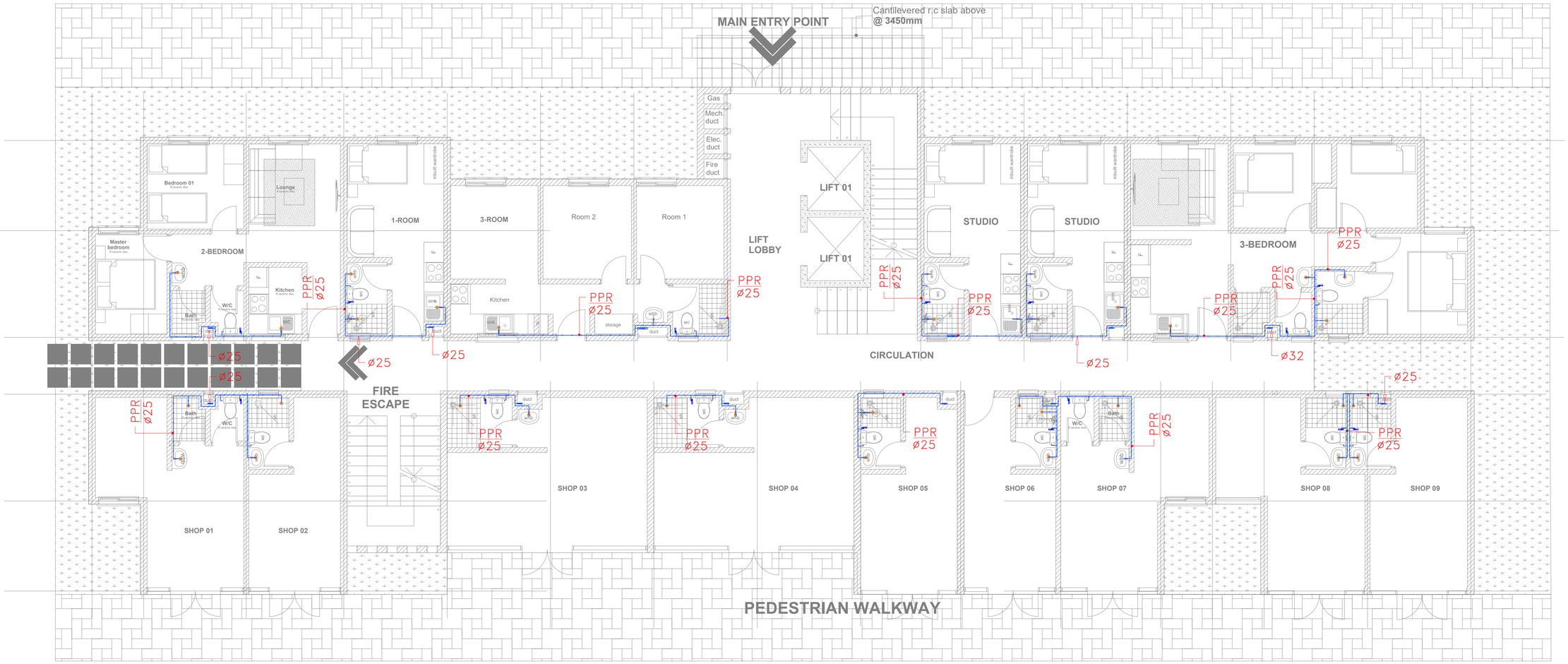
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

BLOCK TYPOLOGY C [G+9]



PROPOSED TYPICAL MIXED USE BLOCK TYPE C_GROUND FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN						
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM	RETAIL
1	2	1	2	1	1	9

GROUND FLOOR SOCIAL+ AFFORDABLE UNITS BLOCK TYPE C

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MIXED USE BLOCK TYPE C [G+9]

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

GROUND FLOOR SOCIAL+ AFFORDABLE UNITS BLOCK TYPE C

SCALE : 1:100

DRAWN BY :

CHECKED BY :

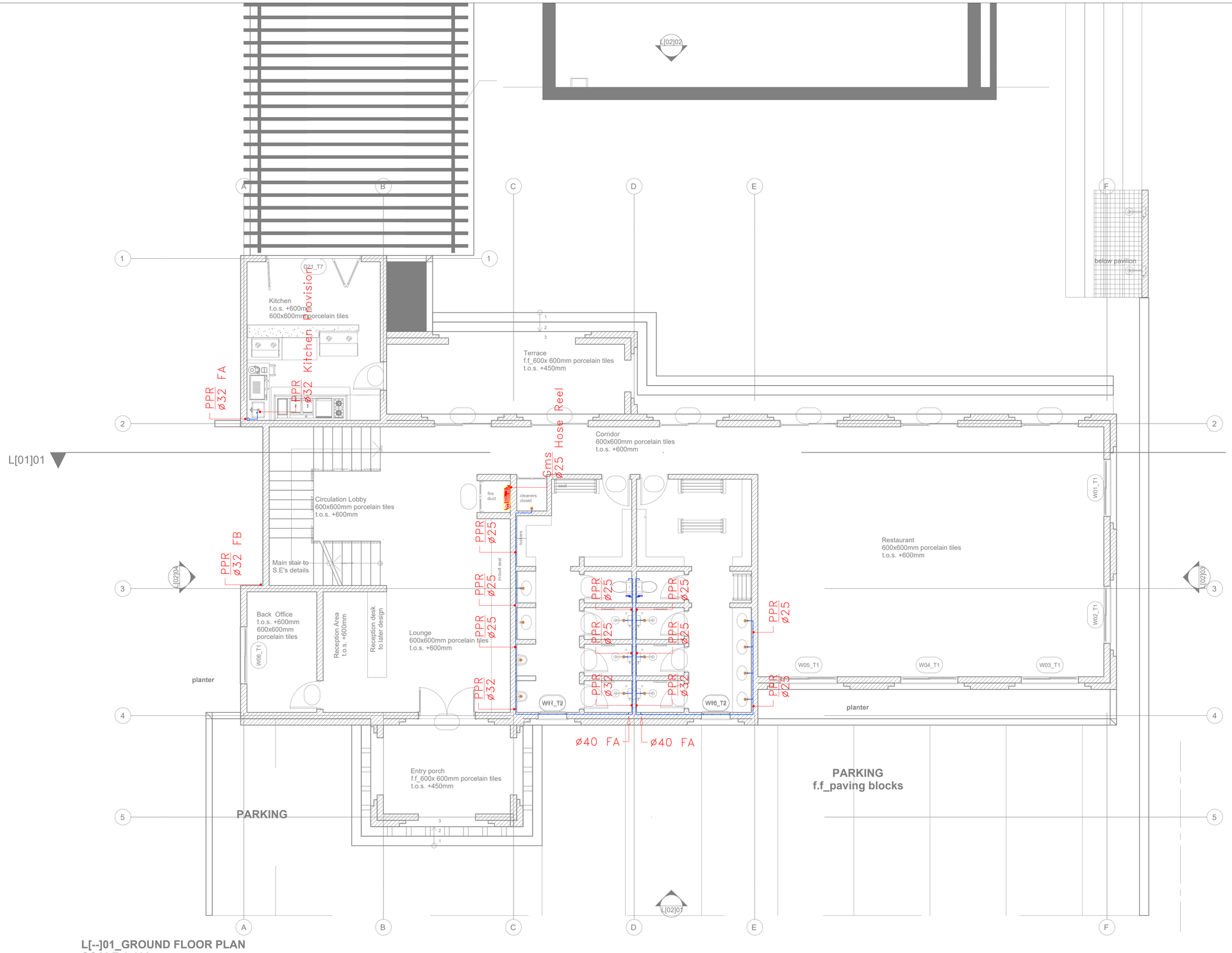
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[--]01_GROUND FLOOR PLAN
SCALE 1:100

CLUB HOUSE GROUND FLOOR WATER SUPPLY

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE GROUND FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

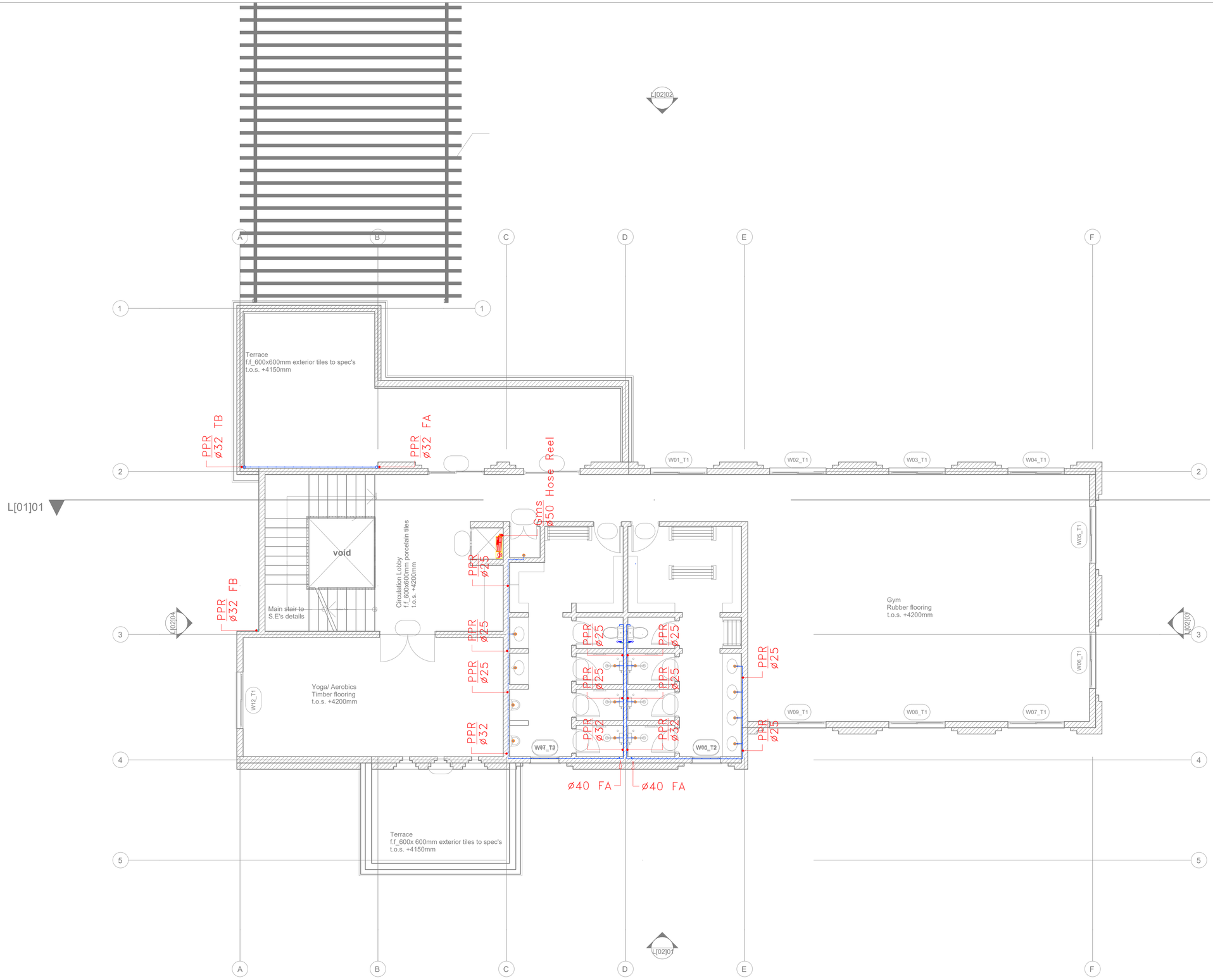
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



CLUB HOUSE FIRST FLOOR FLOOR WATER SUPPLY

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE FIRST FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

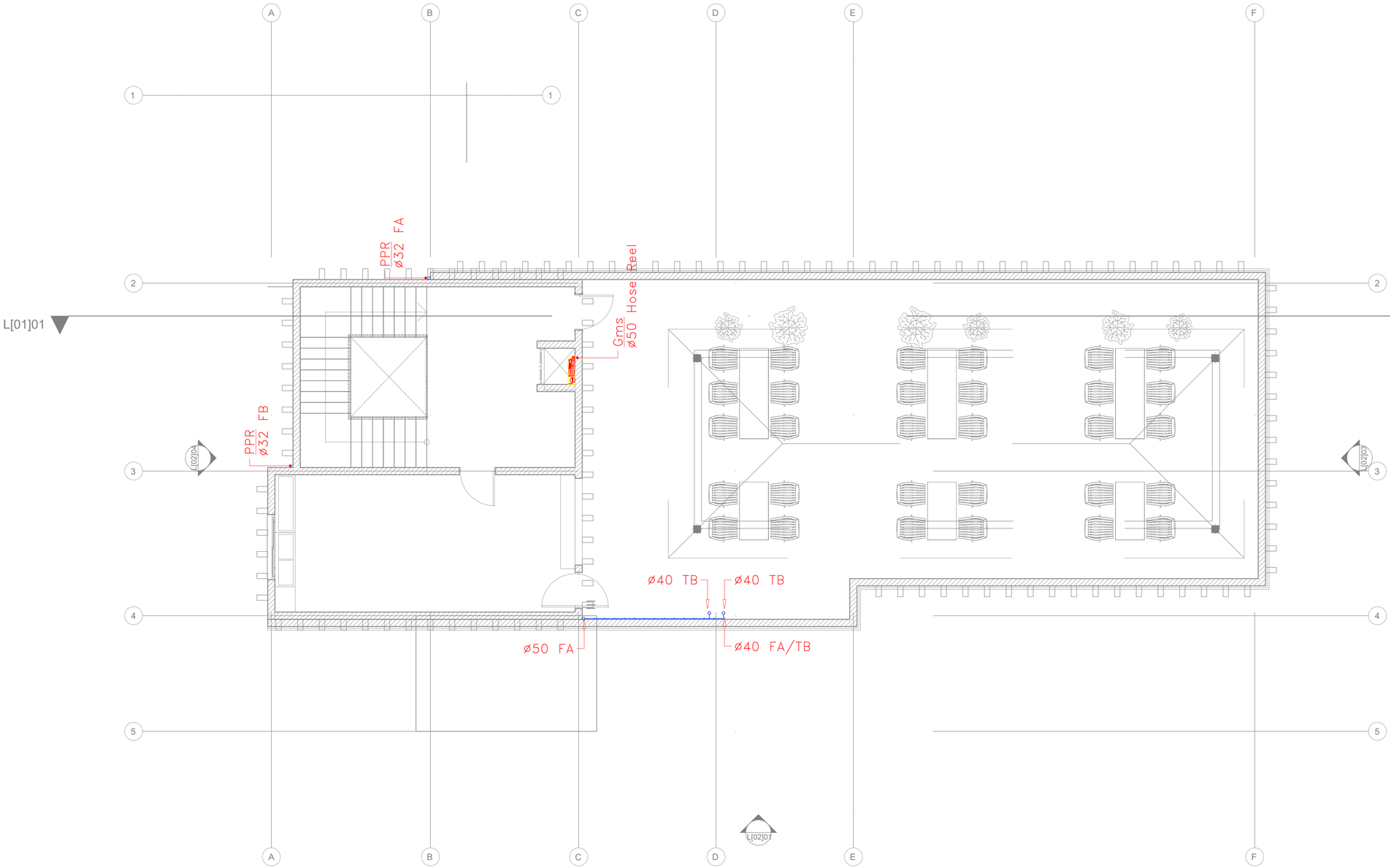
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



CLUB HOUSE TERRACE GROUND FLOOR WATER SUPPLY

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☒ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE TERRACE WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

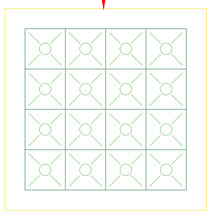
DATE :

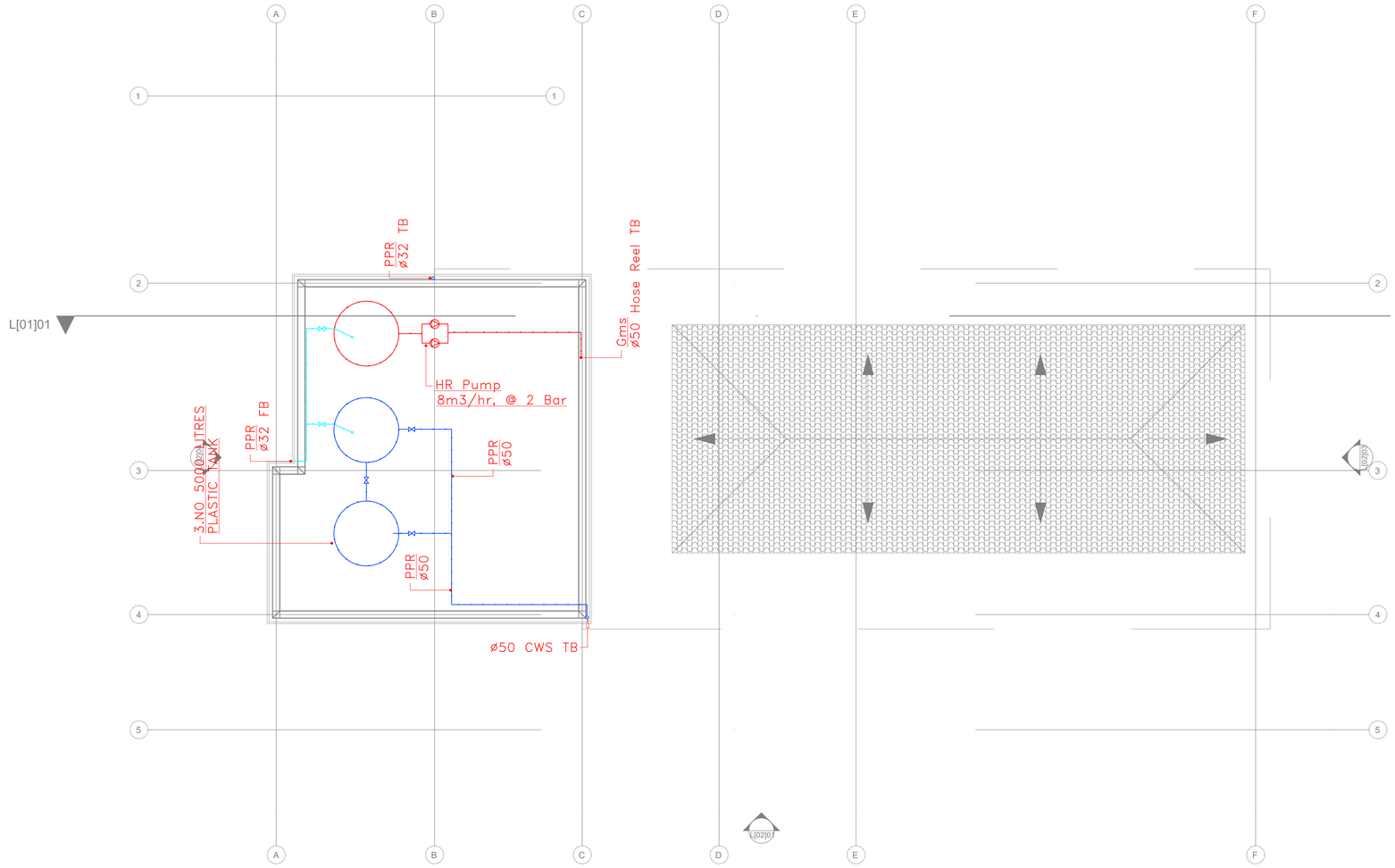
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

32 m3 GRP Tank on 600 mm dwarf walls to Structural Eng. details.
(Allow 500 mm wide walkway around Tank)





CLUB HOUSE ROOF WATER SUPPLY

GENERAL NOTES

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3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD
☐ DETAILED ☑ TENDER
☐ SHOP DWG ☐ AS BUILT

PROJECT: **CLUB HOUSE**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE ROOF WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

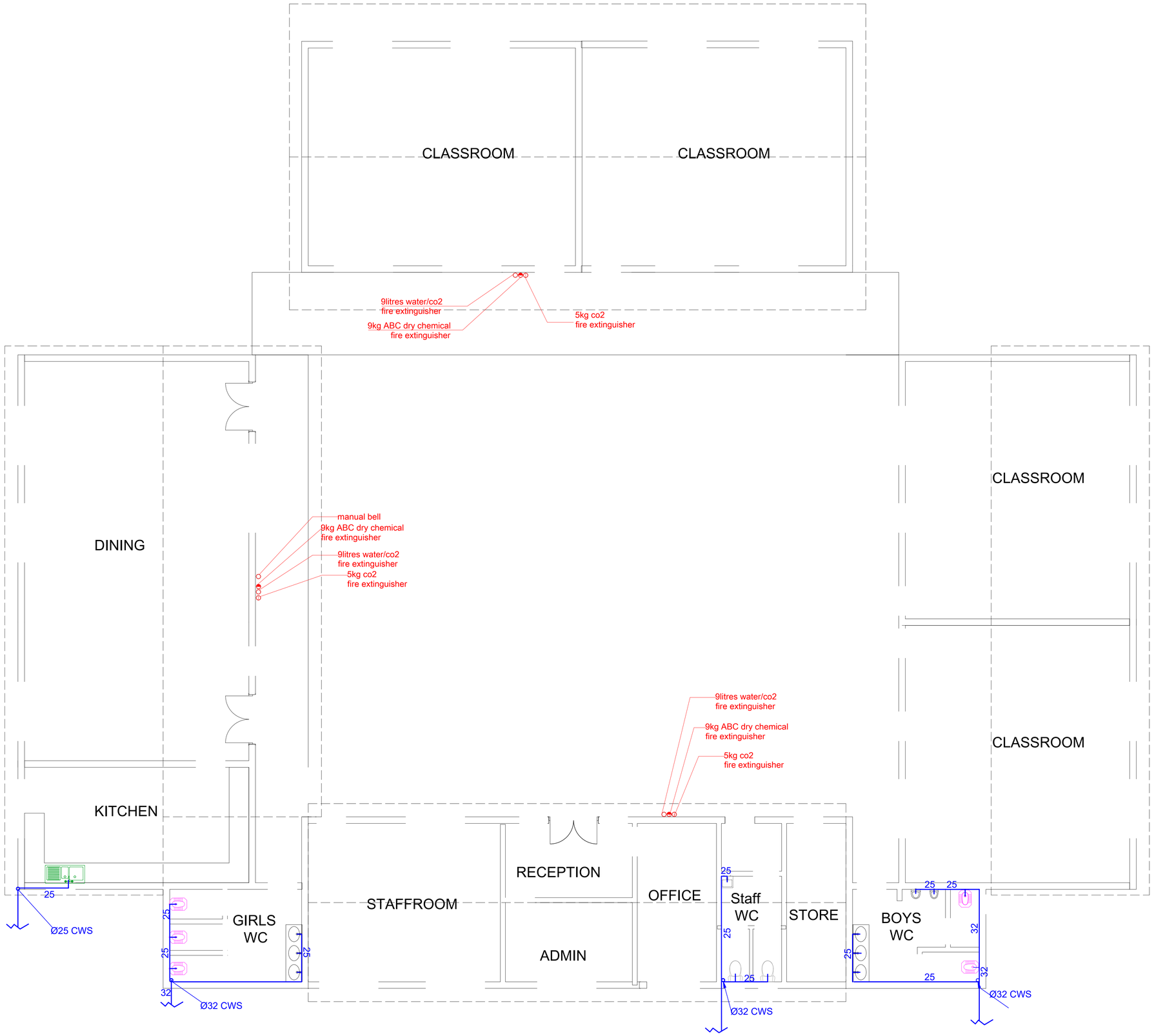
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



KINDERGARTEN TYPICAL PLUMBING AND FIRE FIGHTING FLOOR PLAN

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **KINDERGARTEN**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

KINDERGARTEN TYPICAL PLUMBING AND FIRE FIGHTING FLOOR PLAN

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

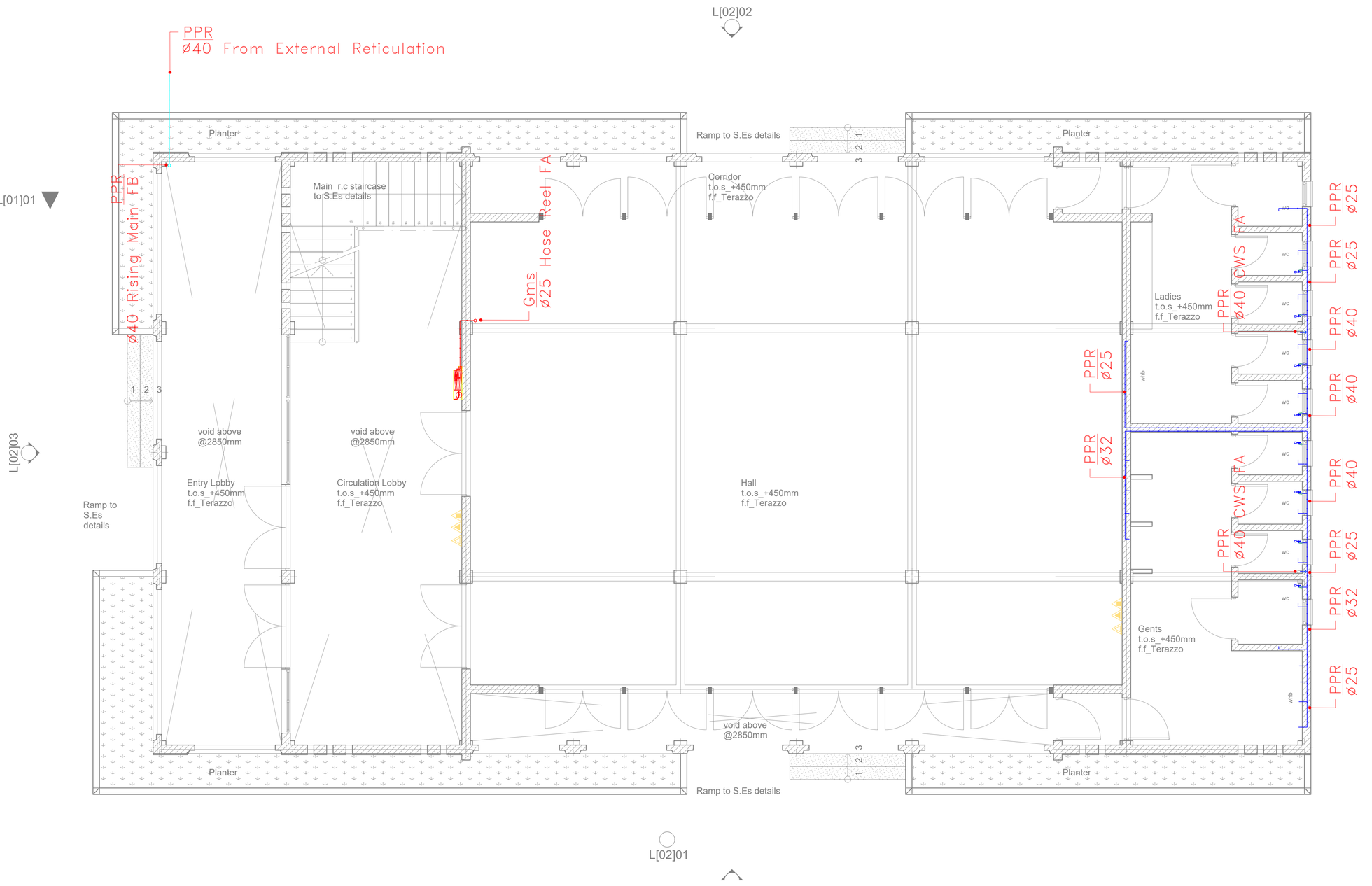
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



GROUND FLOOR WATER SUPPLY COMMUNITY CENTER

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

DRAWN BY :

CHECKED BY :

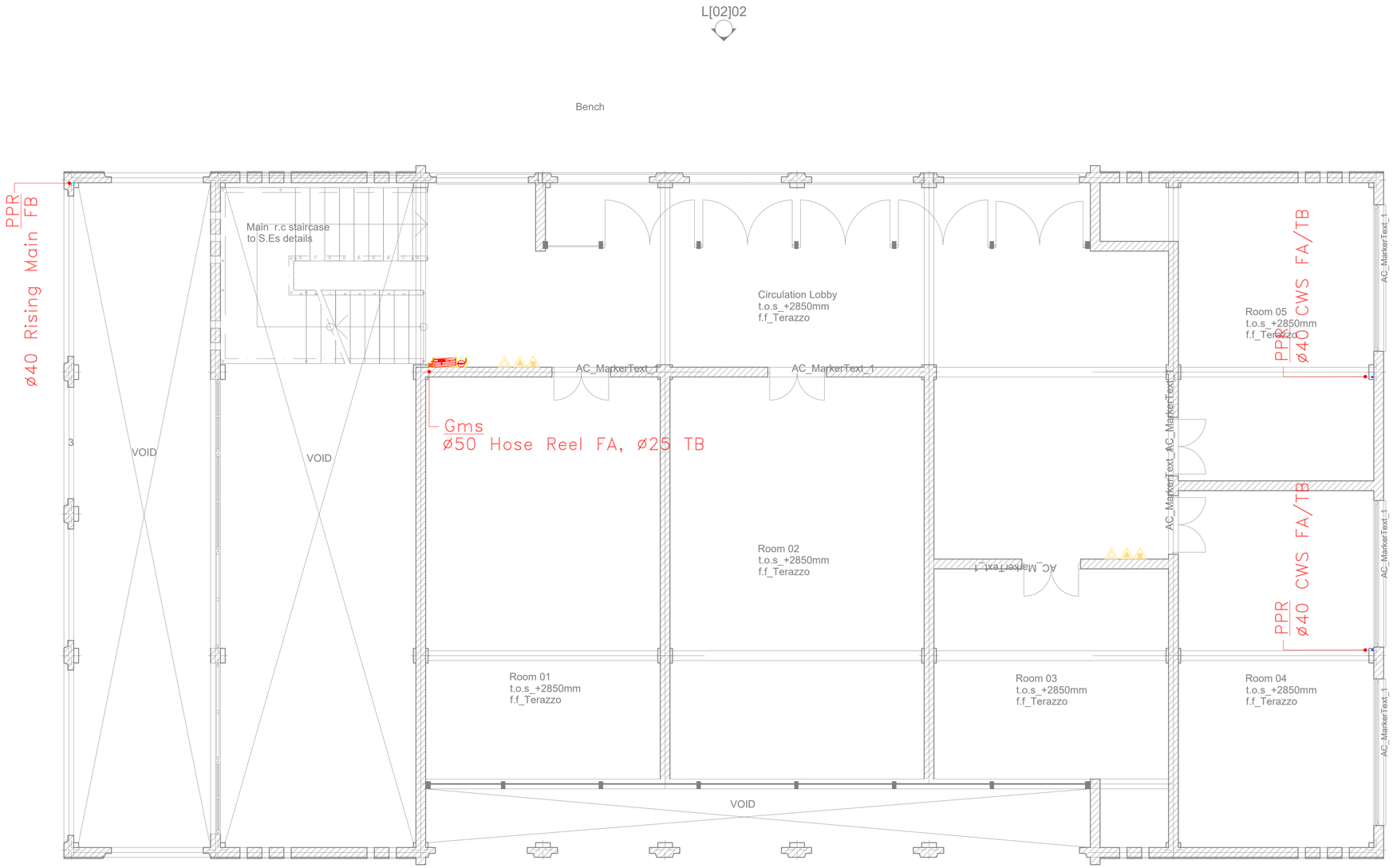
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



FIRST FLOOR WATER SUPPLY COMMUNITY CENTER

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

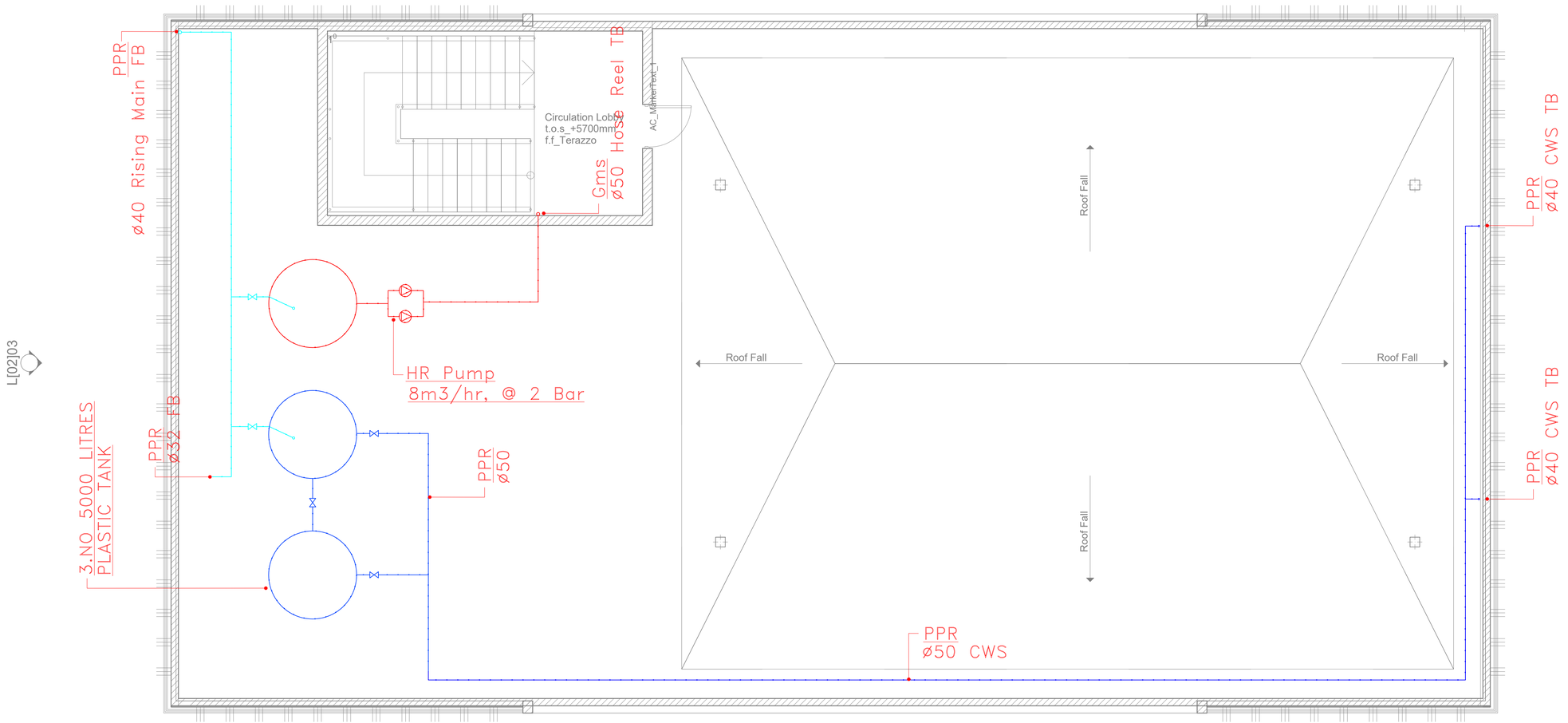
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

L[02]02



L[02]03

L[02]01

ROOF WATER SUPPLY COMMUNITY CENTER

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

DRAWN BY :

CHECKED BY :

Date : Signature:

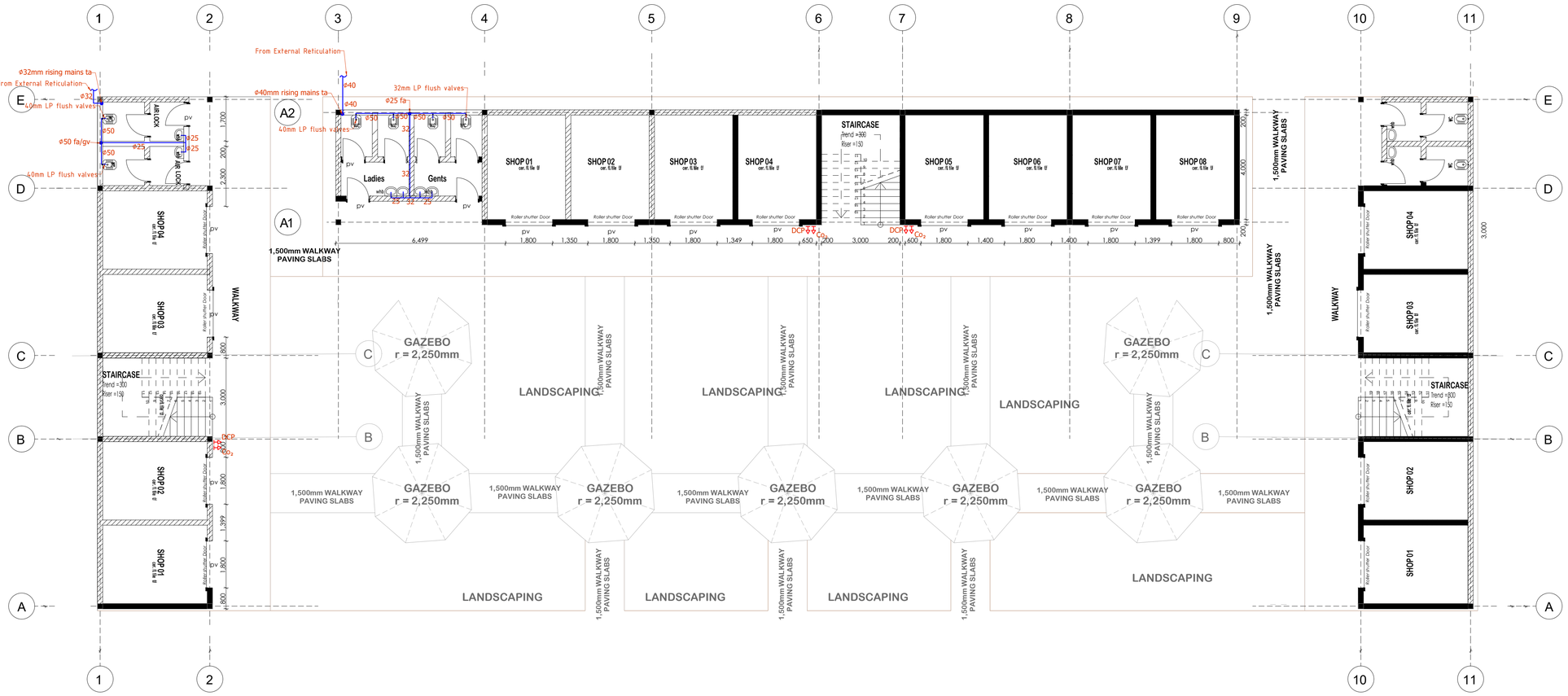
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



STALL GROUND FLOOR WATER SUPPLY

0. Ground Floor Plan 1:100

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **STALLS**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: NYALI ESTATE

DRAWING TITLE :

STALL GROUND FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

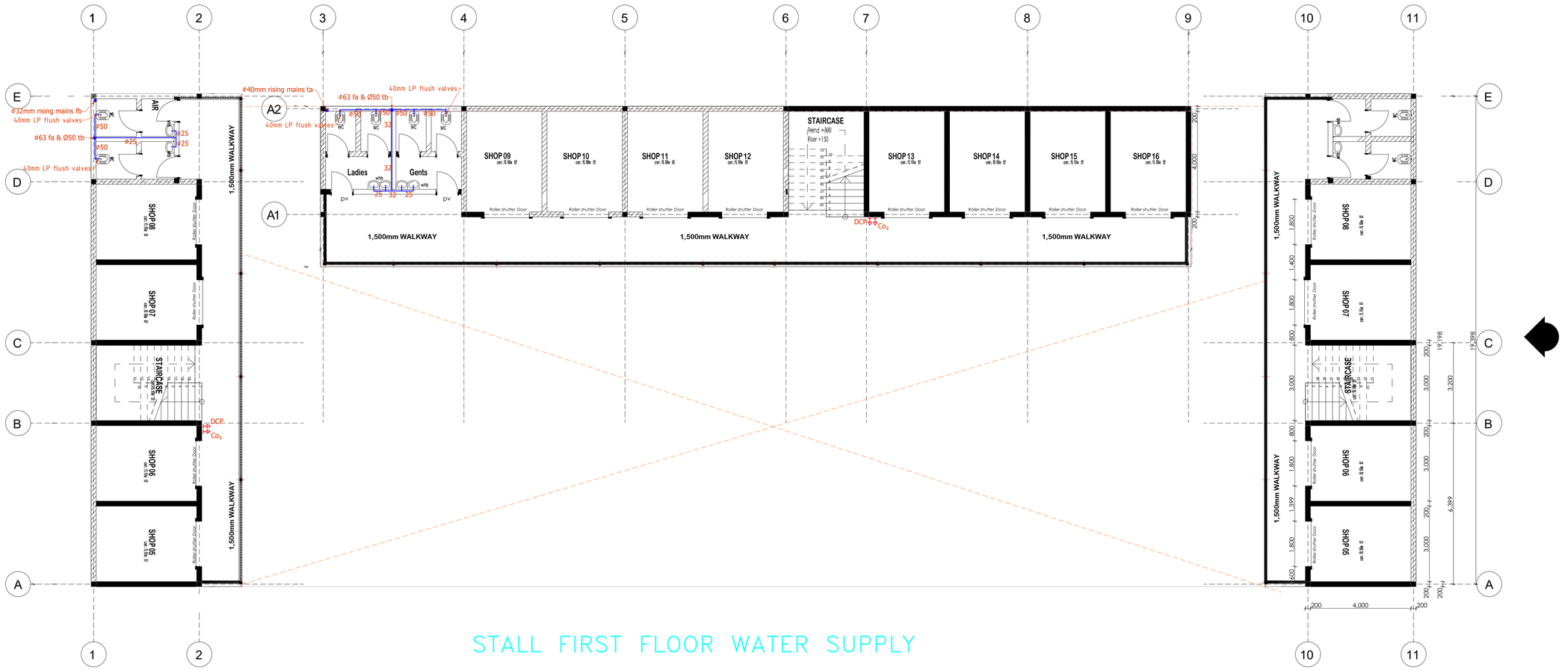
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



STALL FIRST FLOOR WATER SUPPLY

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **STALLS**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: NYALI ESTATE

DRAWING TITLE :

STALL FIRST FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

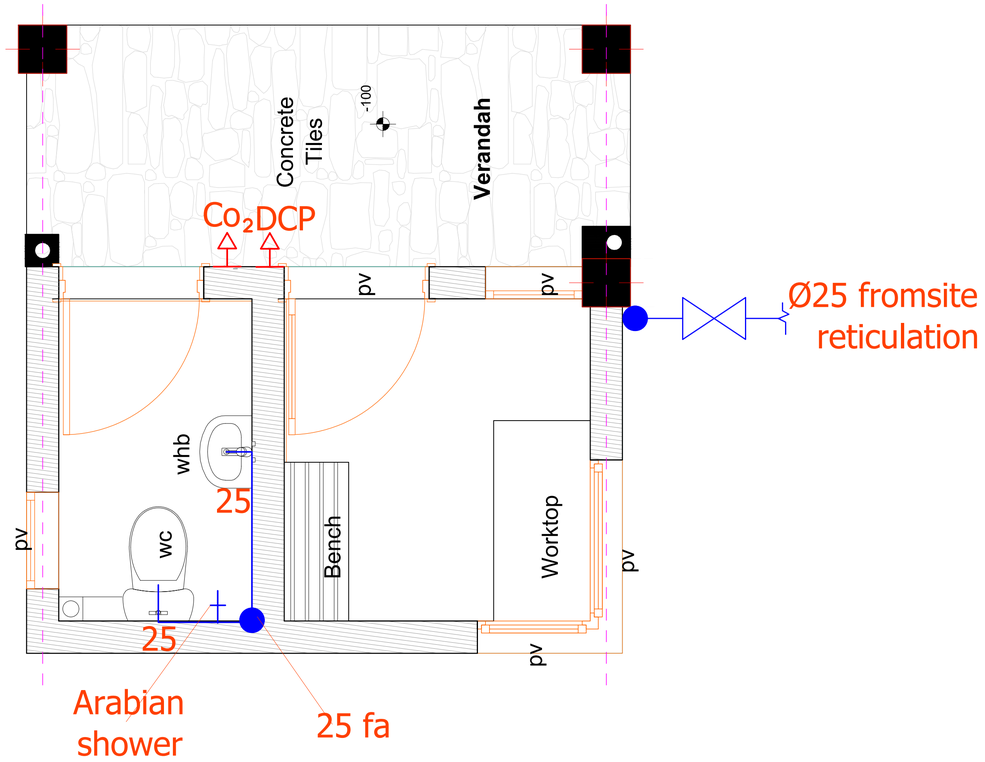
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

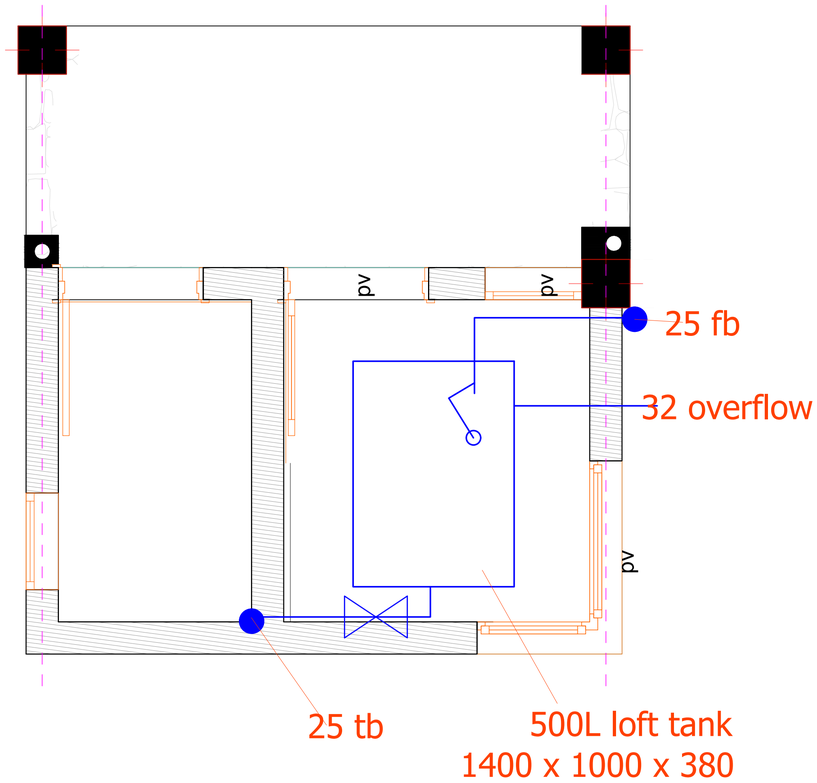
STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



Ground floor water supply



roof tank

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

GATE HOUSE WATER SUPPLY

SCALE : **1:100**

DRAWN BY :

CHECKED BY :

Date : **Signature:**

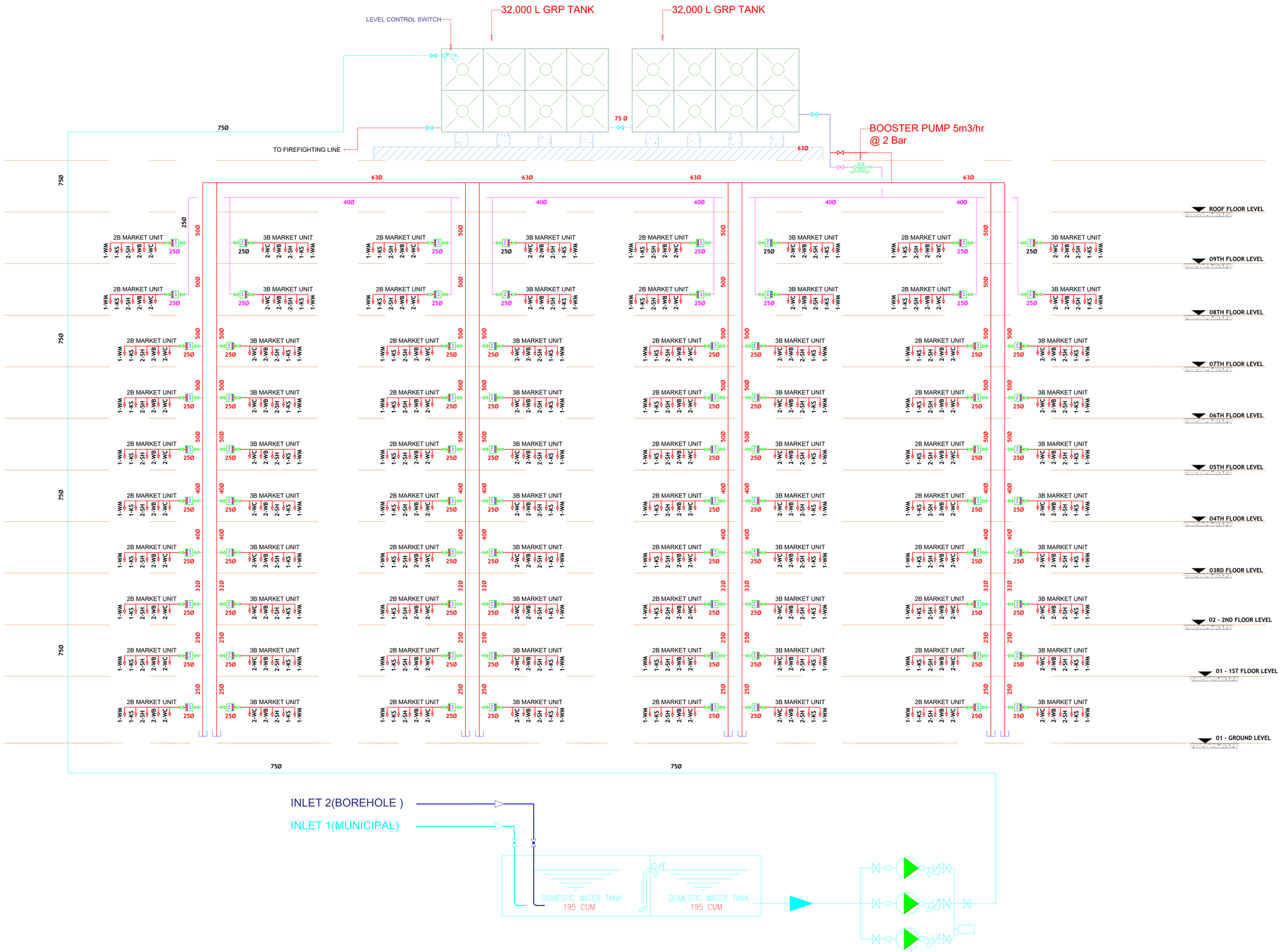
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL AFFORDABLE +MARKET UNITS BLOCK TYPE B

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT:

PRPROPOSED TYPICAL MARKET+ AFFORDABLE UNITS BLOCK TYPE B

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

WATER SUPPLY SCHEMATICS

DRAWING NO :

PMAHP-M-WS_300

SCALE : 1:100

DRAWN BY :

CHECKED BY :

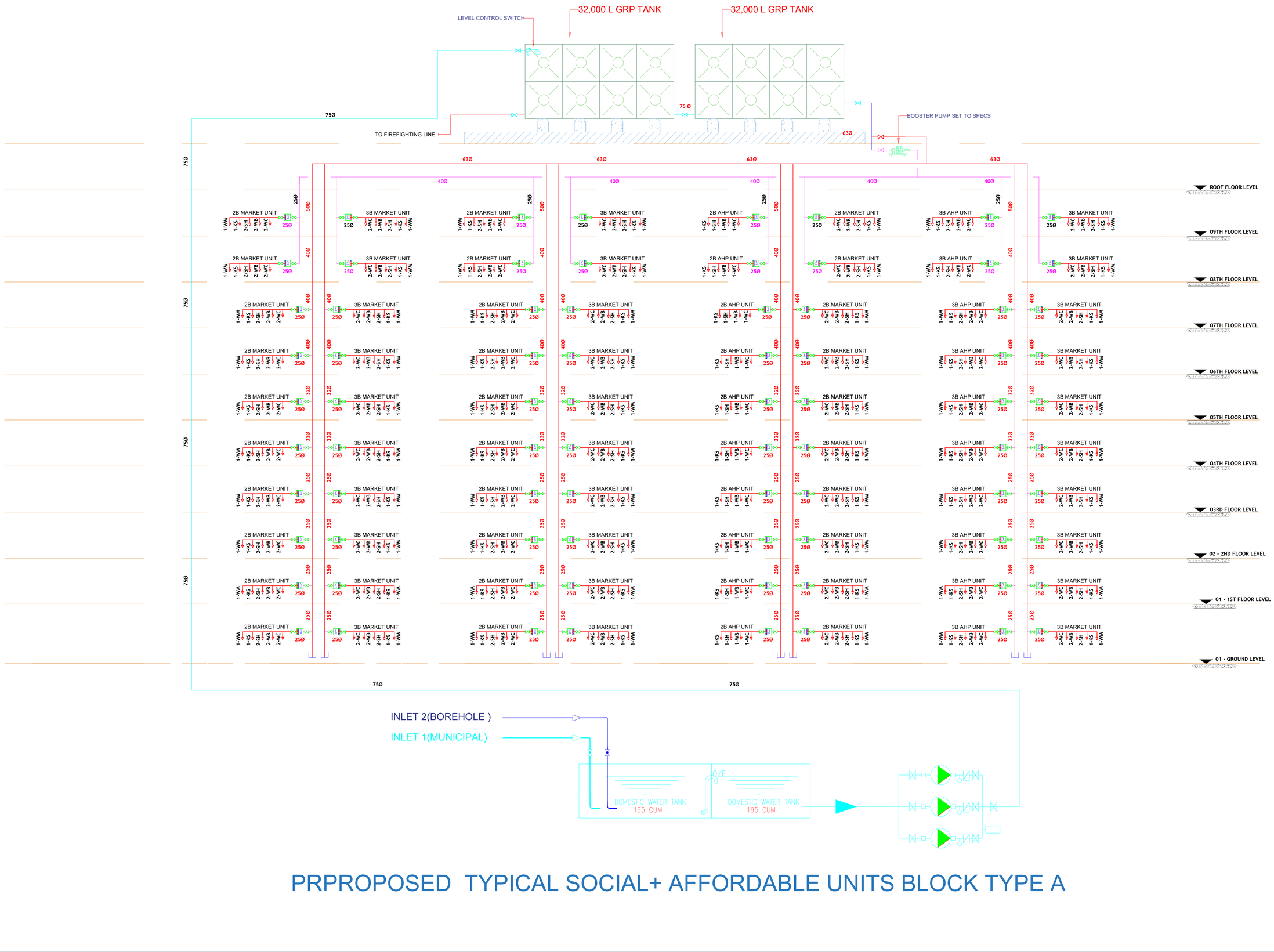
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PRPROPOSED TYPICAL SOCIAL+ AFFORDABLE UNITS BLOCK TYPE A

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:

PRPROPOSED TYPICAL SOCIAL+ AFFORDABLE UNITS BLOCK TYPE A

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: CHUKA

DRAWING TITLE :

WATER SUPPLY SCHEMATICS

SCALE : 1:100

DRAWN BY :

CHECKED BY :

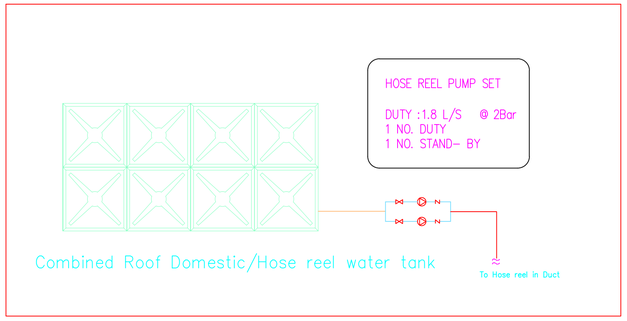
Date : Signature:

DATE :

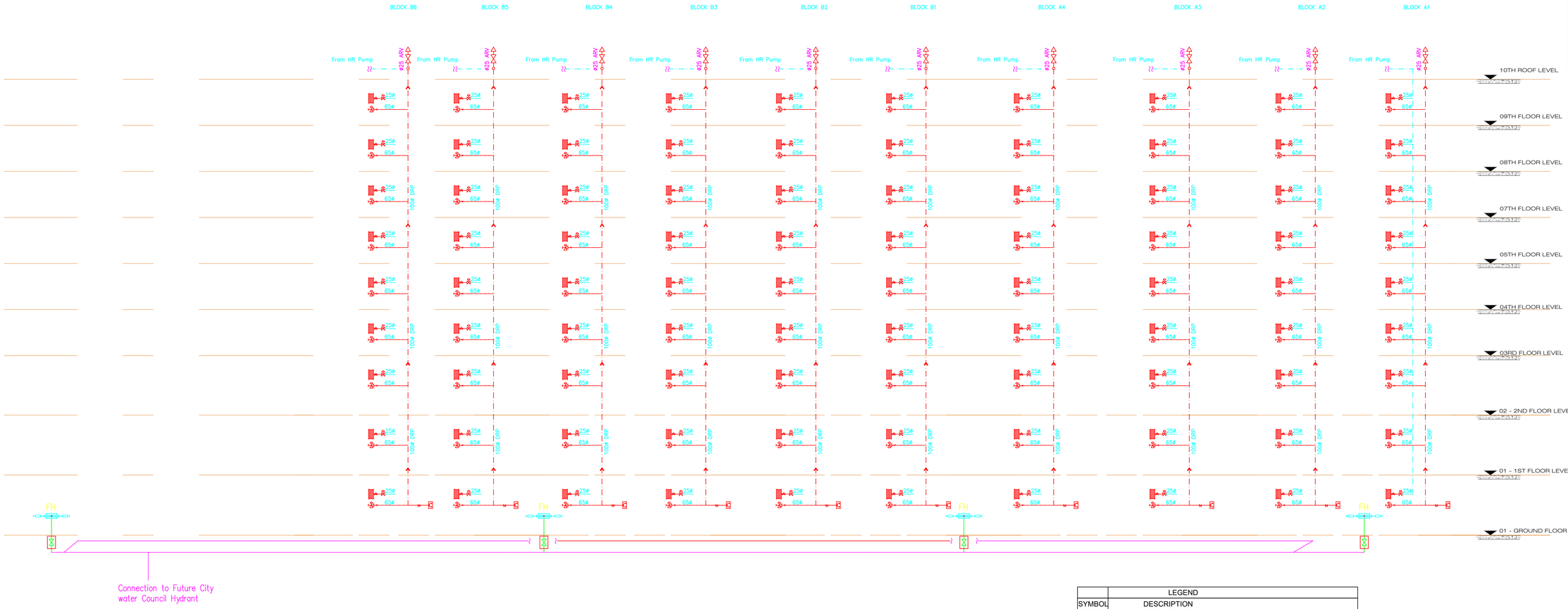
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



Roof Hose Reel Typical Connection



	LEGEND
SYMBOL	DESCRIPTION
	OS & Y GATE VALVE
	LANDING VALVE
	EXTERNAL HYDRANT VALVE
	SINGLE HEADED HYDRANT VALVE
	HOSE REEL DRUM
	BUTTERFLY VALVE
	UNION WITH BALL VALVE FOR DRAIN
	Ø50 HOSE REEL PIPE
	Ø160 EXTERNAL HYDRANT PIPE
	Ø100 DRY RISER PIPE

FIREFIGHTING SCHEMATIC

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL AFFORDABLE +MARKET UNITS BLOCK TYPE B G+9

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

FIREFIGHTING SCHEMATICS

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

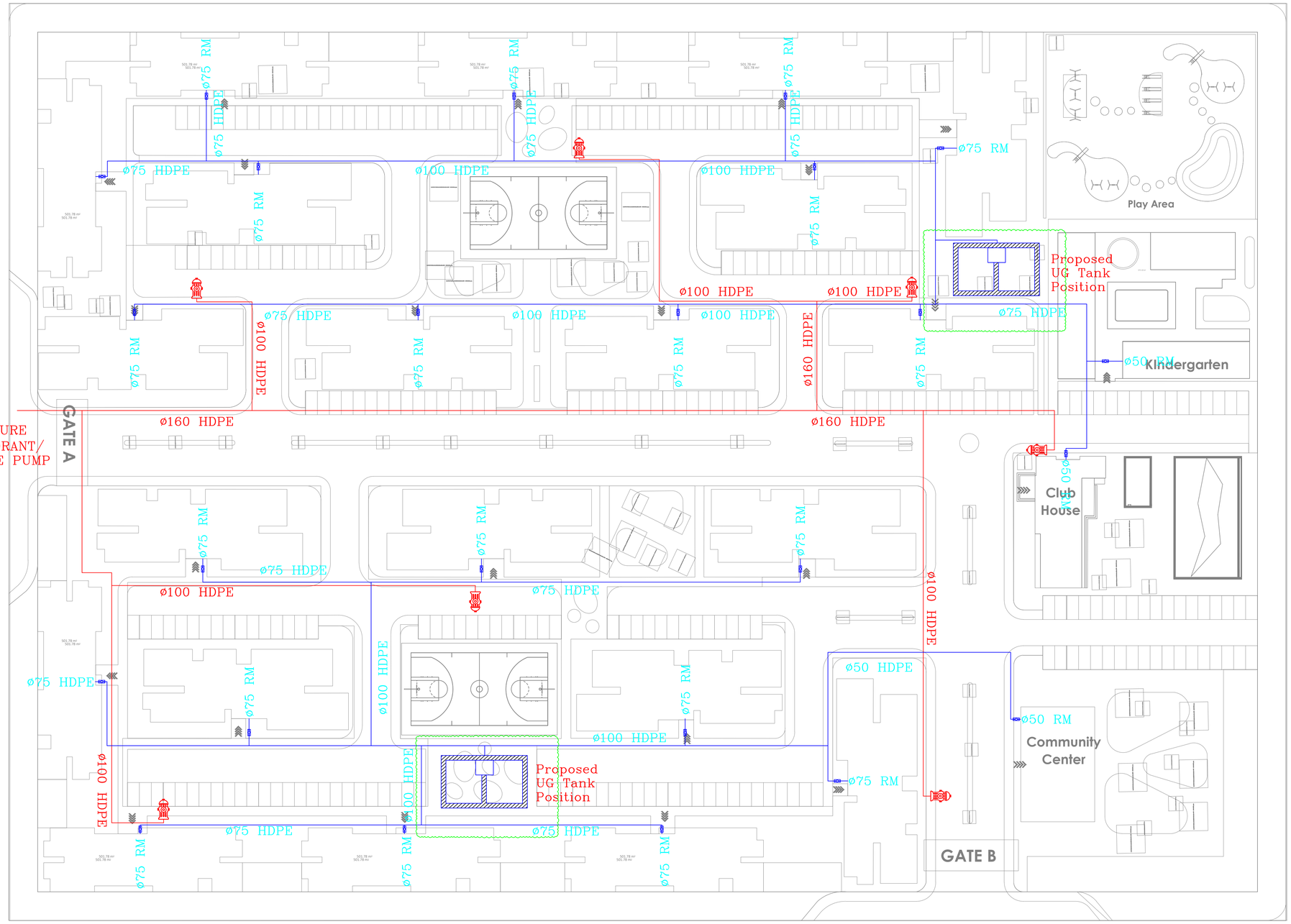
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

KEY

- **SOCIAL+AFFORDABLE BLOCK** [FULL RESIDENTIAL]
- **SOCIAL+AFFORDABLE BLOCK** [G- shops]
- **COMMERCIAL** [Ground floor]
- **AFORDABLE +MARKET BLOCK** FULL RESIDENTIAL
- **ECD** [Ground floor]
- **CLUB HOUSE** [G+1]
- **COMMUNITY CENTER** [G +2
- **SWIMMING POOL**
- **OPEN SPACE**
- **PHASE 02**



GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **Resedential Building**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: **MAGUGA AHP**

DRAWING TITLE :

MAGUGA EXTERNAL RETICULATION

SCALE : **NTS**

DRAWN BY :

CHECKED BY :

Date : **Signature:**

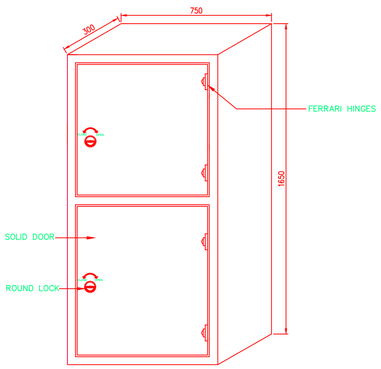
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



SPECIFICATIONS:

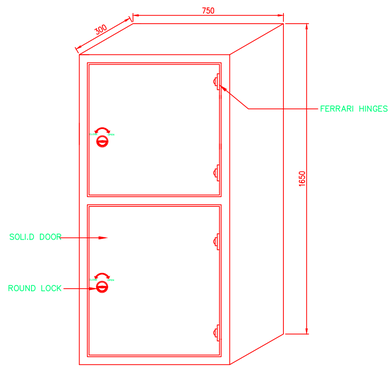
1. MATERIAL : 1.2mm THICK STAINLESS STEEL, MIRROR FINISH.
2. ALL DIMENSIONS ARE IN MM.

CABINET TO ACCOMMODATE

(1) UPPER COMPARTMENT
FIRE HOSE REEL, AUTOMATIC
TYPE C/W 1"x30 MTR HOSE – 1 No
C/W 1" PRESSURE REDUCING VALVE & LOCK SHIELD VALVE
1" NOZZLE – 1 No

(2) LOWER COMPARTMENT
- 2–1/2" PRESSURE REDUCING ANGLE VALVE – 1 NO.
- 2–1/2" X 30 MTR. HOSE
- 2–1/2" NOZZLE – 1 No.
- FIRE EXTINGUISHERS – 2 Nos.

1 FHCS
FIRE HOSE REEL CABINET (SURFACE MOUNTED)
M–FF–401 SCALE NTS



SPECIFICATIONS:

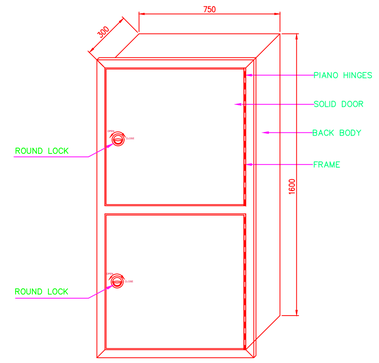
1. MATERIAL : 1.2mm THICK STAINLESS STEEL, MIRROR FINISH

CABINET TO ACCOMMO.DATE

(1) UPPER COMPARTMENT
FIRE HOSE REEL, AUTOMATIC
TYPE C/W 1"x30 MTR HOSE – 1 No
C/W 1" PRESSURE REDUCING VALVE & LOCK SHIELD VALVE
1" NOZZLE – 1 No

(2) LOWER COMPARTMENT
- FIRE EXTINGUISHERS – 2 Nos.

2 HRCS
FIRE HOSE REEL CABINET (SURFACE MOUNTED)
M–FF–401 SCALE NTS



SPECIFICATIONS:

1. MATERIAL : MILD STEEL BACK BOX, 1.2 mm THICK.
2. FRAME : 1.2MM THICK STAINLESS STEEL, MIRROR FINISH
3. ALL DIMENSIONS ARE IN mm

CABINET TO ACCOMMODATE

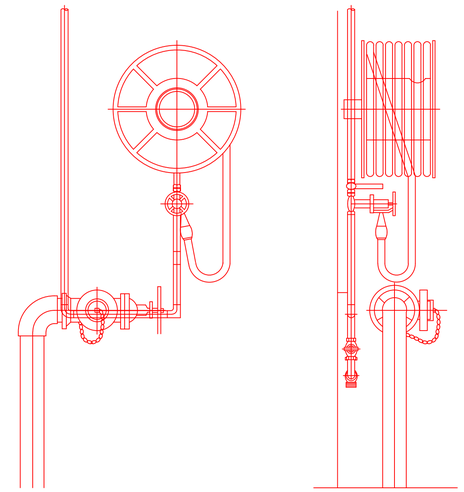
(1) UPPER COMPARTMENT
FIRE HOSE REEL, AUTOMATIC
TYPE C/W 1"x30 MTR HOSE – 1 No
C/W 1" PRESSURE REDUCING VALVE & LOCK SHIELD VALVE
1" NOZZLE – 1 No

(2) LOWER COMPARTMENT
- 2–1/2" PRESSURE REDUCING ANGLE VALVE – 1 NO.
- 2–1/2" X 30 MTR. HOSE
- 2–1/2" NOZZLE – 1 No.
- FIRE EXTINGUISHERS – 2 Nos.

3 FHCR
FIRE HOSE REEL CABINET (SURFACE MOUNTED)
M–FF–401 SCALE

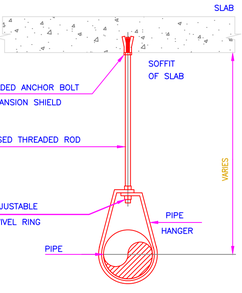
FONT ELEVATION

SIDE ELEVATION

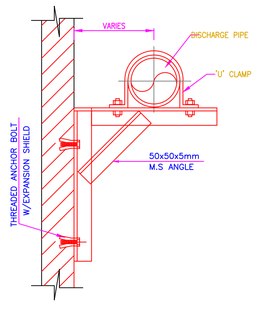


FIRE HOSE REEL WITH HOSE TAP

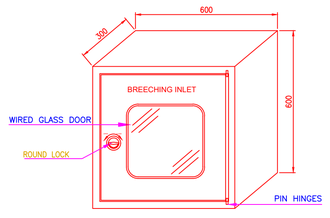
4 FHCR
FIRE HOSE REEL CABINET (SURFACE MOUNTED)
M–FF–401 SCALE



5 PIPE HANGER DETAIL
M–FF–402 SCALE NTS



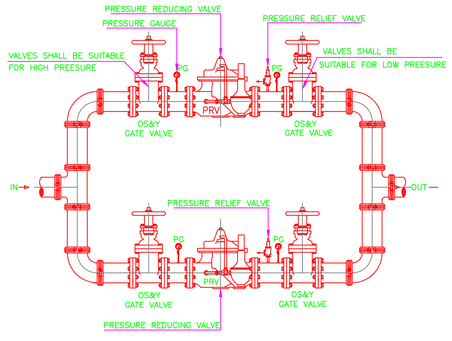
6 PIPE SUPPORT THR'U WALL
M–FF–402 SCALE NTS



SPECIFICATIONS:

1. SIZE: 600(H)X600(W)X300(D)mm
2. MATERIAL: COMPLETE STAINLESS STEEL 1.2 MM THICK MIRROR FINISH
3. ALL DIMENSIONS ARE IN mm

7 4–WAY BREECHING INLET DETAIL (SURFACE MOUNTED)
M–FF–402 SCALE NTS



8 PRESSURE REDUCING STATION
M–FF–402 SCALE NTS

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD
☐ DETAILED ☑ TENDER
☐ SHOP DWG ☐ AS BUILT

PROJECT: Resedential Building

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

Firefighting Details

SCALE : 1:100

DRAWN BY :

CHECKED BY :

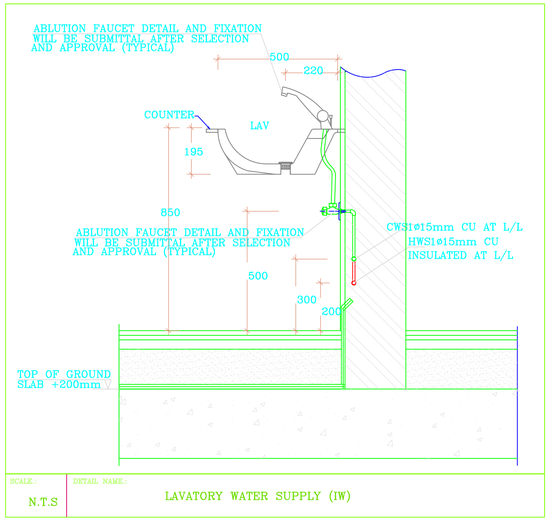
Date : Signature:

DATE :

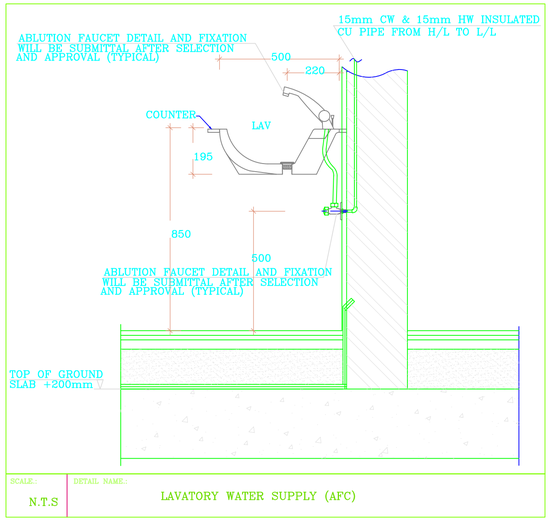
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

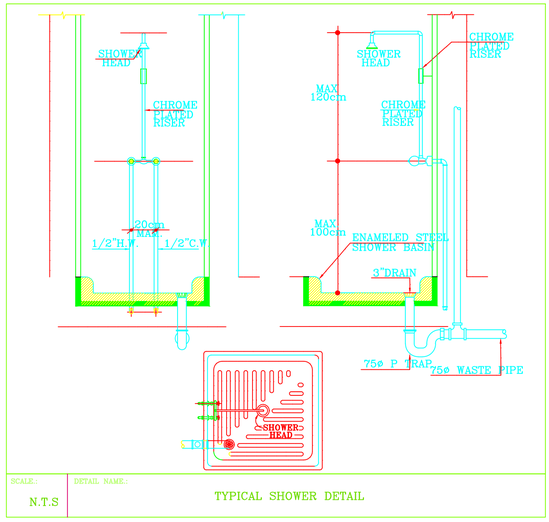
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



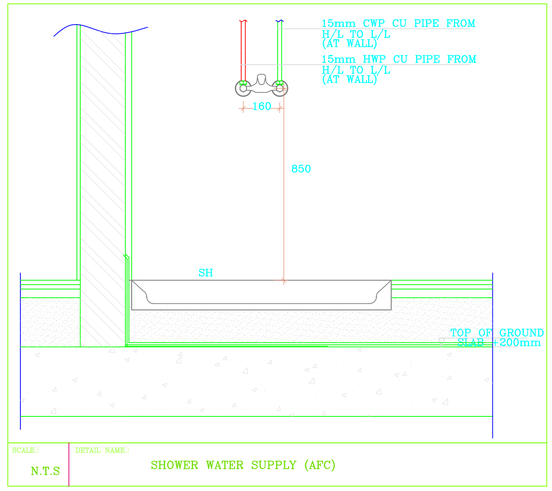
SCALE: N.T.S | DETAIL NAME: LAVATORY WATER SUPPLY (IW)



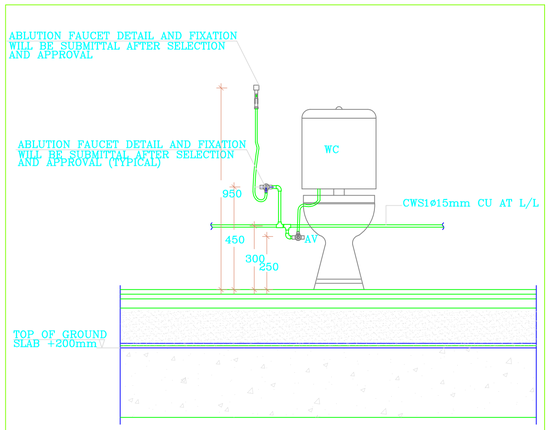
SCALE: N.T.S | DETAIL NAME: LAVATORY WATER SUPPLY (AFC)



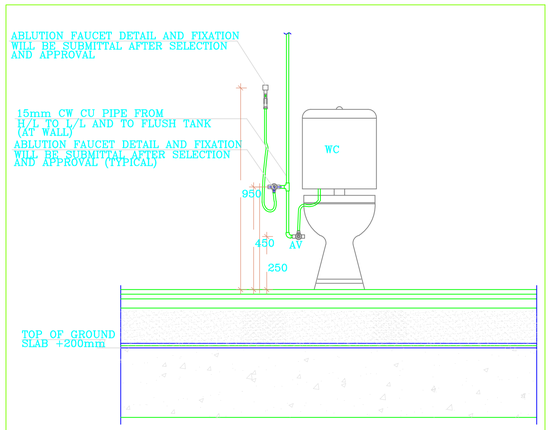
SCALE: N.T.S | DETAIL NAME: TYPICAL SHOWER DETAIL



SCALE: N.T.S | DETAIL NAME: SHOWER WATER SUPPLY (AFC)



SCALE: N.T.S | DETAIL NAME: CLOSET WATER SUPPLY (IW)



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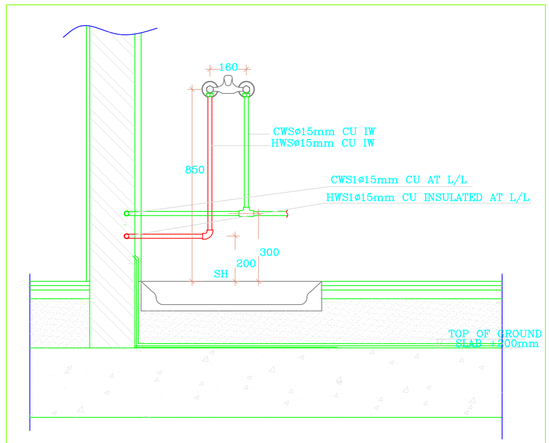
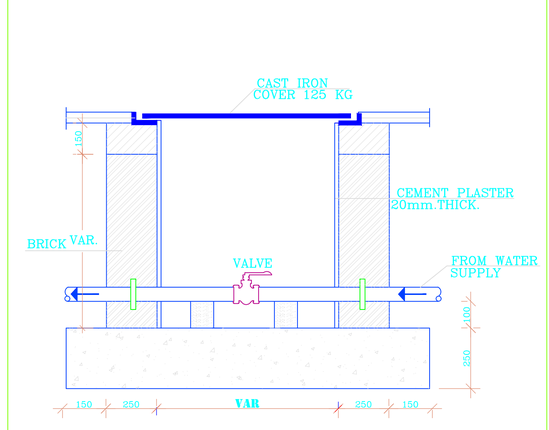
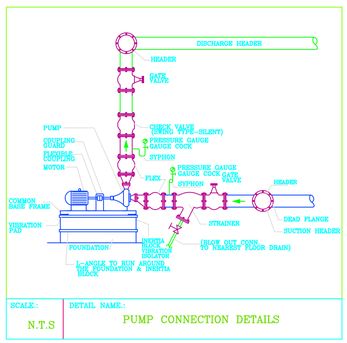


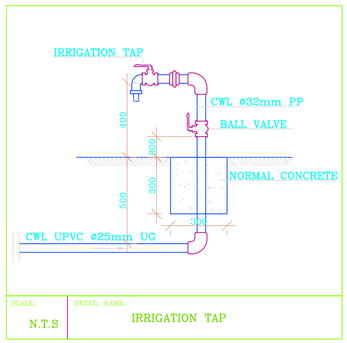
SCALE: N.T.S | DETAIL NAME: SHOWER WATER SUPPLY (IW)



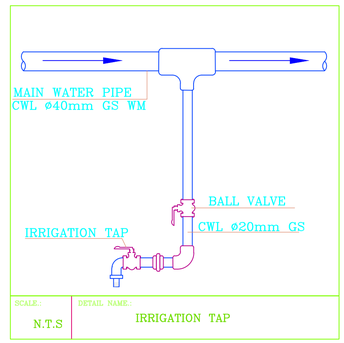
SCALE: N.T.S | DETAIL NAME: VALVE CHAMBER



SCALE: N.T.S | DETAIL NAME: PUMP CONNECTION DETAILS



SCALE: N.T.S | DETAIL NAME: IRRIGATION TAP



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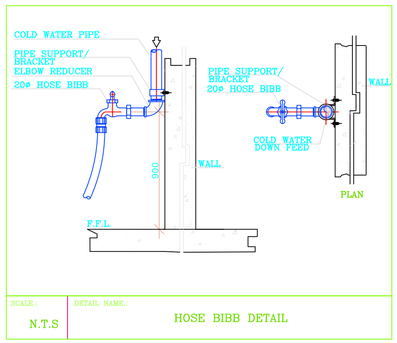

SCALE: N.T.S | DETAIL NAME: HOSE BIBB DETAIL

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REV.	DATE	DESCRIPTION

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- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: Resedential Building

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

WATER SUPPLY DETAILS

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

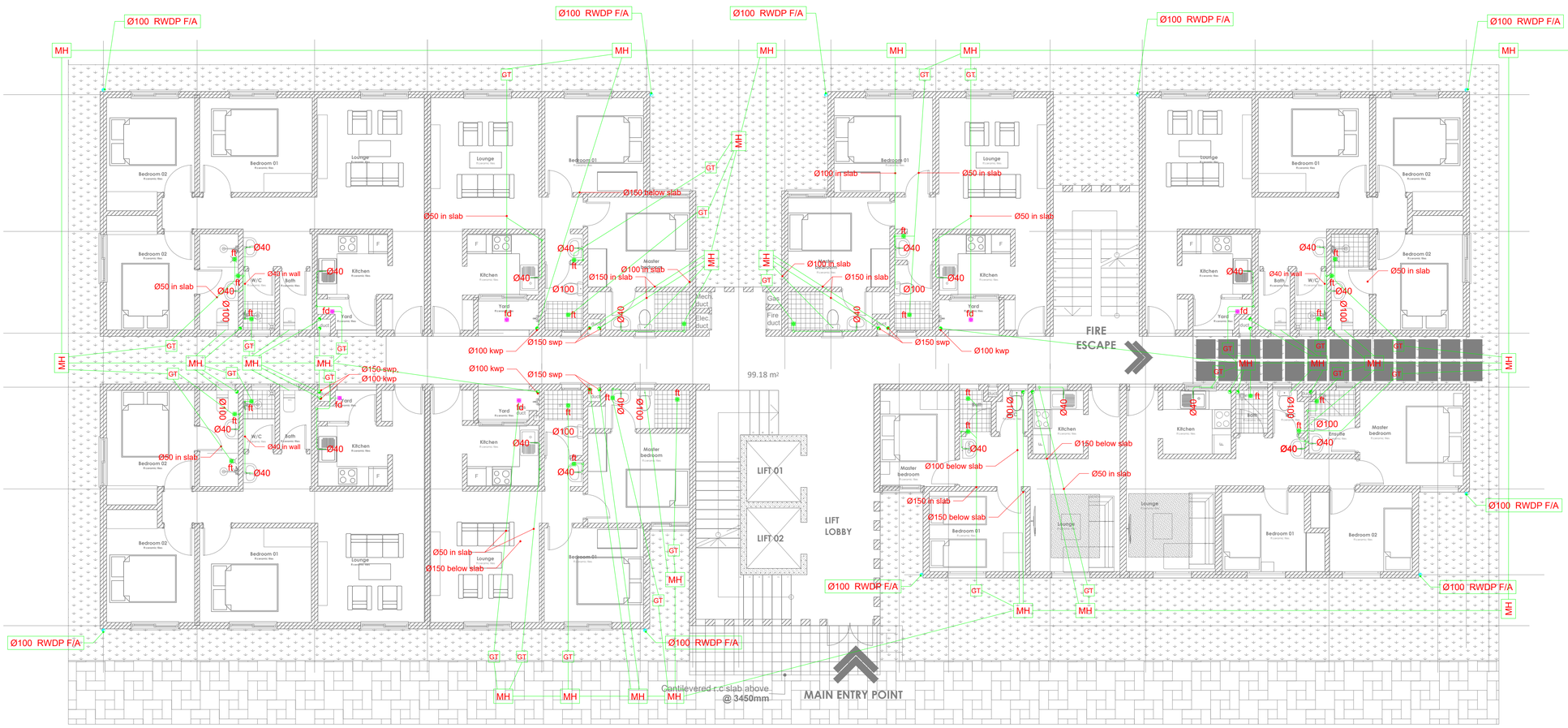
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



To Civil Work Details

PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_GROUND FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN			
AFFORDABLE UNITS		MARKET UNITS	
2_BEDROOM	3_BEDROOM	2_BEDROOM	3_BEDROOM
1	1	3	3

GENERIC BLOCK B(G+9) GROUND FLOOR DRAINAGE

GENERAL NOTES

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DRAWING ISSUED FOR:

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- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MARKET+ AFFORDABLE UNITS BLOCK TYPE B G+9

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

GENERIC BLOCK B(G+9) GROUND FLOOR DRAINAGE

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_TYPICAL 1ST-9TH FLOOR LEVEL

UNIT BREAK DOWN_ UNIT BREAK DOWN			
AFFORDABLE UNITS		MARKET UNITS	
2_BEDROOM	3_BEDROOM	2_BEDROOM	3_BEDROOM
1	1	3	3

GENERIC BLOCK B(G+9) TYPICAL FLOOR DRAINAGE

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MARKET+ AFFORDABLE UNITS BLOCK TYPE B G+9

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :
GENERIC BLOCK B(G+9) TYPICAL FLOOR DRAINAGE

SCALE : 1:100

DRAWN BY :

CHECKED BY :

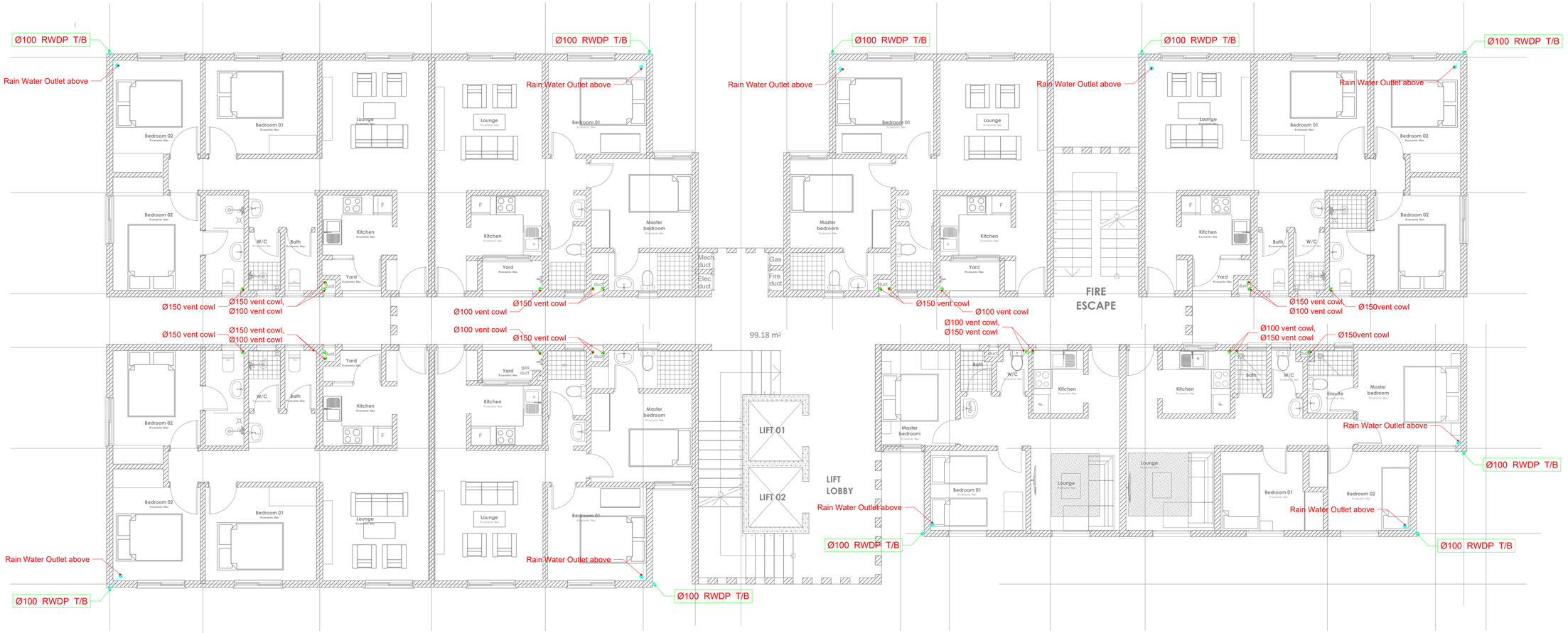
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_TYPICAL 1ST-9TH FLOOR LEVEL

UNIT BREAK DOWN_ UNIT BREAK DOWN			
AFFORDABLE UNITS		MARKET UNITS	
2_BEDROOM	3_BEDROOM	2_BEDROOM	3_BEDROOM
1	1	3	3

GENERIC BLOCK B(G+9) ROOF DRAINAGE

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MARKET+ AFFORDABLE UNITS BLOCK TYPE B G+9

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

GENERIC BLOCK B(G+9) ROOF DRAINAGE

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

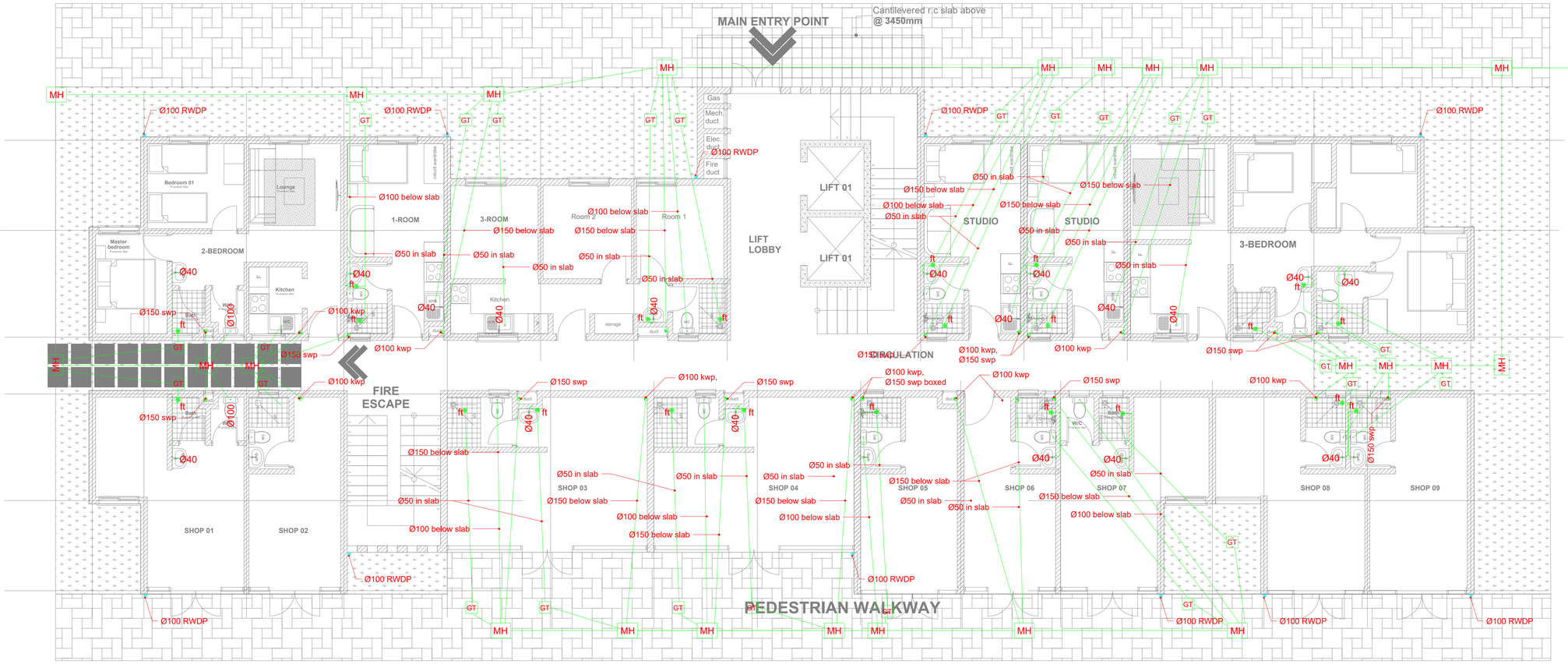
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

BLOCK TYPOLOGY C [G+9]



TYPE C GROUND FLOOR SOCIAL+ AFFORDABLE UNITS DRAINAGE LAYOUT

PROPOSED TYPICAL MIXED USE BLOCK TYPE C_GROUND FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN						
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM	RETAIL
1	2	1	2	1	1	9

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MIXED USE BLOCK TYPE C [G+9]

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

TYPE C GROUND FLOOR SOCIAL+ AFFORDABLE UNITS DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

PROPOSED TYPICAL MIXED USE BLOCK TYPE C_TYPICAL 1ST-14TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	3	4	1

TYPE C TYPICAL FLOOR SOCIAL+ AFFORDABLE UNITS DRAINAGE LAYOUT

GENERAL NOTES

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3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☒ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MIXED USE BLOCK TYPE C [G+9]

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

TYPE C TYPICAL FLOOR SOCIAL+ AFFORDABLE UNITS DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

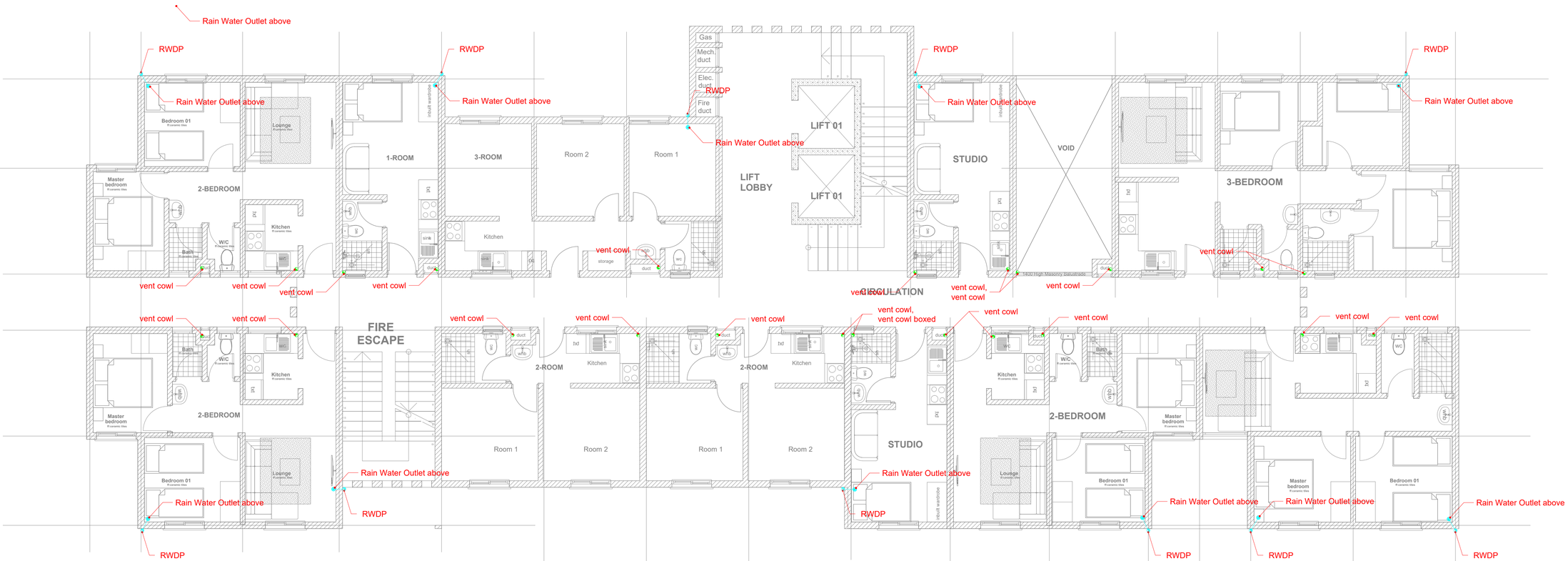
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL MIXED USE BLOCK TYPE C_TYPICAL 1ST-14TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	3	4	1

TYPE C ROOF FLOOR SOCIAL+ AFFORDABLE UNITS DRAINAGE LAYOUT

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MIXED USE BLOCK TYPE C [G+9]

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

TYPE C ROOF FLOOR SOCIAL+ AFFORDABLE UNITS DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

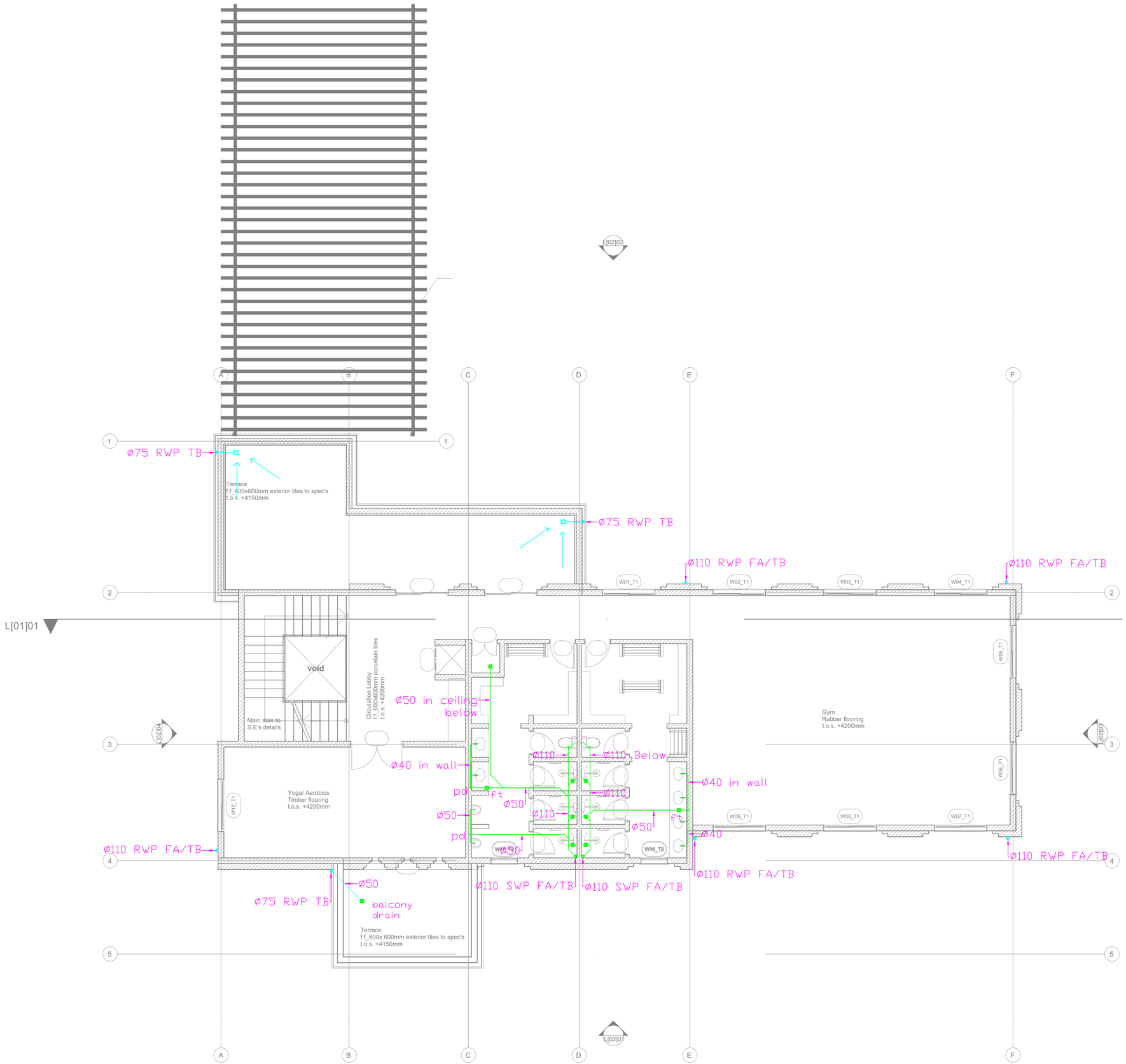
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **CLUB HOUSE**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE FIRST FLOOR DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

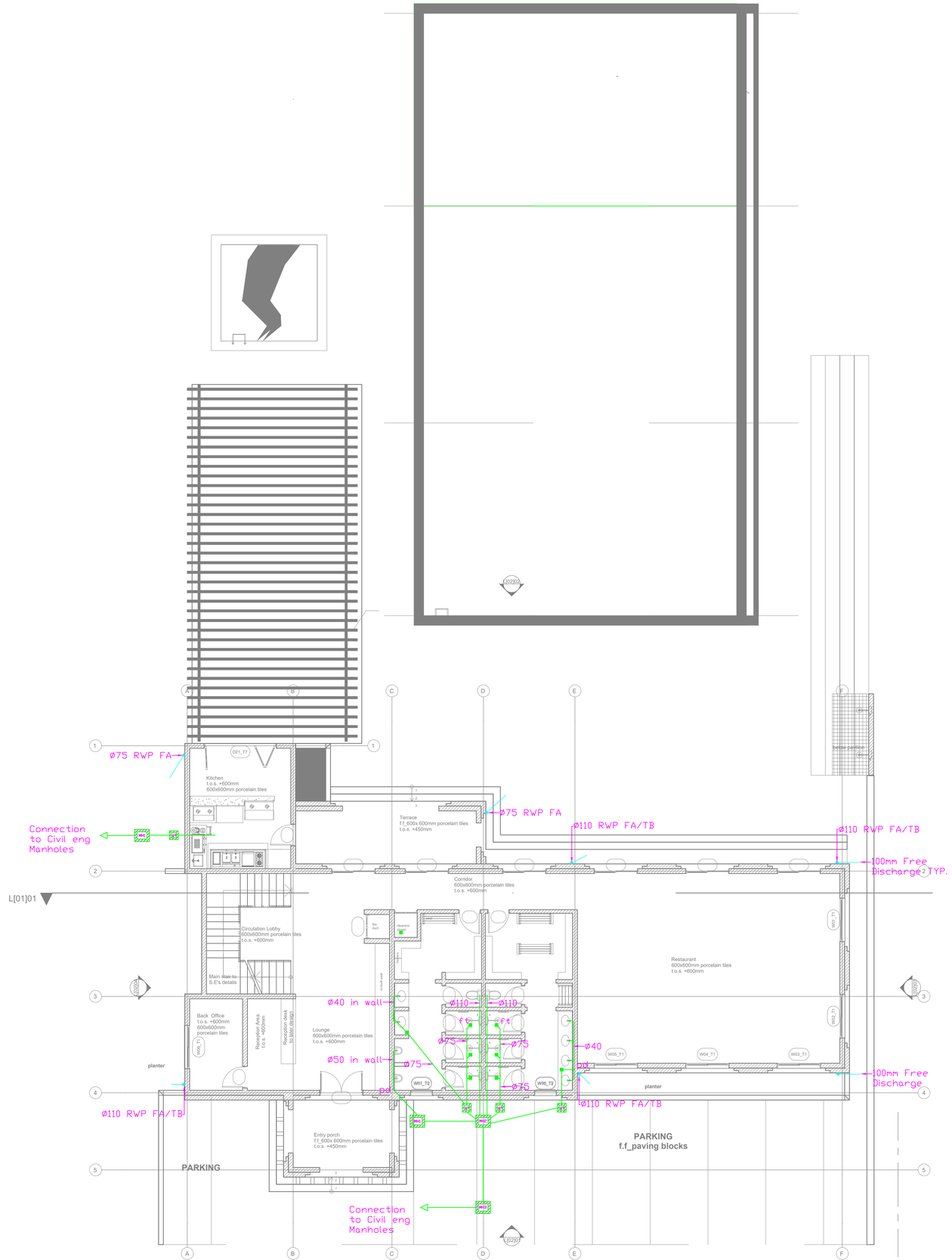
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[--]01_GROUND FLOOR PLAN
SCALE 1:100

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **CLUB HOUSE**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE GROUND FLOOR DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

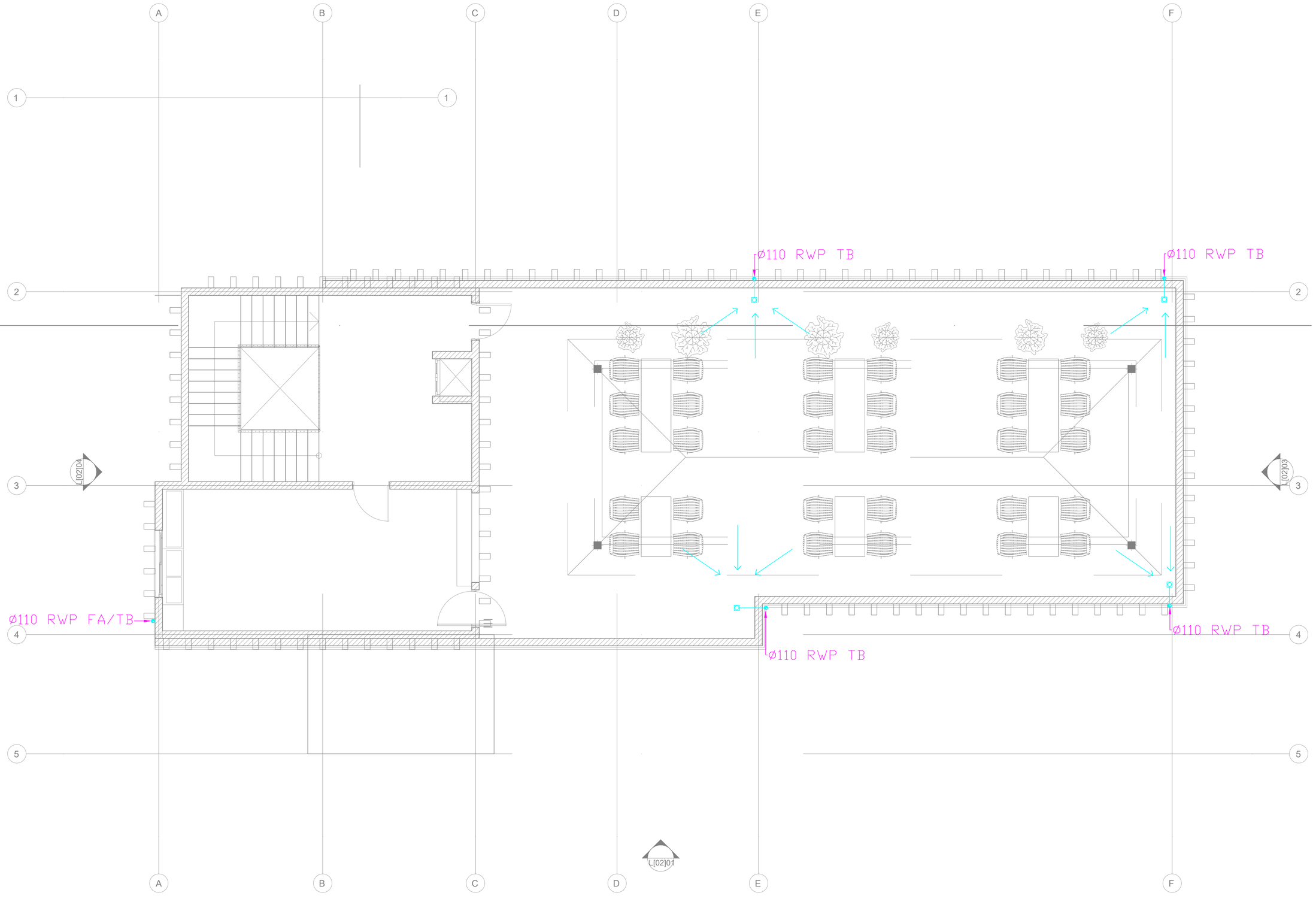
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



GENERAL NOTES

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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **CLUB HOUSE**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE ROOF DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

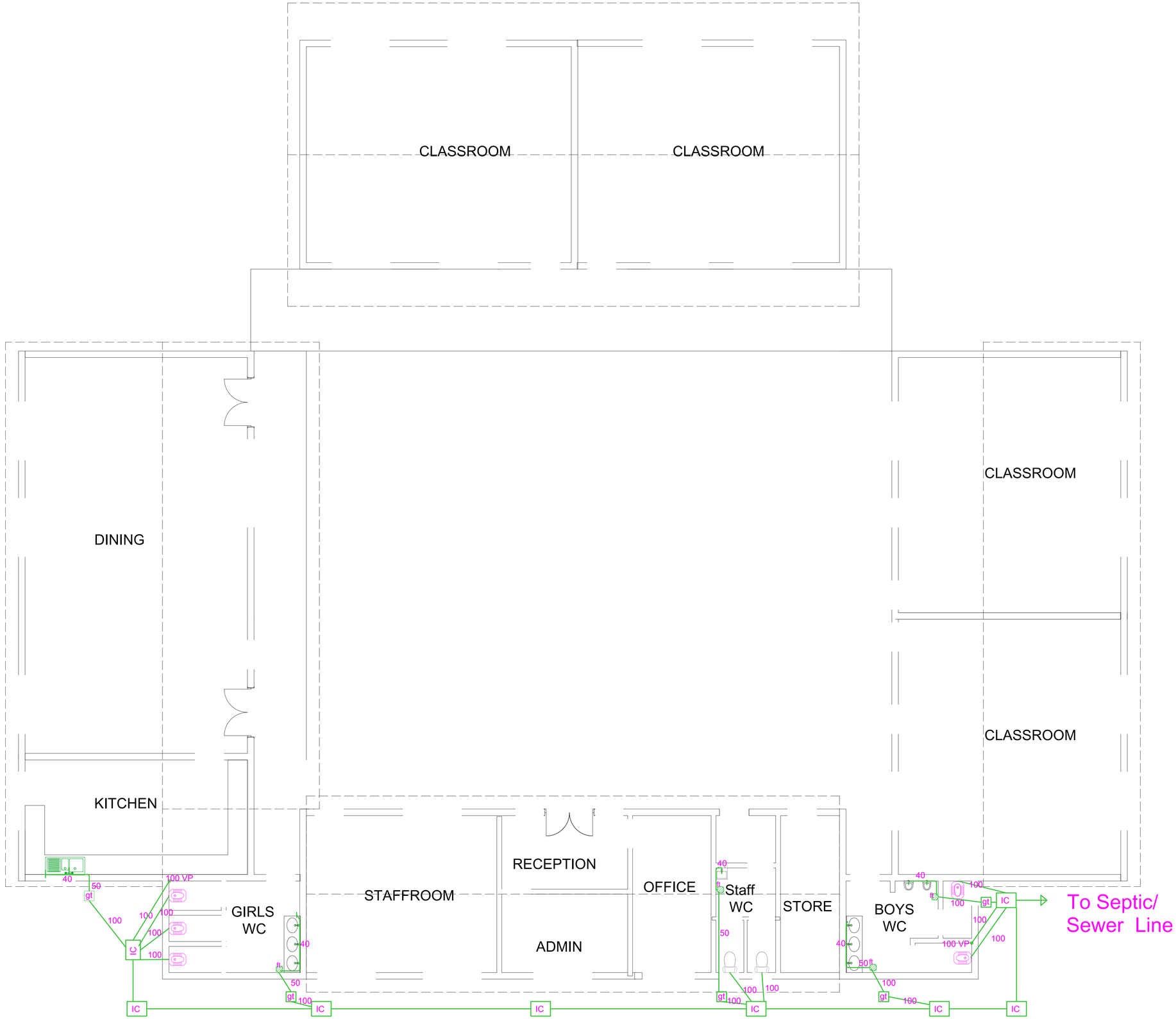
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



KINDERGARTEN DRAINAGE FLOOR PLAN

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **KINDERGARTEN**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

KINDERGARTEN DRAINAGE FLOOR PLAN

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

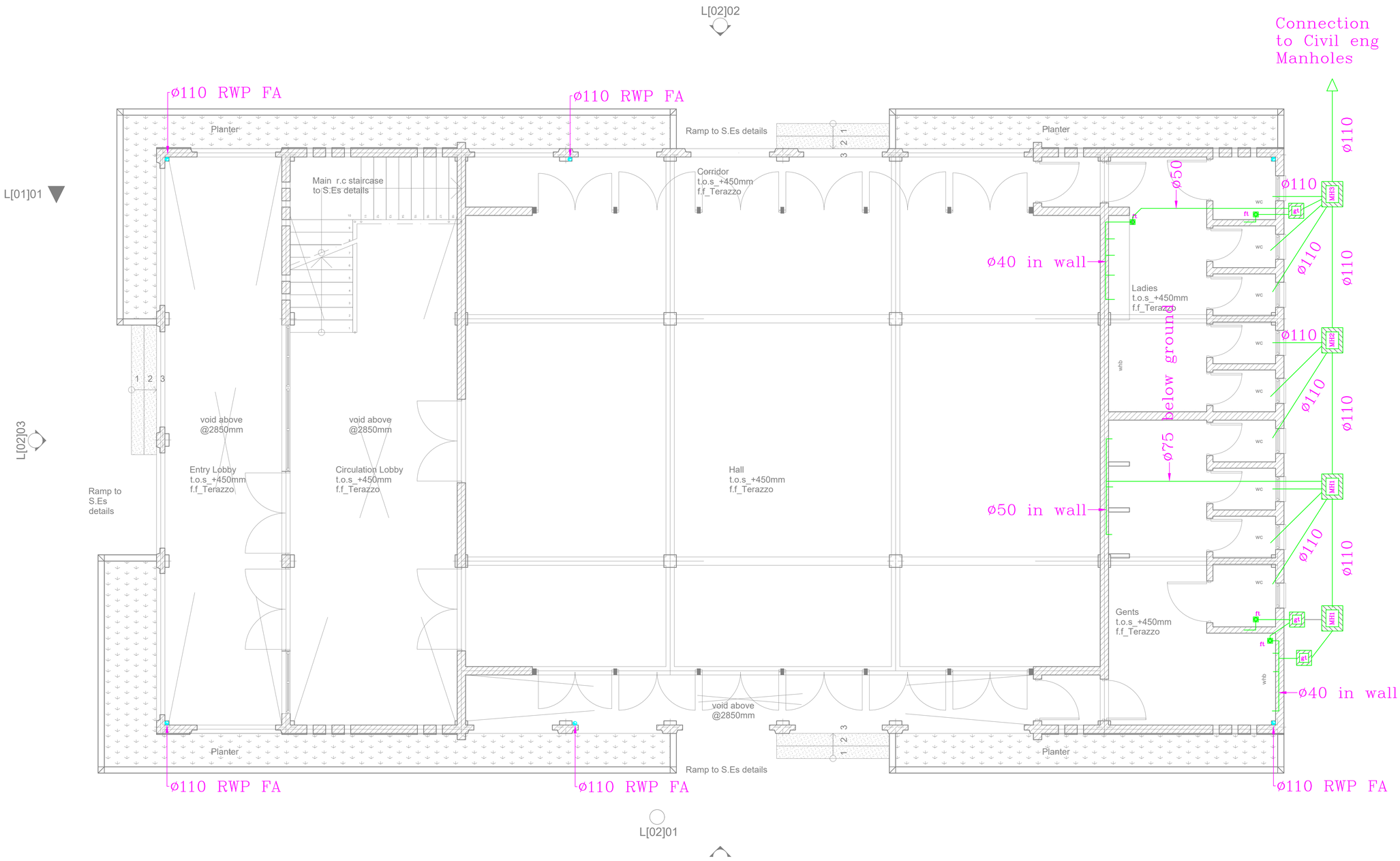
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



GROUND FLOOR DRAINAGE COMMUNITY CENTER

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

DRAWN BY :

CHECKED BY :

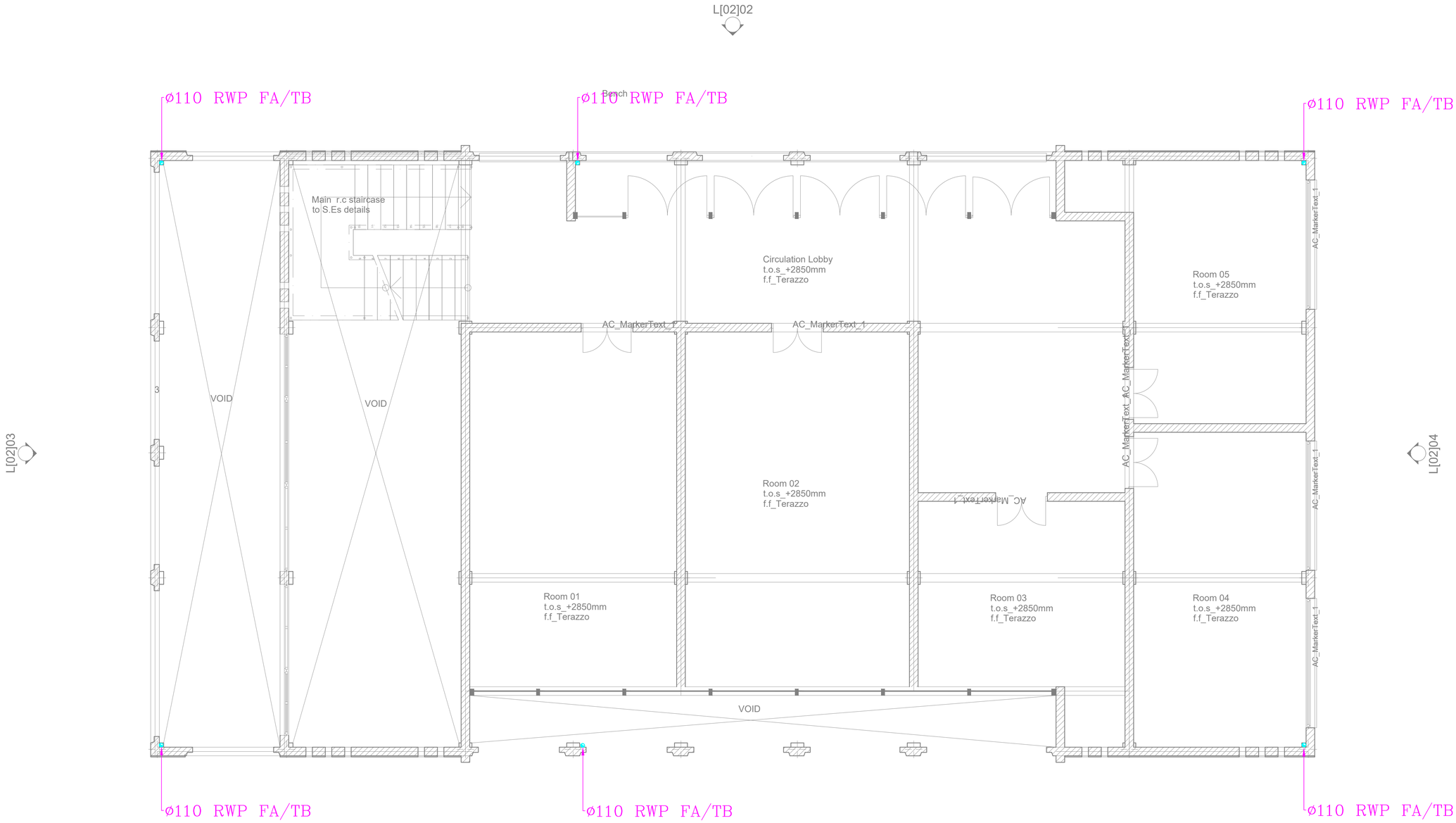
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



FIRST FLOOR DRAINAGE COMMUNITY CENTER

L[02]01

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

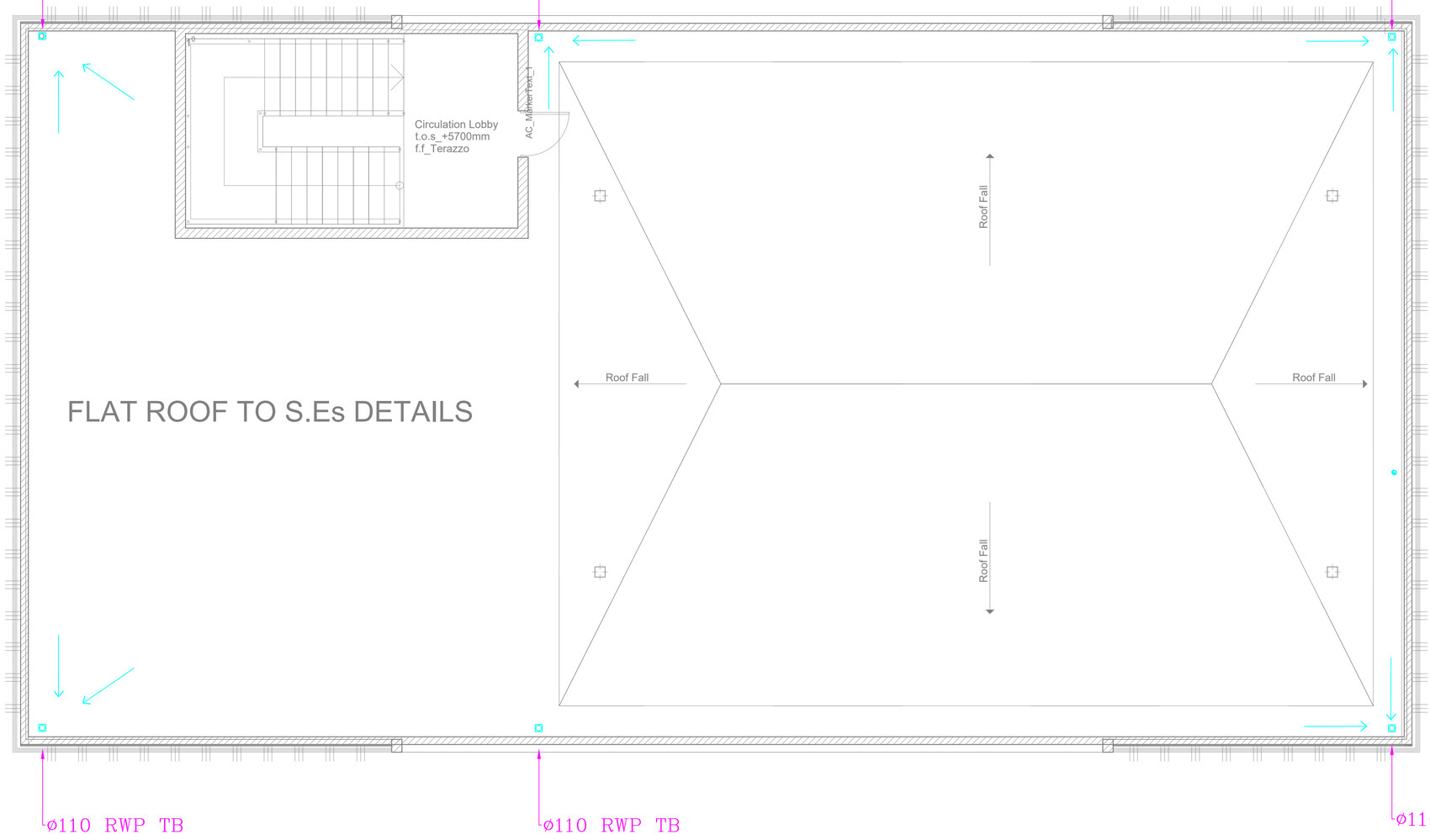
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

L[02]02

ø110 RWP FA/TB

ø110 RWP FA/TB

ø110 RWP FA/TB



L[02]03

FLAT ROOF TO S.Es DETAILS

ø110 RWP TB

ø110 RWP TB

ø110 RWP TB

L[02]01

ROOF DRAINAGE COMMUNITY CENTER

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

DRAWN BY :

CHECKED BY :

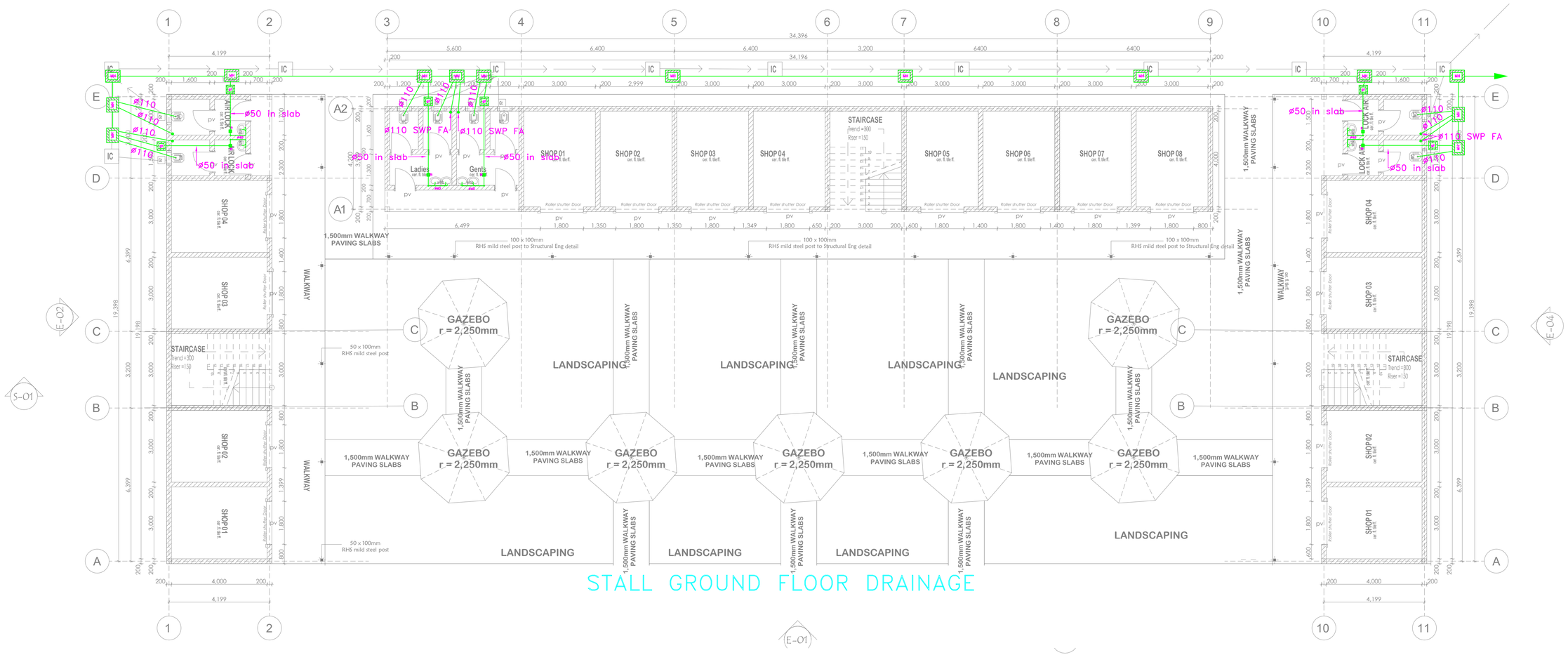
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



STALL GROUND FLOOR DRAINAGE

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **STALLS**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: NYALI ESTATE

DRAWING TITLE :

STALL GROUND FLOOR DRAINAGE

SCALE : 1:100

DRAWN BY :

CHECKED BY :

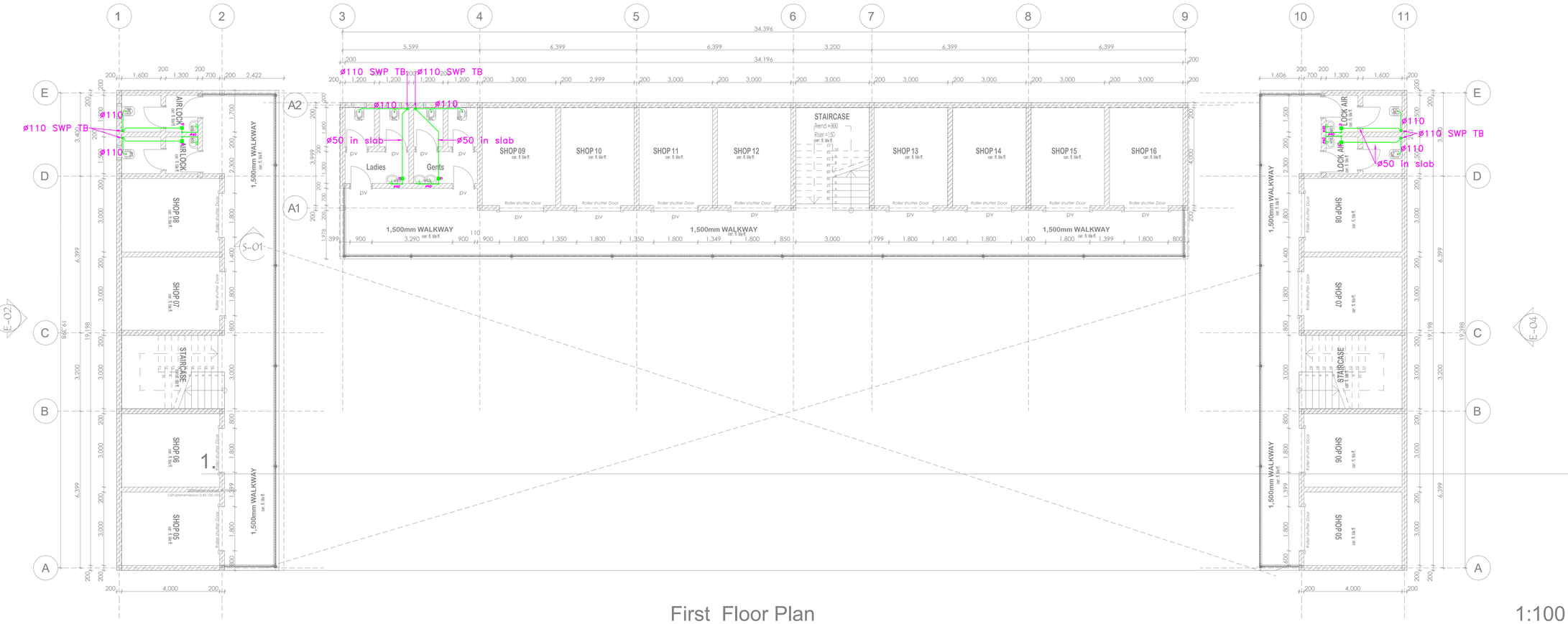
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



First Floor Plan

1:100

STALL FIRST FLOOR DRAINAGE

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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3. Drawings are not to be scaled . Only figured dimensions should be used .
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **STALLS**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: NYALI ESTATE

DRAWING TITLE :

STALL FIRST FLOOR DRAINAGE

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

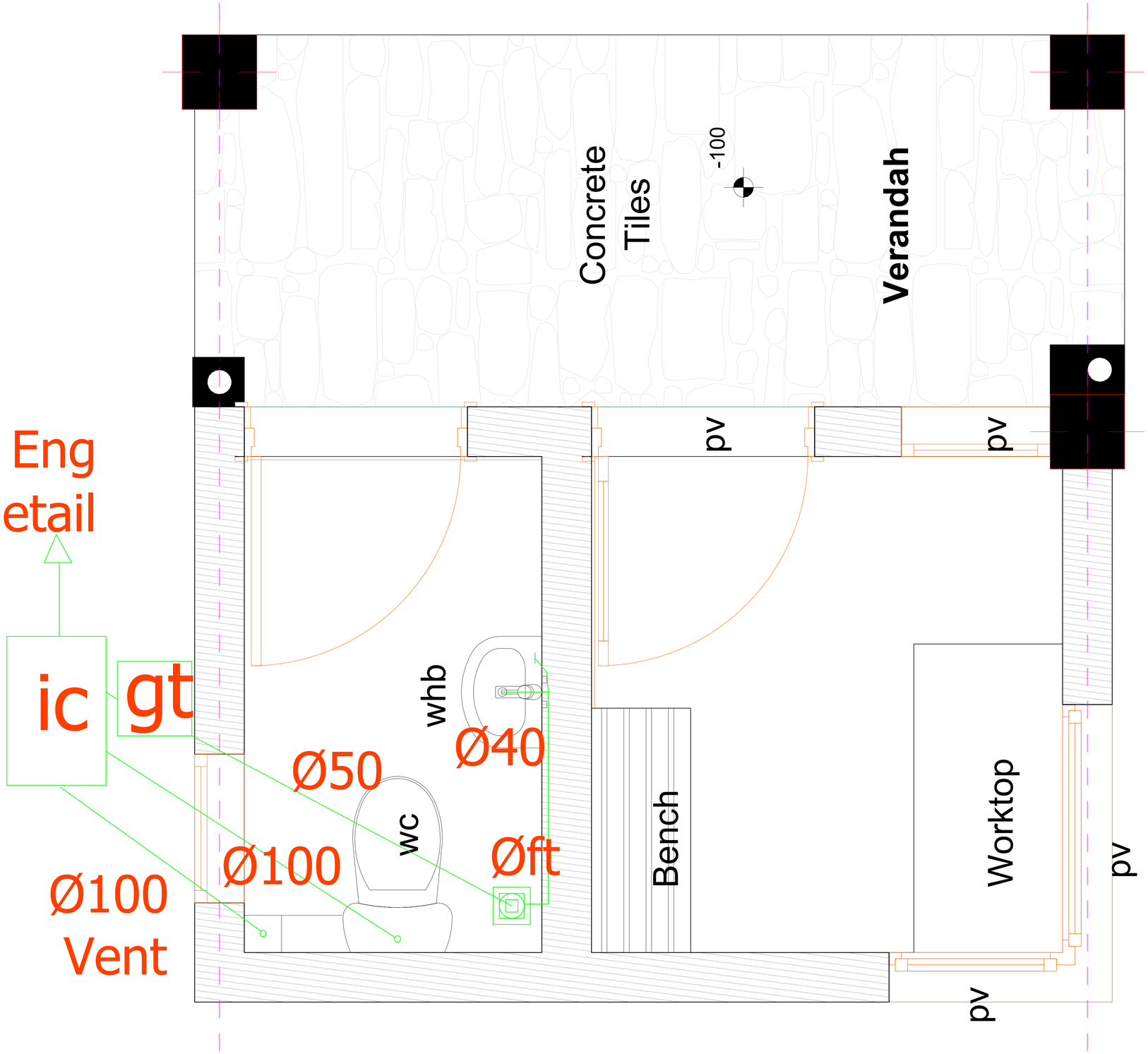
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



GATE HOUSE DRAINAGE

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

GATE HOUSE DRAINAGE

SCALE : **1:100**

DRAWN BY :

CHECKED BY :

Date : **Signature:**

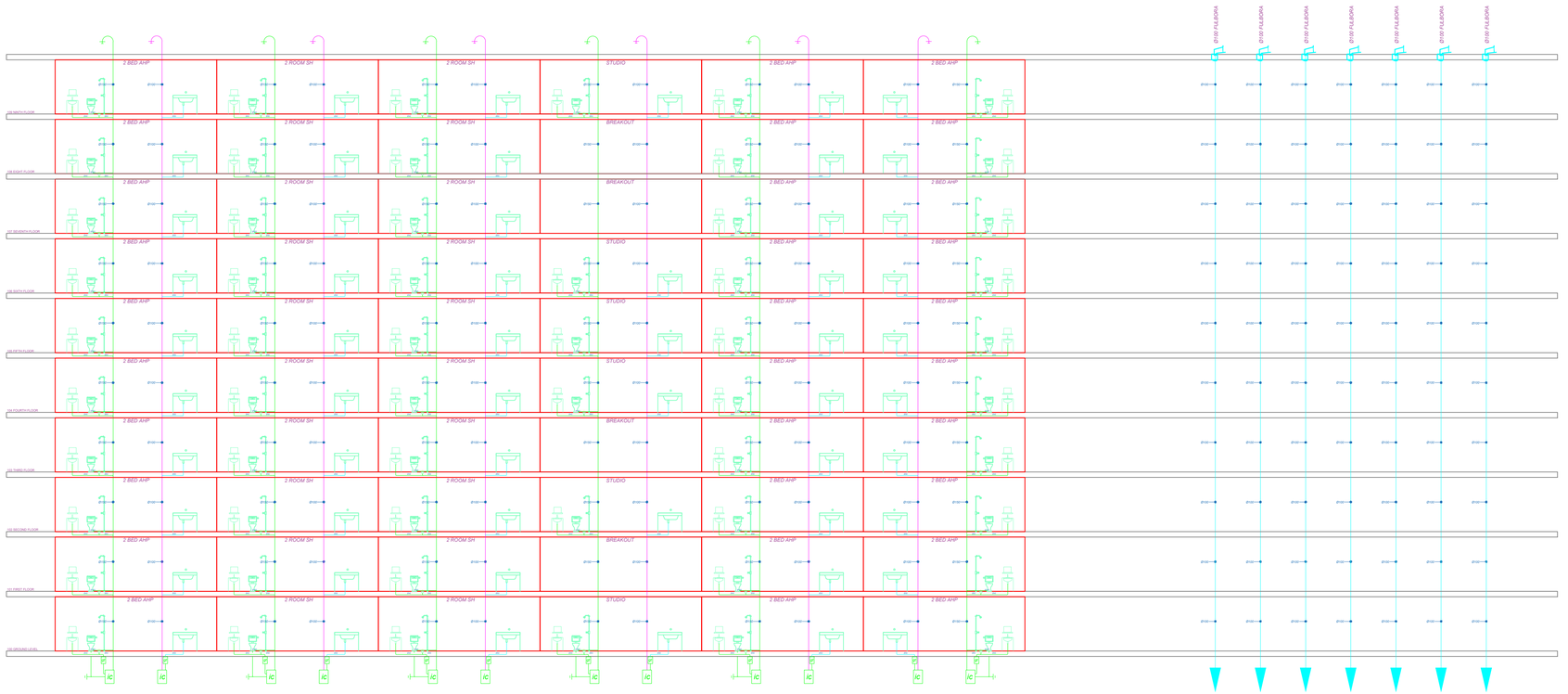
DATE :

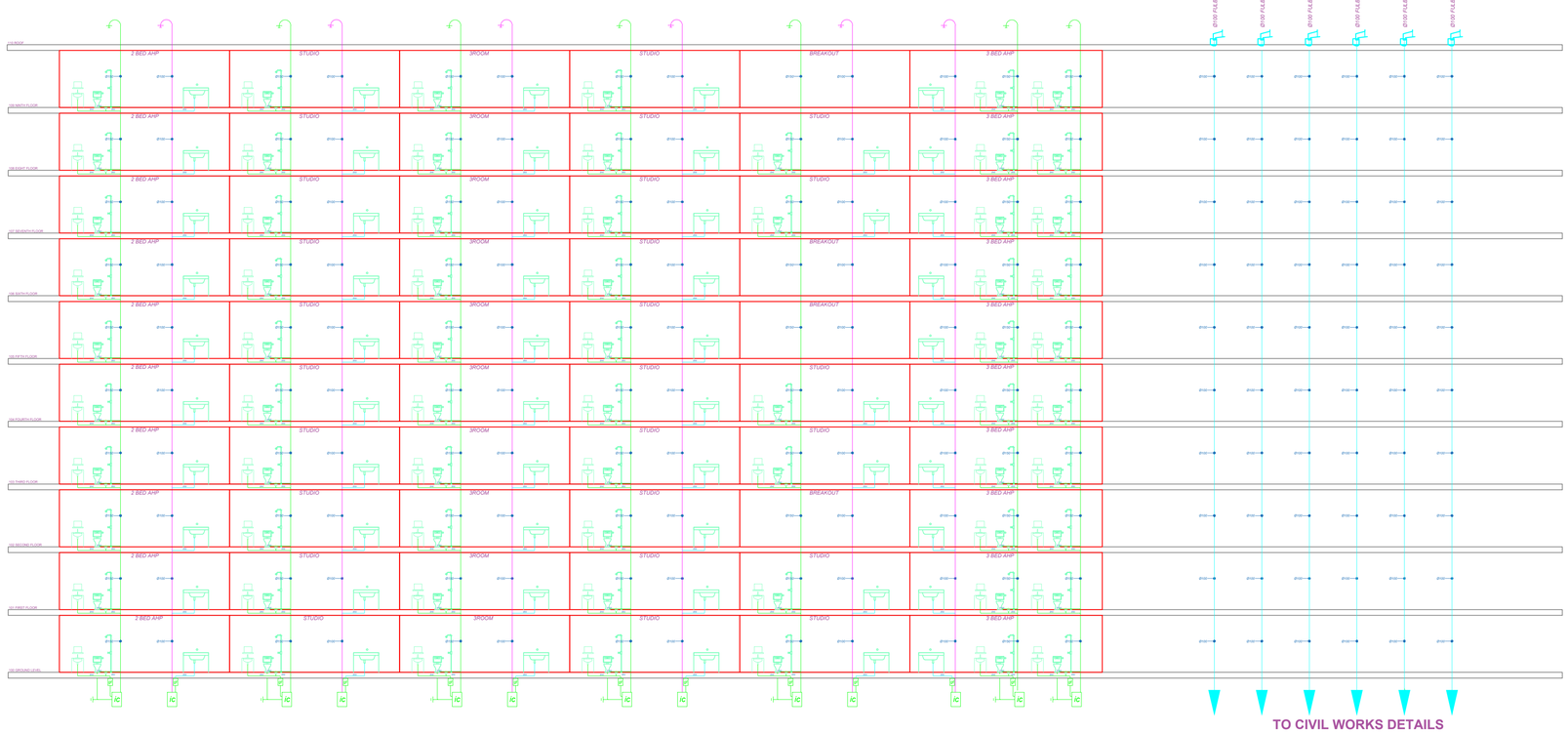
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA





TYPE C (G + 9) DRAINAGE SCHEMATIC

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL AFFORDABLE +MARKET BLOCK TYPE A G+9

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

DRAINAGE SCHEMATICS

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

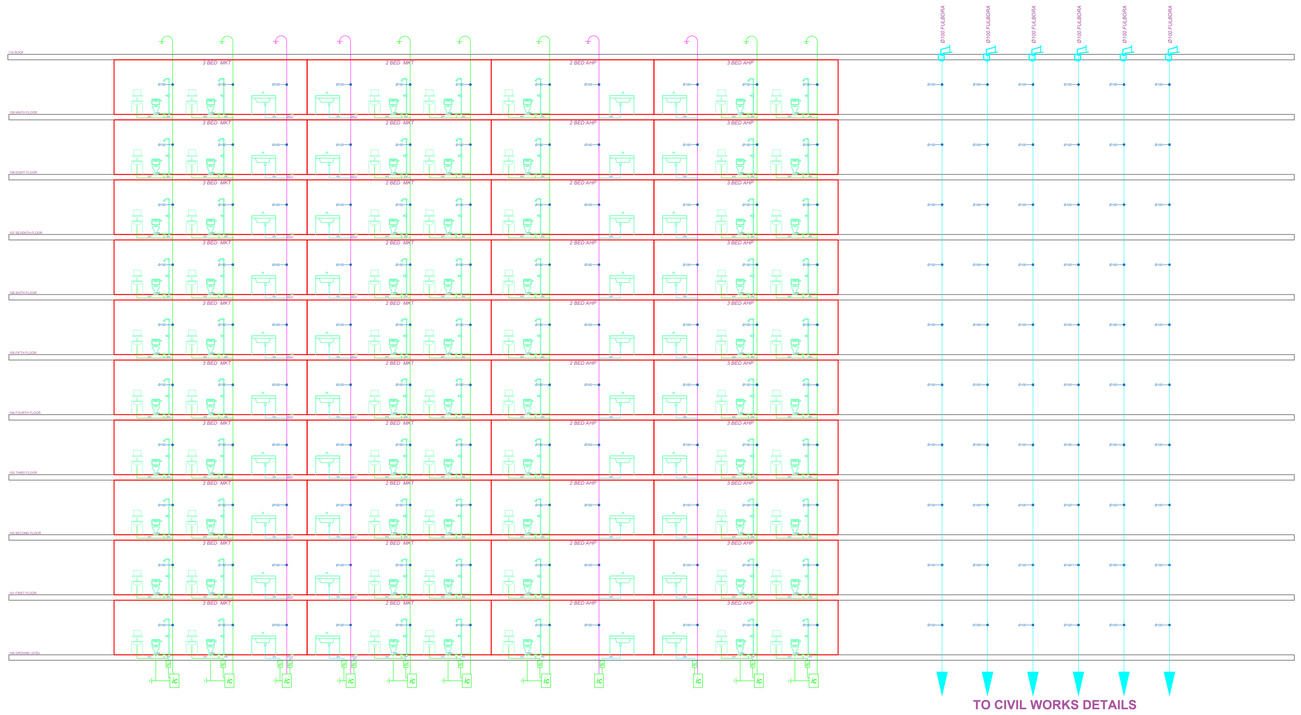
DATE :

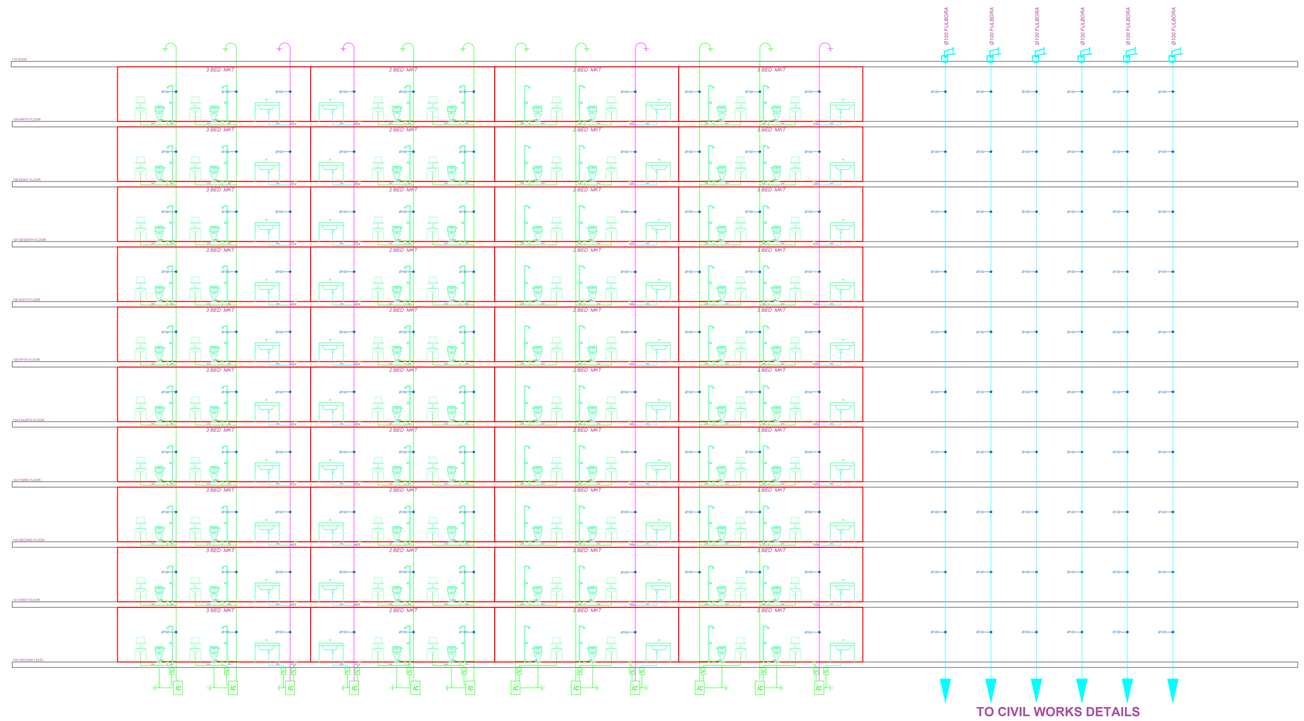
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA





TYPE B (G + 9) DRAINAGE SCHEMATIC

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL AFFORDABLE +MARKET BLOCK TYPE A G+9

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: BAHATI

DRAWING TITLE :

DRAINAGE SCHEMATICS

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

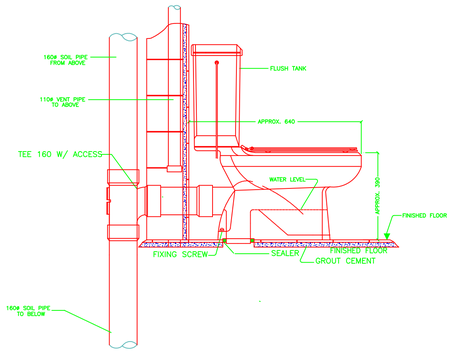
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

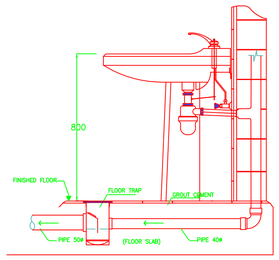
STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

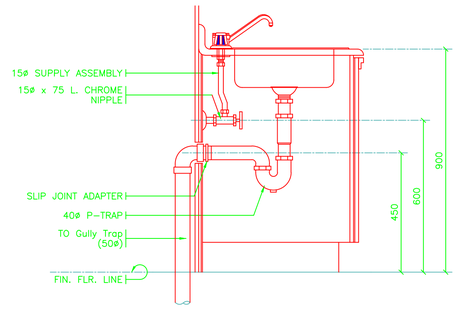
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



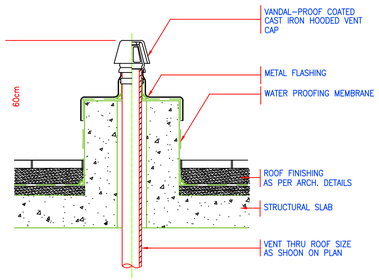
1 WATER CLOSET INSTALLATION DETAILS
NOT TO SCALE



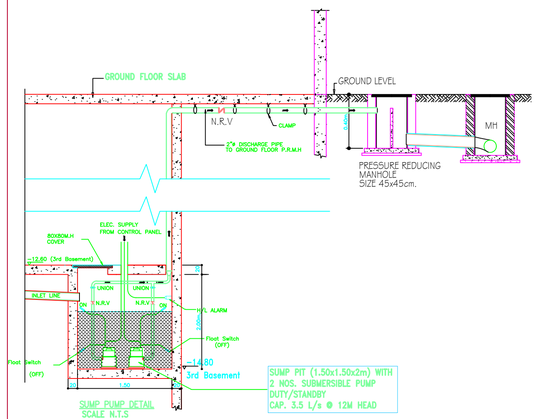
2 WASH HAND BASIN INSTALATION DETAILS
NOT TO SCALE



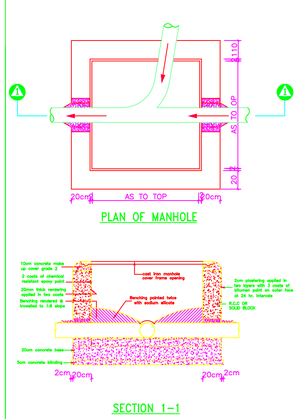
3 PANTRY SINK INSTALLATION DETAILS
NOT TO SCALE

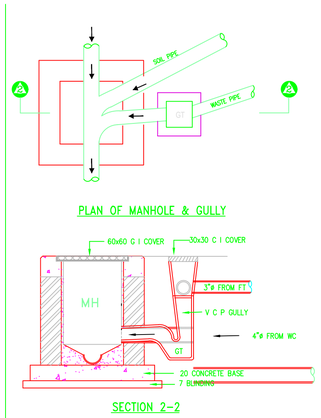


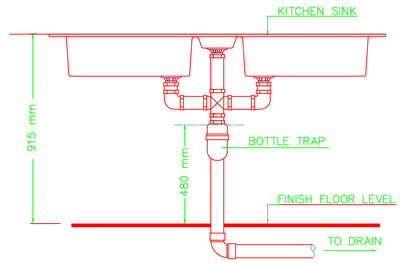
3 W-DR-401 DETAIL OF ROOF VENT TERMINAL
NTS



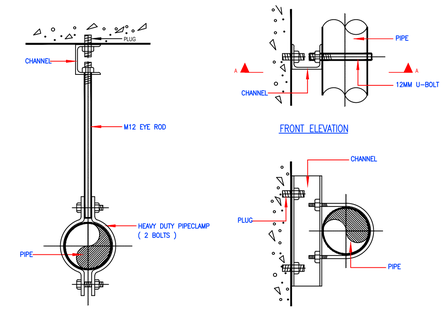
SUMP PUMP DETAIL
SCALE N.T.S



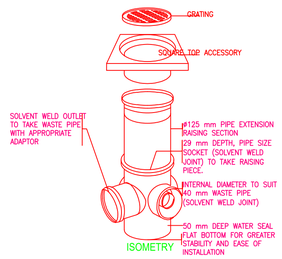




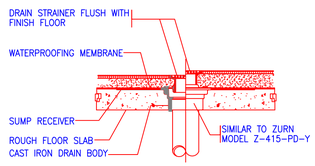
6 KITCHEN SINK INSTALLATION DETALS
NOT TO SCALE



3 W-DR-401 TYPICAL PIPE SUPPORT DETAILS
NTS



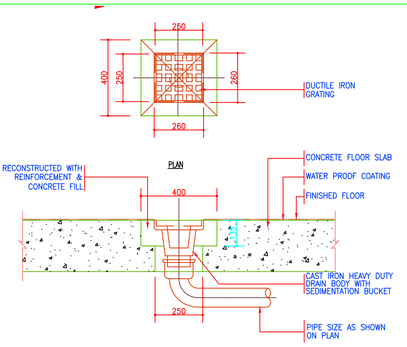
7 SUMP PUMP DETAIL
NOT TO SCALE



8 MANHOLE & GULLY TRAP DETAILS
NOT TO SCALE

SCHEDULES FOR PLUMBING FIXTURE OUTLETS	
DESCRIPTION	WASTE (ø in mm)
WATER CLOSET (FLUSH TANK)	110
LAVATORY	50
BATHUB	50
KITCHEN SINK	50
WASHING MACHINE	50
DISHWASHER	50
DRYER	50

9 FIXTURE CONNECTION SIZE SCHEDULE
NOT TO SCALE



7 W-DR-402 DETAIL FOR PARKING AREA DRAIN (CPD)
NTS

9 W-DR-402 FLOOR TRAP DETAIL
NTS

10 W-DR-402 BALCONY DRAIN DETAIL
NTS

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD
☐ DETAILED ☑ TENDER
☐ SHOP DWG ☐ AS BUILT

PROJECT: Resedential Building

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :
DRAINAGE DETAILS

SCALE : 1:100

DRAWN BY :

CHECKED BY :
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

BAHATI AHP

ELECTRICAL DRAWINGS

MUGUGA AGRICITY

ELECTRICAL DRAWINGS

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.

2. All dimensions are in mm unless otherwise specified.

3. Drawings are not to be scaled . Only figured dimensions should be used .

4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: Residential Building

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: MUGUGA AGRICITY

DRAWING TITLE :
ELECTRICAL DRAWINGS

DRAWING NO :

SCALE : 1:100

DRAWN BY : B.M

CHECKED BY : C.A

Date : Signature:

DATE : MARCH 2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

GENERAL NOTES

1. ALL ELECTRICAL WORKS CARRIED OUT SHALL COMPLY WITH THE LATEST EDITION OF IEEE WIRING REGULATIONS AND RELEVANT LOCAL AUTHORITY REQUIREMENTS.
2. EARTHING INSTALLATION SYSTEM SHALL COMPLY WITH SECTION 5 OF WIRING REGULATION. SECTION 6 & 7 SHALL BE REFERENCED FOR ALL WIRING SYSTEMS. WIRINGS SHALL BE IN CONCEALED CONDUIT/TRUNKING UNLESS OTHERWISE SPECIFIED BY CONSULTANT.
3. THE MOUNTING HEIGHT OF ALL SWITCH SOCKET OUTLET SHALL BE AT 450mm FROM FINISHED FLOOR LEVEL EXCEPT IN WET AREAS WHERE IT SHALL BE 1500mm FROM FINISHED FLOOR LEVEL OR UNLESS OTHERWISE STATED.
4. THE POSITIONING OF ALL LIGHTING LUMINAIRES, SWITCH SOCKET OUTLETS, DISTRIBUTION BOARDS ETC. AS SHOWN IN THE DRAWINGS ARE APPROXIMATE ONLY. THE EXACT POSITIONS SHALL BE DETERMINED AT SITE.
5. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE ELECTRICAL LOAD BALANCING AND LABELLING OF ALL EQUIPMENT AND SWITCHBOARDS THROUGHOUT THE INSTALLATION.
6. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO LIAISE WITH KPLC AND THE LOCAL AUTHORITIES FOR ALL CLEARANCES, CABLE JOINTING, TESTING AND ELECTRICITY METERING FOR THE INSTALLATION.
7. THE OVERALL RESISTANCE FOR THE EARTHING SYSTEM (ELECTRICAL) SHALL BE LESS THAN 1 OHM AND IN ANY CASE SHALL COMPLY WITH KPLC REQUIREMENTS.
8. ALL DISCHARGE LIGHTING LUMINAIRES IF ANY, SHALL BE COMPLETE WITH BUILT–IN CONTROL GEAR, LAMP, LOW–LOSS BALLAST, AND AUXILIARY QUARTZ LAMP FOR DISCHARGE LAMP RE–STRIKING.
9. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SEALING OF ALL CABLE PENETRATION OPENINGS BETWEEN FLOOR SLAB AND WALLS ETC. WITH APPROVED FIRE RATING MATERIAL/SEALANT TO CONSULTANT APPROVAL.
10. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SEALING OF ALL CABLE PENETRATION OPENINGS THROUGH ROOF FLOOR SLABS, WALLS WITH APPROVED WATERPROOF MATERIALS AFTER THE INSTALLATION OF CABLES.
11. ALL FLUORESCENT LIGHTING LUMINAIRES SHALL BE COMPLETE WITH LOW LOSS BALLAST, TUBE LAMPS, ETC. COLOR OF LIGHT OUTPUT SHALL BE AS SPECIFIED BY THE CONSULTANT OR INTERIOR DECORATOR.
12. THE ELECTRICAL SUB–CONTRACTOR SHALL BACKFILL WITH SANDBAG THE MANHOLES AND DRAW PITS TO COMPLY TO TECHNICAL SPECIFICATIONS.
13. ALL CABLES TO BE LAID IN HD UPVC PIPES SHALL BE ENCASED IN CONCRETE WHEN LAID ACROSS THE DRIVEWAY.
14. ALL UNDERGROUND WIRING SHALL BE OF XLPE/SWA/PVC CABLE (IN HD UPVC PIPE FOR HARD GROUND / PAVEMENT).
15. IT IS THE ELECTRICAL SUB–CONTRACTOR'S RESPONSIBILITY TO PROVIDE EARTH FAULT AND OVERCURRENT TRIPPING DISCRIMINATION BETWEEN THE SWITCHBOARD AND THE INCOMING FEEDER TO COMPLY WITH THE LOCAL POWER UTILITY COMPANY AND THE CONSULTANT'S REQUIREMENTS.
16. THE ELECTRICAL SUB–CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPOTENTIAL EARTHING BONDING TO ALL METAL PARTS COMPLETED BY THE OTHER TRADES TO THE NEAREST ELECTRICAL PANEL / EARTH BAR.
17. ALL WIRING TO LIGHTING LUMINAIRES SHALL COMPRISE OF APPROVED CEILING ROSE FOR INDOOR INSTALLATION AND WEATHERPROOF JUNCTION BOX FOR OUTDOOR INSTALLATION. CONNECTION TO LIGHT FIXTURE SHALL BE BY MEANS OF PVC SHEATHED FLEXIBLE CABLE FOR NORMAL SUPPLY, FR CABLE FOR EMERGENCY SUPPLY AND ARMOURED CABLE FOR OUTDOOR INSTALLATION.
18. ALL LIGHTING POLE SPECIFIED SHALL COMPRISE OF RAIL MOUNTED 10A MCB IN THE COMPARTMENT. ALL POLE SHALL HAVE ITS OWN LIGHTNING ELECTRODES. OUTDOOR INSTALLATION SHALL BE IN HEAVY DUTY UPVC PIPES OF 100mm DIAMETER (MINIMUM).
19. MCB's RATED < 100A PROTECTING CABLES SUPPLYING LOADS WITH HIGH SWITCH–ON CURRENT (E.G. MOTORS, HID LAMPS, ETC.) SHALL HAVE TYPE 'C' MAGNETIC CURVE RATING UNLESS OTHERWISE INDICATED IN THE PLANS. UNLESS OTHERWISE STATED, ALL BUSBAR ARE OF HD COPPER AND SHALL BE RATED AT A CURRENT DENSITY OF NO MORE THAN 1.55A/sq. mm.
20. THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL NECESSARY LABOUR, MATERIALS AND EQUIPMENT FOR SATISFACTORY COMPLETION OF THE ENTIRE ELECTRICAL INSTALLATION AS GENERALLY DESCRIBED IN THE SPECIFICATION AND/OR SHOWN ON DRAWINGS.
21. ALL LOCATIONS OF EQUIPMENT AND CABLE ROUTES SHOWN ON THE DRAWING ARE APPROXIMATE. THE EXACT LOCATIONS MUST BE CO–ORDINATED ON SITE BEFORE INSTALLATION. FULLY CO–ORDINATED SHOP DRAWINGS MUST BE SUBMITTED TO THE CONSULTANT FOR APPROVAL BEFORE COMMENCEMENT OF WORK.
22. ALL SWITCHBOARDS AND DISTRIBUTION BOARDS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST DEWA REGULATIONS AND THE APPROVAL OF POWER UTILITY COMPANY. THEY SHALL BE PAINTED WITH A COAT OF ANTI–RUST PAINT AND TWO COATS OF SEMI–GLOSS TEAK PAINT OF BEST QUALITY TO THE APPROVAL OF THE CONSULTANT.
23. ALL POWER CONDUITS AND TRUNKING WHICH ARE EXPOSED SHALL BE PAINTED WITH A COAT OF RUST–RESISTING PRIMER AND TWO COATS OF ELECTRIC ORANGE.
24. ALL CONDUITS SHALL BE G.I., G.I. CONDUITS SHALL COMPLY WITH THE LATEST DEWA REGULATIONS ON ELECTRICAL INSTALLATIONS. MINIMUM SIZE SHALL NOT BE LESS THAN 20mm (INSIDE DIAMETER). ALL THREADS IN CONDUITS SHALL BE TREATED WITH ALUMINUM PAINT OR SIMILAR ANTITRUST PAINT TO PREVENT CORROSION AT JOINTS AND TERMINATION, CONNECTIONS SHALL BE BY MEANS OF COUPLER, SHALL BE USED FOR DIFFERENT CIRCUITS.
25. PHASE SEGREGATION SHALL COMPLY WITH THE LATEST REQUIREMENTS OF THE IEE WIRING REGULATIONS. SEPARATE CONDUITS SHALL BE USED FOR CABLES OF DIFFERENT CIRCUIT CATEGORIES. FOR 3 PHASE FINAL CIRCUITS, SEPARATE CONDUITS SHALL BE USED FOR DIFFERENT CIRCUITS.
26. ALL LIGHTING POINTS SHALL BE PROVIDED WITH CIRCUIT PROTECTIVE CONDUCTORS AND ALL METAL PARTS SHALL BE CONTINUOUSLY EARTHED THROUGHOUT.
27. THE ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL LIGHT LUMINAIRES AS SHOWN ON THE DRAWINGS. EACH FITTING SHALL HAVE ITS OWN INDEPENDENT SUPPORT REGARDLESS OF SURFACE, RECESSED OR SUSPENDED MOUNTING.
28. EACH CIRCUIT SHALL BE TESTED FOR GROUNDS AND SHORTS BY MEANS OF A MEGGER INSULATION RESISTANCE TESTING INSTRUMENT APPLYING A VOLTAGE OF NOT LESS THAN 500V D.C. UPON CIRCUIT UNDER TEST.
29. CABLES FOR ESSENTIAL CIRCUITS SUCH AS EMERGENCY LIGHTING CIRCUITS AND FIRE FIGHTING EQUIPMENT CIRCUITS ETC SHALL NOT BE DRAWN INTO THE SAME CONDUIT, DUCT OR TRUNKING INTENDED FOR NORMAL CIRCUITS AS PER IEE 364 WIRING REGULATION. ALL CABLES AND WIRES FOR LIFE SAFETY AND ESSENTIAL CIRCUIT SHALL BE OF 2HRS FIRE RATED.
30. FOR SINGLE PHASE SUPPLY, CIRCUITS OF DIFFERENT PHASES SHALL NOT SHARE THE SAME CONDUIT.
31. ALL SHUNT TRIP RELEASES OF ACB'S IN THE MAIN ELECTRICAL SWITCHBOARD SHALL BE RATED AT 30V DC. A BATTERY SUPPLY OF SUFFICIENT CAPACITY SHALL BE PROVIDED FOR THE TRIPPING OF ACBs, CAPACITY OF BATTERY SHALL BE SUBMITTED FOR THE CONSULTANT'S APPROVAL PRIOR TO INSTALLATION.
32. ALL EARTH TESTS SHALL BE CARRIED OUT WITH A 1000V MEGGER TEST INSTRUMENT AND IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF DEWA WIRING REGULATIONS.
33. THE LIGHTNING PROTECTION SYSTEM SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST DEWA REGULATIONS PRACTICE AND BS–EN 62305 AND INSTALLED TO THE SATISFACTION OF THE CONSULTANT.
34. THE ELECTRICAL CONTRACTOR SHALL LIASE WITH ELV SYSTEMS CONTRACTOR VIA THE MAIN CONTRACTOR TO ENSURE THAT POWER SUPPLIES FOR ALL EQUIPMENT ARE ADEQUATELY PROVIDED TO SUIT THE SYSTEM REQUIREMENTS.
35. EQUIPOTENTIAL BONDING SHALL BE PROVIDED FOR ALL TOILETS.
36. ALL POWER OUTLET, LIGHTING, ETC., LOCATIONS SHOWN ARE APPROXIMATE ONLY AND THE ELECTRICAL SUB–CONTRACTOR MUST CO–ORDINATE WITH LINX AND OR THE INTERIOR DESIGNER, AS WELL AS EQUIPMENT SUPPLIERS.
37. THE DISTRIBUTION AND SIZE OF THE TRUNKING/CABLE TRAY SHOWN ON THE DRAWINGS ARE MEANT TO FACILIATE THE CONTRACTOR THE PROPOSED ROUTING OF THE MAIN AND SUB–MAIN. THE CONTRACTOR SHALL SIZE THE TRUNKING/CABLE TRAY BASED ON THE EXACT CABLE SPACE AND CODE REQUIREMENTS. THE CONTRACTOR SHALL ALLOW 20% SPARE SPACE FOR FUTURE CABLE LAYING.
38. ALL ISOLATORS INSIDE MECHANICAL PLANTROOMS AND OTHER POTENTIALLY WET LOCATIONS SHALL BE PROVIDED WITH WEATHERPROOF ENCLOSURE (IP65).
39. CONTRACTOR TO CROSS REFER TO FIRE ALARM CAUSE AND EFFECT MATRIX. ALL DEVICES, INTERFACE, TERMINAL BLOCKS, WIRING, ETC. NECESSARY FOR SATISFACTORY OPERATION OF FIRE ALARM AND FIRE STRATEGY SHALL BE DEEM INCLUDED IN THIS CONTRACT.

CO-ORDINATION AND INSTALLATION

1. THE ELECTRICAL CONTRACTOR SHALL OBTAIN APPROVAL FROM STRUCTURAL ENGINEERS FOR PENETRATION THROUGH R.C. BEAMS AND FLOOR SLABS PRIOR TO CONSTRUCTION.
2. ALL CONDUITS LAYOUT AND INSTALLATION METHODS SHALL BE IDENTICAL IN ALL ROOMS AS MUCH AS POSSIBLE.
3. ALL MATERIALS/ CABLES TO BE USED AND INSTALLATION METHOD SHALL COMPLY WITH THE TECHNICAL SPECIFICATION, STANDARDS, CODE OF PRACTICE AND AUTHORITY REQUIREMENT.
4. THE ELECTRICAL CONTRACTOR IS REQUIRED TO SUBMIT DETAILS OF FINAL ARRANGEMENT AND DIMENSIONAL LAYOUT OF ALL ITEMS OF EQUIPMENT IN RESPECTIVE ROOMS TO SUIT SITE CONDITIONS, ETC. FOR REVIEW BY THE SUPERVISING CONSULTANT BEFORE COMMENCEMENT OF INSTALLATION.
5. ALL ELECTRICAL AND ELV DRAWINGS SHALL BE READ IN CONJUCTION WITH THE LATEST ARCHITECTURAL DRAWINGS, INTERIOR DEISGN DRAWINGS, OTHER SERVICES DRAWINGS AND SPECIFICATIONS.

LIGHTNING PROTECTION SYSTEM

1. LIGHTNING PROTECTION SYSTEM SHALL COMPLY WITH IEC CODE OF BS EN 62305.
2. THE POSITIONS OF THE ELECTRODES FOR LIGHTNING PROTECTION SYSTEM ARE APPROXIMATE ONLY. THE EXACT LOCATIONS ON SITE SHALL BE DETERMINED SUCH THAT THE SPECIFIED REQUIREMENTS OF EARTHING SYSTEM ARE COMPLIED.
3. ELECTRICAL CONTRACTOR SHALL LIAISE WITH MAIN CONTRACTOR FOR INSTALLATION OF EARTH ELECTRODE PITS. WATER PROOFING FOR ELECTRODES THROUGH R.C SLAB SHALL BE PROVIDED UNDER THIS CONTRACT.
4. ALL PENETRATIONS THROUGH ROOF TO BE MADE WATER TIGHT AFTER INSTALLATION OF DOWN CONDUCTOR CABLES, ETC.

EARTHING SYSTEM

1. EARTH RESISTANCE WILL BE TESTED UPON COMPLETION OF EACH EARTHING POINT INSTALLATION BEFORE INTERCONNECTION OF THE EARTH POINT.
2. EARTH RESISTIVITY TEST SHALL BE CARRIED AT EACH EARTHING POINT.
3. ALL TAPE/CABLES/CLAMP CONTACT SURFACE SHALL BE HEAVILY TINNED PRIOR TO CONNECTION.
4. PRECAUTIONARY MEASURES SHALL BE TAKEN SO AS NOT TO OVER EXCAVATE THE EARTHING PIT.
5. PROPERTIATARY CAD WELD CONNECTION SHALL BE EMPLOYED FOR CONNECTING EARTH CABLE TO EARTHING POINT STRICTLY IN ACCORDANCE TO THE INSTRUCTION OF THE SUPPLIER.
6. IMMEDIATELY UPON COMPLETION OF EACH GROUP OF EARTH POINT INSTALLATION, TEST SHALL BE CARRIED OUT TO ESTABLISH THE EARTH RESISTANCE. THE TEST RESULTS SHALL BE SUBMITTED TO CONSULTANT FOR APPROVAL.
7. AFTER COMPLETION OF THE EARTHING INSTALLATION AND SATISFACTORY TESTING, EACH OF THE EARTHING PIT SHALL BE SUITABLY GROUTED TO SUPERVISING CONSULTANT REQUIREMENT TO PREVENT INGRESS OF GROUND WATER. GROUTING MATERIALS USED SHALL BE SUBJECT TO CONSULTANT'S APPROVAL.

ELECTRICAL BOARD AND COMPONENTS

1. ALL MCCB's INSTALLED SHALL COMPLETE WITH ADJUSTABLE THERMAL AND MAGNETIC SETTING OF APPROPRIATE RANGE.
2. ALL MCBs USED FOR PROTECTION OF LIGHTING AND SMALL POWER SHALL OF TYPE C CHARACTERISTIC. ALL MCCBs/MPCBs USED FOR PROTECTION OF MOTOR LOADS SHALL BE OF TYPE D CHARACTERISTIC. HOWEVER, MOTOR PROTECTION COORDINATION STUDY SHALL BE SUBMITTED BY THE CONTRACTOR FOR ENGINEER'S/CONSULTANT'S REVIEW AND APPROVAL.
3. MCCBs/MCBs IN THE MAIN SWITCHBOARDS, SUB–SWITCHBOARDS, DISTRIBUTION BOARDS SHOWN HEREIN AND OTHER DRAWINGS PROTECTING MOTOR CIRCUITS FOR PUMPS, FANS, AHU's, ETC. SHALL BE OF THE TYPE SUITABLE FOR MOTOR PROTECTION INCORPORATING OVERLOAD AND SHORT CIRCUIT PROTECTIVE DEVICES (ALSO EARTH FAULT PROTECTION WHERE SHOWN IN THE DRAWINGS) AND THEY SHALL BE SO SELECTED THAT THEY ARE ABLE TO COORDINATE WITH BOTH THE UPSTREAM AND DOWNSTREAM PROTECTION DEVICES.
4. ALL PROTECTION CTs SHALL BE OF CLASS COMPLYING TO DEWA REQUIRENT OR BETTER.
5. ALL METERING CTs SHALL BE OF CLASS COMPLYING TO DEWA REQUIREMENT OR BETTER.
6. BUSBAR MARKINGS, ARRANGEMENTS, CONNECTIONS AND GRADE OF COPPER SHALL COMPLY AS APPROPRIATE WITH BS.159, 1433 AND 1977.
7. ALL ELECTRICAL BOARDS BUSBARS SHALL BE OF HARD DRAWN TINNED COPPER AND SHALL HAVE A CURRENT DENSITY OF NOT LESS THAN 1.55A/SQ.MM. WHEN MORE THAN ONE SET OF BUSBARS ARE USED PER PHASE, APPROPRIATE DERATING FACTOR SHALL APPLY.
8. ALL NON–CURRENT CARRYING METALLIC PARTS OF THE DISTRIBUTION BOARDS SHALL BE BONDED TO SYSTEM EARTH.
9. THERE SHALL BE A COMMON EARTH BAR IN EACH ELECTRICAL BOARD.
10. THE NEUTRAL LINKS AND EARTH BARS IN THE ELECTRICAL BOARDS SHALL BE LOCATED AT AN EASILY ACCESSIBLE POSITION AND SHALL BE KEPT CLEAR OF ANY OBSTRUCTIONS.
11. NEUTRAL AND EARTH BARS SHALL HAVE SUFFICIENT NUMBER OF WAYS TO MATCH THE NUMBER OF SUB–CIRCUITS WITH SPARES.
12. THE MINIMUM CLEARANCE AROUND THE NEUTRAL LINKS SHALL BE 50mm.
13. THE ELECTRICAL SUB–CONTRACTOR IS REQUIRED TO CARRY OUT HIS OWN FAULT LEVEL CALCULATIONS BASING ON THE CHARACTERISTICS OF THE EQUIPMENT OFFERED AND THE ACTUAL/AGREED ROUTING (SUBJECT TO THE SUPERVISING CONSULTANT APPROVAL) OF THE ACTUAL/AGREED ROUTING (SUBJECT TO THE SUPERVISING CONSULTANT APPROVAL) OF THE CABLES AND THEREAFTER SELECT THE MOST APPROPRIATE RUPTURING CAPACITY OF SUB–SWITCHBOARDS, BUSBAR TRUNKING AND DISTRIBUTION BOARDS TO MEET THE PROSPECTIVE FAULT LEVELS. ALL COSTS IN CONNECTION THEREWITH SHALL BE DEEMED TO BE INCLUDED IN THE SUB–CONTRACT SUM. THE ELECTRICAL SUB–CONTRACTOR SHALL SUBMIT DETAILED CALCULATION & SELECTION FOR ELECTRICAL CONSULTANT'S APPROVAL.
14. ALL ELECTRICAL EQUIPMENT AND ACCESSORIES THAT ARE EXPOSED TO WEATHER SHALL BE OF WEATHERPROOF TYPE TO IP65, UNLESS OTHERWISE STATED.
15. IDMTL OVERCURRENT AND EARTH FAULT RELAYS SPECIFIED SHALL BE COMPLETE WITH HIGH SET ELEMENT.
16. ALL OVERCURRENT, EARTH FAULT RELAYS AND EARTH LEAKAGE RELAYS SHALL BE TESTED ON SITE BY ELECTRICAL LICENSED TESTER AND ALL COSTS CONNECTED THEREWITH SHALL BE DEEM TO BE INCLUDED IN THE SUB–CONTRACT SUM.
17. THE ELECTRICAL SUB–CONTRACTOR IS REQUIRED TO SUBMIT DETAILS OF FINAL ARRANGEMENT AND DIMENSIONAL LAYOUT OF ALL THE ITEMS OF EQUIPMENT IN RESPECTIVE ROOMS TO SUIT SITE CONDITIONS, ETC FOR REVIEW BY THE CONSULTANT BEFORE COMMENCEMENT OF INSTALLATION.
18. ALL MOTOR SHALL BE PROVIDED WITH EMERGENCY STOP BUTTON RIGHT NEXT TO THE EQUIPMENT.
19. UNLESS OTHERWISE INDICATED, THE MCCBs/MCBs INSTALLED FOR ANY MAIN SWITCHBOARDS, SUB–BOARDS AND DISTRIBUTION BOARDS SHALL HAVE THE FOLLOWING MINIMUM BREAKING CAPACITY :

MAIN SWITCHBOARD	:	50KA RMS. 1 SEC.
SUB BOARDS	:	35KA RMS. 1 SEC.
DISTRIBUTION BOARDS	:	10KA RMS. 1 SEC.

CABLES AND ANCILLARY PRODUCTS

1. ALL CABLES / WIRES FOR FINAL SUB–CIRCUIT WIRINGS SHALL BE PVC, MULTI–STRAND COPPER CONDUCTORS.
2. NO PVC CONDUIT/TRUNKING SHALL BE ALLOWED FOR THE WHOLE ELECTRICAL INSTALLATION UNLESS OTHERWISE STATED. IN GENERAL, ALL WIRING SHALL BE DONE WITHIN CONDUIT EMBEDDED IN SLAB FOR ALL SEVICES. EXPOSE CONDUIT/ WIRE SHALL NOT BE ACCEPTED.
3. SEPARATE CONDUIT/MULTI–GANG SWITCH BOX SHALL BE PROVIDED FOR FINAL SUB–CIRCUIT OF DIFFERENT PHASES. ALSO A SIGN SHALL BE PROVIDED TO INDICATE THE VOLTAGE BETWEEN THEM IN ACCORDANCE WITH DEWA REGULATION FOR THE INSTALLATIONS.
4. ALL EXTERNAL/LANDSCAPE LIGHTING POINTS SHALL BE PROVIDED WITH CABLES WITH ADDITIONAL LENGTH OF 5m.
5. SPACE FACTOR OF CONDUIT & TRUNKING SHALL COMPLY WITH DEWA REGULATION OF PRACTICE FOR WIRING OF ELECTRICAL EQUIPMENT OF BUILDINGS.
6. ALL SUB–MAINS CIRCUITS TO BE COMPLETE WITH CIRCUIT PROTECTIVE CONDUCTOR (CPC) COMPLYING TO DEWA REGULATION FOR THE INSTALLATIONS.
7. NEUTRAL & EARTH CABLES FOR EACH DIFFERENT CIRCUIT SHALL BE BROUGHT BACK TO THE SOURCE PANEL AND SHALL NOT BE LOOPED TOGETHER OUTSIDE THE PANEL.
8. ALL ELECTRICAL CONDUITS AND CONDUIT BOXES TO CAST WITHIN R.C. SLAB AT WET AREAS MUST HAVE TIGHTLY SEALED AND WATERPROOF JOINTS.
9. ALL UNDERGROUND JUNCTION BOXES SHALL BE OF G.I., TYPE. KNOCK OUT BOXES SHALL NOT BE USED AS UNDERFLOOR JUNCTION BOXES.
10. THE SIZES OF CABLE TRAY/TRUNKING/CONDUIT AS SHOWN IN DRAWINGS ARE APPROXIMATE ONLY. ELECTRICAL SUB–CONTRACTOR IS DEEMED TO HAVE ALLOWED IN HIS TENDER PRICE FOR ALL NECESSARY ADJUSTMENT TO ACCOMMODATE THE CABLES AND SHALL SUBMIT ALL DETAILED CO–ORDINATED CABLE CONDUIT/TRUNKING/TRAY/ LADDER ROUTE PLANS AND SECTION DRAWINGS TO THE SUPERVISON CONSULTANT FOR CLEARANCE PRIOR TO STARTING WORK ON SITE.
11. ALL UNDERGROUND CABLES CROSSING DRIVEWAYS OR HARDCORE AREAS ARE TO BE PROVIDED WITH HEAVY DUTY PVC PIPES, ENCASED IN CONCRETE WITH FULL HAUNCHING.
12. ALL STRAIGHT CONDUIT RUNS EXEEDING 8 METERS SHALL BE PROVIDED WITH JUNCTION BOX TO FACILITATE EASY WIRE / CABLE PULLING.
14. ALL FEEDER CABLES SHALL BE XLPE / SWA / LSOH FOR NORMAL CRCUIT AND XLPE / SWA / FR FOR EMERGENCY CIRCUITS.

LUMINAIRES

1. ALL LIGHTING SWITCHES SHALL COMPLY WITH CIBSE STANDARD, KENYA GREEN BUILDING REGULATION AND SHALL BE OF THE APPROVED TYPE.
2. FLUORESCENT LAMP TUBES USED AT PUBLIC AREAS SHALL BE OF COLOUR 83 WARM WHITE AND INSTANT START UNLESS OTHERWISE STATED AND OF LOW LOSS ENERGY SAVING TYPE.
3. ELECTRICAL CONTRACTOR SHALL REFER TO LIGHTING CONSULTANT – FOR FURTHER NOTES AND LEGENDS.
4. ALL EXIT LIGHTINGS SHALL BE POSITIONED NOT MORE THAN 2.4m ABOVE FFL. TO CENTRE OF FITTING.

POWER OUTLETS

1. SWITCH SOCKET OUTLETS AND SWITCHES MOUNTED SURFACE AT PLANTROOMS, STORES AND SIMILAR AREAS SHALL BE OF WEATHER PROOF TYPE UNLESS OTHERWISE STATED.
2. ALL ELECTRICAL EQUIPMENT & ACCESSORIES THAT ARE EXPOSED OR LESS THAN 2.0M AWAY FROM WET AREA SHALL BE OF WATERPROOF TYPE.
3. COLOUR FOR ALL SWITCHES, SWITCH SOCKET OUTLETS SHALL BE AS PER SUPERVISING CONSULTANT'S / ARCHITECT'S / INTERIOR DESIGNER'S SELECTION.
4. UNLESS OTHERWISE INDICATED, THE MOUNTING HEIGHTS FROM FINISHED FLOOR LEVELS FOR VARIOUS ITEMS OF ELECTRICAL WIRING ACCESSORIES/ EQUIPMENT SHALL BE AS FOLLOWS:

LIGHTING SWITCHES	–	1250mm TO CENTRELINE
SWITCH SOCKET OUTLETS	–	450mm TO CENTRELINE
DISTRIBUTION BOARDS	–	GENERALLY 1800mm TO TOP OF BOARD
WALL/COLUMN LIGHTS	–	2500mm TO CENTRELINE

5. THE ELECTRICAL CONTRACTOR SHALL NOTE THAT THE POSITIONS OF ELECTRICAL POINTS, LUMINAIRES, LIGHTING SWITCHES, SWITCH SOCKET OUTLETS ETC. ARE INDICATIVE AND APPROXIMATE AS SHOWN ON DRAWINGS. THE ACTUAL POSITIONS SHALL BE BASED ON THE CONSULTANT'S OR INTERIOR DESIGNER'S DRAWING. THE ELECTRICAL SUB–CONTRACTOR IS DEEMED TO HAVE ALLOWED IN HIS TENDER PRICE FOR ALL NECESSARY SITE ADJUSTMENT TO SUIT THE FINAL POSITIONS.
6. LOCATIONS FOR ELECTRICAL DISTRIBUTION BOARDS SHOWN IN THE PLANS ARE INDICATIVE ONLY. ELECTRICAL SUB–CONTRACTOR SHALL VERIFY ON SITE AND PROPOSE THEIR ACTUAL LOCATIONS ON THE SHOP DRAWING FOR CLEARANCE.
7. ELECTRICAL DISTRIBUTION BOARD SHALL NOT BE MOUNTED MORE THAN 1800mm ABOVE FFL. (MEASURED FROM FFL TO TOP OF DISTRIBUTION BOARD).
8. ALL ISOLATOR SHALL BE IP–65, IN METAL CABINET AND PAD–LOCKABLE.
9. FINAL LOCATION AND MOUNTING HEIGHT OF WIRING DEVICES SHALL BE COORDINATED WITH ARCHITECT AND ID CONSULTANT.
10. MOTORIZED DAMPER AND MOTORIZED VALVE WHERE REQUIRED BY MECHANICAL SHALL BE BE PROVIDED WITH RESPECTIVE FUSE CONNECTION UNIT TO BE CONNECTED TO RELATED EQUIPMENT LMCP OR AS OTHERWISE SHOWN ON PLAN.

ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	12W Ceiling Rose		*2 WAY 1 GANG SWITCH*
	12W Surface LED Down lighter		*1 WAY SWITCH*
	12W Ball Fitting		*2 WAY 2 GANG SWITCH*
	15W Presence Sensor		
	10W Ball Fitting		*Two arm 150W solar Light for external electrics*
	13A Twin sockets		*3-ph ISOLATOR*
	13A Twin sockets with data		*45A KITCHEN UNIT*
	CONSUMER UNIT		*Surveillance Camera*
	DISTRIBUTION BOARD		*20A D.P Switch with Neon Light*
	TV Point		*Instant Shower Point*
	Door Bell		*KPLC Meterboard*
	1-ph ISOLATOR		

GENERAL NOTES

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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION
R1	16/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

☐ *APPROVAL* ☐ *RECORD*

☐ *DETAILED* ☑ *TENDER*

☐ *SHOP DWG* ☐ *AS BUILT*

PROJECT: *Residential Building*

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: AHP

DRAWING TITLE :

LIGHTING AND POWER SYSTEM GENERAL NOTES AND SYMBOLS

SCALE : *1:100*

DRAWN BY : *B.M*

CHECKED BY : *C.A*

Date : *16/03/2024*

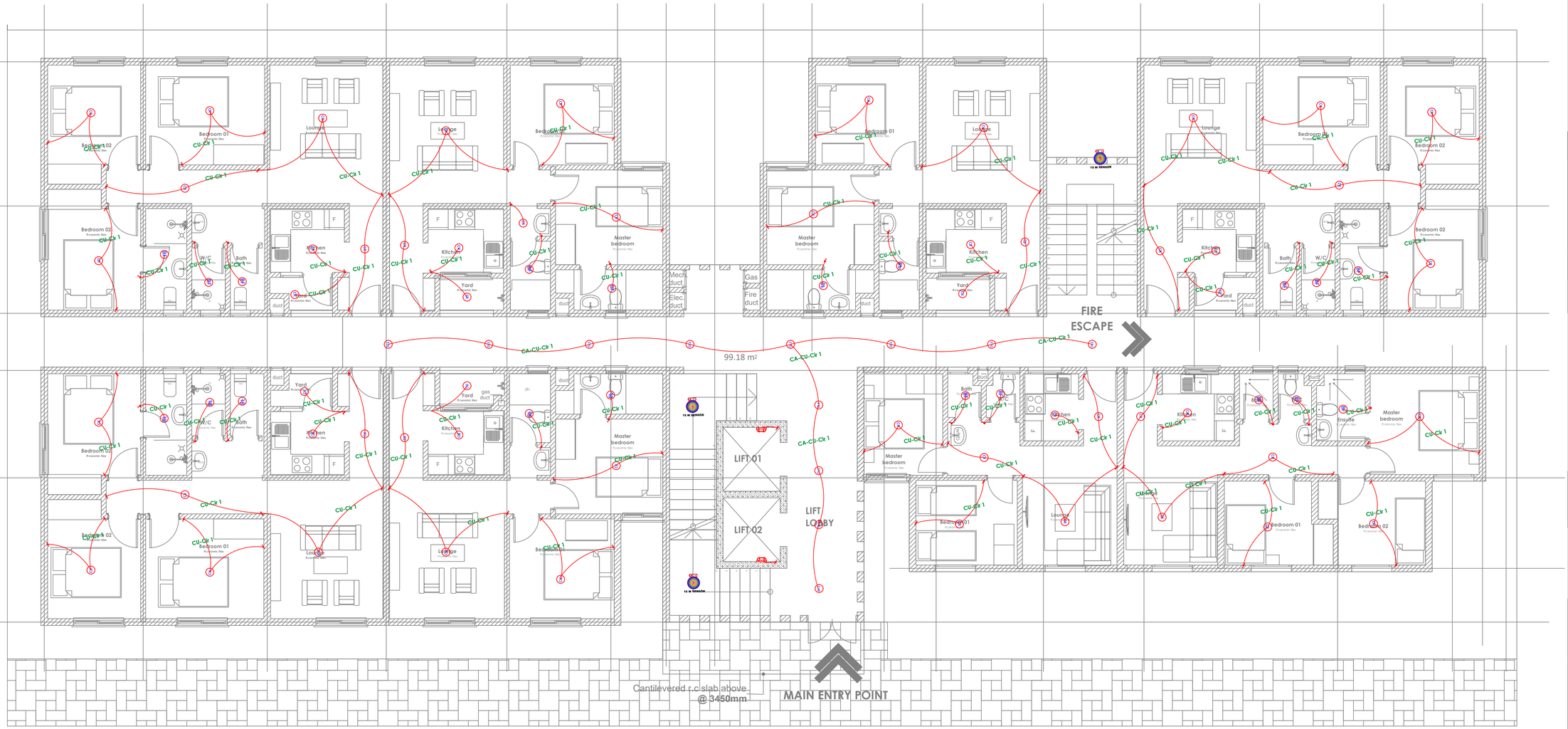
DATE : *16/03/2024*

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_GROUND FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN			
AFFORDABLE UNITS		MARKET UNITS	
2_BEDROOM	3_BEDROOM	2_BEDROOM	3_BEDROOM
1	1	3	3

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
CR	12W Ceiling Rose		2 WAY 1 GANG SWITCH
DL1	12W Surface LED Down lighter		1 WAY SWITCH
BF	12W Ball Fitting		2 WAY 2 GANG SWITCH
	15W Presence Sensor		
	10W Ball Fitting		

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION
R1	16/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **Residential Building**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: AHP

DRAWING TITLE :

BLOCK TYPE B GROUND FLOOR POWER LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 16/03/2024

DATE : 16/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

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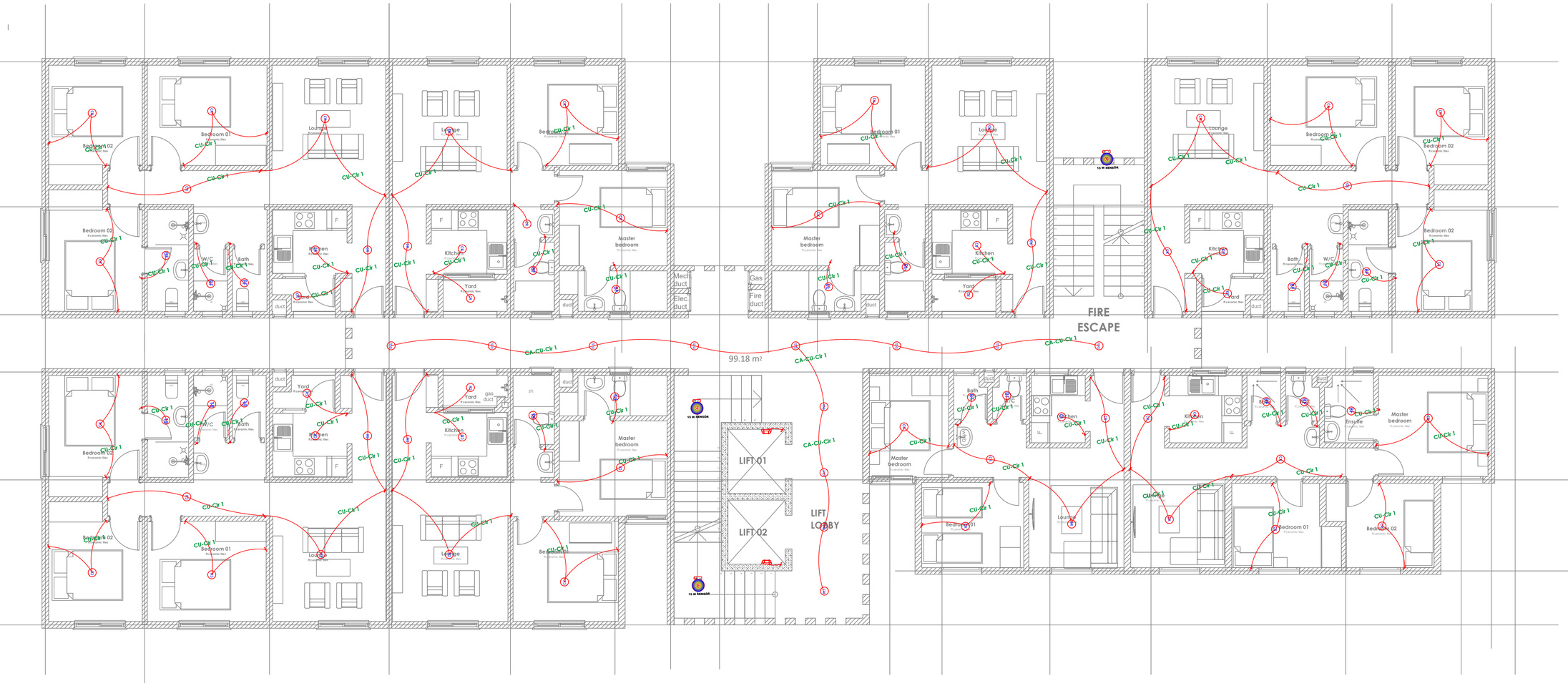

PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_TYPICAL 1ST-9TH FLOOR LEVEL

UNIT BREAK DOWN_ UNIT BREAK DOWN			
AFFORDABLE UNITS		MARKET UNITS	
2_BEDROOM	3_BEDROOM	2_BEDROOM	3_BEDROOM
1	1	3	3

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
CR	12W Ceiling Rose		2 WAY 1 GANG SWITCH
DL1	12W Surface LED Down lighter		1 WAY SWITCH
BF	12W Ball Fitting		2 WAY 2 GANG SWITCH
	15W Presence Sensor		
	10W Ball Fitting		

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION
R1	16/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **Residential Building**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: AHP

DRAWING TITLE :

BLOCK TYPE B TYPICAL FLOOR POWER LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 16/03/2024

DATE : 16/03/2024

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PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_GROUND FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN			
AFFORDABLE UNITS		MARKET UNITS	
2_BEDROOM	3_BEDROOM	2_BEDROOM	3_BEDROOM
1	1	3	3

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	13A Twin sockets		3-ph ISOLATOR
	13A Twin sockets with data		45A KITCHEN UNIT
	CONSUMER UNIT		Surveillance Camera
	DISTRIBUTION BOARD		20A D.P Switch with Neon Light
	TV Point		Instant Shower Point
	Door Bell		KPLC Meterboard

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION
R1	16/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **Residential Building**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: AHP

DRAWING TITLE :

BLOCK TYPE B GROUND FLOOR POWER LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 16/03/2024

DATE : 16/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

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PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_TYPICAL 1ST-9TH FLOOR LEVEL

UNIT BREAK DOWN_ UNIT BREAK DOWN			
AFFORDABLE UNITS		MARKET UNITS	
2_BEDROOM	3_BEDROOM	2_BEDROOM	3_BEDROOM
1	1	3	3

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	13A Twin sockets		*3-ph ISOLATOR*
	13A Twin sockets with data		*45A KITCHEN UNIT*
	CONSUMER UNIT		*Surveillance Camera*
	DISTRIBUTION BOARD		*20A D.P Switch with Neon Light*
	TV Point		*Instant Shower Point*
	Door Bell		*KPLC Meterboard*

GENERAL NOTES

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2. All dimensions are in mm unless otherwise specified.
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REV.	DATE	DESCRIPTION
R1	16/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **Residential Building**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: AHP

DRAWING TITLE :

BLOCK TYPE B TYPICAL FLOOR POWER LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 16/03/2024

DATE : 16/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

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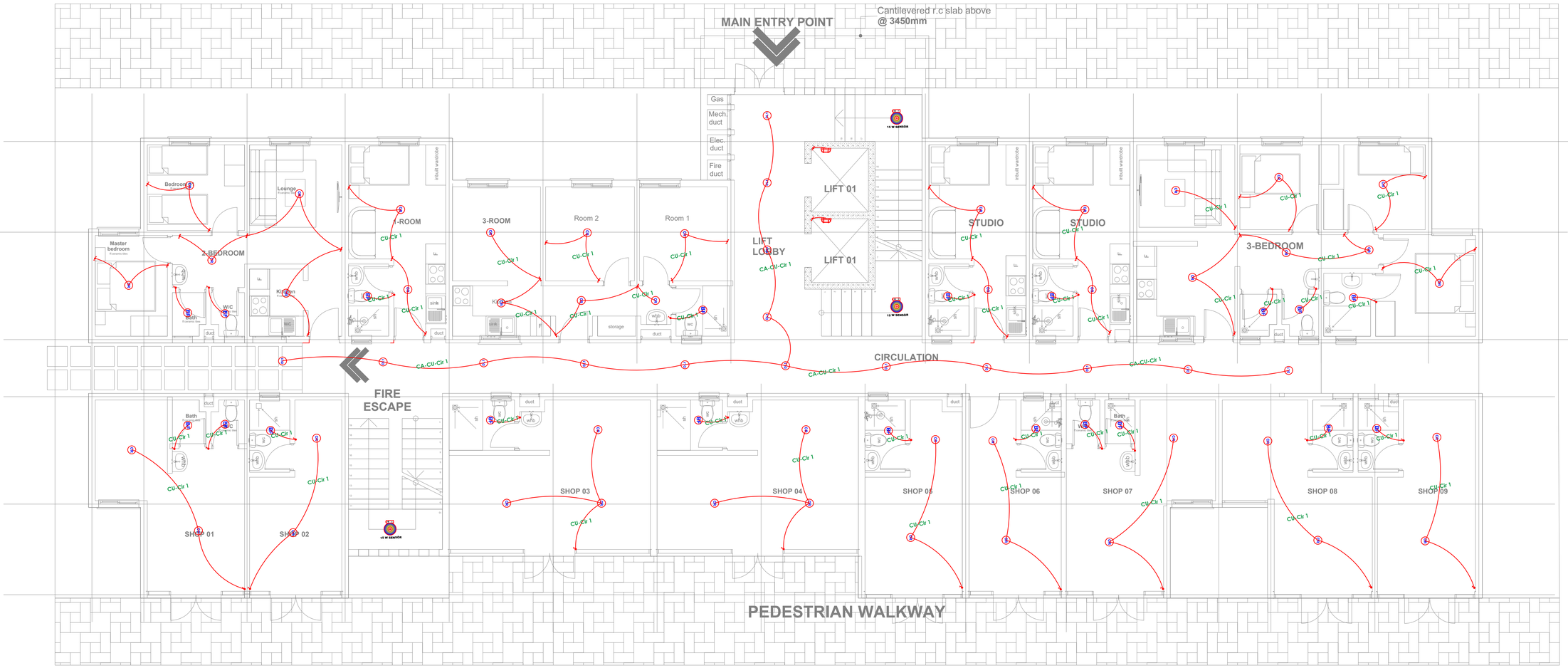

PROPOSED TYPICAL MIXED USE BLOCK TYPE C_GROUND FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN						
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM	RETAIL
1	2	1	2	1	1	9

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
CR	12W Ceiling Rose		2 WAY 1 GANG SWITCH
DL1	12W Surface LED Down lighter		1 WAY SWITCH
BF	12W Ball Fitting		2 WAY 2 GANG SWITCH
	15W Presence Sensor		
	10W Ball Fitting		

GENERAL NOTES

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2. All dimensions are in mm unless otherwise specified.
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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION
R1	16/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **Residential Building**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: AHP

DRAWING TITLE :

BLOCK TYPE C GROUND FLOOR LIGHTING LAYOUT

SCALE : 1:100

DRAWN BY : B.M

CHECKED BY : C.A

Date : 16/03/2024

DATE : 16/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

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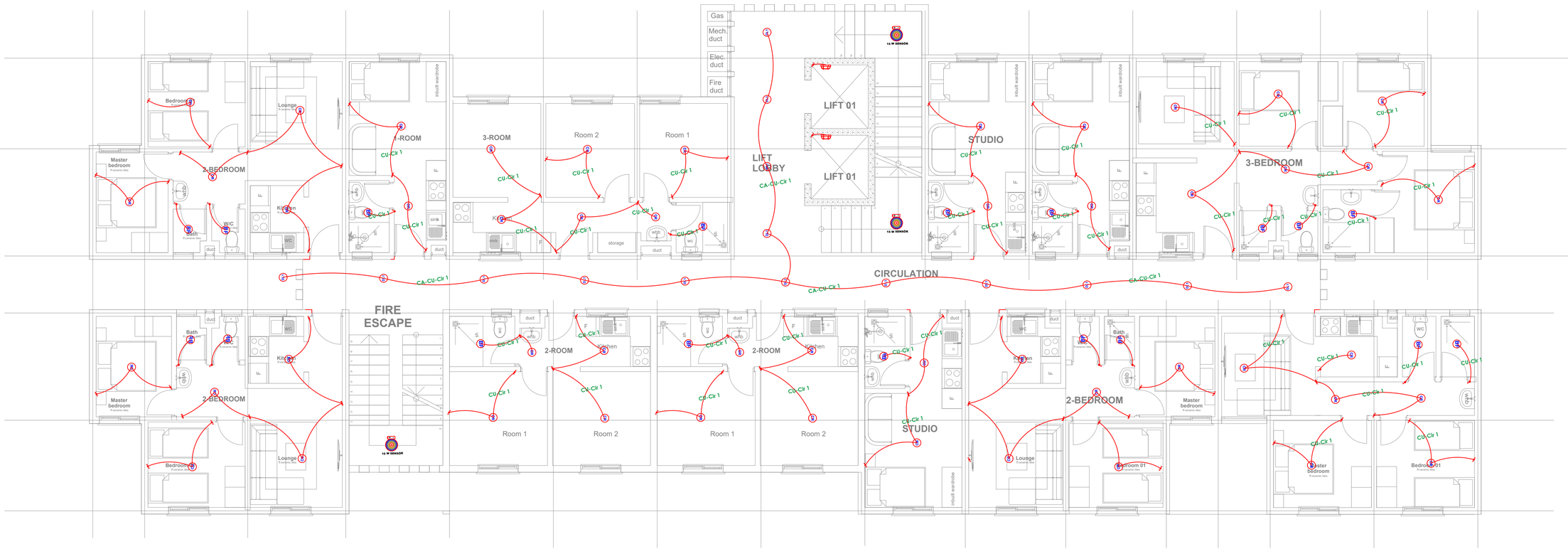

PROPOSED TYPICAL MIXED USE BLOCK TYPE C_TYPICAL 1ST-9TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	3	4	1

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
CR	12W Ceiling Rose		2 WAY 1 GANG SWITCH
DL1	12W Surface LED Down lighter		1 WAY SWITCH
BF	12W Ball Fitting		2 WAY 2 GANG SWITCH
	15W Presence Sensor		
	10W Ball Fitting		

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION
R1	16/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **Residential Building**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: AHP

DRAWING TITLE :

BLOCK TYPE C TYPICAL FLOOR LIGHTING LAYOUT

SCALE : 1:100

DRAWN BY : B.M

CHECKED BY : C.A

Date : 16/03/2024

DATE : 16/03/2024

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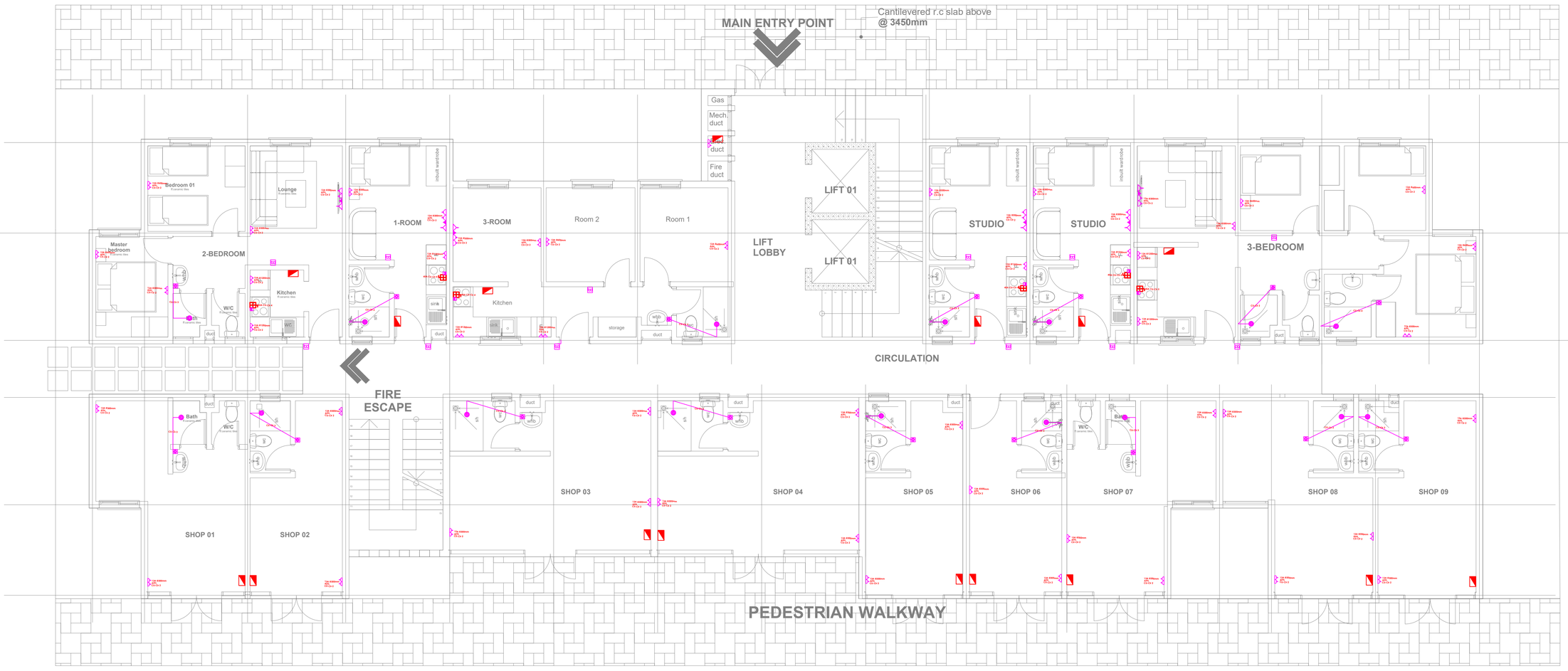
BLOCK TYPE C [G+4]



PROPOSED TYPICAL MIXED USE BLOCK TYPE C_GROUND FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN						
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM	RETAIL
1	2	1	2	1	1	9

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	13A Twin sockets		*3-ph ISOLATOR*
	13A Twin sockets with data		*45A KITCHEN UNIT*
	CONSUMER UNIT		*Surveillance Camera*
	DISTRIBUTION BOARD		*20A D.P Switch with Neon Light*
	TV Point		*Instant Shower Point*
	Door Bell		*KPLC Meterboard*

GENERAL NOTES

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REV.	DATE	DESCRIPTION
R1	16/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **Residential Building**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: AHP

DRAWING TITLE :

BLOCK TYPE C GROUND FLOOR POWER LAYOUT

SCALE : 1:100

DRAWN BY : B.M

CHECKED BY : C.A

Date : 16/03/2024

DATE : 16/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

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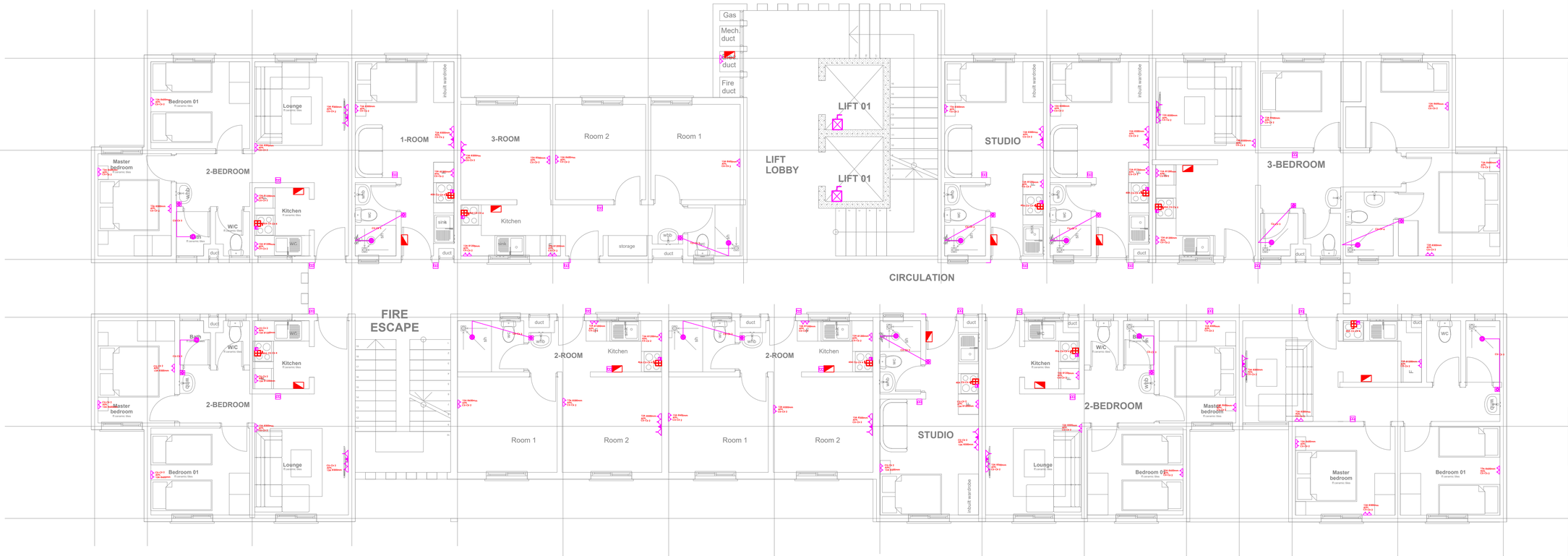

PROPOSED TYPICAL MIXED USE BLOCK TYPE C_TYPICAL 1ST-9TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	3	4	1

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	13A Twin sockets		*3-ph ISOLATOR*
	13A Twin sockets with data		*45A KITCHEN UNIT*
	CONSUMER UNIT		*Surveillance Camera*
	DISTRIBUTION BOARD		*20A D.P Switch with Neon Light*
	TV Point		*Instant Shower Point*
	Door Bell		*KPLC Meterboard*

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION
R1	16/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **Residential Building**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: AHP

DRAWING TITLE :

BLOCK TYPE C TYPICAL FLOOR POWER LAYOUT

SCALE : 1:100

DRAWN BY : B.M

CHECKED BY : C.A

Date : 16/03/2024

DATE : 16/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

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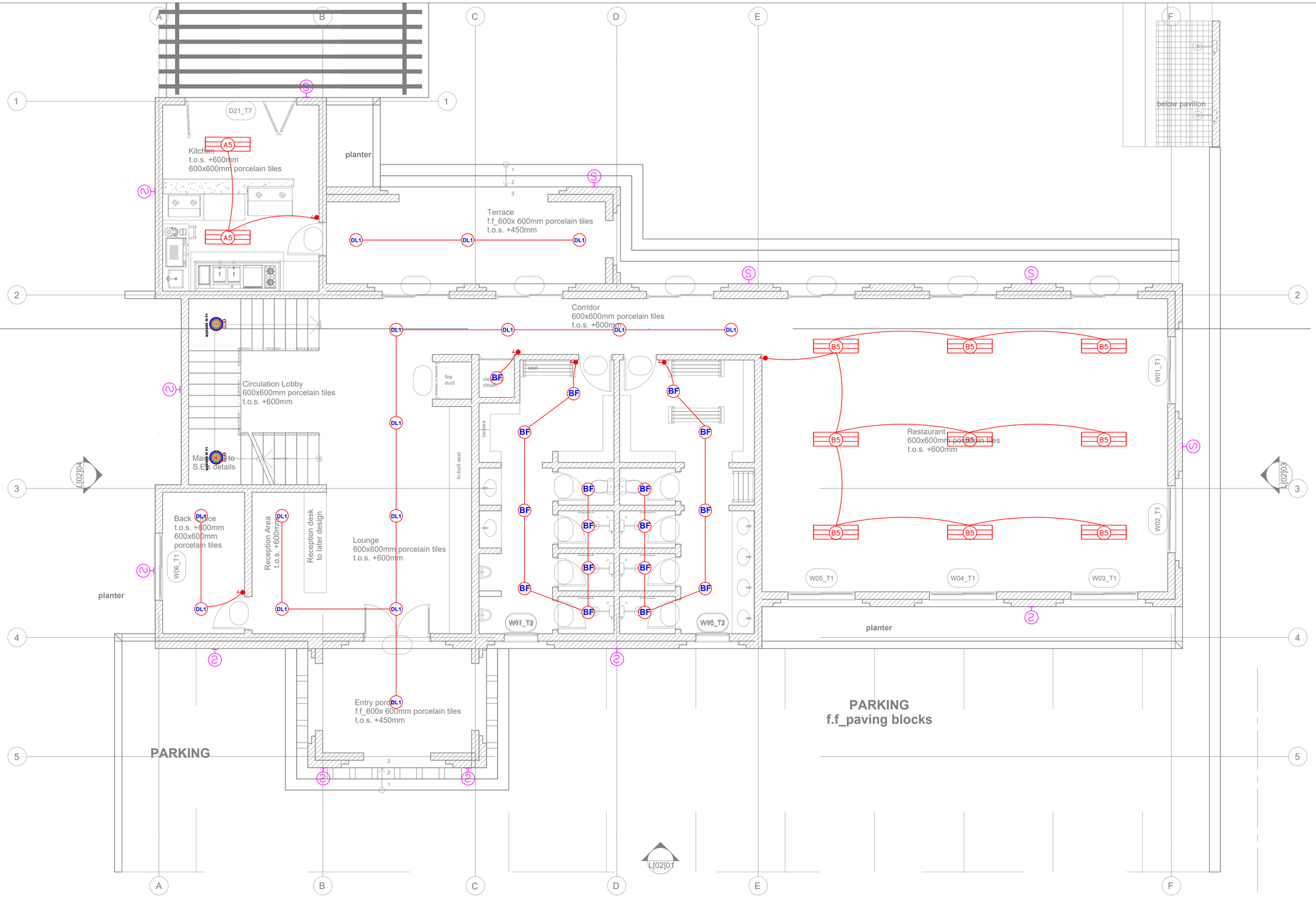

L[--]01_GROUND FLOOR PLAN
SCALE 1:100

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
CR	12W Ceiling Rose		2 WAY 1 GANG SWITCH
DL1	12W Surface LED Down lighter		1 WAY SWITCH
BF	12W Ball Fitting		2 WAY 2 GANG SWITCH
	15W Presence Sensor	B5	40W 1200x300mm LED Panel
	10W Ball Fitting		
	18W Security Lights		

GENERAL NOTES

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2. All dimensions are in mm unless otherwise specified.
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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION
R1	19/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: AHP

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: CLUB HOUSE

DRAWING TITLE :

CLUB HOUSE GROUND FLOOR LIGHTING LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 19/03/2024

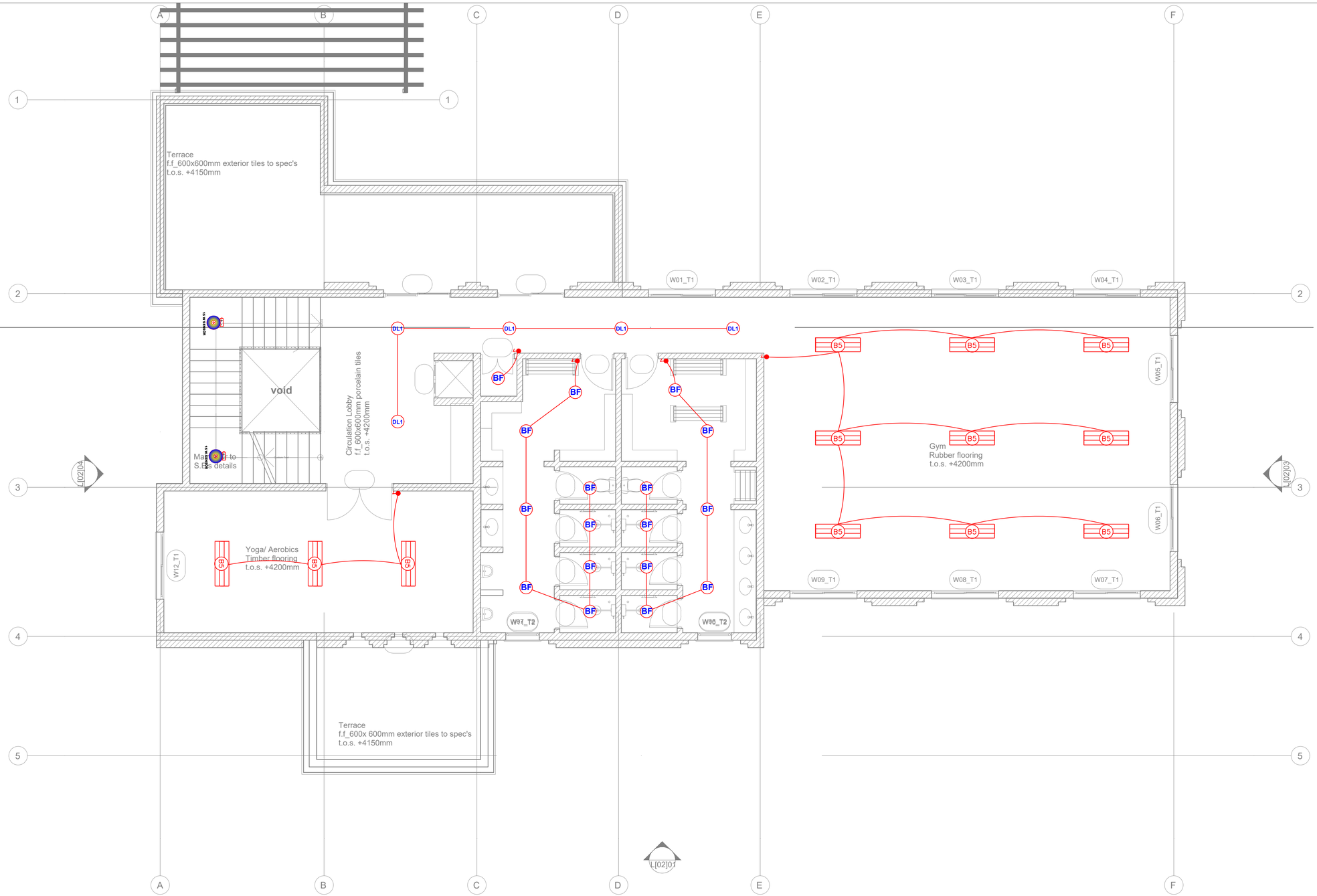
DATE : 19/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
CR	*12W Ceiling Rose*		*2 WAY 1 GANG SWITCH*
DL1	*12W Surface LED Down lighter*		*1 WAY SWITCH*
BF	*12W Ball Fitting*		*2 WAY 2 GANG SWITCH*
15 W SENSOR	*15W Presence Sensor*	B5	*40W 1200x300mm LED Panel*
	10W Ball Fitting		
	18W Security Lights		

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION
R1	19/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: AHP

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: CLUB HOUSE

DRAWING TITLE :

CLUB HOUSE FIRST FLOOR LIGHTING LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 19/03/2024

DATE : 19/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

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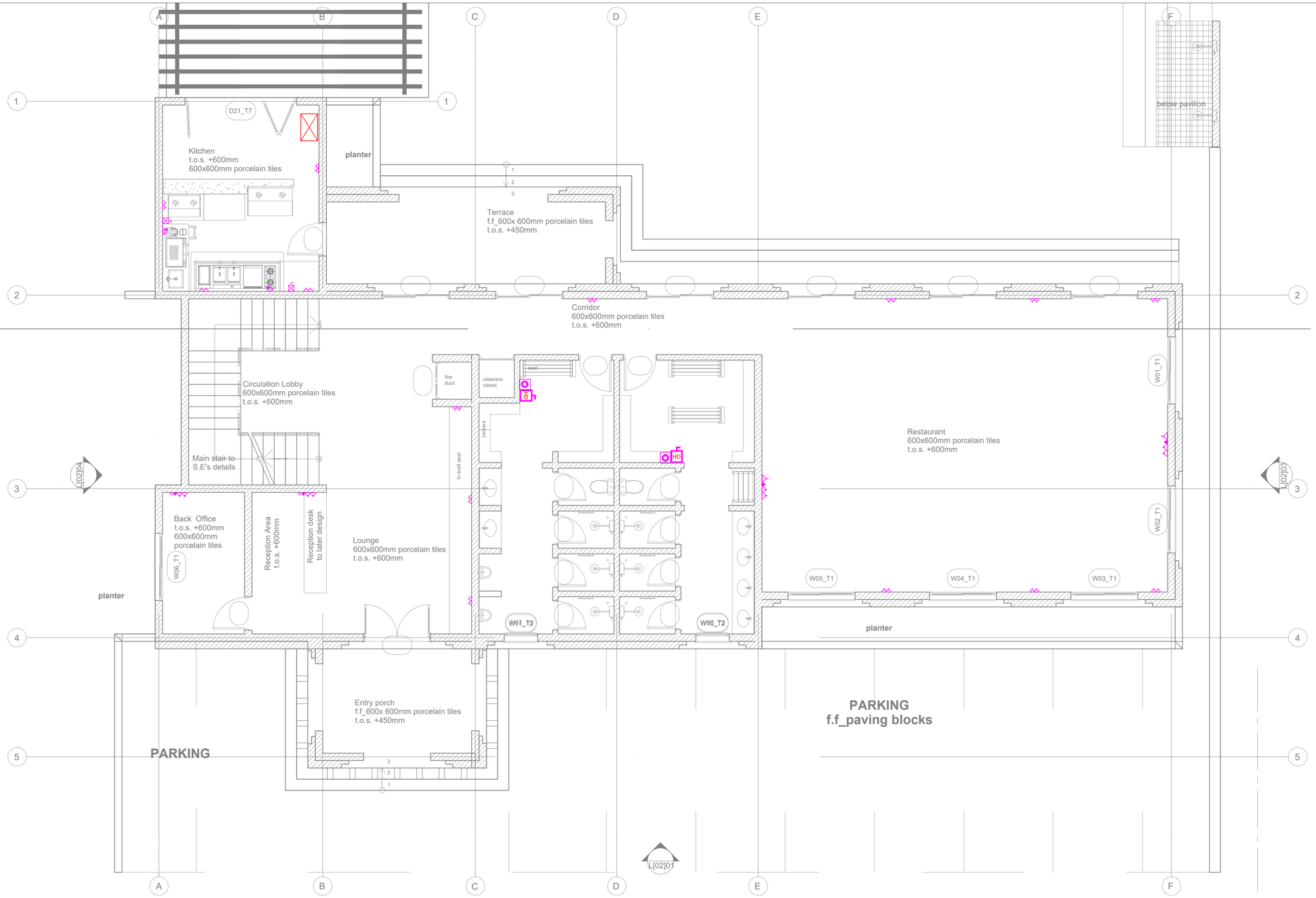

L[--]01_GROUND FLOOR PLAN
SCALE 1:100

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	13A Twin sockets		*3-ph ISOLATOR*
	13A Twin sockets with data		*45A KITCHEN UNIT*
	CONSUMER UNIT		*Surveillance Camera*
	DISTRIBUTION BOARD		*20A D.P Switch with Neon Light*
	TV Point		*Instant Shower Point*
B	*Door Bell*		*KPLC Meterboard*
	5 pin Industrial Socket		

GENERAL NOTES

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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION
R1	19/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD
☐ DETAILED ☑ TENDER
☐ SHOP DWG ☐ AS BUILT

PROJECT: AHP

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: CLUB HOUSE

DRAWING TITLE :
CLUB HOUSE GROUND FLOOR POWER LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 19/03/2024

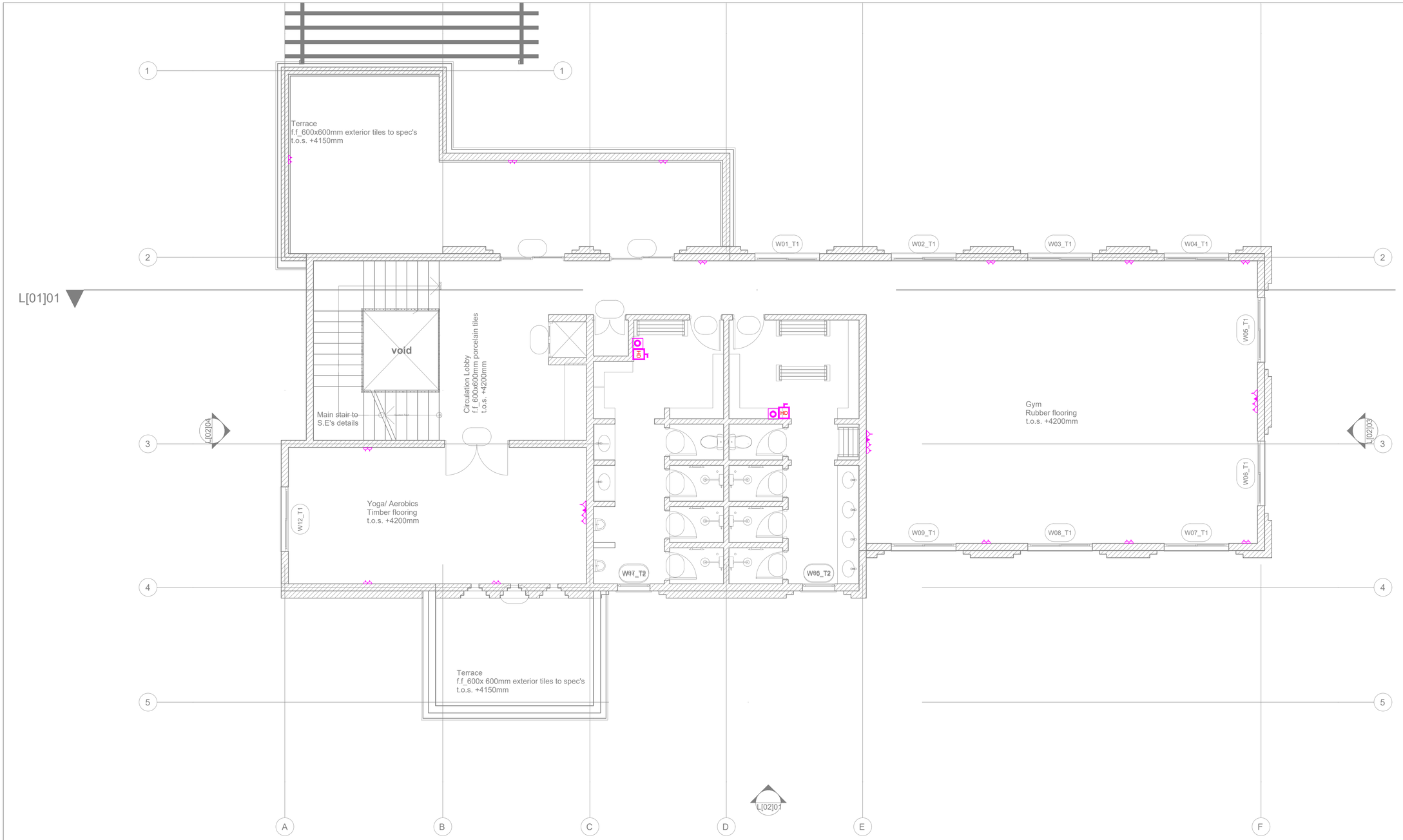
DATE : 19/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	13A Twin sockets		*3-ph ISOLATOR*
	13A Twin sockets with data		*45A KITCHEN UNIT*
	CONSUMER UNIT		*Surveillance Camera*
	DISTRIBUTION BOARD		*20A D.P Switch with Neon Light*
	TV Point		*Instant Shower Point*
	Door Bell		*KPLC Meterboard*
	5 pin Industrial Socket		

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION
R1	19/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: AHP

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: CLUB HOUSE

DRAWING TITLE :

CLUB HOUSE FIRST FLOOR POWER LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 19/03/2024

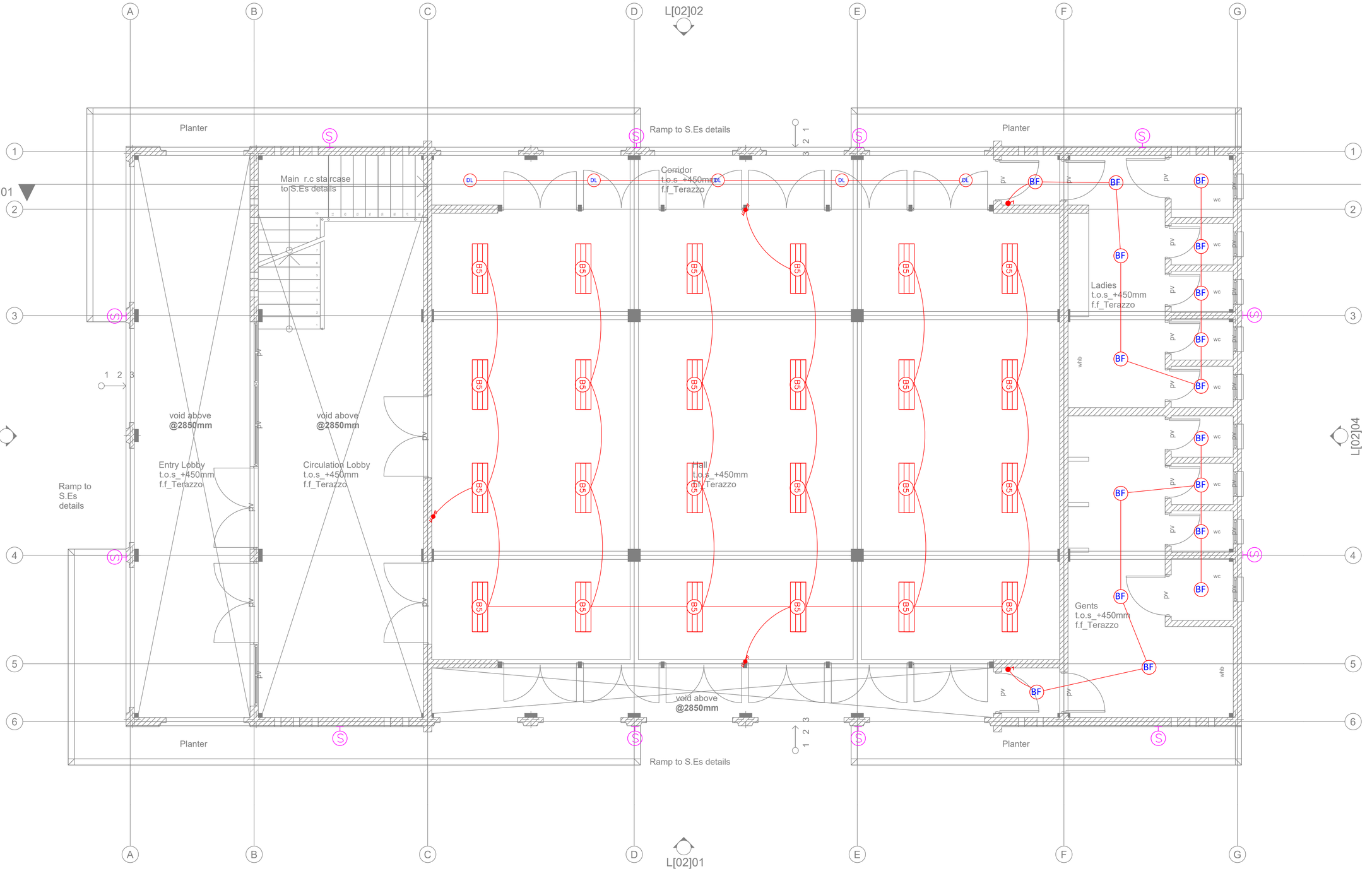
DATE : 19/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
CR	*12W Ceiling Rose*		*2 WAY 1 GANG SWITCH*
DL	*12W LED Down lighter*		*1 WAY SWITCH*
BF	*12W Ball Fitting*		*2 WAY 2 GANG SWITCH*
15 W SENSOR	*15W Presence Sensor*	B5	*40W 1200x300mm LED Panel*
	10W Ball Fitting	HB	*50W High Bay LED Light*
S	*18W Security Lights*		

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION
R1	19/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: AHP

CLIENT:STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: COMMUNITY CENTER

DRAWING TITLE :

COMMUNITY CENTER GROUND FLOOR LIGHTING LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 19/03/2024

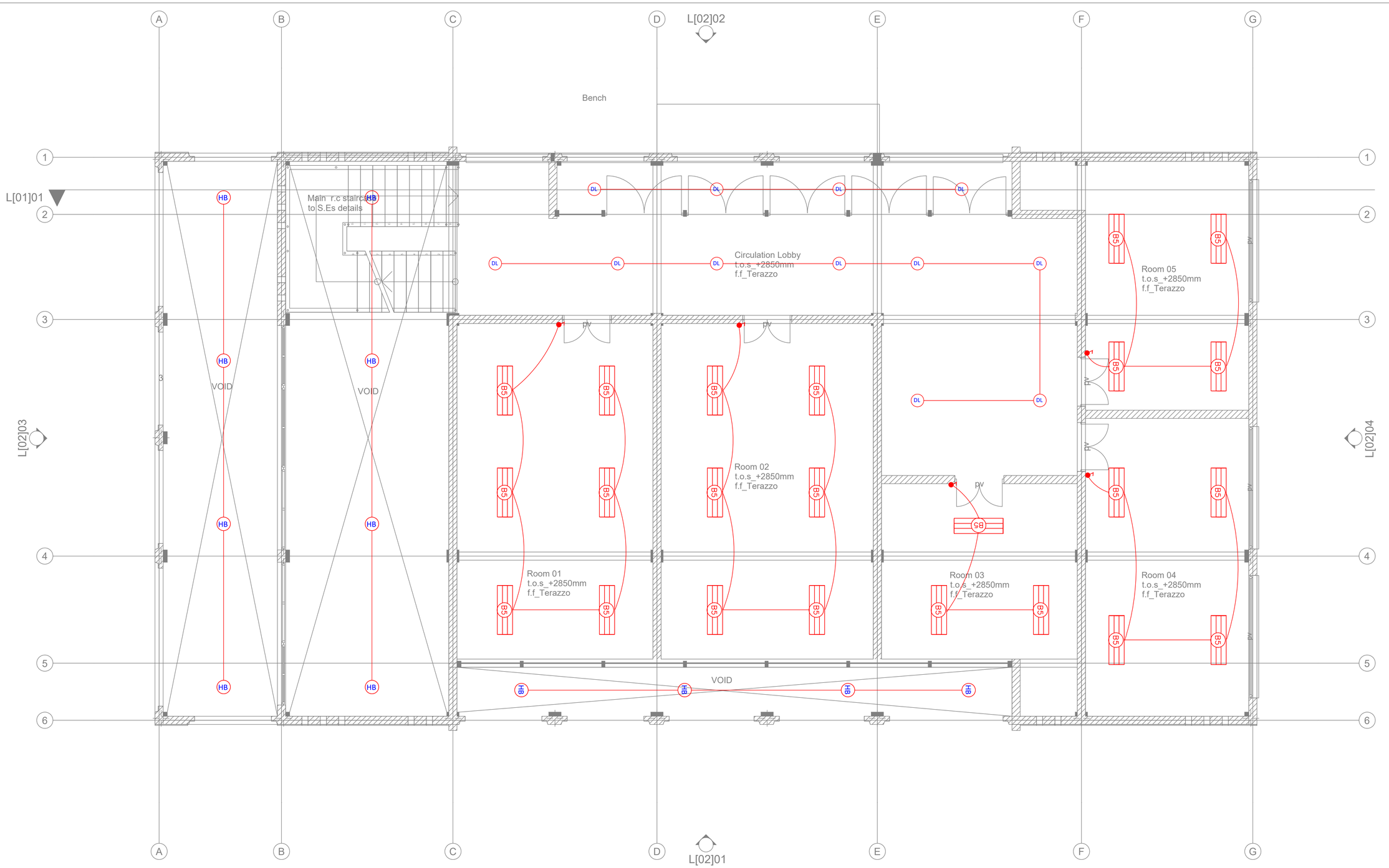
DATE : 19/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
CR	12W Ceiling Rose		2 WAY 1 GANG SWITCH
DL	12W LED Down lighter		1 WAY SWITCH
BF	12W Ball Fitting		2 WAY 2 GANG SWITCH
15 W SENSOR	15W Presence Sensor	B5	40W 1200x300mm LED Panel
	10W Ball Fitting	HB	50W High Bay LED Light
	18W Security Lights		

GENERAL NOTES

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REV.	DATE	DESCRIPTION
R1	19/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: AHP

CLIENT: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: COMMUNITY CENTER

DRAWING TITLE :

COMMUNITY CENTER FIRST FLOOR LIGHTING LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 19/03/2024

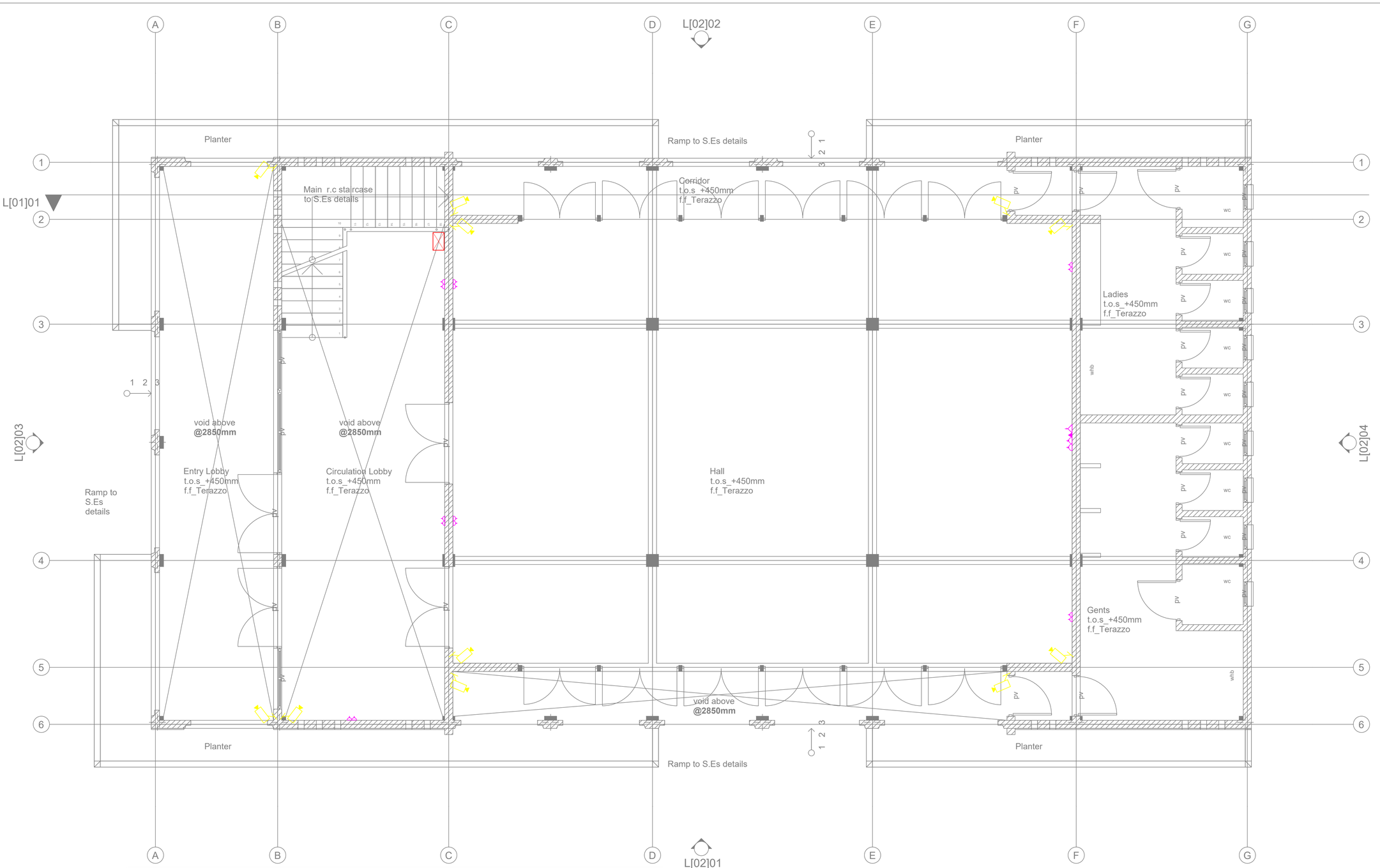
DATE : 19/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	13A Twin sockets		*3-ph ISOLATOR*
	13A Twin sockets with data		*45A KITCHEN UNIT*
	CONSUMER UNIT		*Surveillance Camera*
	DISTRIBUTION BOARD		*20A D.P Switch with Neon Light*
	TV Point		*Instant Shower Point*
	Door Bell		*KPLC Meterboard*
	5 pin Industrial Socket		

GENERAL NOTES

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REV.	DATE	DESCRIPTION
R1	19/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: AHP

CLIENT: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: COMMUNITY CENTER

DRAWING TITLE :

COMMUNITY CENTER GROUND FLOOR POWER LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 19/03/2024

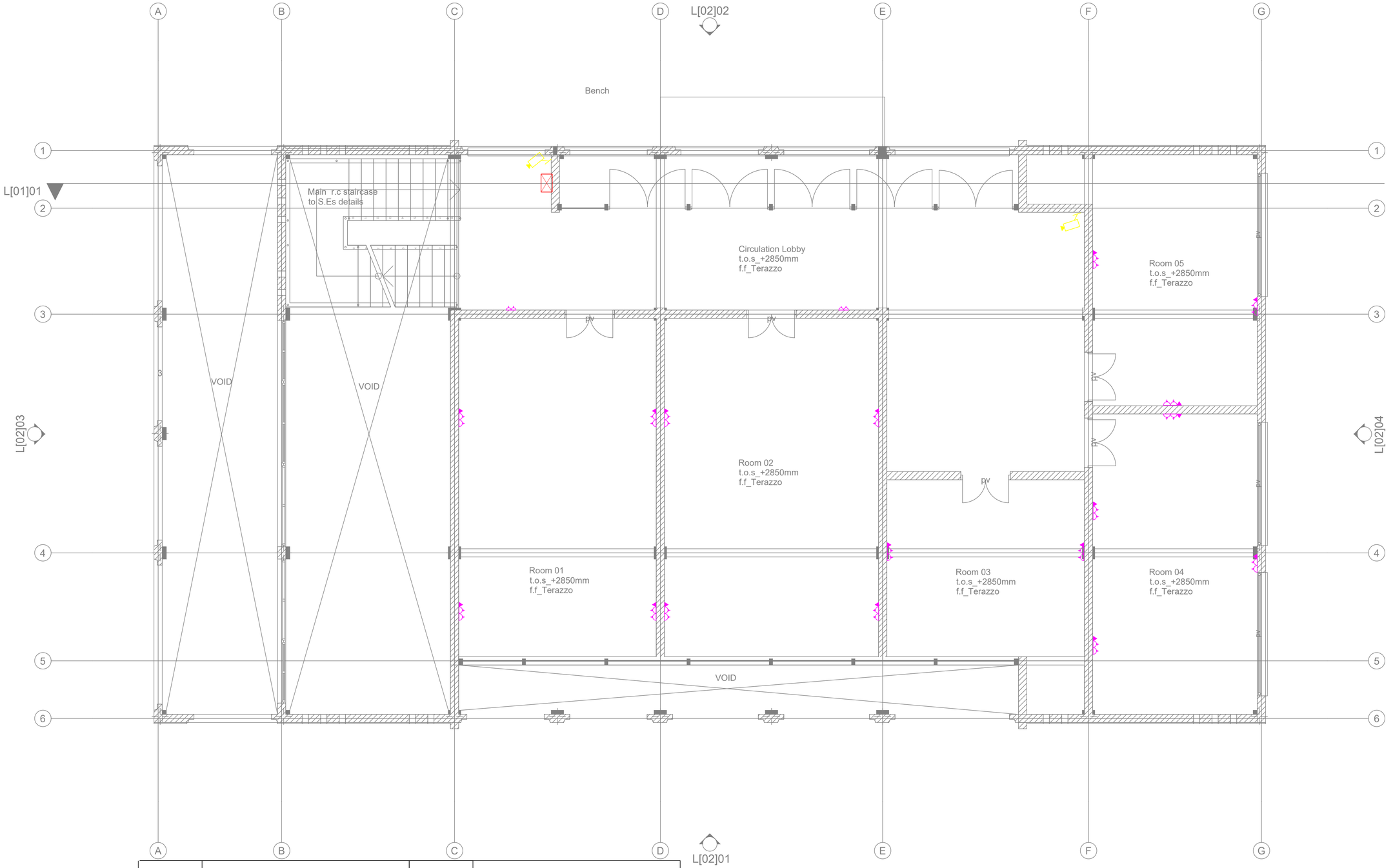
DATE : 19/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	13A Twin sockets		*3-ph ISOLATOR*
	13A Twin sockets with data		*45A KITCHEN UNIT*
	CONSUMER UNIT		*Surveillance Camera*
	DISTRIBUTION BOARD		*20A D.P Switch with Neon Light*
	TV Point		*Instant Shower Point*
	Door Bell		*KPLC Meterboard*
	5 pin Industrial Socket		

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REV.	DATE	DESCRIPTION
R1	19/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: AHP

CLIENT: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: COMMUNITY CENTER

DRAWING TITLE :

COMMUNITY CENTER FIRST FLOOR POWER LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

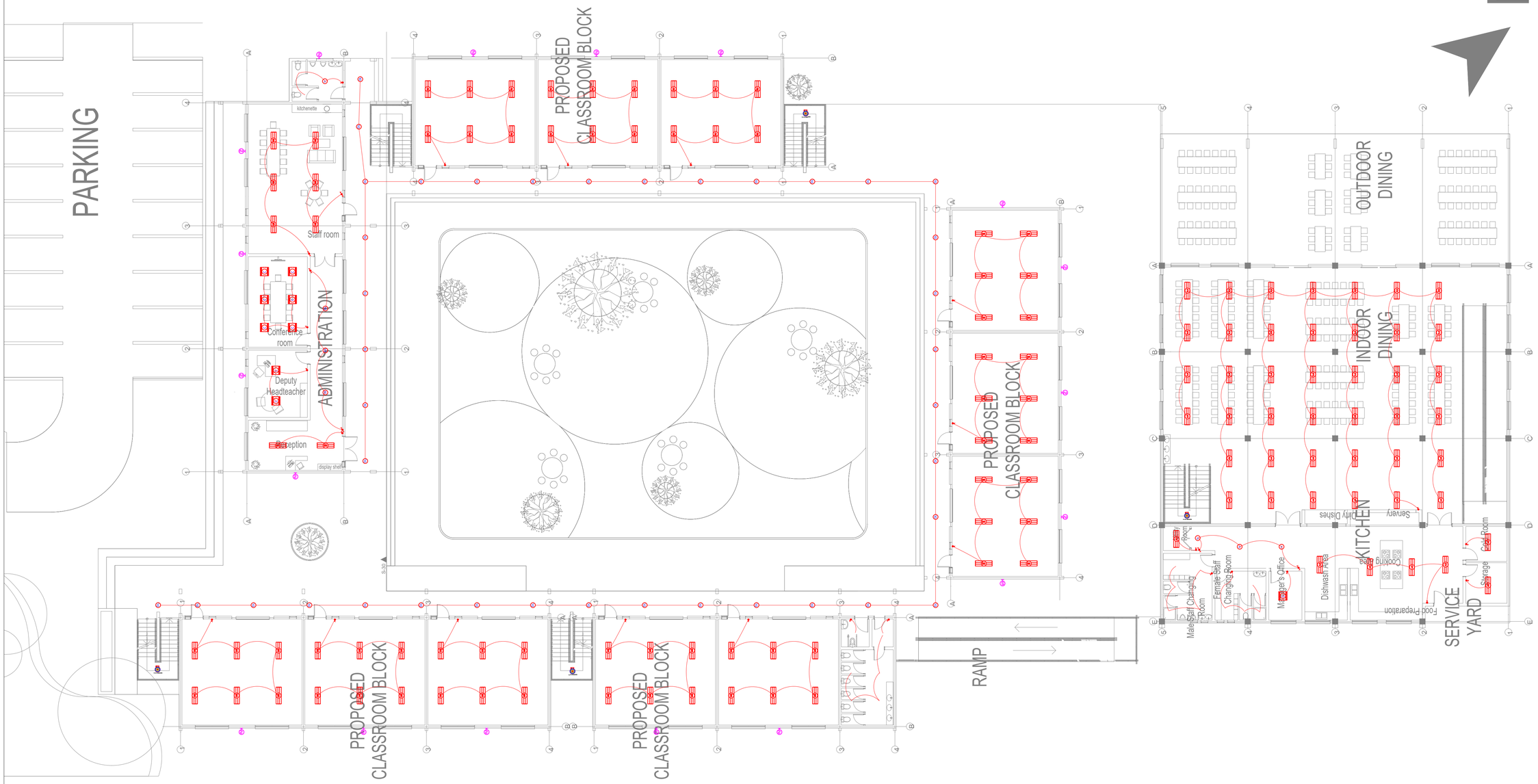
Date : 19/03/2024

DATE : 19/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



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REV.	DATE	DESCRIPTION
R1	19/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: AHP

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: SCHOOL

DRAWING TITLE :

SCHOOL LIGHTING LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 19/03/2024

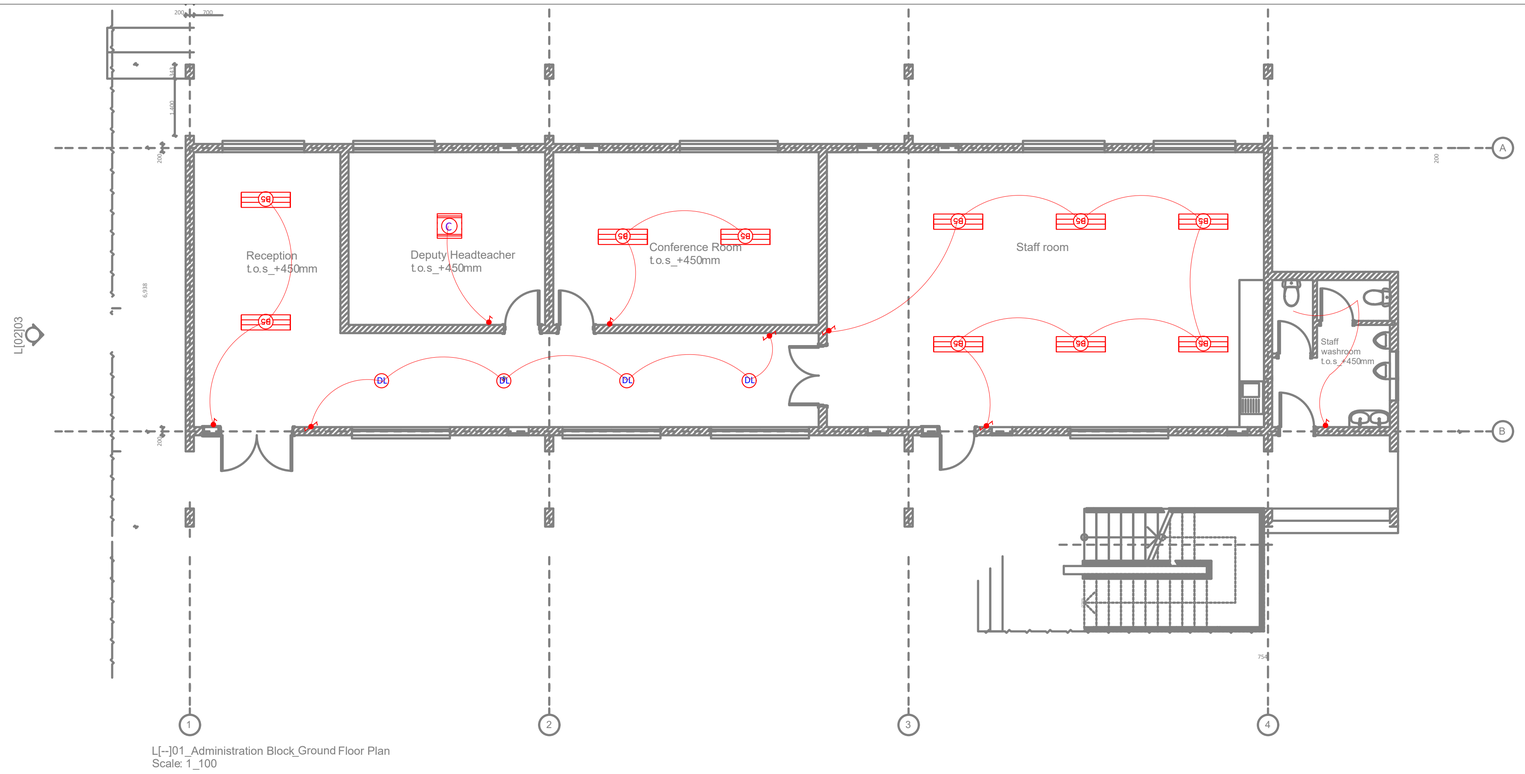
DATE : 19/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

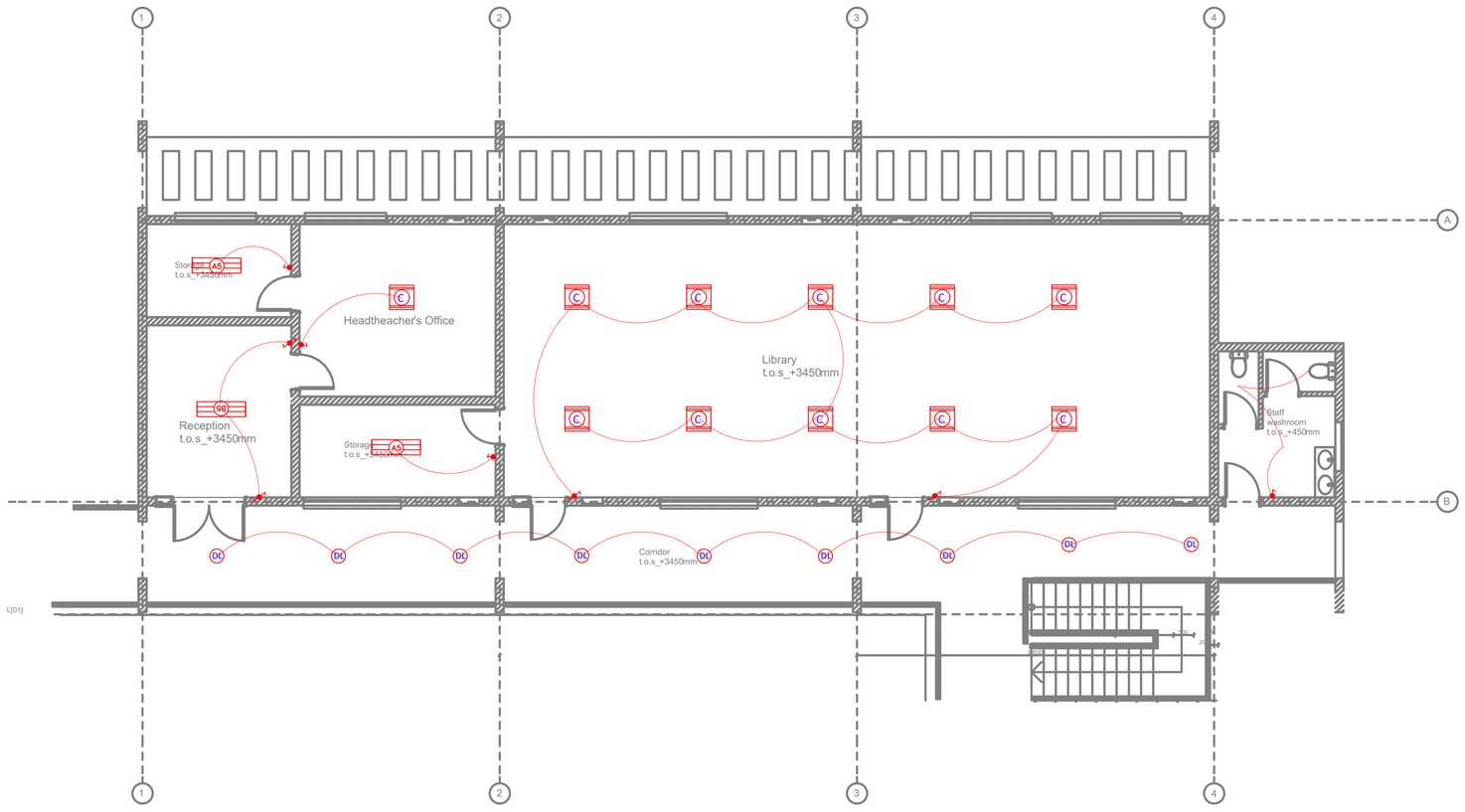
STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[--]01_Administration Block_Ground Floor Plan
Scale: 1_100



L[--]02_Administration Block_First Floor Plan

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
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REV.	DATE	DESCRIPTION
R1	19/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: AHP

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: SCHOOL

DRAWING TITLE :

SCHOOL LIGHTING LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 19/03/2024

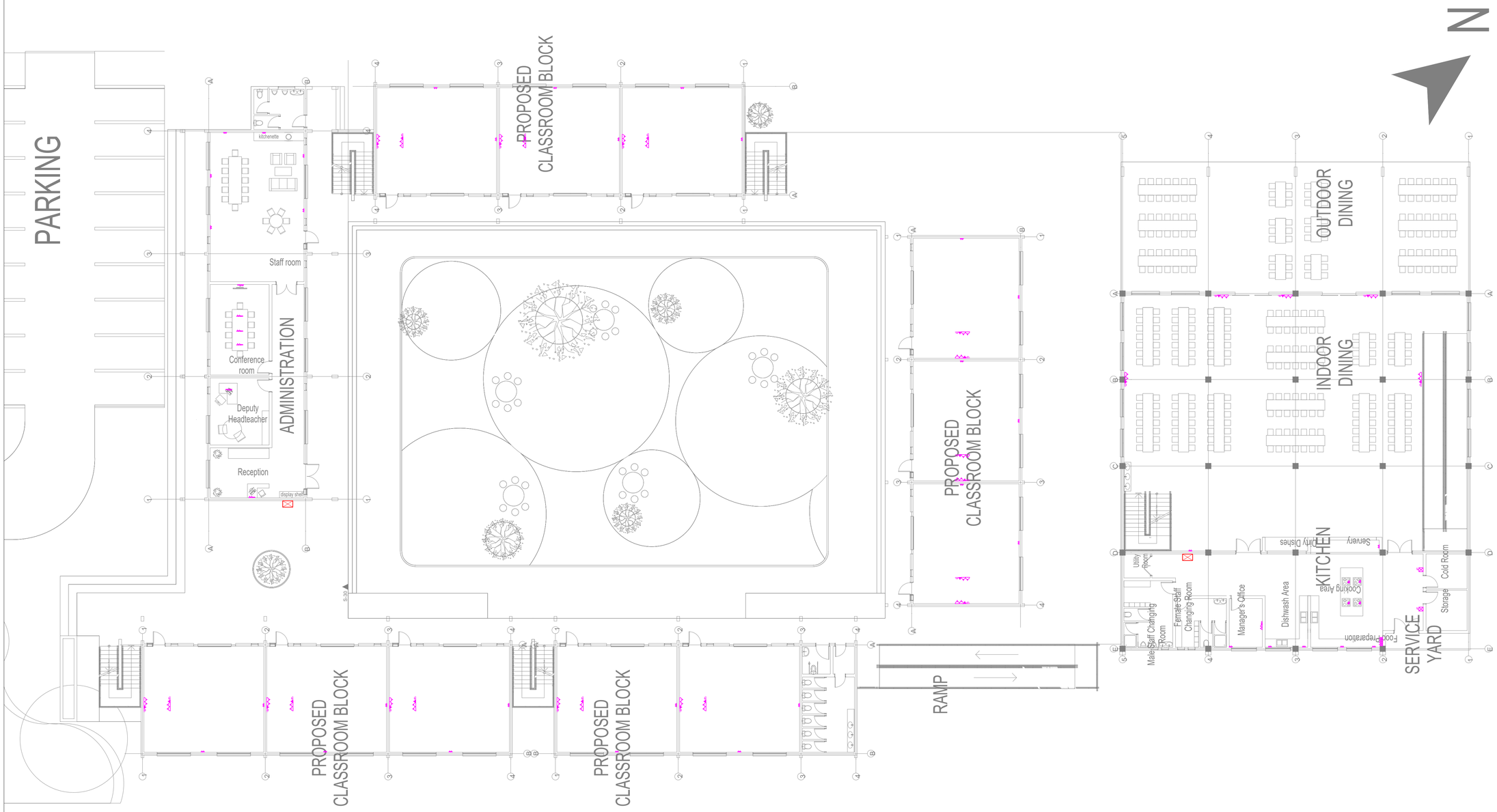
DATE : 19/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	13A Twin sockets		3-ph ISOLATOR
	13A Twin sockets with data		45A KITCHEN UNIT
	CONSUMER UNIT		Surveillance Camera
	DISTRIBUTION BOARD		20A D.P Switch with Neon Light
	TV Point		Instant Shower Point
	Door Bell		KPLC Meterboard
	5 pin Industrial Socket		

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION
R1	19/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: AHP

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: SCHOOL

DRAWING TITLE :

SCHOOL POWER LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 19/03/2024

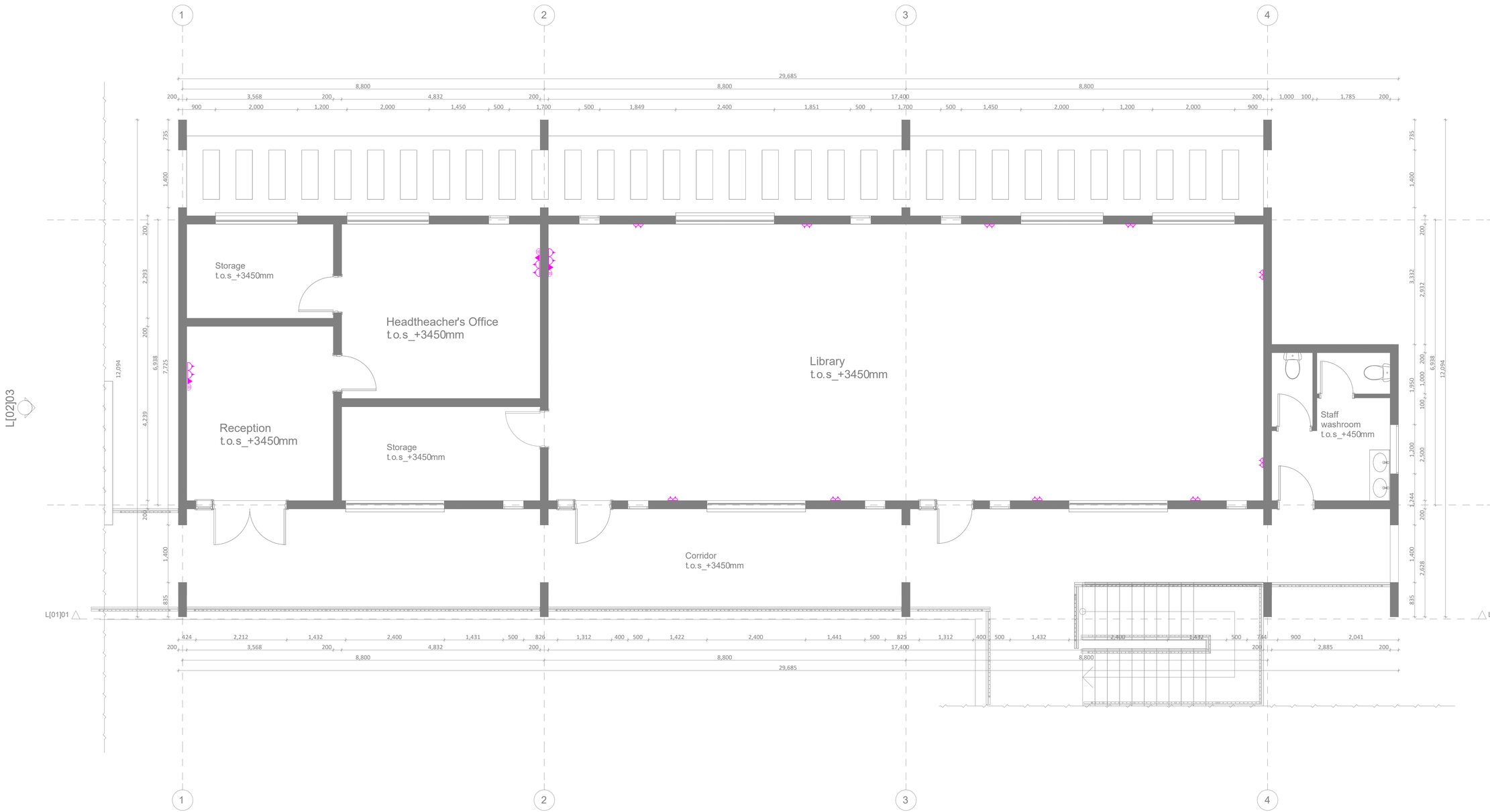
DATE : 19/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[--]02_Administration Block_First Floor Plan
Scale: 1_100

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	13A Twin sockets		*3-ph ISOLATOR*
	13A Twin sockets with data		*45A KITCHEN UNIT*
	CONSUMER UNIT		*Surveillance Camera*
	DISTRIBUTION BOARD		*20A D.P Switch with Neon Light*
	TV Point		*Instant Shower Point*
B	*Door Bell*		*KPLC Meterboard*
	5 pin Industrial Socket		

GENERAL NOTES

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REV.	DATE	DESCRIPTION
R1	19/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD
☐ DETAILED ☑ TENDER
☐ SHOP DWG ☐ AS BUILT

PROJECT: AHP

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: SCHOOL

DRAWING TITLE :
SCHOOL POWER LAYOUT

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

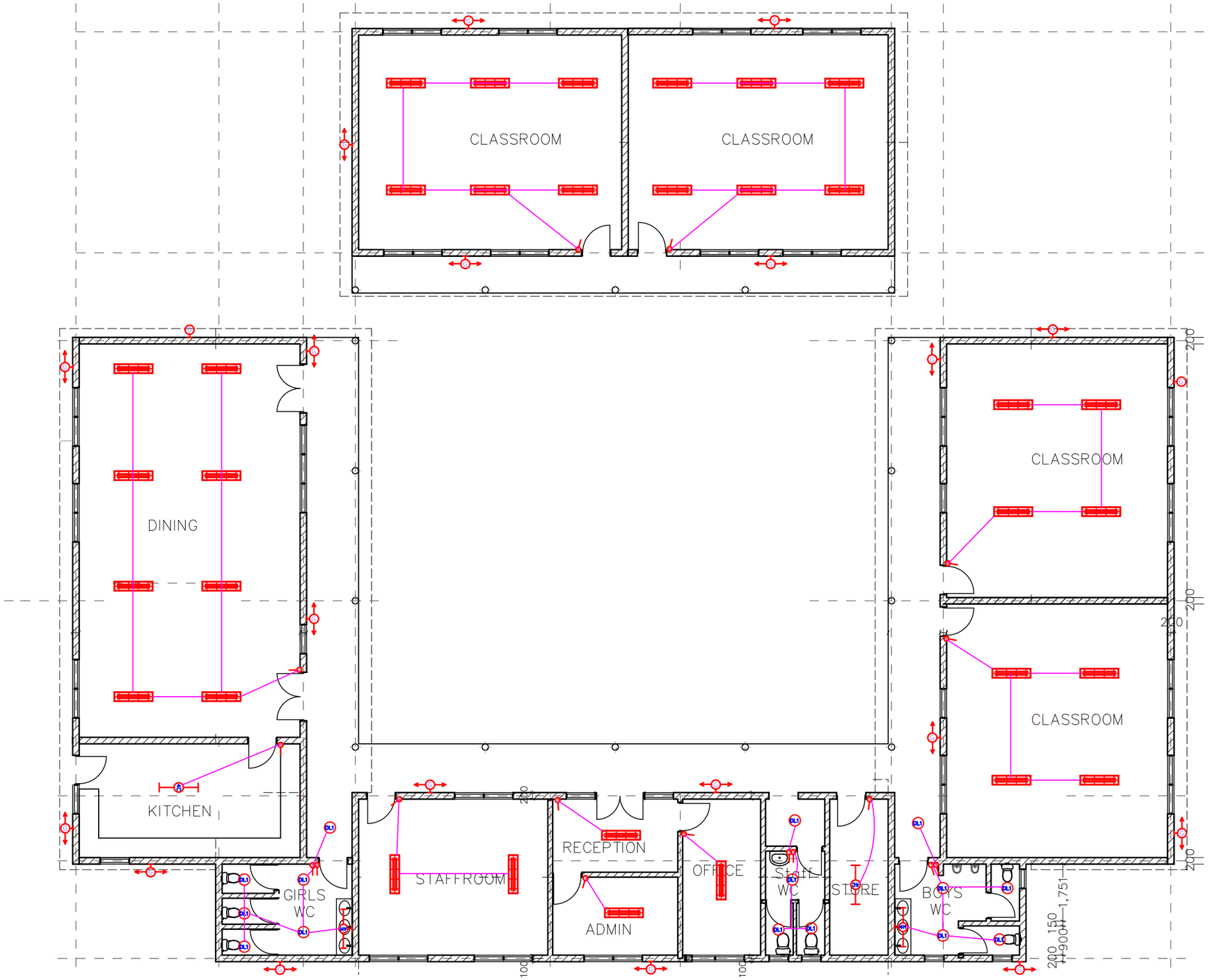
Date : 19/03/2024

DATE : 19/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



KINDERGARTEN ELECTRICAL LIGHTING LAYOUT

Scale 1:100

GENERAL NOTES

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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION
R0	13/3/24	LIGHTING LAYOUT

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: AFFORDABLE HOUSING PROJECT

CLIENT: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: LANET

DRAWING TITLE :

FLOOR LIGHTING LAYOUT

SCALE : 1:100

DRAWN BY : B.M

CHECKED BY : G.K

Date :13/03/2024

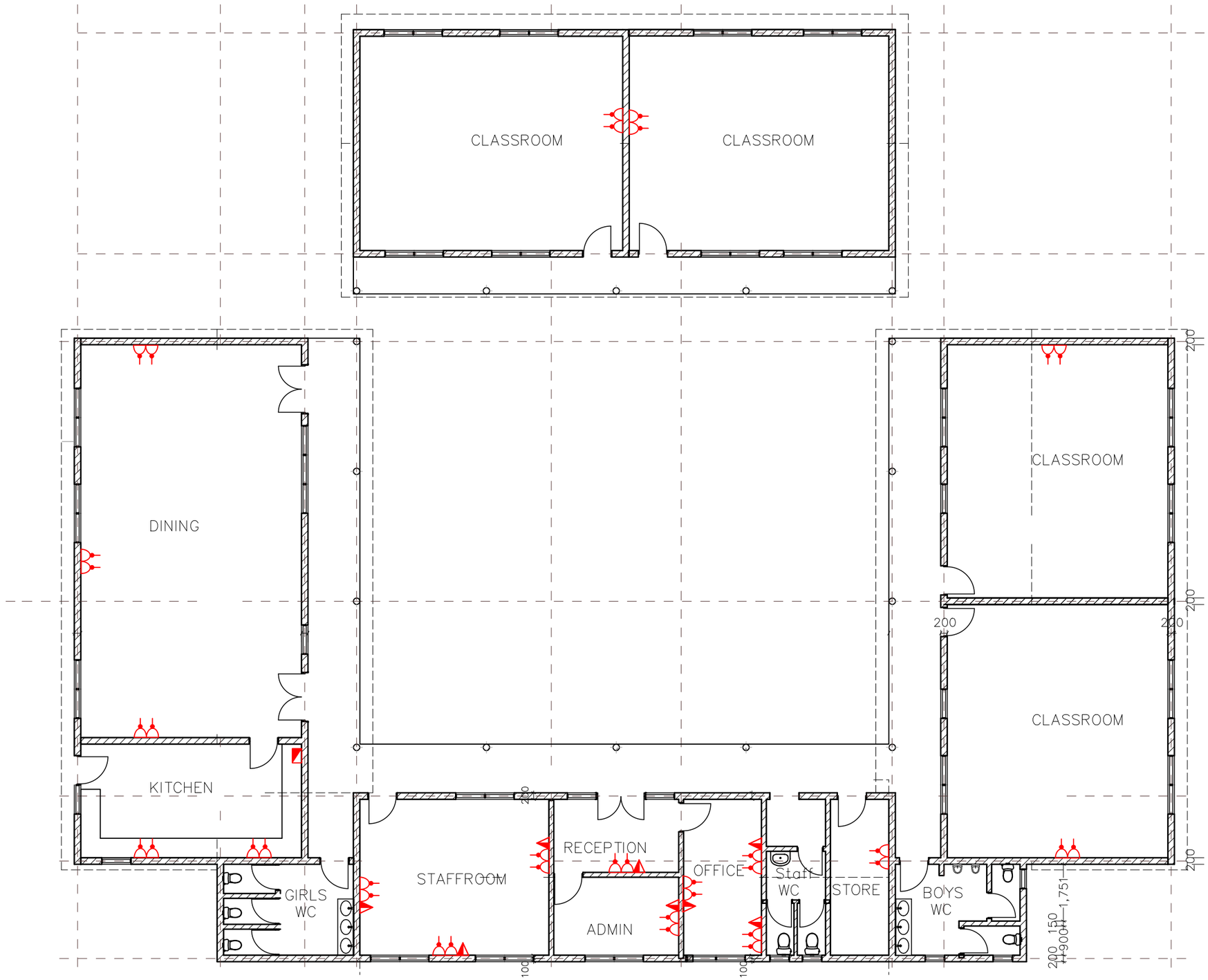
DATE :13/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



KINDERGARTEN ELECTRICAL POWER LAYOUT

GENERAL NOTES

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REV.	DATE	DESCRIPTION
R0	13/3/24	SITE POWER/ICT LAYOUT

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: AFFORDABLE HOUSING PROJECT

CLIENT: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: LANET

DRAWING TITLE :

FLOOR POWER LAYOUT

SCALE : 1:100

DRAWN BY : B.M

CHECKED BY : G.K

Date :13/03/2024

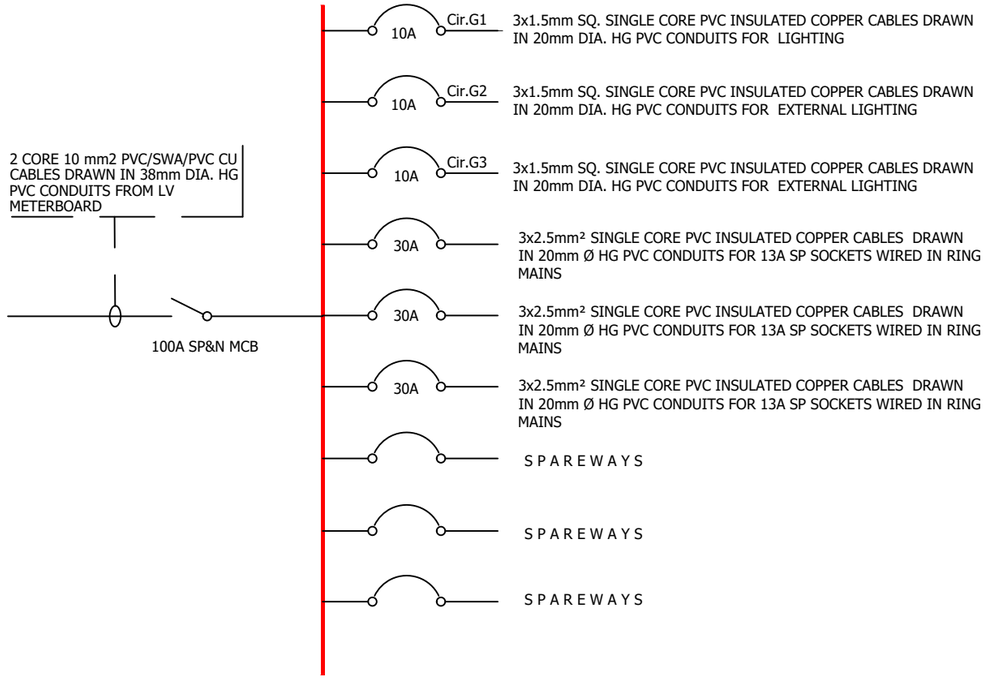
DATE :13/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



9 WAYS S.P.& N 100 AMPS CONSUMER UNIT CU"G" FLUSH MOUNTED METAL CASED UNIT INCORPORATING 100A S.P&N INTEGRAL MCB AS SCHNEIDER ELECTRIC FOR GATE HOUSE

GENERAL NOTES

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REV.	DATE	DESCRIPTION
R0	13/3/24	SCHEMATICS

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☒ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: AFFORDABLE HOUSING PROJECT

CLIENT: STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

SCHEMATICS

SCALE : 1:100

DRAWN BY : B.M

CHECKED BY : G.K

Date :13/03/2024

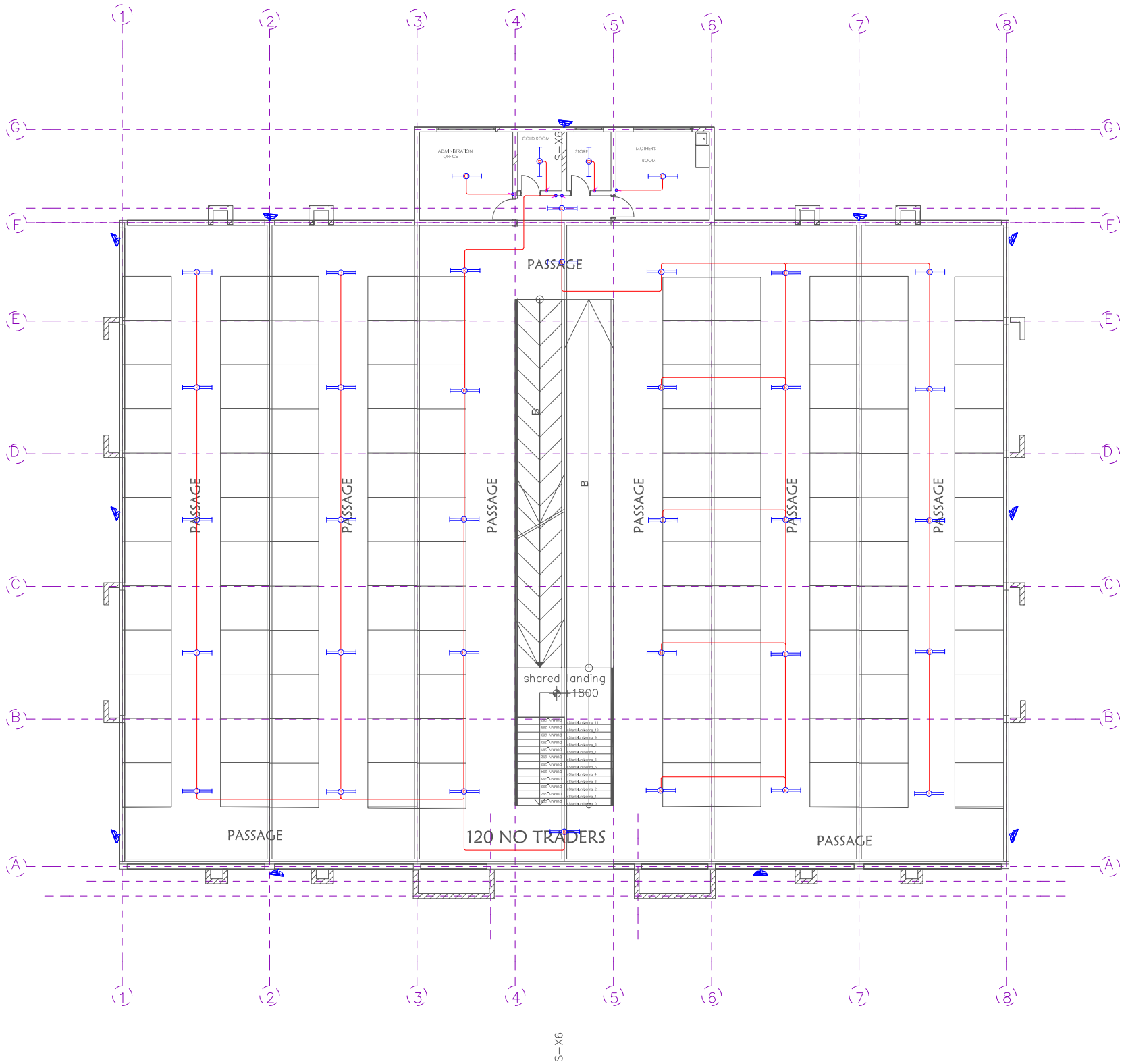
DATE :13/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

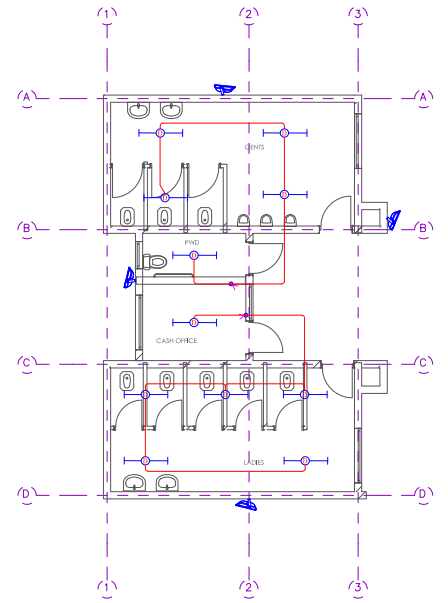
STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



GROUND FLOOR – LIGHTING



ABLUTION BLOCK – LIGHTING

NOTES

1. This drawing should be read alongside architectural drawings.
2. All dimensions are in mm unless otherwise stated.
3. All lighting switches shall be mounted at the height of 1350mm AFFL unless otherwise stated.
4. All socket outlets shall be mounted at the height of 300mm AFFL unless otherwise stated.
5. All distribution boards and consumer units shall be mounted at the height of 1800mm AFFL unless otherwise stated.
6. All lighting circuits shall be 3x1.5 sq.mm PVC SC Copper cables unless specified otherwise
7. All ring mains circuits shall be 3x2.5 sq.mm PVC SC Copper cables unless specified
8. All fittings and accessories to adhere to KEBS and/or British Standards and NFPA.

REVISIONS

No	Date	Description	Initial

LEGEND

	1200mm 1x18W Waterproof Led Light Fitting Polycarbonate Diffuser & Base With LED tube as Ocean
	1200mm 2x18W Waterproof Led Light Fitting Polycarbonate Diffuser & Base With LED tube as Ocean
	Outdoor Aluminium Bulkhead with Opal Diffuser, grill & visor as Fumagalli c/w 20w LED bulb
	1200mm 1x18W base batten fitting with LED tube as Ocean
	1gang 1way 10A flush ivory white plate switch
	1gang 2way 10A flush ivory white plate switch
	2gang 2way 10A flush ivory white plate switch
	13amp twin switched flush socket outlet plate
	RJ45 twin data outlet plate
	Hand Drier DP outlet point
	Shower DP outlet point
	Distribution Board lockable, powder coated w integral TP MCCB incoming isolator
	Consumer unit lockable, powder coated w integral DP incoming isolator

Project Title:

THE PROPOSED ESP MARKET

Plot No:

Client:

GOVERNMENT OF KENYA

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

URBAN DEVELOPMENT DEPARTMEN

Drawing Title:

FIRST FLOOR AND ABLUTION BLOCK LIGHTING LAYOUT

Architect:

URBAN AND METROPOLITAN DEVELOPMENT DEPARTMENT

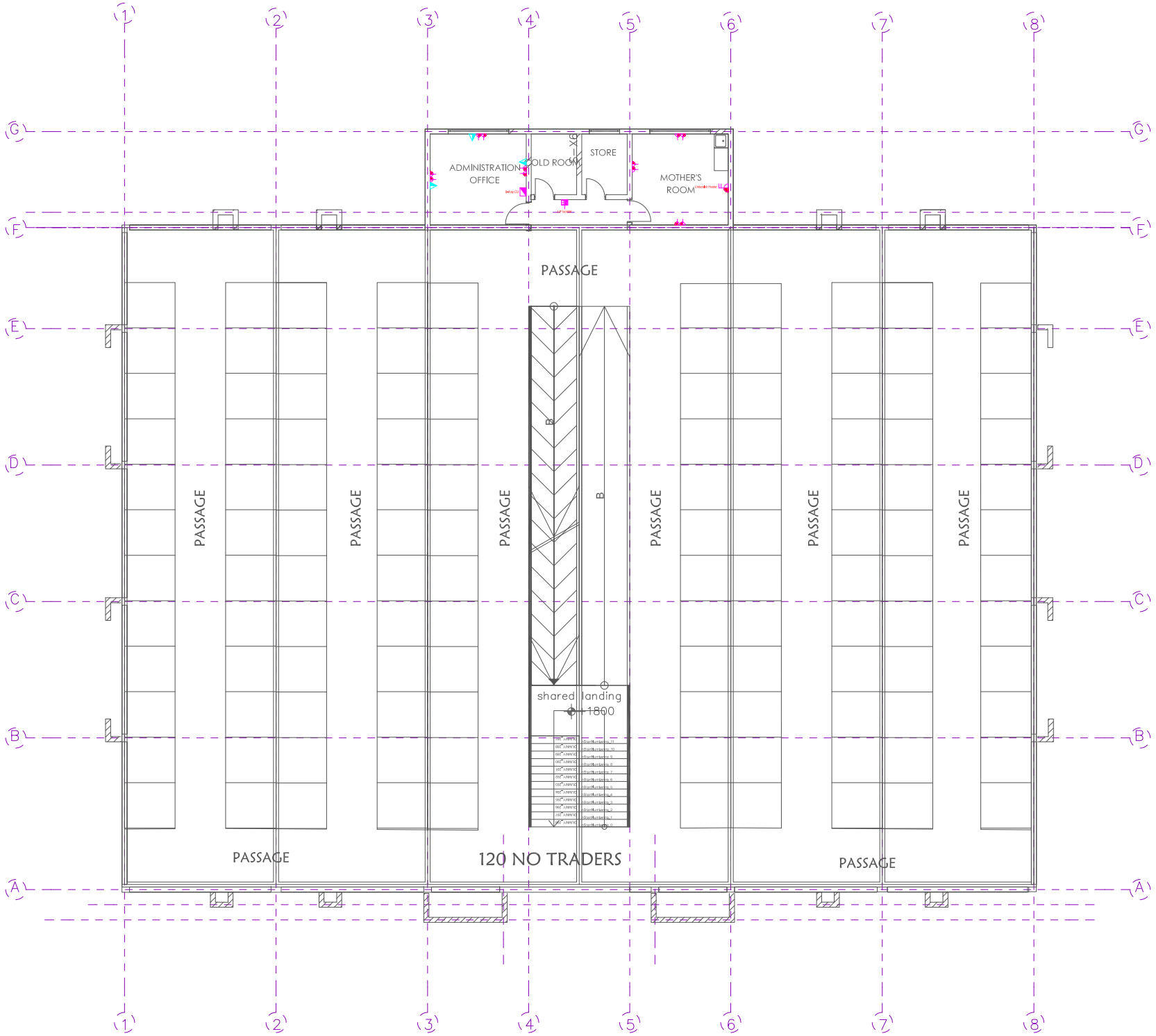
Approved By:

SECRETARY, URBAN AND METROPOLITAN DEVELOPMENT DEPARTMENT

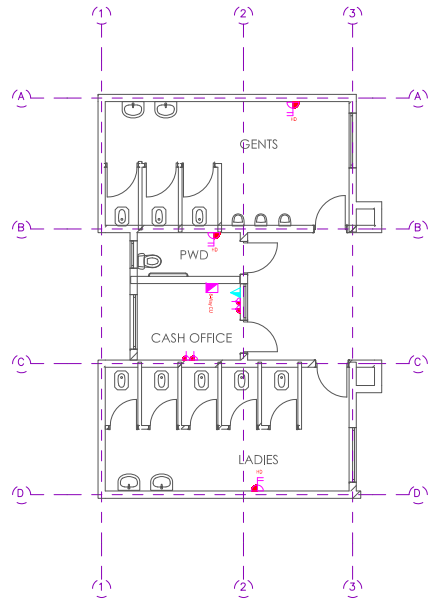
Signature: .....

Date: .....

Drawing No.: SDHUD/DUMED/NCG/23/E-01	Scale: NOT TO SCALE
Job No.:	Date.: 01 NOV. 2023



GROUND FLOOR – POWER



ABLUTION BLOCK – POWER

NOTES

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3. All lighting switches shall be mounted at the height of 1350mm AFFL unless otherwise stated.
4. All socket outlets shall be mounted at the height of 300mm AFFL unless otherwise stated.
5. All distribution boards and consumer units shall be mounted at the height of 1800mm AFFL unless otherwise stated.
6. All lighting circuits shall be 3x1.5 sq.mm PVC SC Copper cables unless specified otherwise
7. All ring mains circuits shall be 3x2.5 sq.mm PVC SC Copper cables unless specified
8. All fittings and accessories to adhere to KEBS and/or British Standards and NFPA.

REVISIONS

No	Date	Description	Initial

LEGEND

	1200mm 1x10W Waterproof Led Light Fitting Polycarbonate Diffuser & Base With LED tube as Ocean
	1200mm 2x10W Waterproof Led Light Fitting Polycarbonate Diffuser & Base With LED tube as Ocean
	Outdoor Aluminium Bulkhead with Opal Diffuser, grill & visor as Fumagalli c/w 20w LED bulb
	1200mm 1x10W base batten fitting with LED tube as Ocean
	1gang 1way 10A flush ivory white plate switch
	1gang 2way 10A flush ivory white plate switch
	2gang 2way 10A flush ivory white plate switch
	13amp twin switched flush socket outlet plate
	RJ45 twin data outlet plate
	Hand Drier DP outlet point
	Shower DP outlet point
	Distribution Board lockable, powder coated w integral TP MCCB incoming isolator
	Consumer unit lockable, powder coated w integral DP incoming isolator

Project Title:

THE PROPOSED ESP MARKET

Plot No:

Client:

GOVERNMENT OF KENYA

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

URBAN DEVELOPMENT DEPARTMEN

Drawing Title:

FIRST FLOOR AND ABLUTION BLOCK POWER LAYOUT

Architect:

URBAN AND METROPOLITAN DEVELOPMENT DEPARTMENT

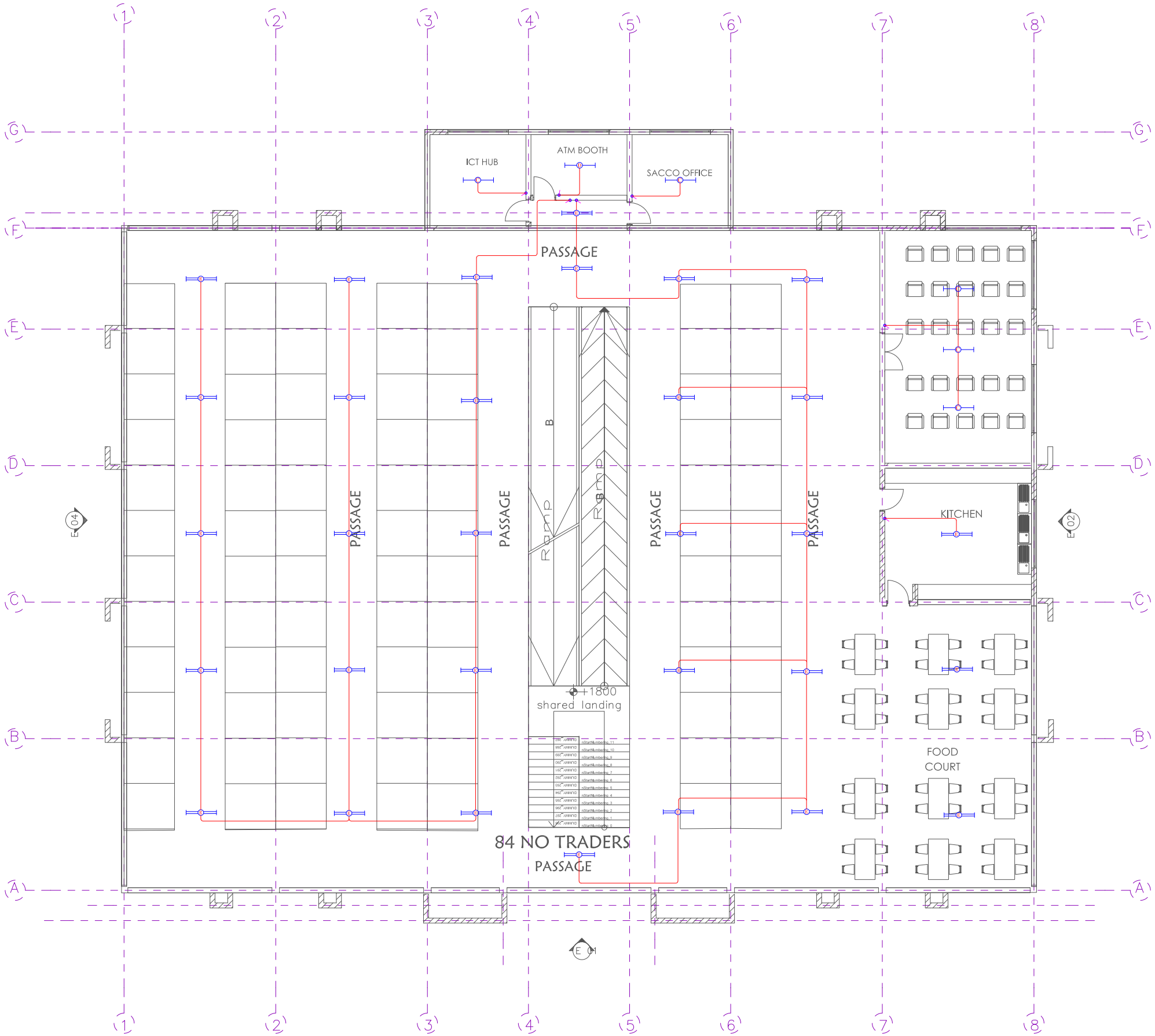
Approved By:

SECRETARY, URBAN AND METROPOLITAN DEVELOPMENT DEPARTMENT

Signature: .....

Date: .....

Drawing No.: SDHUD/DUMED/NCG/23/E-01	Scale: NOT TO SCALE
Job No.:	Date.: 01 NOV. 2023



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REVISIONS

No	Date	Description	Initial

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	1200mm 2x18W Waterproof Led Light Fitting Polycorbonate Diffuser & Base With LED tube as Osram
H	Outdoor Aluminium Bulkhead with Opal Diffuser, grill & visor as Fumagalli c/w 20w LED bulb
	1200mm 1x18W bare battens fitting with LED tube as Osram
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	Consumer unit lockable, powder coated w integral DP incoming isolator

Project Title:

THE PROPOSED ESP MARKET

Plot No:

Client:

GOVERNMENT OF KENYA

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

URBAN DEVELOPMENT DEPARTMEN

Drawing Title:

FIRST FLOOR
LIGHTING LAYOUT

Architect:

URBAN AND METROPOLITAN DEVELOPMENT DEPARTMENT

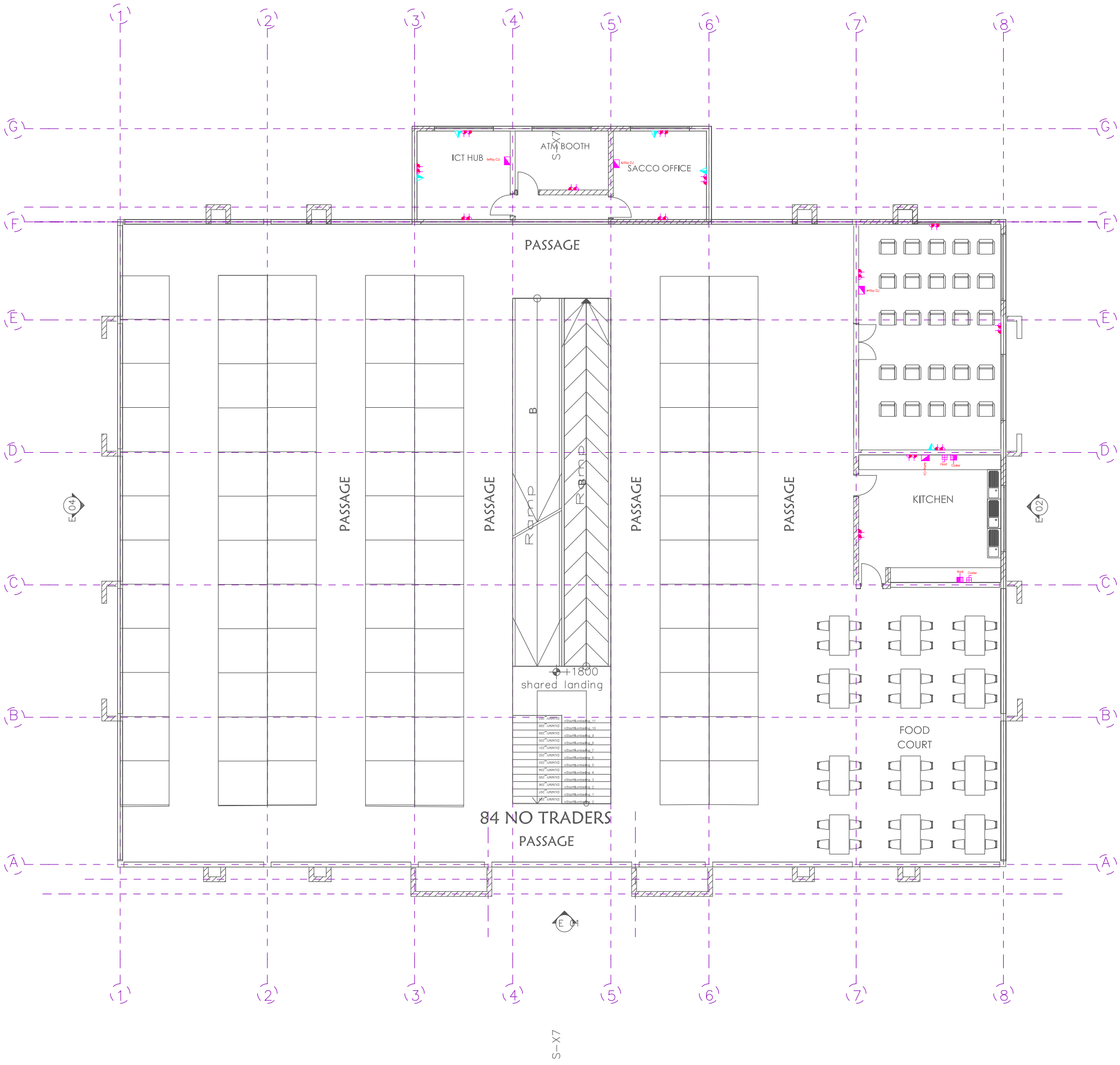
Approved By:

SECRETARY, URBAN AND METROPOLITAN DEVELOPMENT DEPARTMENT

Signature: .....

Date: .....

Drawing No.: *SDHUD/DUMED/NCG/23/E-01*	Scale: NOT TO SCALE
Job No.:	Date.: *01 NOV. 2023*



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Project Title:

THE PROPOSED ESP MARKET

Plot No:

Client:

GOVERNMENT OF KENYA

STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

URBAN DEVELOPMENT DEPARTMEN

Drawing Title:

FIRST FLOOR
POWER LAYOUT

Architect:

URBAN AND METROPOLITAN DEVELOPMENT DEPARTMENT

Approved By:

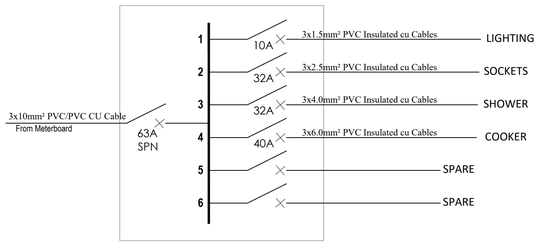
SECRETARY, URBAN AND METROPOLITAN DEVELOPMENT DEPARTMENT

Signature: .....

Date: .....

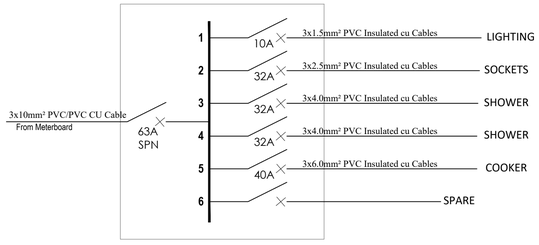
Drawing No.: *SDHUD/DUMED/NCG/23/E-01*	Scale: NOT TO SCALE
Job No.:	Date.: *01 NOV. 2023*

TYPICAL TWO BEDROOM AHP CU

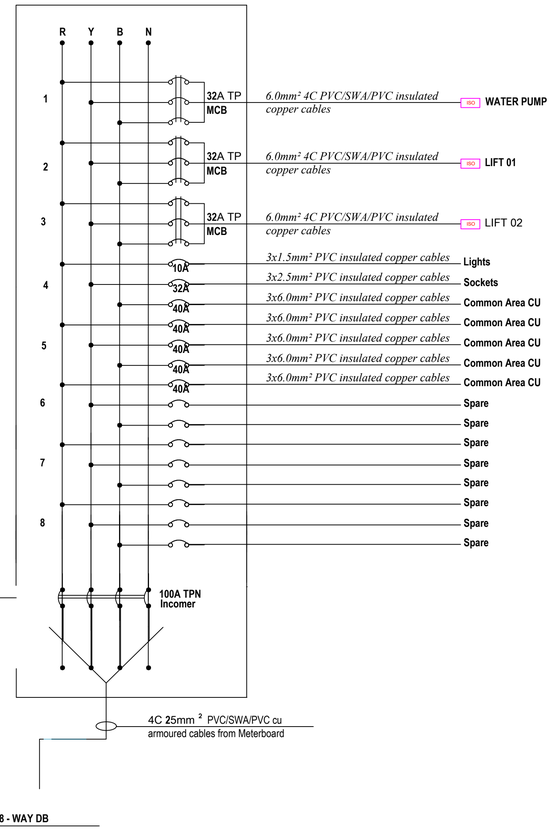


6-WAY CU SCHEMATIC

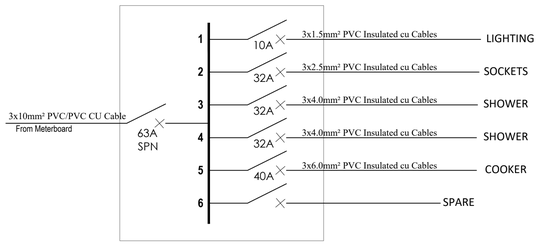
TYPICAL THREE BEDROOM AHP & MKT CU



6-WAY CU SCHEMATIC

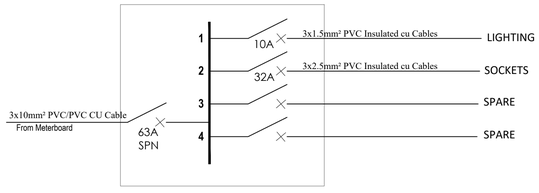


TYPICAL TWO BEDROOM MKT CU



6-WAY CU SCHEMATIC

TYPICAL FLOOR COMMON AREA CU



4-WAY CU SCHEMATIC

PROPOSED AFFORDABLE UNITS BLOCK TYPE B

GENERAL NOTES

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2. All dimensions are in mm unless otherwise specified.
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **Residential Building**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: AHP

DRAWING TITLE :

BLOCK TYPE B CU & DB SCHEMATICS

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 16/03/2024

DATE : 16/03/2024

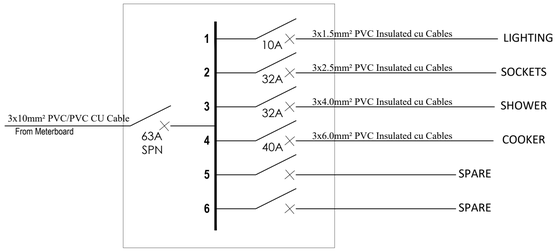
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

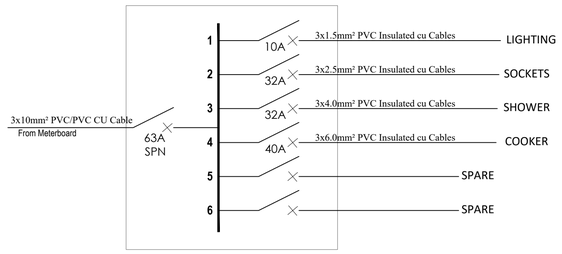
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

TYPICAL STUDIO & 1 ROOM CU



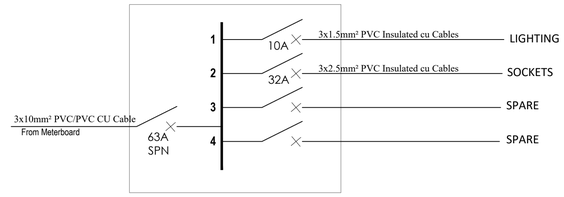
6-WAY CU SCHEMATIC

TYPICAL TWO BEDROOM CU



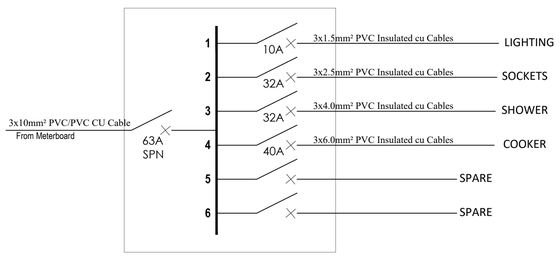
6-WAY CU SCHEMATIC

TYPICAL FLOOR COMMON AREA CU



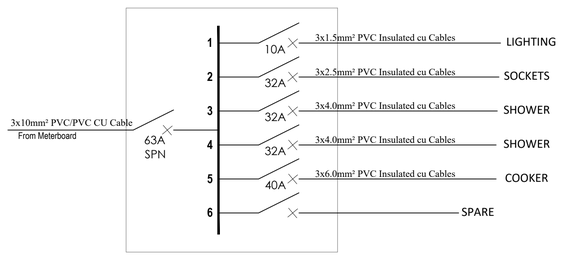
4-WAY CU SCHEMATIC

TYPICAL TWO ROOM & TWO BEDROOM CU

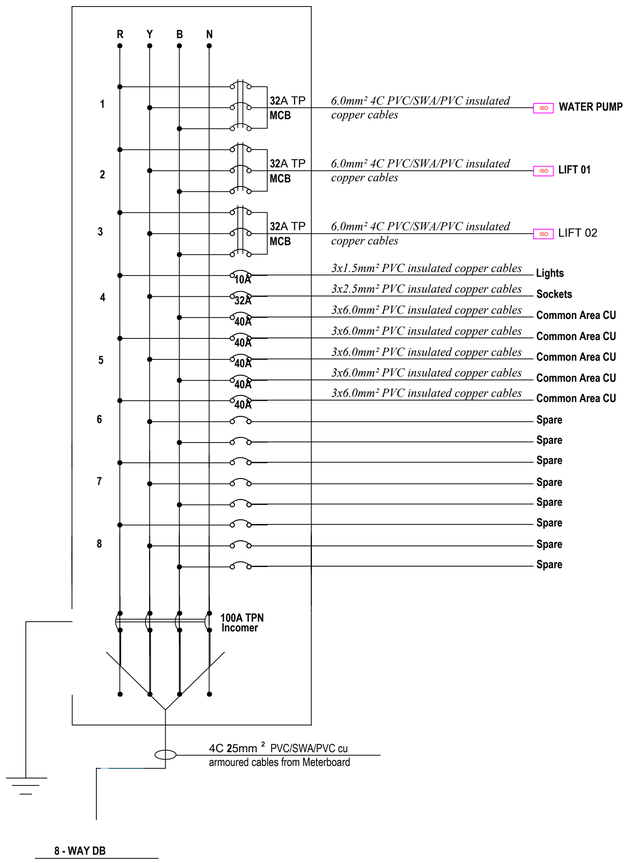


6-WAY CU SCHEMATIC

TYPICAL THREE BEDROOM CU



6-WAY CU SCHEMATIC



PROPOSED AFFORDABLE UNITS BLOCK TYPE C

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **Residential Building**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: AHP

DRAWING TITLE :

BLOCK TYPE C CU & DB SCHEMATICS

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 16/03/2024

DATE : 16/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

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REV.	DATE	DESCRIPTION
R1	16/3/24	ELECTRICAL LAYOUT

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **Residential Building**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: AHP

DRAWING TITLE :

TYPICAL METERBOARD SCHEMATICS

SCALE : NTS

DRAWN BY : B.M

CHECKED BY : C.A

Date : 16/03/2024

DATE : 16/03/2024

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

PROPOSED CONSTRUCT + FINANCE OF PROPOSED CONSTRUCTION OF A MIXED USE AHP DEVELOPMENT (G+9)

MECHANICAL DRAWINGS

PLUMBING, DRAINAGE & FIRE FIGHTING

GENERAL NOTES

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DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: Resedential Building

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: BAHATI

DRAWING TITLE :

COVER PAGE

SCALE : NTS

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

SGOK.png

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

GENERAL NOTES FOR DOMESTIC WATER SERVICES

1. ALL DIMENSIONS ARE IN METRIC MILLIMETERS. ALL SANITARY FIXTURES AND SINKS SHALL BE PROVIDED WITH ANGLE VALVES.

2. HOT AND COLD WATER CONNECTIONS TO EACH SANITARY APPLIANCE SHALL INCLUDE CHROME PLATED ANGLE VALVE FOR ISOLATION AND THE ISOLATING VALVE FOR BATH TUB AND SHOWER SHALL BE LOCATED ABOVE THE FALSE CEILING.

3. THE PIPE DIAMETER INDICATED ON THE DRAWING ARE NOMINAL AND THE ACTUAL DIAMETER OF THE PIPES SHALL BE AS PER THE EQUIVALENT PIPE DIAMETERS DETAIL AND AS SPECIFIED.

4. THE DOMESTIC WATER INSTALLATION SHALL CARRIED OUT TO COMPLY WITH THE LATEST LOCAL AUTHORITY REQUIREMENT INCLUDING:

   a. WATER SUPPLY REGULATIONS
   b. ALL OTHER LOCAL REGULATIONS HAVING JURISDICTION ON THE WORK

5. THE TYPES, MATERIALS AND SIZES OF PIPES TO BE USED ARE STATED IN THE SCHEDULE OF MATERIALS.

6. PIPE FITTINGS AND ALL OTHER MATERIALS USED IN THE PLUMBING MUST BE OF TYPE APPROVED BY THE LOCAL WATER DEPARTMENT AND RELEVANT AUTHORITY.

7. ALL VALVES ARE TO BE LOCATED SUCH THAT IT CAN BE READILY BY THE MAINTENANCE PERSONNEL. ACCESS PANEL TO ENGINEERS APPROVAL SHALL BE PROVIDED WHERE NECESSARY.

8. ALL COLD WATER PIPES SHOWN ON THE PLAN SHALL BE ROUTED AT THE CEILING OF THE RESPECTIVE PLAN UNLESS OTHERWISE STATED. ALL PIPE WORK SHALL BE CONCEALED IN PIPE SHAFT/WALLS/PARTITION OR RUN WITHIN FALSE CEILING SPACE UNLESS OTHERWISE NOTED.

9. AUTOMATIC AIR VENTS TO BE PROVIDED AT THE HIGHEST POINTS OF PIPING NETWORK.

10. ALL PIPES PASSING THROUGH RETAINING WALLS OR WATERTIGHT STRUCTURES SHALL BE MADE WATER-TIGHT WITH PUDDLE FLANGE AT THE POINT OF PENETRATION THROUGH STRUCTURES. PIPES PENETRATION THROUGH FIRE WALLS & FLOORS SHALL BE SEALED WITH FIRE PROOFING MATERIALS. PIPE SLEEVES ARE TO BE PROVIDED WHEREVER THERE IS PENETRATION THROUGH STRUCTURAL BEAM OR SLAB.

11. ALL DETAILS SHOWN ARE TO BE READ IN CONJUNCTION WITH ALL ISOLATION VALVES SHALL BE PROVIDED FOR INCOMING WATER SUPPLY LINE AT EVERY UNIT/COMMON AREA.

12. LOCATIONS AND SIZE OF SLEEVES FOR PIPE WILL BE SHOWN IN SHOP DRAWINGS.

STANDARD NOTES FOR BUILDING DRAINAGE

PIPING

- ☑ 1- MATERIALS SHALL BE TO APPROVAL AND THE INSTALLATION SHALL BE ACCORDING TO BS 5572.
- ☑ 2- ALL INTERNAL PIPING SHALL BE UPVC TO BS 4514 EXCEPT WASTE PIPING WHICH SHALL BE TO BS 5255. ALL U/G PIPING SHALL BE TO BS 4660.
- ☑ 3- NO BENDS SHALL BE ALLOWED IN HORIZONTAL PIPES RUNNING UNDERGROUND.

RODDING EYES

- ☑ 1- ACCESS POINTS SHOULD BE CAREFULLY SITED TO ALLOW THE SERVICE ENTRY FOR CLEANING AND TESTING.
- ☑ 2- ALL VERTICAL STACKS SHALL BE PROVIDED WITH RODDING EYES AT JUNCTIONS ON EVERY FLOOR.
- ☑ 3- ALL HORIZONTAL DRAINAGE PIPES SHALL HAVE RODDING EYES AT POINTS OF CHANGE OF DIRECTION IN PIPES AS REQUIRED FOR EFFECTIVE MAINTENANCE.
- ☑ 4- RODDING EYES SHALL BE PROVIDED WHERE MORE THAN ONE WC IS CONNECTED TO A HORIZONTAL SOIL PIPE.
- ☑ 5- RODDING EYE IS TO BE PROVIDED WHERE THE DISTANCE BETWEEN ONE WC AND STACK OR MANHOLE IS MORE THAN 5 METERS.

STACKS

- ☑ 1- THE UPPER LIMIT OF STACK LOADING SHALL NOT BE MORE THAN A QUARTER FULL.
- ☑ 2- FOR BUILDINGS OF LESS THAN 20 STORIES HEIGHT, APPLIANCES LOCATED ON GROUND FLOOR SHALL NOT BE CONNECTED TO VERTICAL STACK DISCHARGING AT GROUND LEVEL.
- ☑ 3- FOR BUILDINGS GREATER THAN 20 STORIES APPLIANCES LOCATED AT GR. FLOOR AND FIRST FLOOR SHALL NOT BE CONNECTED TO VERTICAL STACK DISCHARGING AT GROUND LEVEL.
- ☑ 4- CONNECTION FROM THE APPLIANCES LINES ON ANY FLOOR AND THE MAIN PIPE SHALL BE IN VERTICAL STAKES ONLY.
- ☐ 5- FOR ALL BENDS THAT ARE AT BASE OF STACKS, PROVIDE A 45 OR 90 DEGREES LONG RADIUS TYPE ELBOW.

VENT PIPES

- ☑ 1- IN SINGLE STACK SYSTEM, PROVIDE A SEPARATE VENTILATION FOR INDIVIDUAL CONNECTIONS FROM THE WC, FLOOR TRAP, SINK, ETC. ANY HORIZONTAL PIPE LONGER THAN 1.5 METERS FROM SUCH FIXTURES SHALL BE VENTED ON THE HIGH SIDE.
- ☑ 2- VENT PIPES FROM MANHOLES AND VERTICAL STACKS SHALL BE EXTENDED 2 METERS ABOVE THE ROOF, THE END OF WHICH SHALL BE FITTED WITH VENT COWLS.

RESTRICTIONS

- ☑ 1- THE DRAINAGE PIPES SHALL BE MADE NOT TO RUN THROUGH ELECTRIC ROOMS OR ELECTRIC SUB-STATIONS.
- ☑ 2- DIRECT CONNECTION OF WASTE SYSTEM FROM A FLOOR TRAP TO A FLOOR TRAP SHALL NOT BE PERMITTED.
- ☑ 3- NO DRAIN PIPES SHALL BE CAST INTO AN RCC STRUCTURAL ELEMENT WITHOUT PRIOR APPROVAL FROM STRUCTURAL ENG'R.
- ☑ 4- TO ALLOW THE DRAIN PIPES TO PASS THROUGH ANY STRUCTURAL ELEMENT IN BUILDING A CAST IRON SLEEVE IS FIRST FITTED WITHIN THE STRUCTURAL ELEMENT SUCH A BY PASS, THE SLEEVE SHALL OFFER A TOLERANCE OF AT LEAST 50 MM FOR EASE OF INSTALLATION OF THE PIPE. THE GAP BETWEEN THE PIPE AND THE SLEEVE SHALL THEN BE FILLED WITH SUITABLE SEALANT.
- ☑ 5- NOT TO PLACE UNDERGROUND PIPE LINE WITH TOP OF PIPE LESS THAN 600 MM BELOW FFL UNLESS CONCRETE STYLE 150 MM THICK SHALL BE PROVIDED AROUND TO PROTECT THE PIPE.
- ☑ 6- TYPICAL OUTLET SIZE (MM)

WATER CLOSET	100
WASH BASIN	50
KITCHEN SINK	50
FLOOR DRAIN	75
BATH TUB/SHOWER	40
WASHING M/C	40
BALCONY DRAIN	50

- ☑ 7- STACK SIZES SHALL BE AS FOLLOWS: –

UP TO GROUND PLUS SEVEN STORY	
SOIL PIPE	100
WASTE PIPE	100
VENT PIPE	75
RAIN WATER PIPE	100
BALCONY DRAIN PIPE	50
A/C DRAIN PIPE	32

- ☑ 8- STACK SIZES SHALL BE AS FOLLOWS: –

ABOVE SEVEN STORY	
SOIL PIPE	150
WASTE PIPE	150
VENT PIPE	100
RAIN WATER PIPE	100
BALCONY DRAIN PIPE	50
A/C DRAIN PIPE	32

C) MANHOLES

- ☑ 1- THE MANHOLE SCHEDULE SHALL BE ARRANGED IN THE MANNER SHOWN BELOW ,THE MANHOLE INVERT LEVEL (I L) , COVER LEVEL (C L) DEPTH AND DISTANCE BETWEEN MANHOLES SHALL BE REFERENCED FROM KENYA C , F.I.C USING KENYA DATUM AND ALL UNITS SHALL BE IN SYSTEM.
- ☑ 2- A SKETCH SHOWING THE RELATIVE LEVEL BETWEEN F.I.C AND BUILDING MANHOLES SHALL BE PROVIDED.
- ☑ 3- THE INVERT LEVEL OF THE EXTERNAL DRAINAGE SYSTEM SHALL BE DETERMINED BY THE CONSULTANT TAKING INTO CONSIDERATION THE DRAINAGE CONNECTION LEVEL TO MATCH THAT OF F.I.C, IN CASE OF N.O.C THE DEEP OF LAST MANHOLE SHALL BE LESS THAN 1200 MM.
- ☑ 4- THE DEPTH OF FIRST MANHOLE SHALL BE AT LEAST 450 MM.
- ☑ 5- SLOPES FOR HORIZONTAL RUNS SHALL BE AS FF:FOR 100 MM-1:60 FOR 150 MM-1:90 FOR 200 MM-1:120.
- ☑ 6- MANHOLES AND ACCESS CHAMBERS SHALL BE LAY OUT ACCORDING TO CONSULTANT'S SCHEME., COVERS PROVIDED SHALL BE SUITABLE FOR THE LOADS THEY ARE SUBJECTED TO, AND IN ACCORDANCE WITH BS 497.
- ☑ 7- ACUTE ANGLE CONNECTIONS SHALL NOT BE ALLOWED WITHIN JUNCTION MANHOLES.
- ☑ 8- AT A MH THE TOPS OF ALL SEWERS SHOULD BE AT THE SAME LEVEL SO THAT THE PIPES OF SMALLER DIAMETER ARE NOT FLOODED WHEN THE BIGGER PIPES ARE RUNNING FULL.
- ☑ 9- BACKDROP SHALL BE PROVIDED WHEN THE LEVEL DIFFERENCE BETWEEN INCOMING AND MAIN SEWER IS CONSIDERABLE.
- ☑ 10- AN INSPECTION CHAMBER / MANHOLE / GULLY TRAP CONSTRUCTED IN COVERED AREA SHALL BE DRY TYPE AND PROVIDED WITH RECESSED DOUBLE SEAL TYPE COVER.
- ☑ 11- ANY MANHOLE LOCATED IN GARAGE, DRIVEWAY OR OTHER TRAFFIC AREAS SHALL BE PROVIDED WITH HEAVY DUTY COVERS.
- ☑ 12- IF INSPECTION CHAMBERS / MANHOLES ARE IN AGRICULTURAL LAND, MANHOLE COVERS SHOULD BE RAISED 75 MM ABOVE THE NATURAL GROUND LEVEL.
- ☑ 13- DISTANCE BETWEEN MH TO MH SHALL NOT EXCEED 15 METERS IN VILLAS AND BUILDINGS.
- ☑ 14- MINIMUM REQUIREMENT FOR MANHOLE VENTING SHALL BE THE PROVISION OF VENT PIPE TO FIRST AND LAST MANHOLES OF DRAINAGE LINE. THESE VENT PIPES SHALL BE 100 MM BELOW COVER LEVEL.
- ☑ 15- THE SITING OF ANY MANHOLE SHALL BE KEPT AWAY FROM UNDERGROUND WATER TANK BY A DISTANCE NOT LESS THAN THE DEPTH OF THE WATER TANK.

SUMP PUMP

- ☑ 1- IN BASEMENT, SAND TRAP WITH PVC BUCKET SHALL BE PROVIDED JUST BEFORE END CONNECTION OF CAR PARK DRAIN TO THE SUMP PUMP PIT AND THE RAMP DRAIN CHANNEL.
- ☑ 2- IF A BASEMENT SUMP PUMP IS FOR RAIN WATER COLLECTION ONLY FROM BASEMENT, CONNECT ONE WASTE PIPE FROM THE NEAREST TOILET TO THE BASEMENT DRAINAGE LINE TO MAKE IT ALWAYS WET.
- ☑ 3- SUMP PUMP SERVICE ONLY THE BASEMENT DRAIN AND SEWERAGE.

MANHOLES CONSTRUCTION

- ☑ 1- ALL INSPECTION CHAMBERS/MANHOLES SHOULD BE BUILT ON BED OF CEMENT CONCRETE 1:4:6 THE THICKNESS OF THE CONCRETE SHALL BE 150MM FOR MANHOLES UP TO 1000MM DEEP AND 200MM FOR DEPTHS ABOVE 1000MM.
- ☑ 2- WHERE MANHOLE / INSPECTION CHAMBERS ARE CONSTRUCTED BELOW GROUND WATER TABLE , COMPLETE CONSTRUCTION SHALL BE EITHER IN WATERPROOFED RCC. OR IN G.R.P.
- ☑ 3- ALL MAIN LINE CHANNELS SHALL BE LOCATED IN THE CENTER OF THE MANHOLES.
- ☑ 4- BENCHING OF INCOMING BRANCHES SHOULD BE INCLINED TOWARDS THE MAIN DIRECTION OF FLOW .
- ☑ 5- DIAMETER OF SEMI-CIRCULAR CHANNEL IN THE BOTTOM OF MANHOLE SHALL BE EQUAL TO THAT OF THE INCOMING SEWER DIAMETER.
- ☑ 6- THE SIDES OF CHANNELS IN MANHOLE SHALL BE EXTENDED VERTICALLY TO THE SAME LEVEL OF THE SOFFIT OF THE PIPE.
- ☑ 7- THE BENCHING IN INSPECTION CHAMBER/ MANHOLES SHOULD HAVE SMOOTH SURFACE CEMENT PLASTER.
- ☑ 8- MANHOLES SIZES SHALL BE AS FOLLOWS:-

MANHOLES DEEP MM	MANHOLES SIZE MM	MANHOLES COVER MM	
UP TO 1300	600X600 ☐	600X600 ☐ FOR SEW	◯ FOR SWD
FROM 1301 TO 1700	800X800 ☐	600X600 ☐ FOR SEW	◯ FOR SWD
FROM 1701 TO 2500	1000 ◯	600X600 ☐ FOR SEW	◯ FOR SWD
FROM 2501 TO 4000	1500 ◯	600X600 ☐ FOR SEW	◯ FOR SWD

ALL 1000 & 1500 MANHOLE SHALL HAVE G.R.P. LININGS

F I C (THE LAST MANHOLE)

☑

PLATE, THIS MANHOLE SHALL HAVE ONLY ONE INCOMING CONNECTION AND WORK BY GRAVITY ONLY.

- ☑ 2- IN CASE OF THERE ARE NO PROPOSAL OF FUTURE CONNECTION FROM DRAINAGE DEPARTMENT. THE FUTURE CONNECTION SHALL BE IN LESS WIDTH ROAD AND THE MAX DEPTH SHALL BE 1200 MM.

D) MISCELLANEOUS

RAIN WATER DRAINAGE

- ☑ 1- THE DRAINAGE OF ROOFS AND PAVED AREAS SHALL BE ACCORDING TO BS 6367.
- ☑ 2- RAINWATER PIPES ARE NOT TO BE CONNECTED TO SEWER LINES.
- ☑ 3- ALL O.T.S, S (4X4M & LESS) SHOULD HAVE FLOOR TRAPS FOR RAINWATER CONNECTED TO THE NEAREST GULLY TRAP OR WASTE STACK. OTHER O.T.S,S SHALL HAVE RW DRAIN FOR RAIN WATER WHICH IS FREE DISCHARGE TO OUTSIDE.
- ☑ 4- FOR ALL AIR WELLS, ACCESS DOORS SHOULD BE PROVIDED AT THE LOWER LEVEL OF THE WELL .
- ☑ 5- FOR PROJECT HAVING LARGE RAIN CATCHMENT AREAS, RAIN WATER SCHEME SHALL BE DESIGNED TO BS 6367 APPROVAL.

PROVISION FOR FUTURE CONNECTION

- ☑ 1- SHOP FACILITIES IN BUILDINGS SHALL HAVE WASTE PIPE & VENT PIPE CONNECTION PROVISIONS FOR FUTURE WITH APPROVED GRATING AS PER DETAILS.

SYSTEM TEST

- ☑ 1- WATER AND AIR TESTS SHALL BE CARRIED OUT AFTER THE PIPES ARE INSTALLED AND CONSULTANT CERTIFICATE SHALL BE SUBMITTED TO ENGINEERS.

ABBREVIATIONS

ABBREV.	DESCRIPTIONS	ABBREV.	DESCRIPTIONS
AS	AS SHOWN	IC	INSPECTION CHAMBER
CCO	CEILING CLEANOUT	IV	ISOLATION VALVE
CO	CLEANOUT	KS	KITCHEN SINK
CV	CHECK VALVE	LVL.	LEVEL
CWR	COLD WATER SUPPLY	L/L	LOW LEVEL
CV	CHECK VALVE	MAX	MAXIMUM
CWL	COLD WATER LINE	NC	NORMALLY CLOSED
DWG.	DRAWING	NO.	NUMBER
FC	FLEXIBLE CONNECTION	O.C.	ON CENTER
FCO	FLOOR CLEANOUT	PBC	PRESSURE BREAK CHANNEL
FD	FLOOR DRAIN	PD	PARKING DRAIN
FFL	FINISHED FLOOR LINE	PCV	PUMP CONTROL VALVE
FT	FLOOR TRAP	PRV	PRESSURE REDUCING VALVE
FV	FLOAT VALVE	RD	ROOF DRAIN
F/A	FROM ABOVE	RWP	RAIN WATER PIPE
F/B	FROM BELOW	RWS	RAIN WATER STACK
F/A, T/B	FROM ABOVE TO BELOW	SP	SOIL PIPE
F/B, T/A	FROM BELOW TO ABOVE	SS	SOIL STACK
GD	GUTTER DRAIN	TYP.	TYPICAL
GRND.	GROUND	T/A	TO ABOVE
GT	GULLY TRAP	T/B	TO BELOW
GV	GATE VALVE	U/G	UNDERGROUND
HP	HORSEPOWER	U/S	UNDER SLAB
HWS	HOT WATER SUPPLY	VP	VENT PIPE
H/L	HIGH LEVEL	WP	WASTE PIPE
WB	WASH BASIN	WS	WASTE STACK
WC	WATER CLOSET	WM	WASHING MACHINE
WM	WATER METER		
W/	WITH		
YS	WYE STRAINER		

LEGENDS & SYMBOLS

SYMBOLS	DESCRIPTIONS	SYMBOLS	DESCRIPTIONS
	COLD WATER LINE		RAINWATER/BALCONY WASTE PIPE
IV	ISOLATION VALVE		VENT PIPE
	CHECK VALVE/PUMP CONTROL VALVE		WASTE/SOIL PIPE
	SURGE ANTICIPATING CONTROL VALVE		BALCONY/PARKING DRAIN
	PRESSURE REDUCING VALVE		FLOOR TRAP/DRAIN
	FLEXIBLE CONNECTION/VICTAULIC COUPLING	GT	GULLY TRAP
TAP TAP	TAPS/HOSE BIBB		ROOF DRAIN
	WATER METER		VENT STACK THRU ROOF (COWL)
	FLOAT VALVE		BALCONY DRAIN STACK
	PUMP		RAINWATER STACK
	MOTORIZED BUTTERFLY VALVE		SOIL STACK
	PRESSURE REDUCING VALVE		VENT STACK
	Y-STRAINER		CEILING CLEANOUT
	PRESSURE GAUGE		ELECTRIC DRIVEN PUMP
	HYDROPNEUMATIC TANK/PRESSURE VESSELS		FLOOR CLEANOUT
	FLOW	IC	INSPECTION CHAMBER
			OIL INTERCEPTOR

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD
☐ DETAILED ☑ TENDER
☐ SHOP DWG ☐ AS BUILT

PROJECT: Resedential Building

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

Water Supply & Drainage System General Notes, Abbreviations, Legend and Symbols

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL SERVICES.

2. ALL EQUIPMENT SHALL BE TO THE APPROVAL OF Local Occupational Safety & Health Services (OSHS)

3. THE SPRINKLER PIPE SIZE HAVE BEEN BASED ON HYDRAULIC CALCULATION. HOWEVER, CONTRACTOR SHALL SUBMIT THE HYDRAULIC CALCULATIONS FOR PIPE SIZES AT SHOP DRAWINGS STAGE.

4. FLOW SWITCHES LOCATED IN THE MAIN DISTRIBUTION PIPE SHALL BE LINKED TO THE MAIN FIRE DETECTION SYSTEM.

5. THE PUMP SET SHALL BE A PACKAGED SET SUPPLIED BY A SPECIALIST SUPPLIER, COMPLETE WITH ACCESSORIES & TESTED. SITE ASSEMBLED UNITS SHALL NOT BE ACCEPTABLE. THE ENTIRE SET SHALL BE UL/FM FACTORY ASSEMBLED.

6. ALL ZONE CONTROL VALVES SHALL HAVE TEST DRAIN PIPES CONNECTED TO NEAREST DRAIN POINT.

7. ALL SPRINKLER HEADS SHALL BE UL/FM APPROVED WITH THE FOLLOWING TYPES:

   a.IN ALL FALSE CEILING AREAS: ½" ORIFICE, ½" NOT, 154°F BRIGHT CHROME RECESSED TYPE.

   b.N CARPARKING AREAS: ½" ORIFICE, ½" NPT, 135°F BRONZE PENDENT TYPE.

   c.IN MECHANICAL FLOOR: ½" ORIFICE, ½" NPT, 154°F BRONZE UPRIGHT TYPE.

   d.IN GUEST BEDROOM: 17/32" ORIFICE, ½" NPT, 135°F BRIGHT CHROME, HORIZONTAL SIDE WALL.

   e.IN SAUNAS & STEAM ROOMS: ½" ORIFICE, ½" NPT, 286°F CORROSION RESISTANT, CHROME PENDENT TYPE/SIDE WALL.

TABLE (BASED ON LPC REGULATIONS)

SP.	TYPE OF OCCUPATION	HAZARD CLASSIFICATION	MAX-AREA COVERAGE (M^2)	MAX-AREA OF OPERATION (M^2)	MAX-DISTANCE BETWEEN SP HEAD (M^2)	DESIGN DENSITY OF DISCHARGE (MM/MIN)
1	OFFICES (AREA<126M²)	LIGHT	21	84	4.6	2.25
2	CAR PARKS	ORDINARY GROUP 1	12	72	4.0	5.0
3	KITCHEN/ LAUNDRY	ORDINARY GROUP 1	12	72	4.0	5.0
4	RESIDENTIAL/ HOTEL	LIGHT	21	84	4.6	2.25

9. CONTRACTOR SHALL COMPLY WITH ALL THE LOCAL OSHS AND ASHRAE STANDARDS

10. SPRINKLER AND STANDPIPE PIPEWORK SHALL BE GALVANIZED M.S. PIPE CONFORMING TO ASTM A53, HEAVY DUTY WITH G.I. MALEABLE SCREWED FITTINGS, UP TO SIZE 2" DIA.AND VICTAULIC G.I. FITTINGS SHALL BE FOR SIZES 2½" DIA AND ABOVE.

11. FIRE EQUIPMENTS SHALL BE HOUSED IN RECESSED ENCLOSURE WITH DOOR AS PER ARCHITECT'S DETAIL.

12. PROVIDE FIRE DAMPER IN THE AIR DUCT PENETRATING THE CONCRETE WALLS OR FIRE RATED WALLS. (BY A/C CONTRACTOR)

13. MAIN ENTRANCE DOORS FOR ALL OFFICES, FLATS, KITCHEN SHALL BE 1/2 HR. FIRE RESISTANT, METAL OR SOLID TEMPER OR APPROVED BY CIVIL DEFENCE.

14. DOORS FOR STAIRCASES AND ALL SERVICES ROOMS SHALL BE 2 HR. FIRE RESISTANT AND SELF CLOSING, METAL OR SOLID TEMPER .

15. THE FAHU UNITS, AHU UNITS, ETC. SHALL BE INTERLOCKED WITH THE FIRE ALARM SYSTEM & SHALL AUTOMATICALLY SWITCH OFF, A SIGNAL IS INITIATED IN THE RETURN AIR SMOKE PANEL.

16. ALL EQUIPMENT SHALL BE SUBJECTED TO THE APPROVAL OF KENYA CIVIL DEFENSE.

17. COMPARTMENTALIZATION OF THE BUILDING'S EACH FLOOR, STAIRCASE, CORRIDORS, KITCHENS, ETC. SHALL BE CONSIDERED AS A SEPARATE FIRE COMPARTMENT FOR THE PURPOSE OF FIRE ALARM SYSTEM DESIGN.

18. ALL HOLES, OPENINGS FOR THE CABLES, CABLE TRAYS, ETC. SHALL BE FITTED WITH SMOKE/FLAME PROOF FIRE BARRIER.

19. SPRINKLER ZONE CONTROL VALVES AND TAMPER SWITCHES SHALL BE INTER-LINKED WITH THE MAIN FIRE ALARM CONTROL PANEL.

20. BASEMENT FLOORS & CORRIDORS SHALL BE MECHANICALLY VENTILATED. BASEMENT AREAS SHALL BE EQUIPPED WITH MECHANICAL VENTILATION EQUIPMENTS AND SHALL BE OPERATED BY EMERGENCY POWER SUPPLY IN CASE OF FIRE. AS APPROVED BY LOCAL CIVIL DEFENSE AUTHORITY. (REFER TO A/C DRAWINGS FOR DETAILS)

21. FOR FIRE PUMPSET ARRANGEMENT, REFER TO THE RELEVANT DETAILS.

20. LOW LEVEL CUT-OFF SWITCH SHALL BE POSITIONED IN SUCH A WAY THAT A MINIMUM OF 227 CU. M. SHALL BE MAINTAINED FOR FIRE FIGHTING.

21. REPEATER PANEL SHALL BE PROVIDED AT THE SUITABLE LOCATION AS AGREED BY CIVIL DEFENSE AUTHORITY.

22. METAL GUARDS SHALL BE PROVIDED FOR EXPOSED PENDENT SPRINKLER HEADS ON RAMPS AND INSIDE EQUIPMENT ROOMS.

ABBREVIATIONS

ABBREV.	DESCRIPTIONS
AAV	AUTOMATIC AIR RELEASE VENT
APPROX.	APPROXIMATELY
AS	AS SHOWN
BSMT.	BASEMENT
CAP.	CAPACITY
CV	CHECK VALVE
C/W	COMPLETE WITH
DN	DOWN
ESR	ECCENTRIC REDUCTION REDUCER
FE	FIRE EXTINGUISHER
FFL	FINISHED FLOOR LINE
FH	FIRE HYDRANT
FHR	FIRE HOSE REEL
FJ	FLEXIBLE JOINT
FM	FLOW METER
FP	FIRE PUMP
HP	HYDRANT PIPE
FS	FLOW SWITCH
F/A	FROM ABOVE
F/B	FROM BELOW
G.I.	GALVANIZED IRON
W/	WITH
YS	WYE STRAINER
MM	MILLIMETER
GRND.	GROUND
RPM	REVOLUTION PER MINUTE
SM	SQUARE METER
THK.	THICKNESS
GV	GATE VALVE
HZ	HIGH ZONE
H/L	HIGH LEVEL
JP	JOCKEY PUMP
LV	LANDING VALVE
LVL.	LEVEL
MAX	MAXIMUM
MIN	MINIMUM
MZ	MID ZONE
NTS	NOT TO SCALE
O.C.	ON CENTER
PFE	PORTABLE FIRE EXTINGUISHER
PIV	POST INDICATOR VALVE
PRV	PRESSURE REDUCING VALVE
RN	RISER NIPPLE
SCHED	SCHEDULE
TYP	TYPICAL
T/A	TO ABOVE
T/B	TO BELOW
OS&Y	OPEN STEM AND YOKE

LEGENDS & SYMBOLS

SYMBOLS	DESCRIPTIONS
	23 KG CO2 WHEELED TYPE PORTABLE F.E.
	4.5 KG ABC DRY CHEMICAL F.E.
	4.5 KG CO2 PORTABLE F.E.
	AIR RELIEF VALVE
	BREECHING INLET 4 WAY (STAINLESS STEEL FACIA)
	CHECK VALVE
	FIRE HOSE REEL
	FIRE HYDRANT
	FLOOR CONTROL VALVE W/ SUPERVISORY SWITCH
	FLEXIBLE JOINT
M	FLOW METER
	OS & Y GATE VALVE WITH TAMPER SWITCH
	PRESSURE GAUGE
PRV	PRESSURE REDUCING VALVE
	ALARM CHECK VALVE
	ROOF MANIFOLD
	SPRINKLER HEAD UPRIGHT
	SPRINKLER HEAD PENDENT
	SPRINKLER HEAD SIDEWALL
	WYE STRAINER
	FIRE PUMP CONTROLLER UL LISTED & FM APPROVED WITH AUTO TRANSFER SWITCH
	FIRE PUMP (ELECTRIC) UL LISTED & FM APPROVED HORIZONTAL SPLIT CASE
	CLASS III SYSTEM-FIRE HOSE CABINET, FIRE HOSE REEL AND LANDING VALVE.

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: Resedential Building

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

Firefighting System General Notes, Abbreviations, Legend and Symbols

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

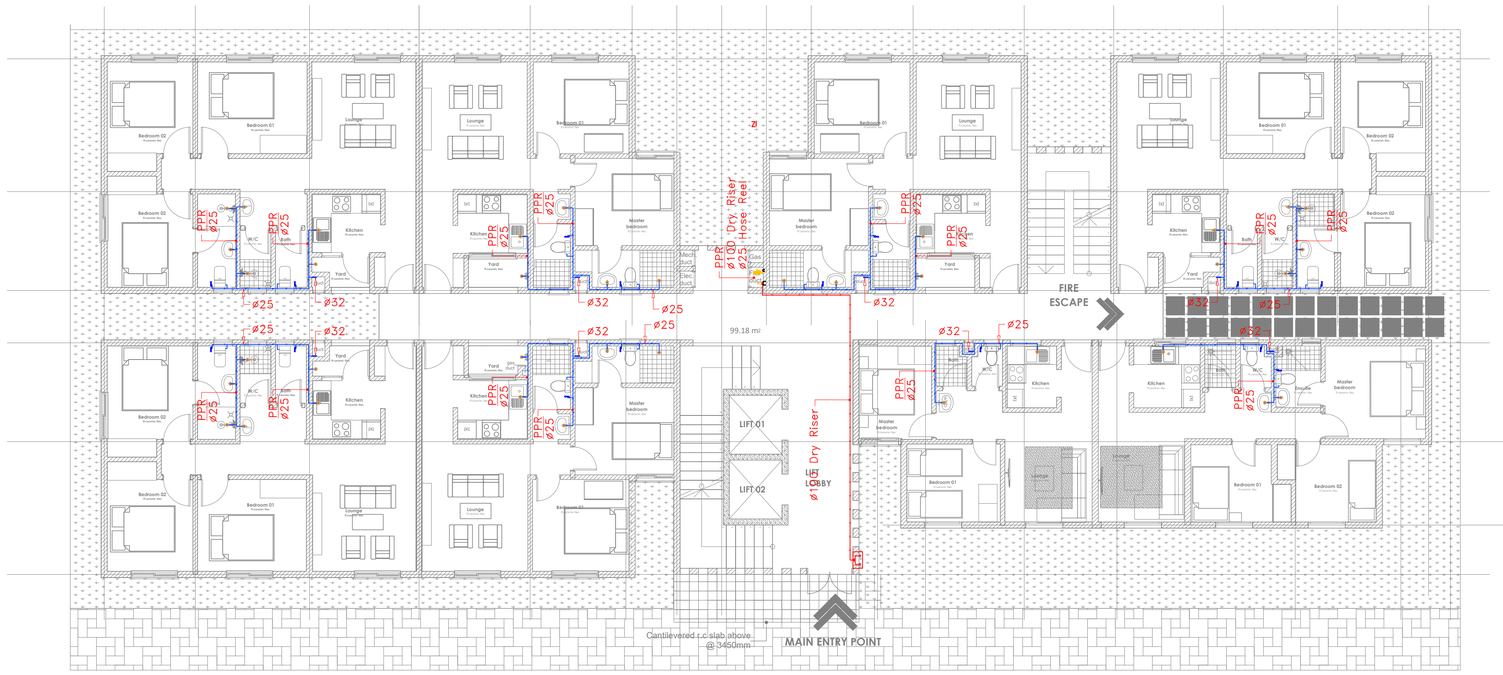
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_GROUND FLOOR PLAN

GROUN FLOOR AFFORDABLE + MARKET UNITS BLOCK TYPE B (G+9)

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT:

PROPOSED TYPICAL AFFORDABLE +MARKET UNITS BLOCK TYPE B G+9

CLIENT:STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

GROUND FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

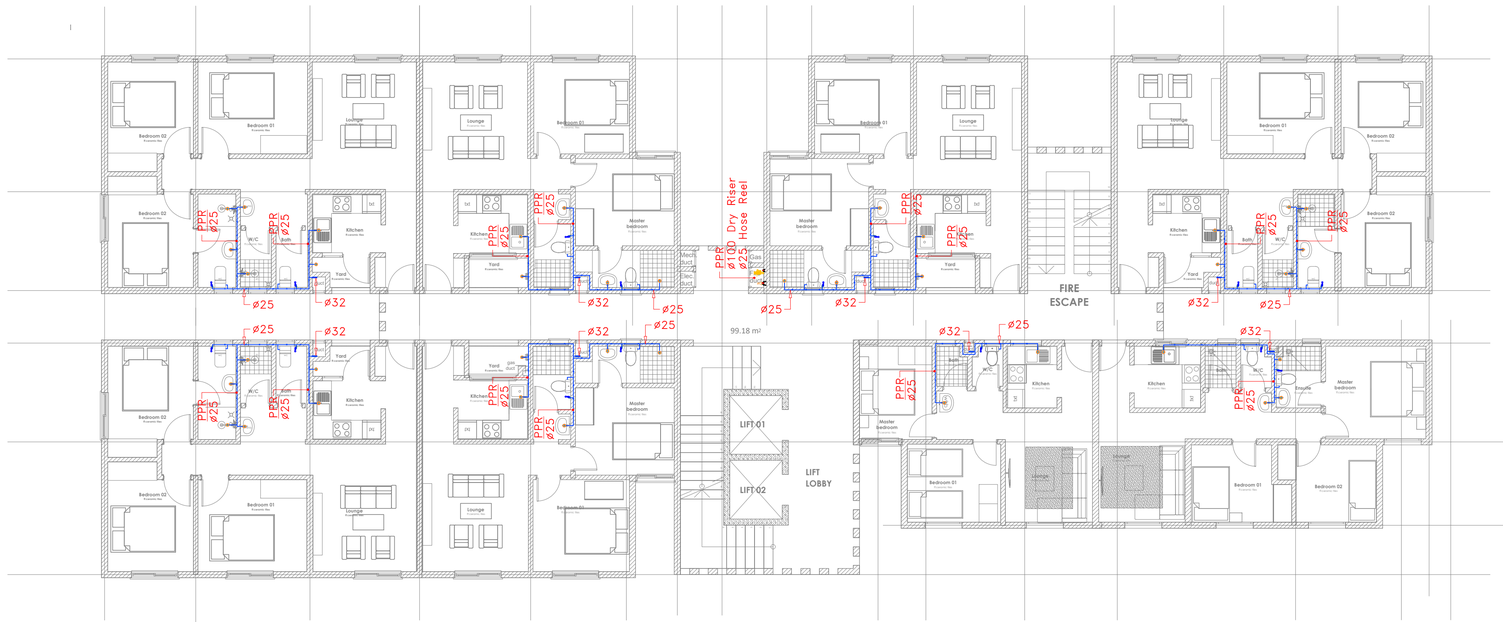
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_TYPICAL 1ST-9TH FLOOR LEVEL

TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B (G+9)

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT:

PROPOSED TYPICAL AFFORDABLE +MARKET UNITS BLOCK TYPE B G+9

CLIENT:STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

TYPICAL FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

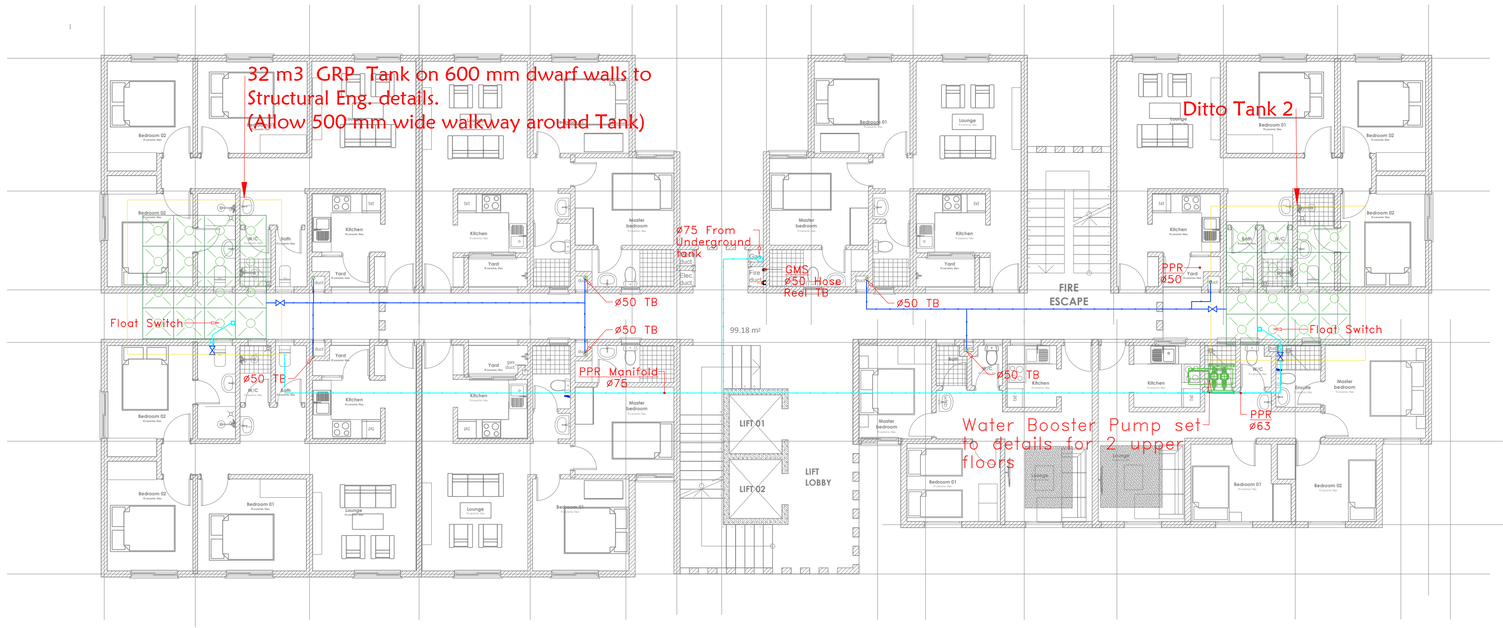
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_TYPICAL 1ST-9TH FLOOR LEVEL

ROOF AFFORDABLE + MARKET UNITS BLOCK TYPE B (G+9)

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT:

PROPOSED TYPICAL AFFORDABLE +MARKET UNITS BLOCK TYPE B G+9

CLIENT:STATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

ROOF FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

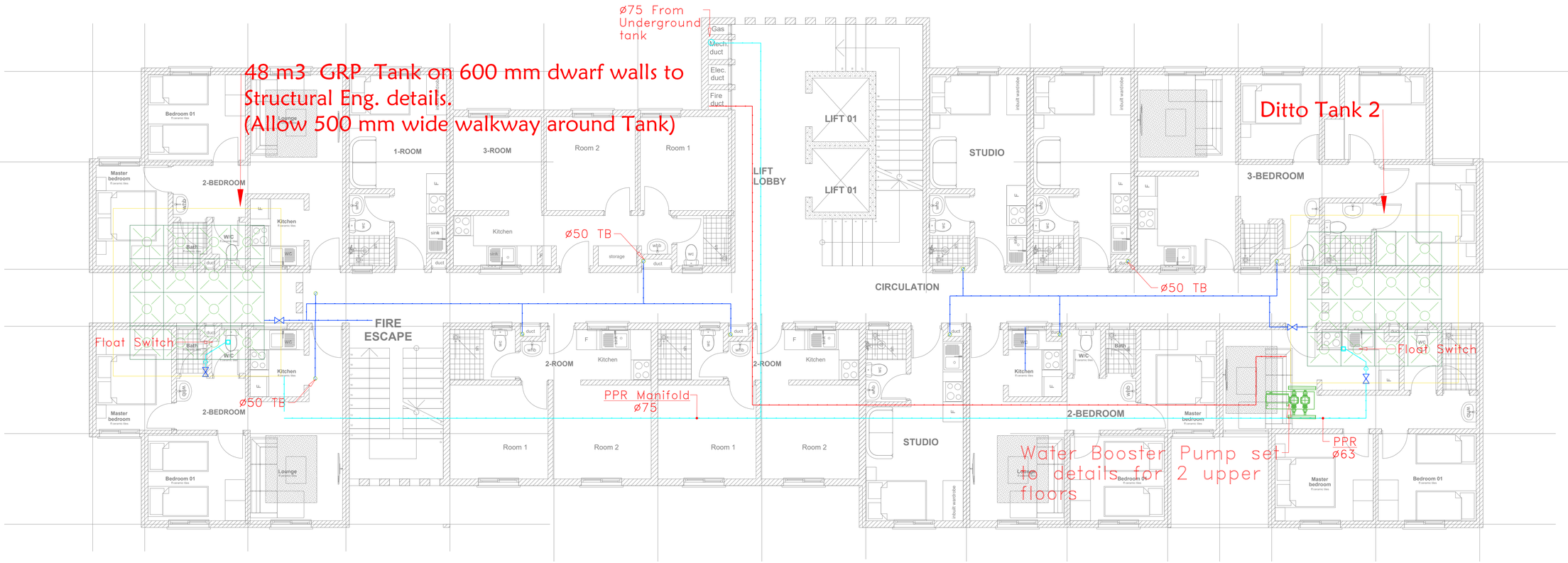
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL MIXED USE BLOCK TYPE C_TYPICAL 1ST-14TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	3	4	1

ROOF FLOOR SOCIAL+ AFFORDABLE UNITS BLOCK TYPE C

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MIXED USE BLOCK TYPE C [G+9]

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

ROOF FLOOR WATER SUPPLY SOCIAL+ AFFORDABLE UNITS BLOCK TYPE C

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

PROPOSED TYPICAL MIXED USE BLOCK TYPE C_TYPICAL 1ST-14TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	3	4	1

TYPICAL FLOOR SOCIAL+ AFFORDABLE UNITS BLOCK TYPE C

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MIXED USE BLOCK TYPE C [G+9]

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

TYPICAL FLOOR WATER SUPPLY SOCIAL+ AFFORDABLE UNITS BLOCK TYPE C

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

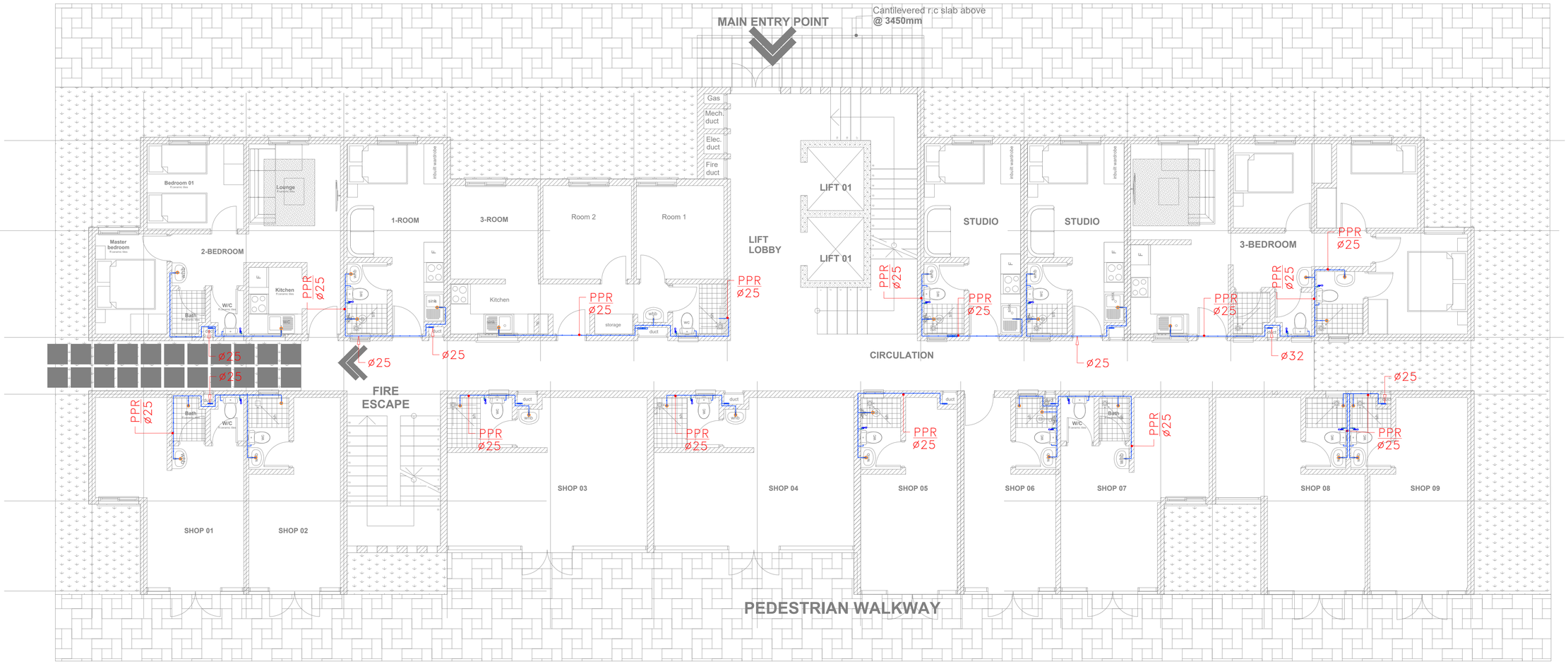
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

BLOCK TYPOLOGY C [G+9]



PROPOSED TYPICAL MIXED USE BLOCK TYPE C_GROUND FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN						
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM	RETAIL
1	2	1	2	1	1	9

GROUND FLOOR SOCIAL+ AFFORDABLE UNITS BLOCK TYPE C

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DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MIXED USE BLOCK TYPE C [G+9]

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

GROUND FLOOR SOCIAL+ AFFORDABLE UNITS BLOCK TYPE C

SCALE : 1:100

DRAWN BY :

CHECKED BY :

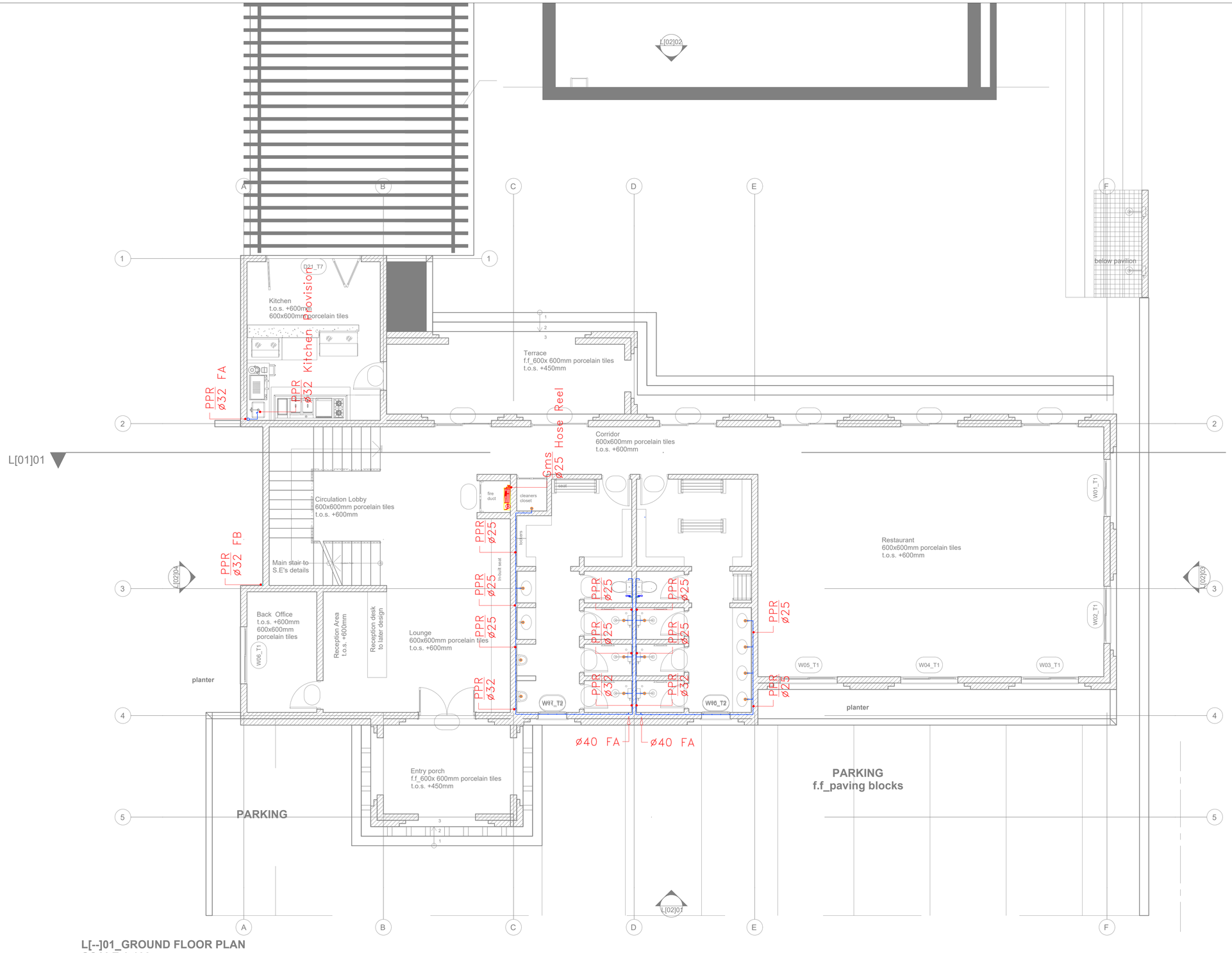
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[--]01_GROUND FLOOR PLAN
SCALE 1:100

CLUB HOUSE GROUND FLOOR WATER SUPPLY

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE GROUND FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

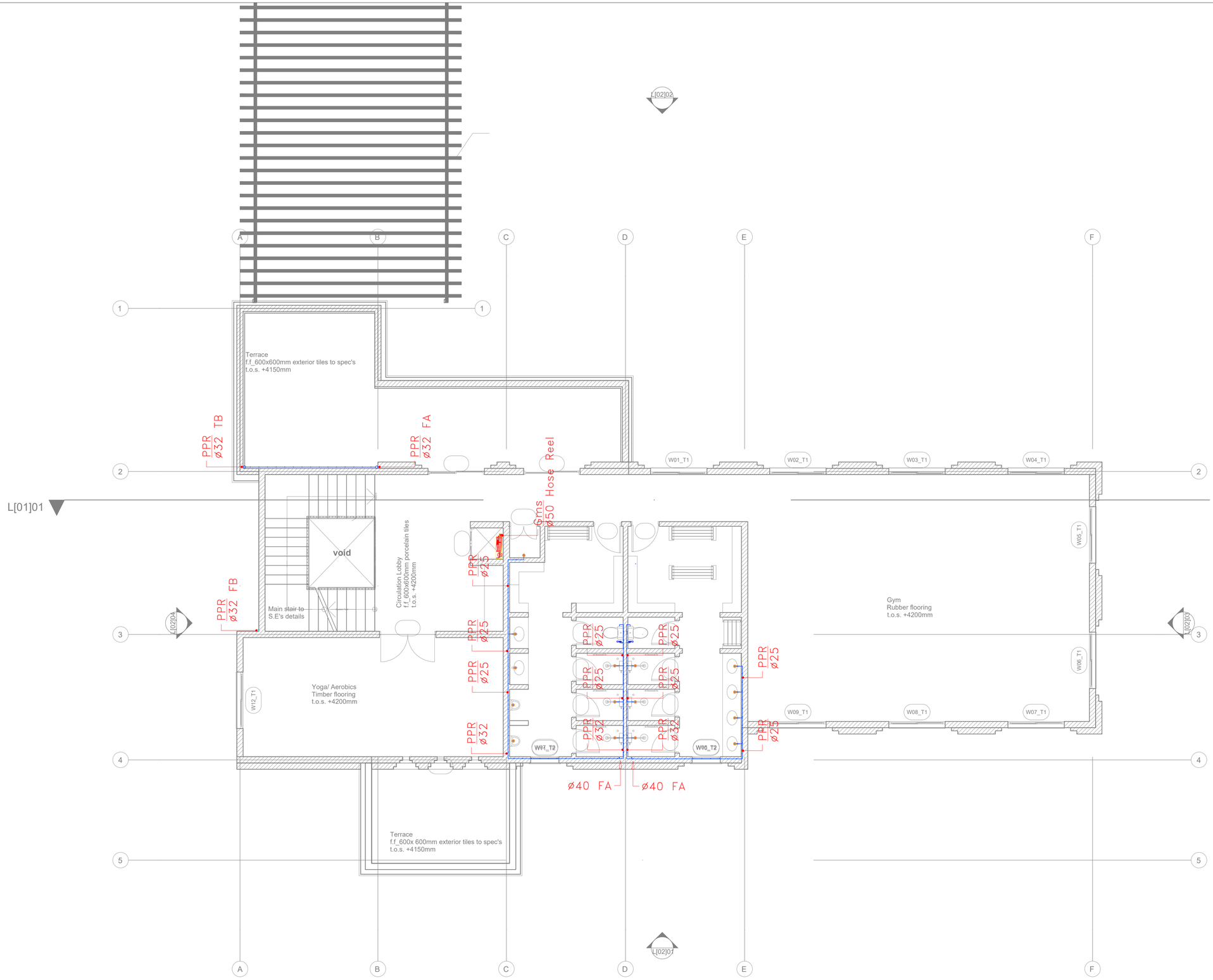
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



CLUB HOUSE FIRST FLOOR FLOOR WATER SUPPLY

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE FIRST FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

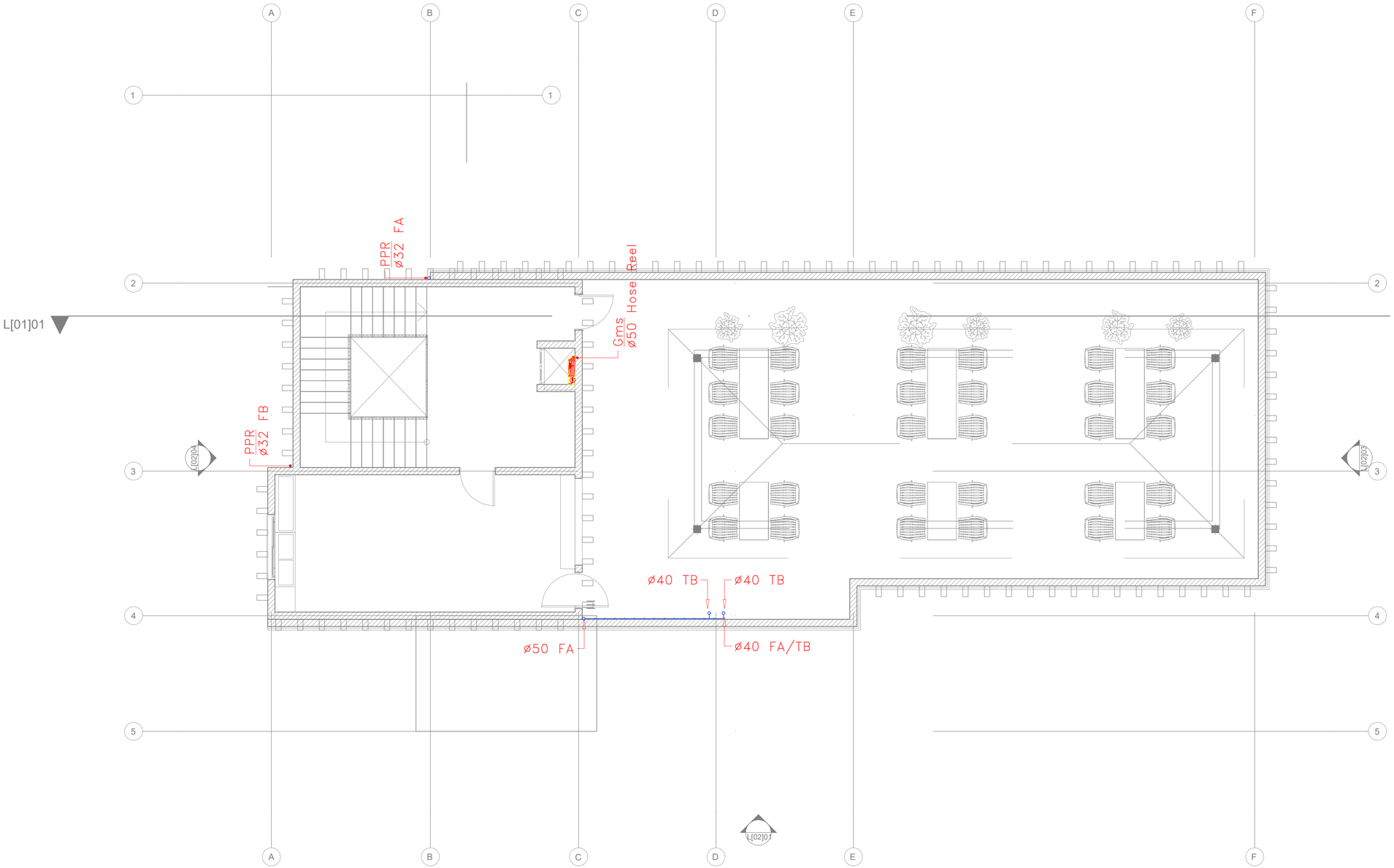
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



CLUB HOUSE TERRACE GROUND FLOOR WATER SUPPLY

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☒ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE TERRACE WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

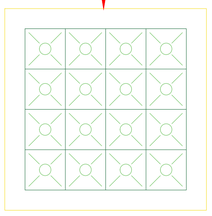
DATE :

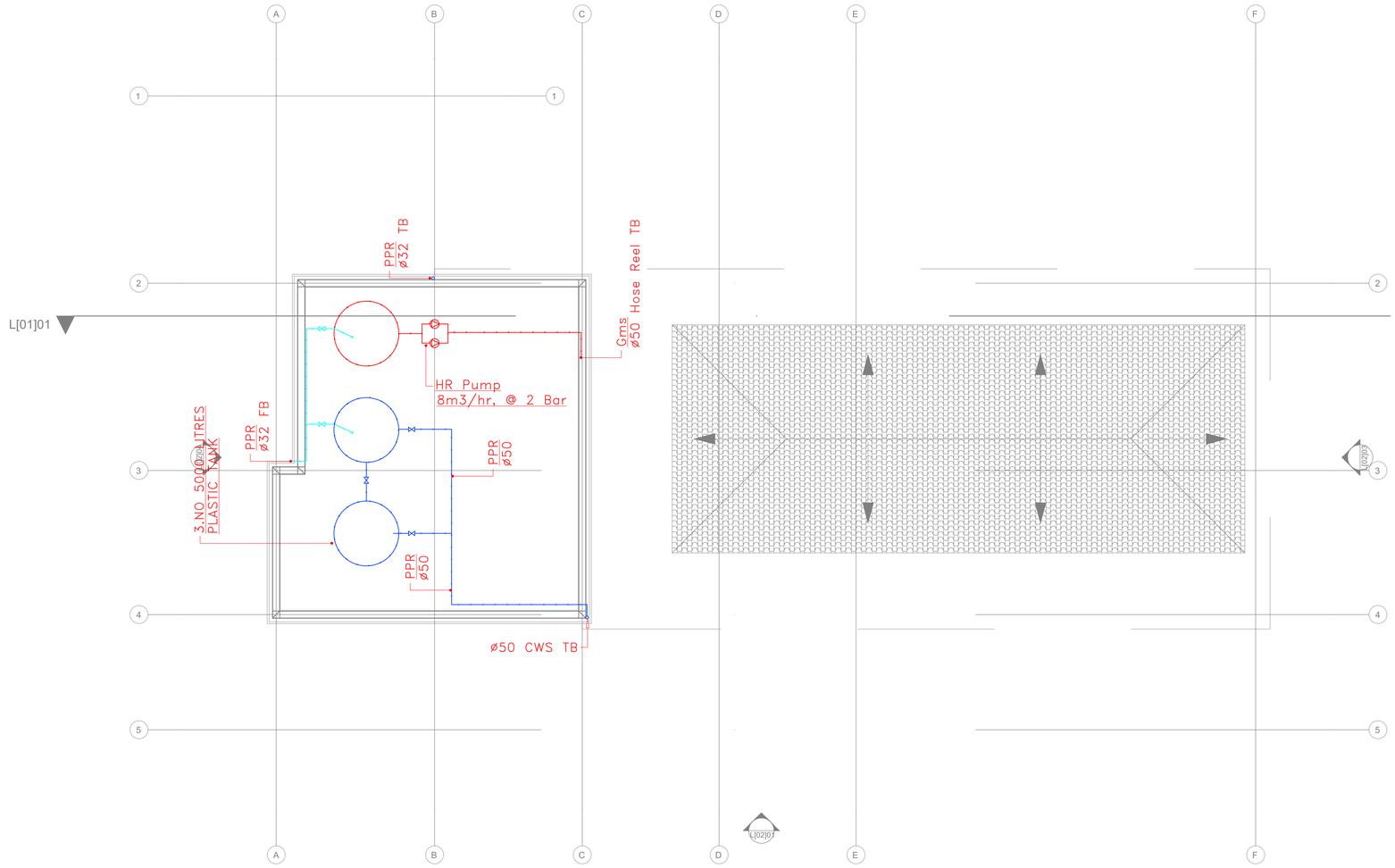
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

32 m3 GRP Tank on 600 mm dwarf walls to Structural Eng. details.
(Allow 500 mm wide walkway around Tank)





CLUB HOUSE ROOF WATER SUPPLY

GENERAL NOTES

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2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD
☐ DETAILED ☑ TENDER
☐ SHOP DWG ☐ AS BUILT

PROJECT: **CLUB HOUSE**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE ROOF WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

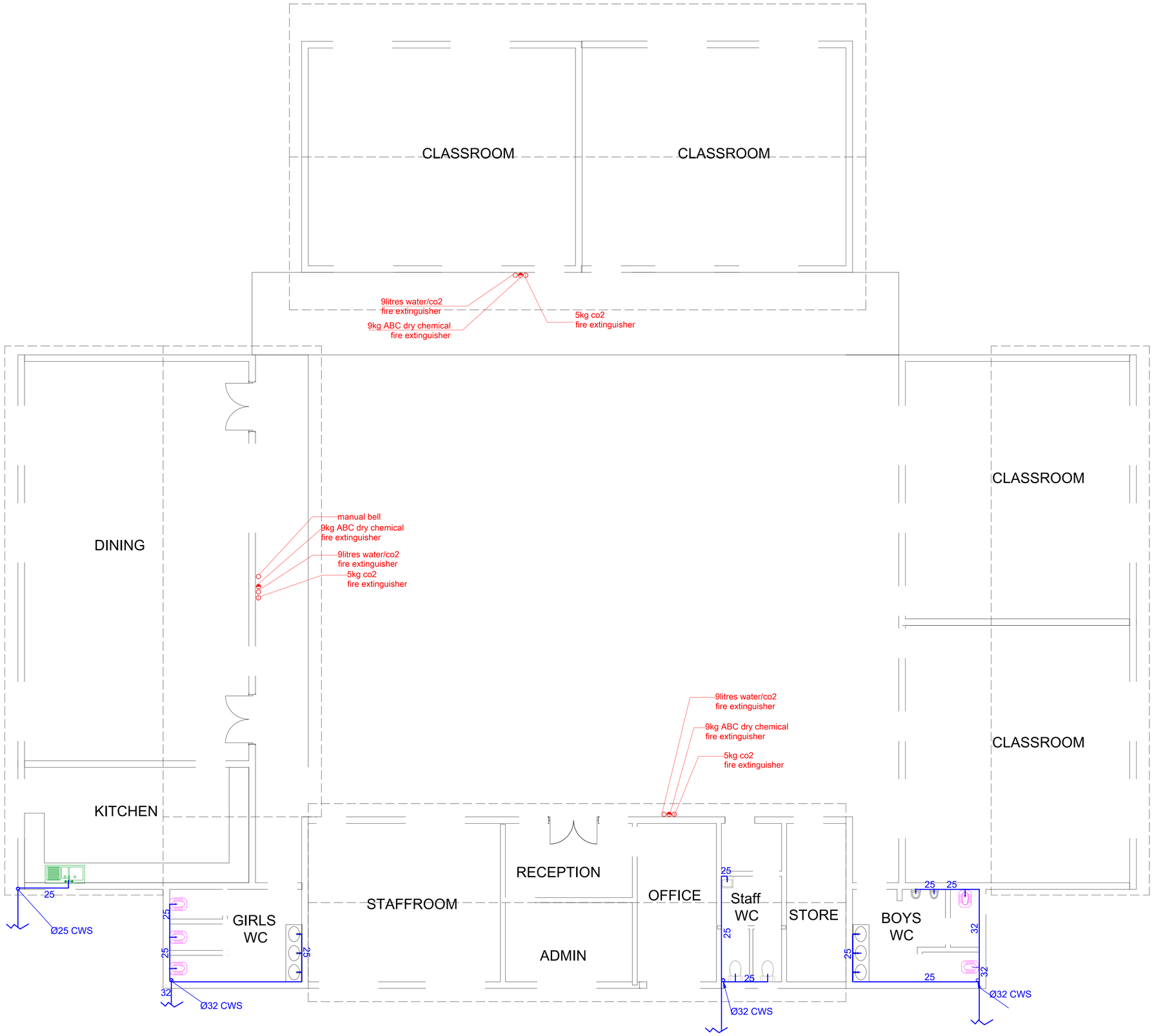
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



KINDERGARTEN TYPICAL PLUMBING AND FIRE FIGHTING FLOOR PLAN

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **KINDERGARTEN**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

KINDERGARTEN TYPICAL PLUMBING AND FIRE FIGHTING FLOOR PLAN

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

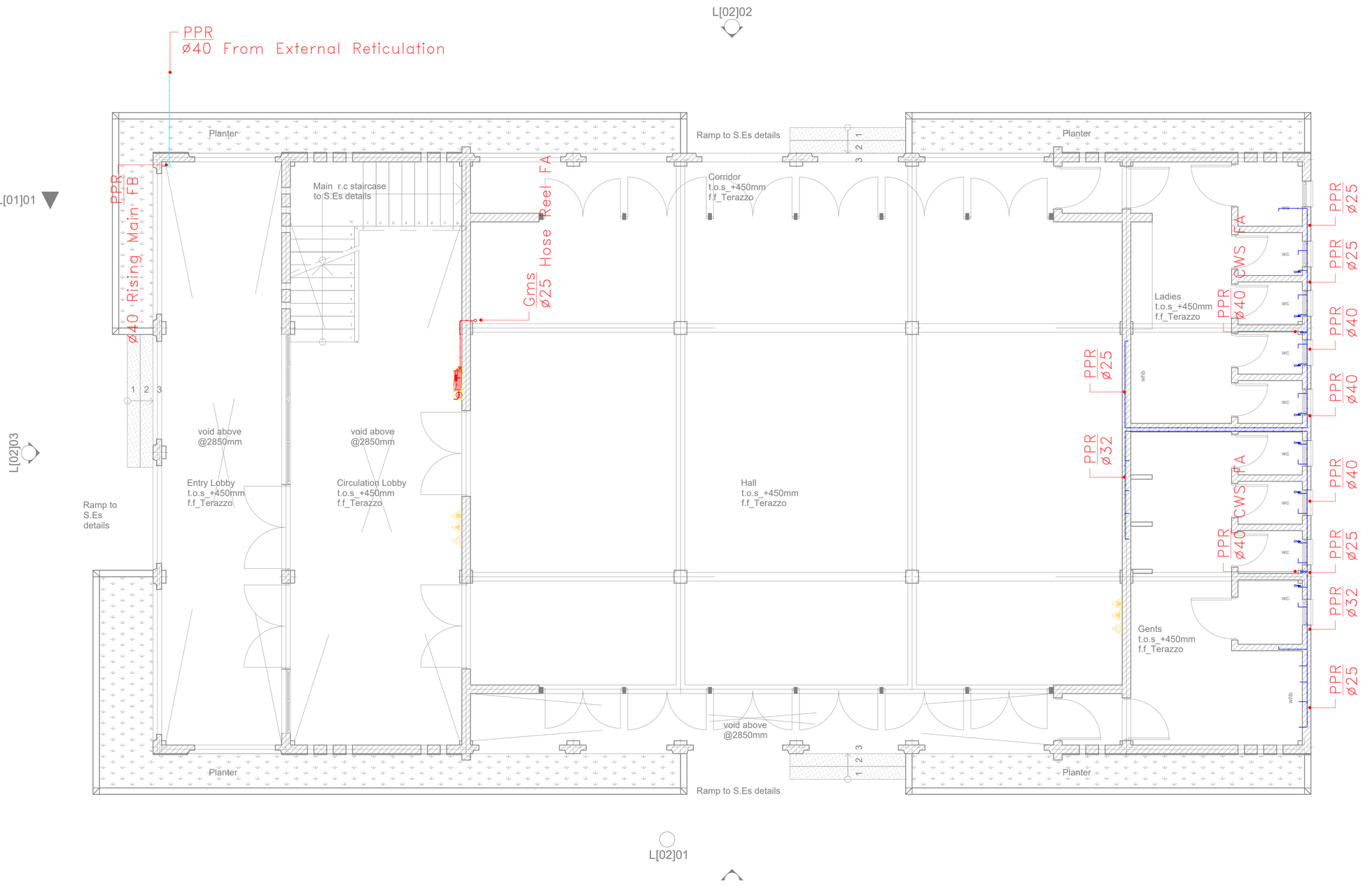
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



GROUND FLOOR WATER SUPPLY COMMUNITY CENTER

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

DRAWN BY :

CHECKED BY :

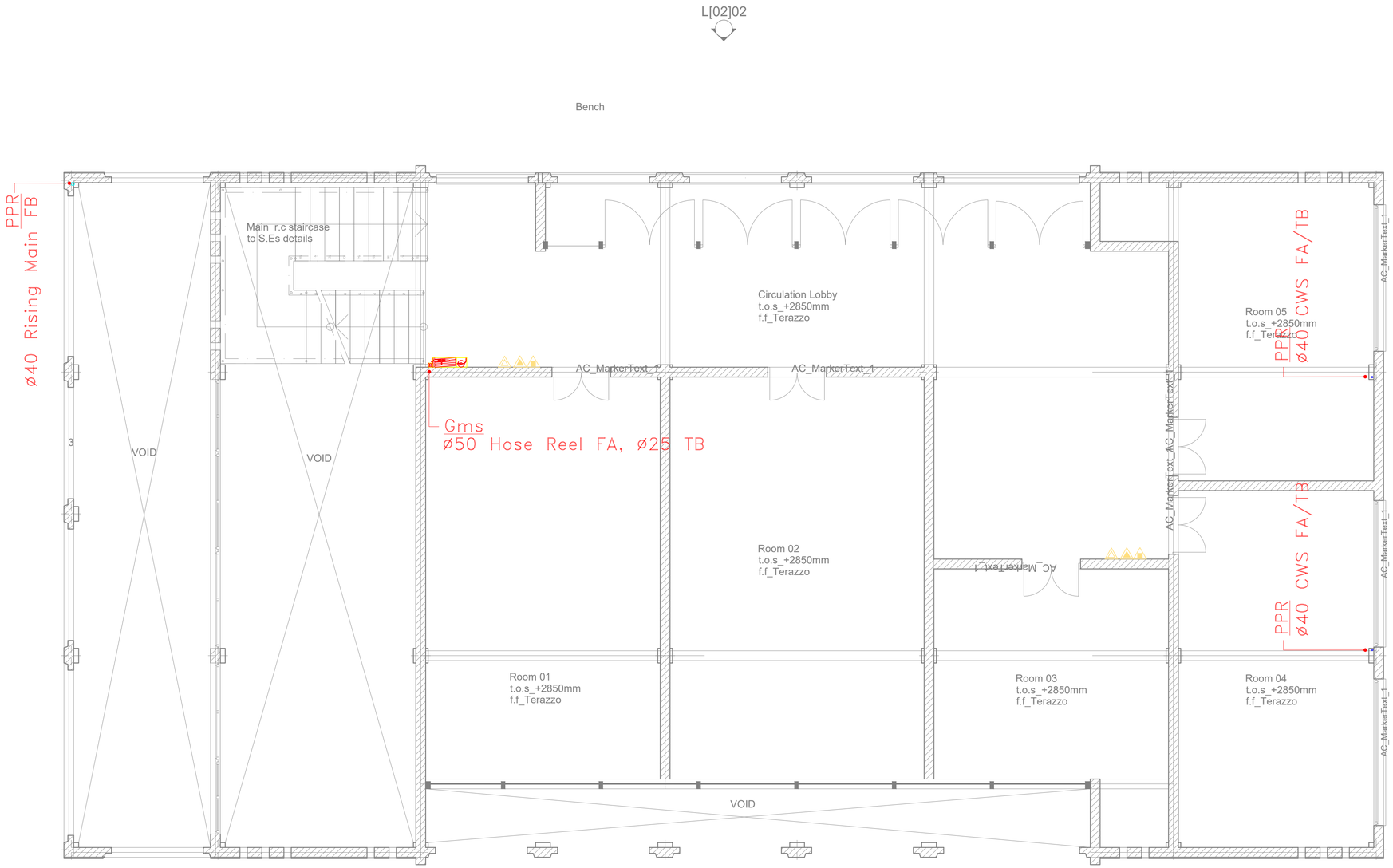
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



FIRST FLOOR WATER SUPPLY COMMUNITY CENTER

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

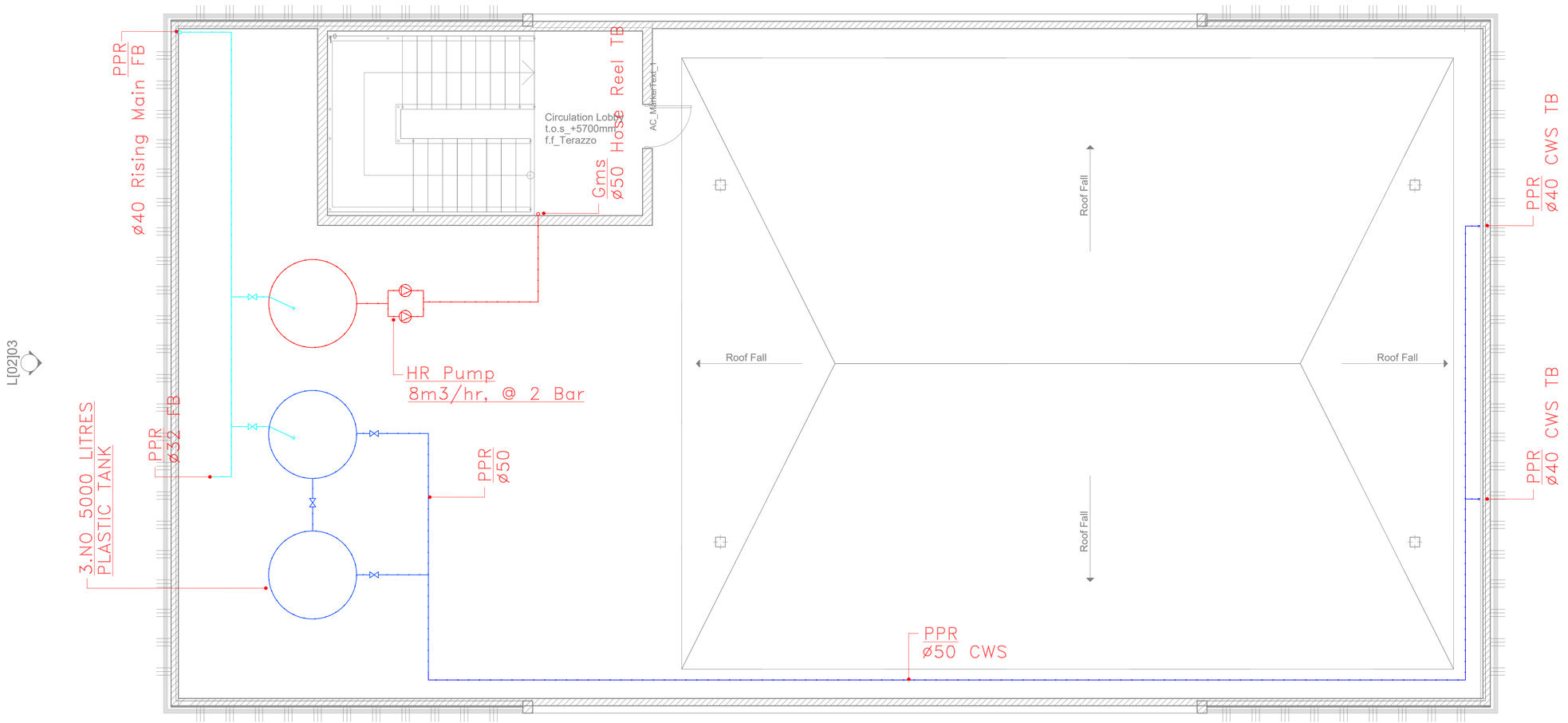
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

L[02]02



L[02]03

L[02]01

ROOF WATER SUPPLY COMMUNITY CENTER

GENERAL NOTES

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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

DRAWN BY :

CHECKED BY :

Date : Signature:

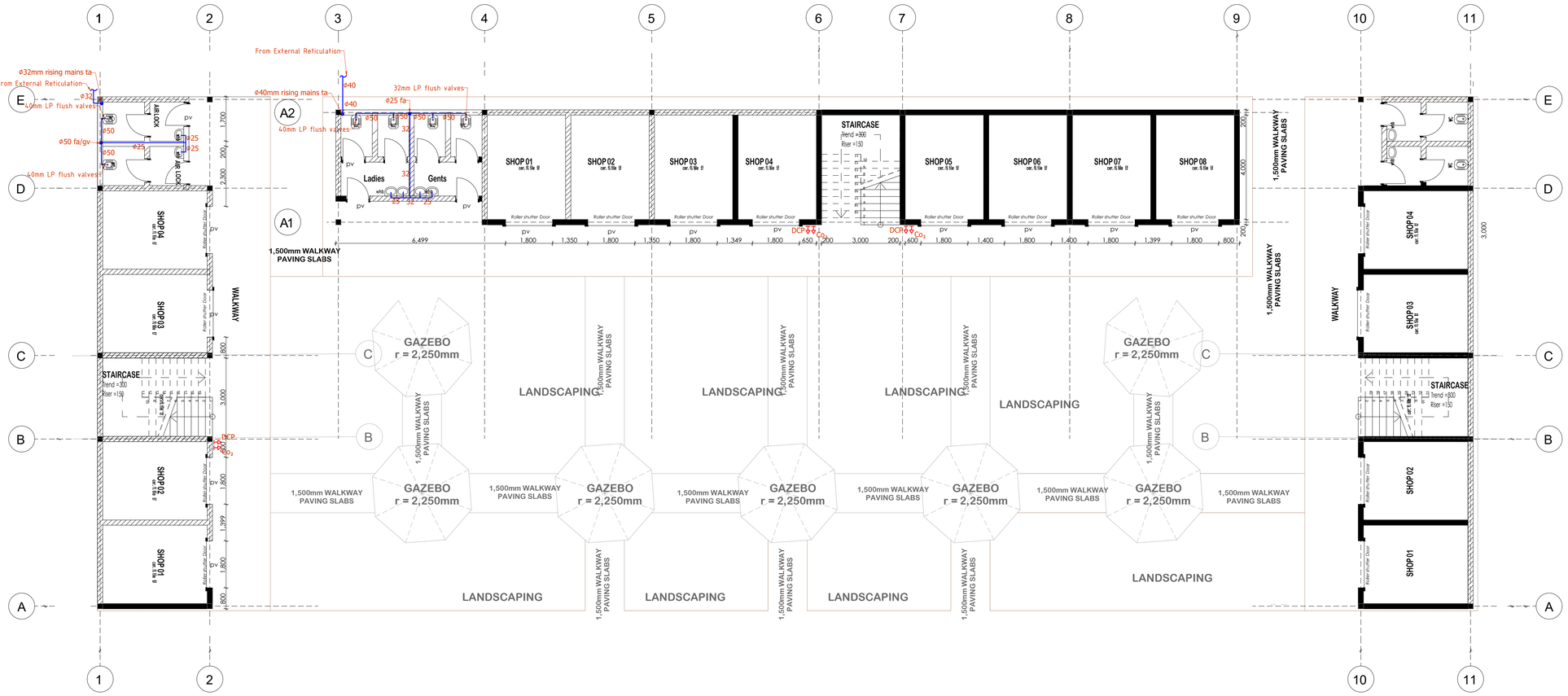
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



STALL GROUND FLOOR WATER SUPPLY

0. Ground Floor Plan 1:100

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **STALLS**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: NYALI ESTATE

DRAWING TITLE :

STALL GROUND FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

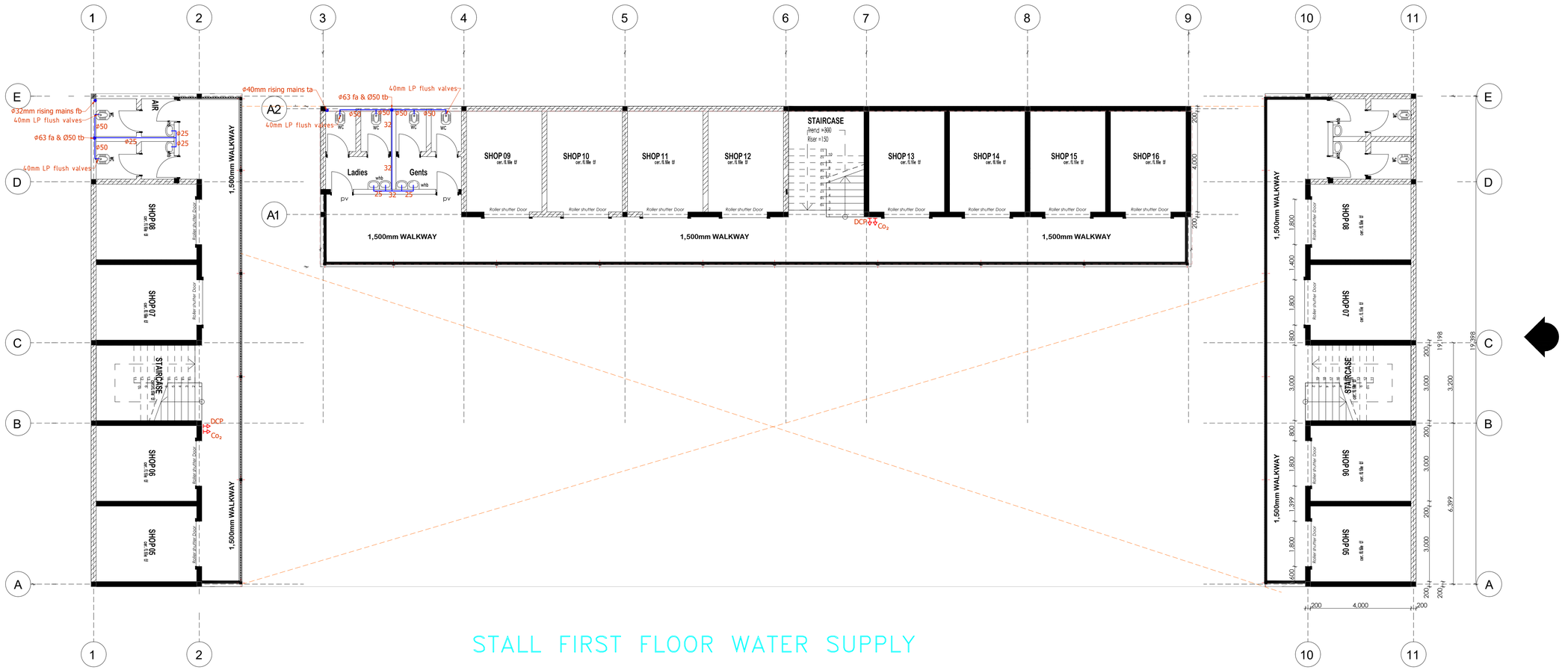
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



STALL FIRST FLOOR WATER SUPPLY

GENERAL NOTES

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3. Drawings are not to be scaled . Only figured dimensions should be used .
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **STALLS**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: NYALI ESTATE

DRAWING TITLE :

STALL FIRST FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

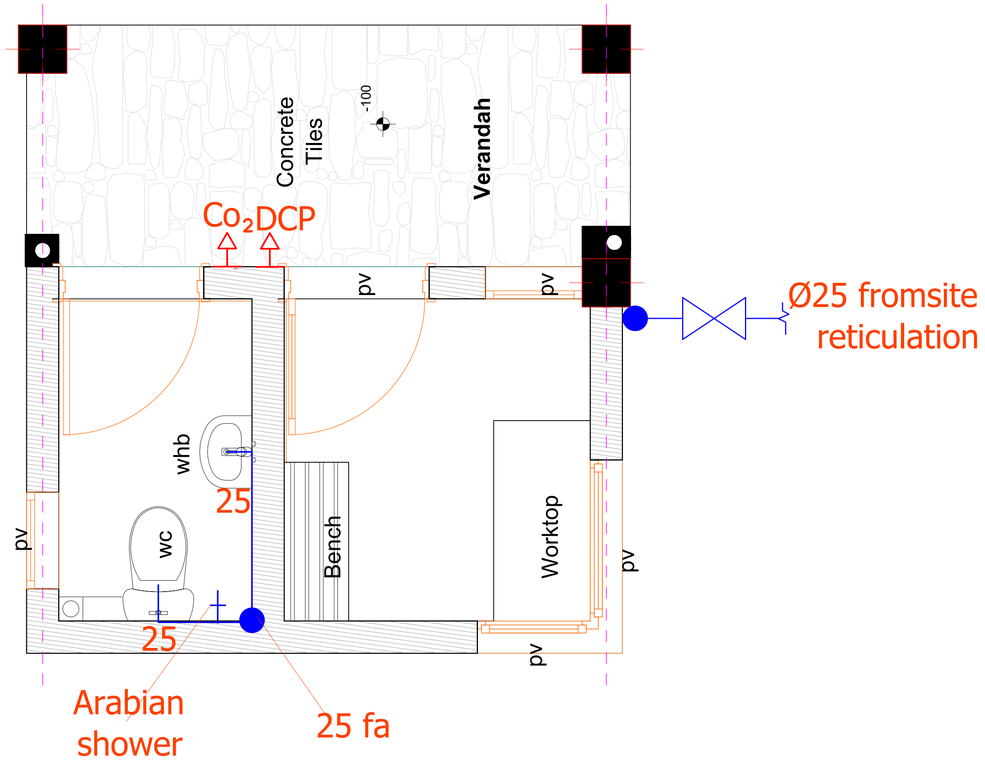
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

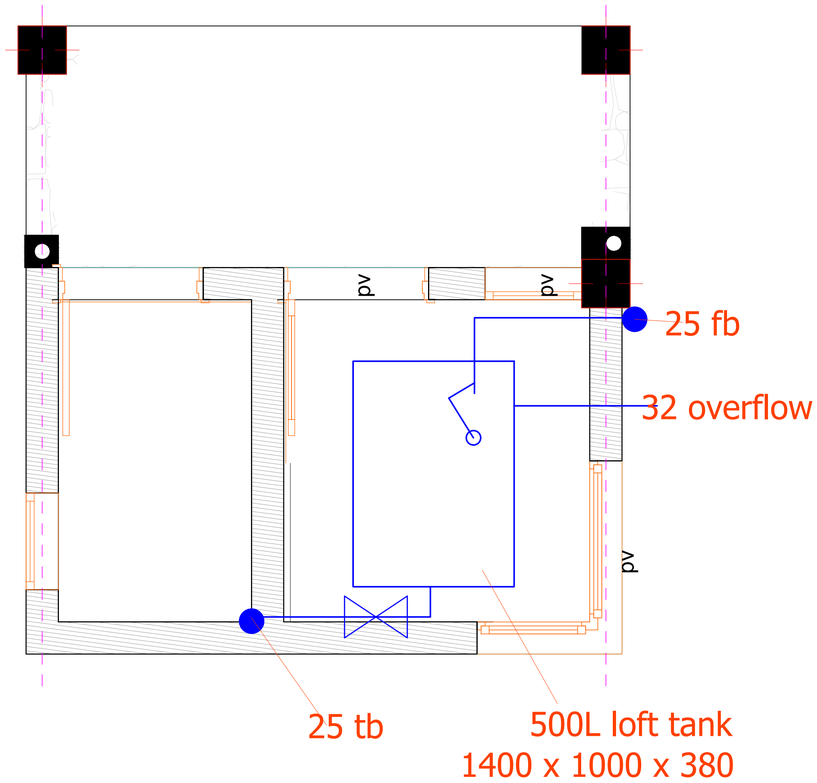
STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



Ground floor water supply



roof tank

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

GATE HOUSE WATER SUPPLY

SCALE : **1:100**

DRAWN BY :

CHECKED BY :

Date : **Signature:**

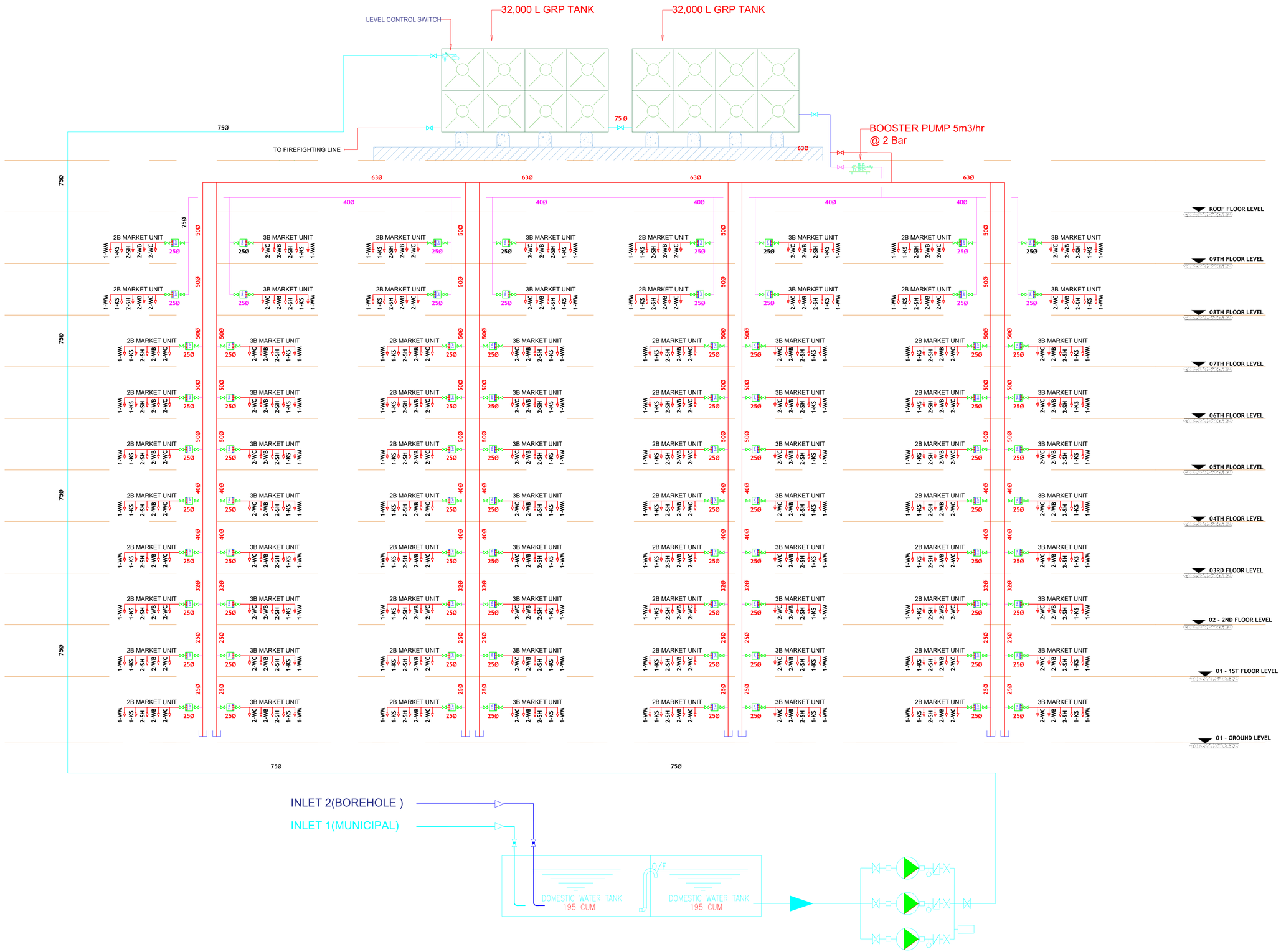
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL AFFORDABLE +MARKET UNITS BLOCK TYPE B

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT:

PRPROPOSED TYPICAL MARKET+ AFFORDABLE UNITS BLOCK TYPE B

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

WATER SUPPLY SCHEMATICS

DRAWING NO :

PMAHP-M-WS_300

SCALE : 1:100

DRAWN BY :

CHECKED BY :

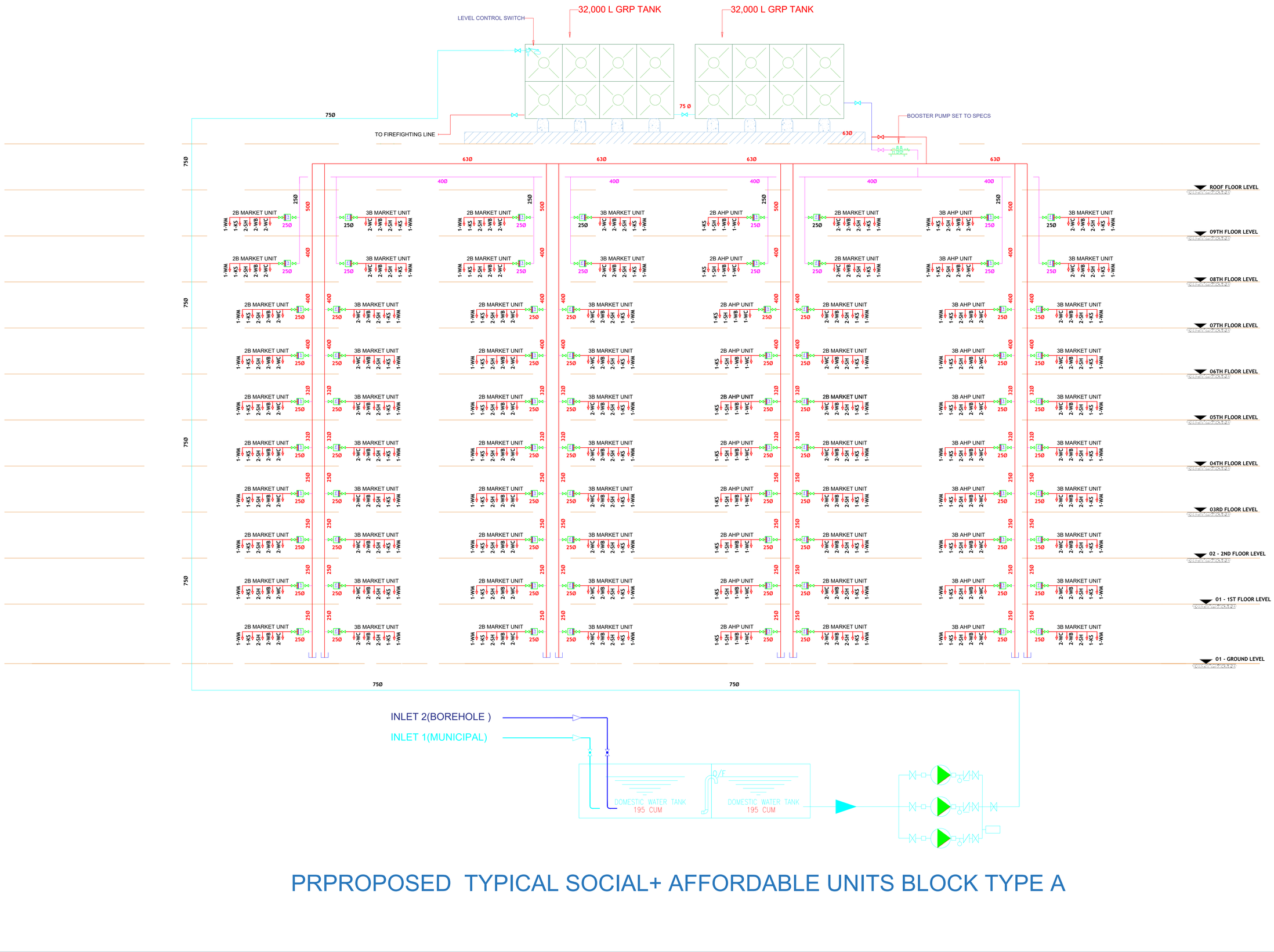
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PRPROPOSED TYPICAL SOCIAL+ AFFORDABLE UNITS BLOCK TYPE A

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:

PRPROPOSED TYPICAL SOCIAL+ AFFORDABLE UNITS BLOCK TYPE A

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: CHUKA

DRAWING TITLE :

WATER SUPPLY SCHEMATICS

SCALE : 1:100

DRAWN BY :

CHECKED BY :

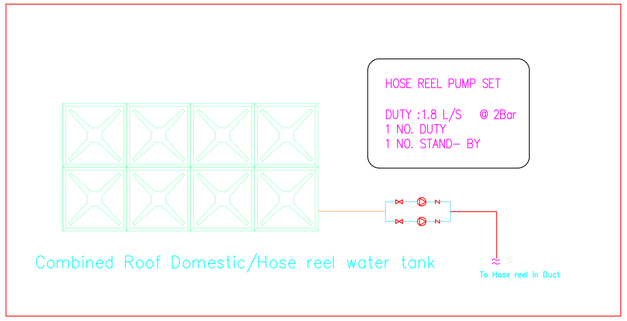
Date : Signature:

DATE :

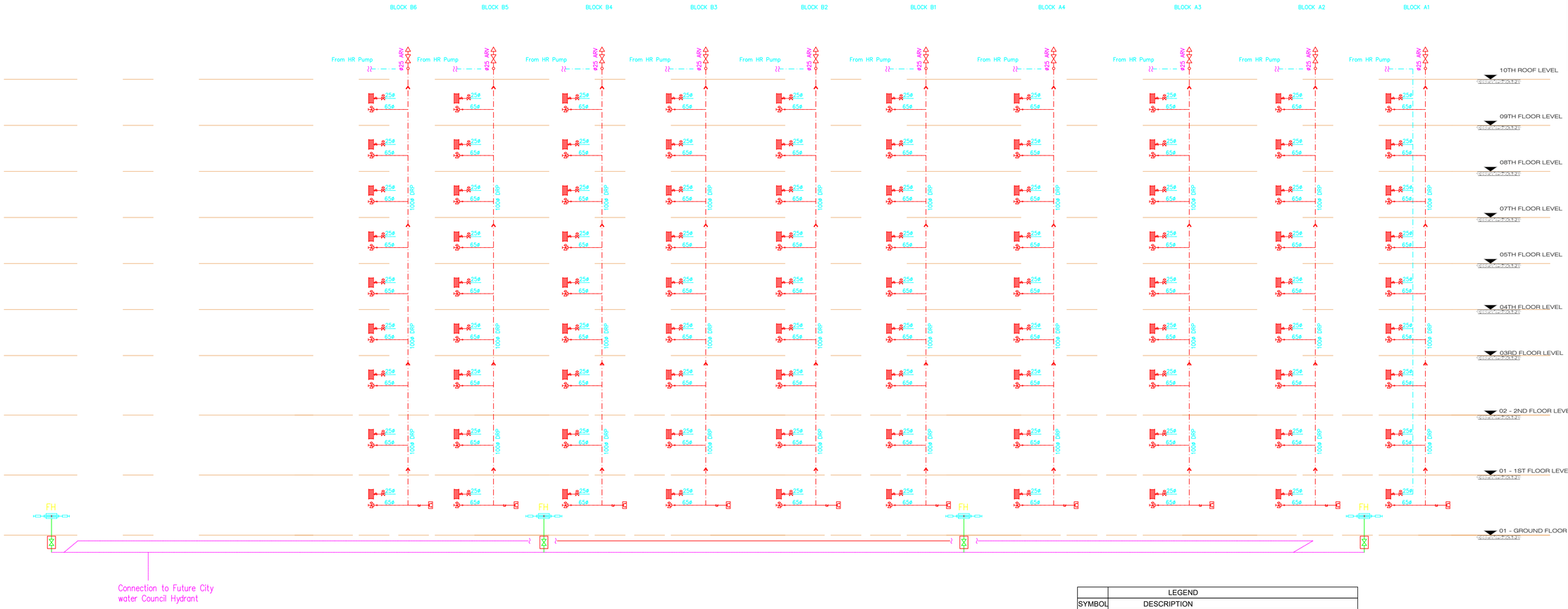
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



Roof Hose Reel Typical Connection



	LEGEND
SYMBOL	DESCRIPTION
	OS & Y GATE VALVE
	LANDING VALVE
	EXTERNAL HYDRANT VALVE
	SINGLE HEADED HYDRANT VALVE
	HOSE REEL DRUM
	BUTTERFLY VALVE
	UNION WITH BALL VALVE FOR DRAIN
	Ø50 HOSE REEL PIPE
	Ø160 EXTERNAL HYDRANT PIPE
	Ø100 DRY RISER PIPE

FIREFIGHTING SCHEMATIC

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL AFFORDABLE +MARKET UNITS BLOCK TYPE B G+9

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

FIREFIGHTING SCHEMATICS

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

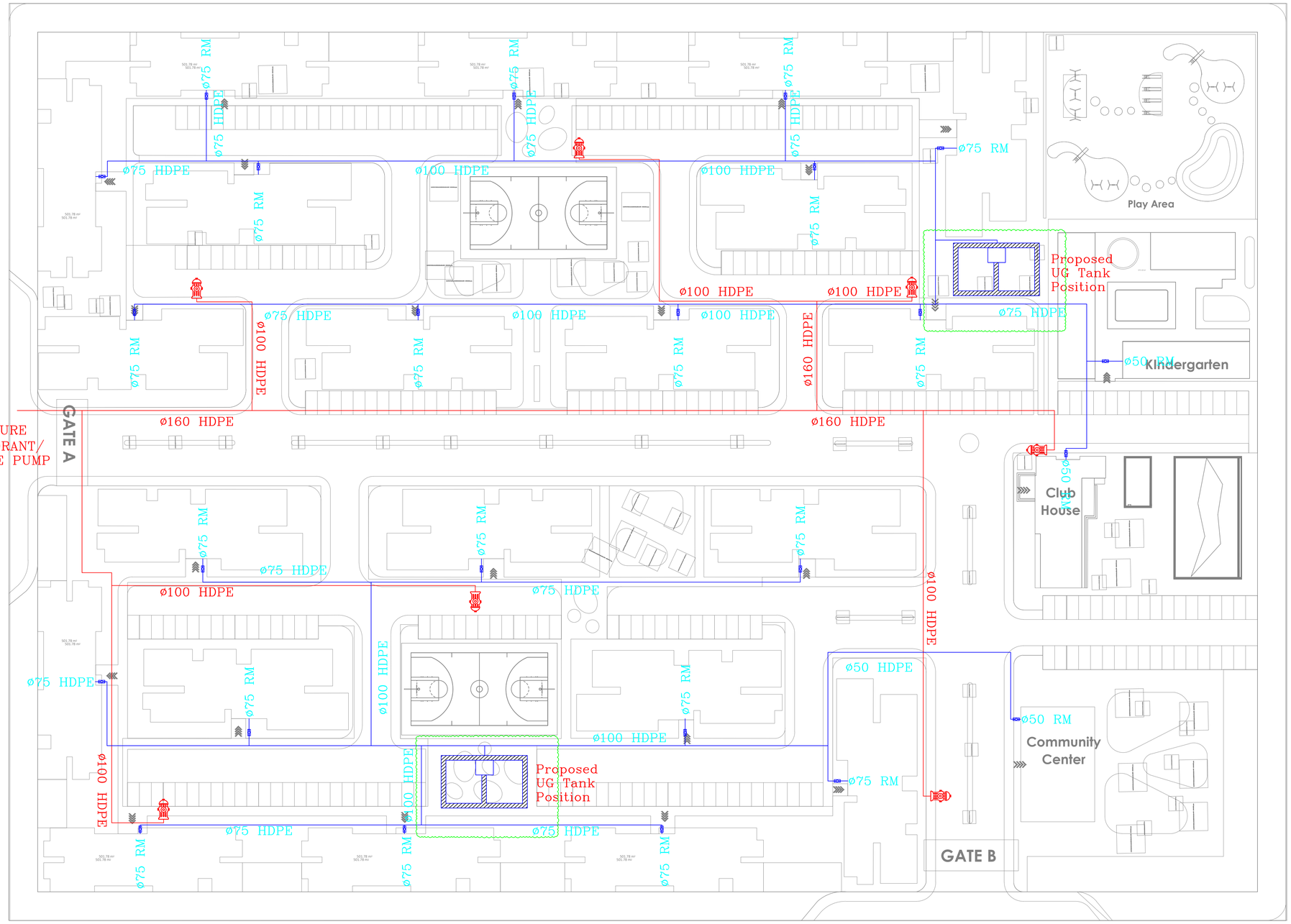
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

KEY

- **SOCIAL+AFFORDABLE BLOCK** [FULL RESIDENTIAL]
- **SOCIAL+AFFORDABLE BLOCK** [G- shops]
- **COMMERCIAL** [Ground floor]
- **AFORDABLE +MARKET BLOCK** FULL RESIDENTIAL
- **ECD** [Ground floor]
- **CLUB HOUSE** [G+1]
- **COMMUNITY CENTER** [G +2
- **SWIMMING POOL**
- **OPEN SPACE**
- **PHASE 02**



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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **Resedential Building**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: **MAGUGA AHP**

DRAWING TITLE :

MAGUGA EXTERNAL RETICULATION

SCALE : **NTS**

DRAWN BY :

CHECKED BY :

Date : **Signature:**

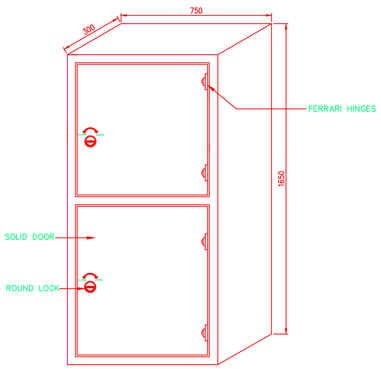
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



SPECIFICATIONS:

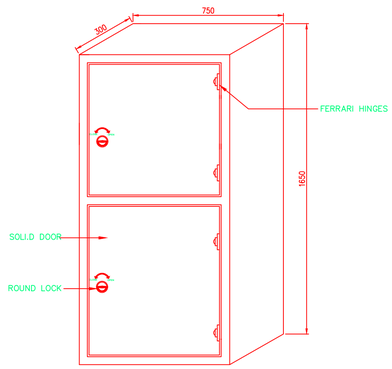
1. MATERIAL : 1.2mm THICK STAINLESS STEEL, MIRROR FINISH.
2. ALL DIMENSIONS ARE IN MM.

CABINET TO ACCOMMODATE

(1) UPPER COMPARTMENT
FIRE HOSE REEL, AUTOMATIC
TYPE C/W 1"x30 MTR HOSE – 1 No
C/W 1" PRESSURE REDUCING VALVE & LOCK SHIELD VALVE
1" NOZZLE – 1 No

(2) LOWER COMPARTMENT
- 2–1/2" PRESSURE REDUCING ANGLE VALVE – 1 NO.
- 2–1/2" X 30 MTR. HOSE
- 2–1/2" NOZZLE – 1 No.
- FIRE EXTINGUISHERS – 2 Nos.

1 FHCS
FIRE HOSE REEL CABINET (SURFACE MOUNTED)
M–FF–401 SCALE NTS



SPECIFICATIONS:

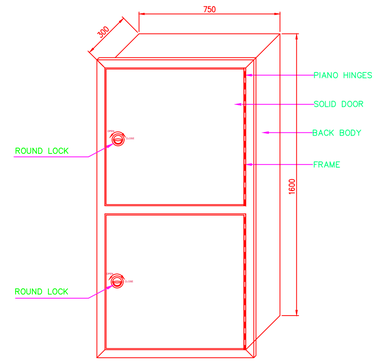
1. MATERIAL : 1.2mm THICK STAINLESS STEEL, MIRROR FINISH

CABINET TO ACCOMMO.DATE

(1) UPPER COMPARTMENT
FIRE HOSE REEL, AUTOMATIC
TYPE C/W 1"x30 MTR HOSE – 1 No
C/W 1" PRESSURE REDUCING VALVE & LOCK SHIELD VALVE
1" NOZZLE – 1 No

(2) LOWER COMPARTMENT
- FIRE EXTINGUISHERS – 2 Nos.

2 HRCS
FIRE HOSE REEL CABINET (SURFACE MOUNTED)
M–FF–401 SCALE NTS



SPECIFICATIONS:

1. MATERIAL : MILD STEEL BACK BOX, 1.2 mm THICK.
2. FRAME : 1.2MM THICK STAINLESS STEEL, MIRROR FINISH
3. ALL DIMENSIONS ARE IN mm

CABINET TO ACCOMMODATE

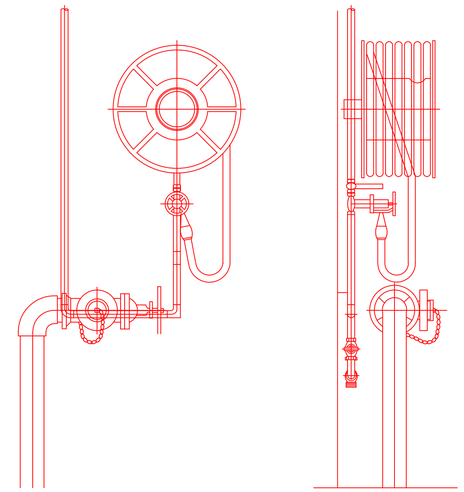
(1) UPPER COMPARTMENT
FIRE HOSE REEL, AUTOMATIC
TYPE C/W 1"x30 MTR HOSE – 1 No
C/W 1" PRESSURE REDUCING VALVE & LOCK SHIELD VALVE
1" NOZZLE – 1 No

(2) LOWER COMPARTMENT
- 2–1/2" PRESSURE REDUCING ANGLE VALVE – 1 NO.
- 2–1/2" X 30 MTR. HOSE
- 2–1/2" NOZZLE – 1 No.
- FIRE EXTINGUISHERS – 2 Nos.

3 FHCR
FIRE HOSE REEL CABINET (SURFACE MOUNTED)
M–FF–401 SCALE

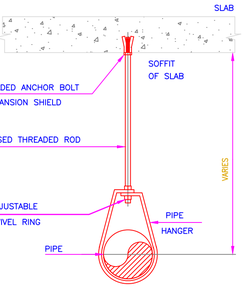
FONT ELEVATION

SIDE ELEVATION

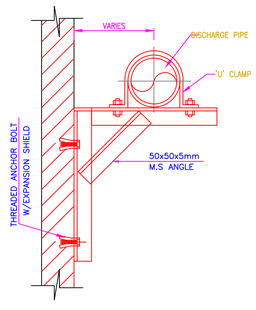


FIRE HOSE REEL WITH HOSE TAP

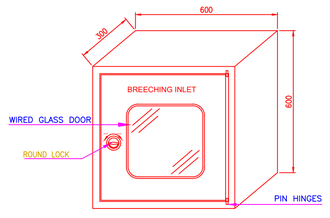
4 FHCR
FIRE HOSE REEL CABINET (SURFACE MOUNTED)
M–FF–401 SCALE



5 PIPE HANGER DETAIL
M–FF–402 SCALE NTS



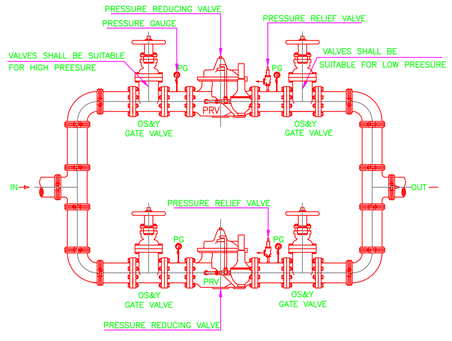
6 PIPE SUPPORT THR'U WALL
M–FF–402 SCALE NTS



SPECIFICATIONS:

1. SIZE: 600(H)X600(W)X300(D)mm
2. MATERIAL: COMPLETE STAINLESS STEEL 1.2 MM THICK MIRROR FINISH
3. ALL DIMENSIONS ARE IN mm

7 4–WAY BREECHING INLET DETAIL (SURFACE MOUNTED)
M–FF–402 SCALE NTS



8 PRESSURE REDUCING STATION
M–FF–402 SCALE NTS

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD
☐ DETAILED ☑ TENDER
☐ SHOP DWG ☐ AS BUILT

PROJECT: Resedential Building

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

Firefighting Details

SCALE : 1:100

DRAWN BY :

CHECKED BY :

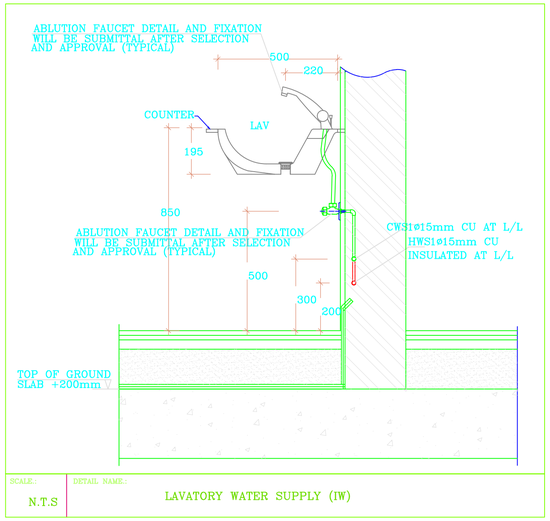
Date : Signature:

DATE :

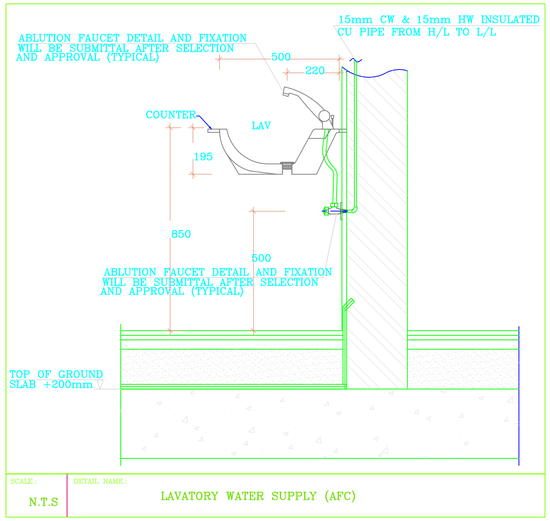
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

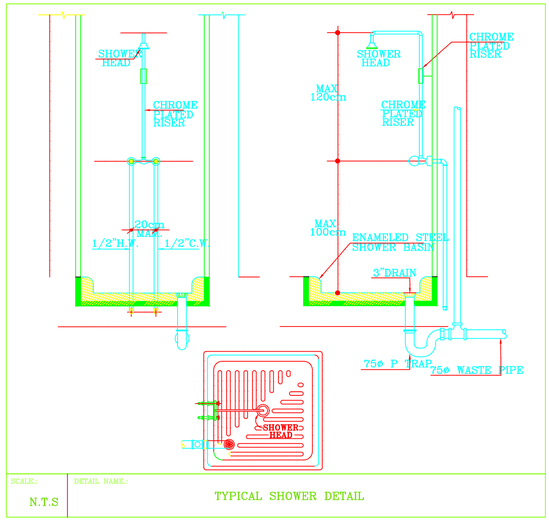
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



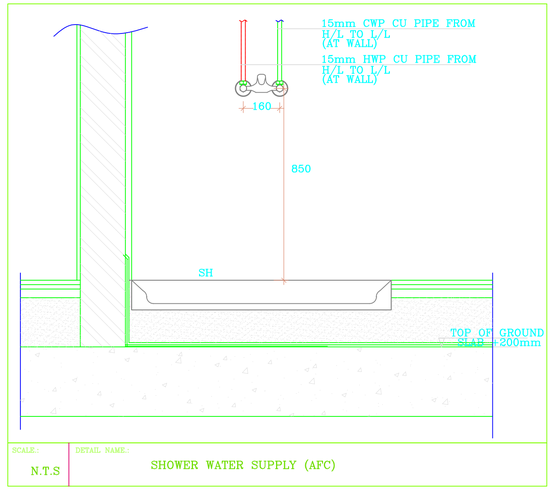
SCALE: N.T.S | DETAIL NAME: LAVATORY WATER SUPPLY (IW)



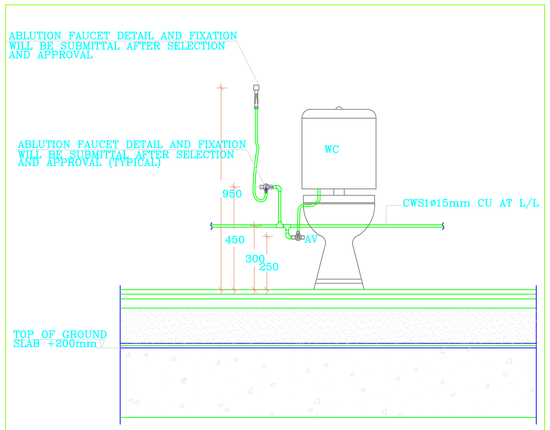
SCALE: N.T.S | DETAIL NAME: LAVATORY WATER SUPPLY (AFC)



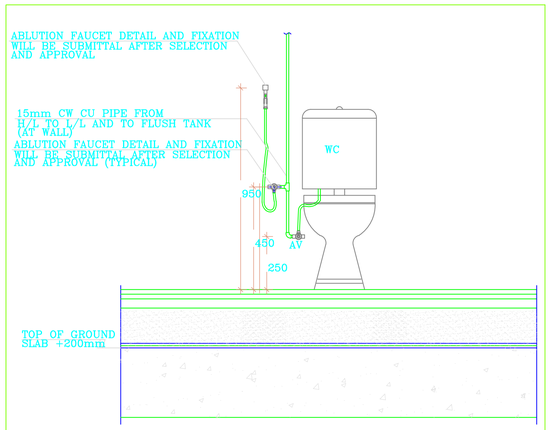
SCALE: N.T.S | DETAIL NAME: TYPICAL SHOWER DETAIL



SCALE: N.T.S | DETAIL NAME: SHOWER WATER SUPPLY (AFC)



SCALE: N.T.S | DETAIL NAME: CLOSET WATER SUPPLY (IW)



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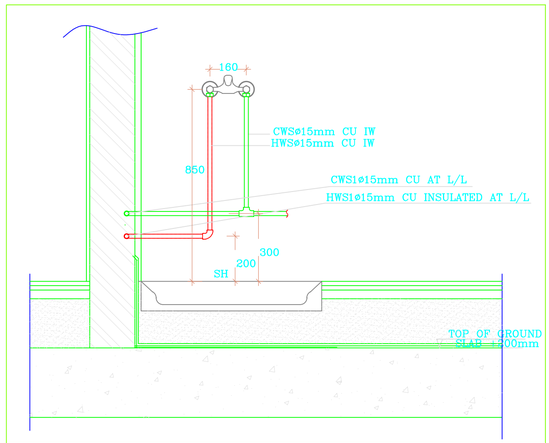
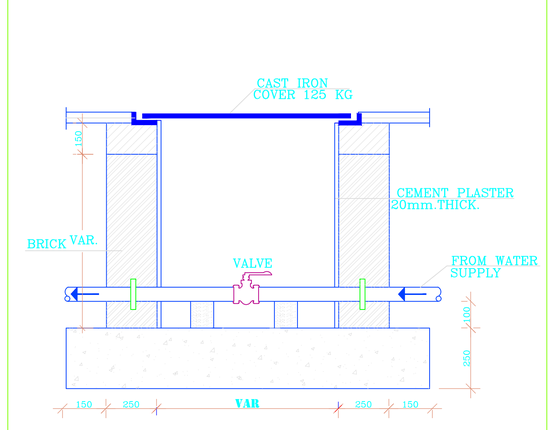
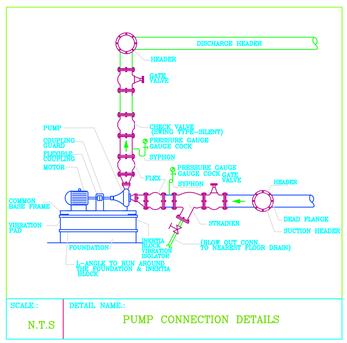


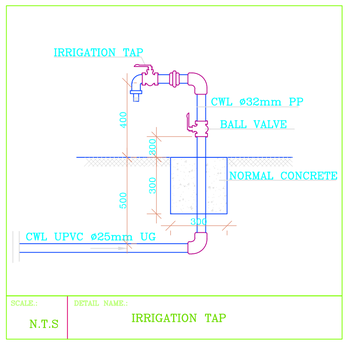
SCALE: N.T.S | DETAIL NAME: SHOWER WATER SUPPLY (IW)



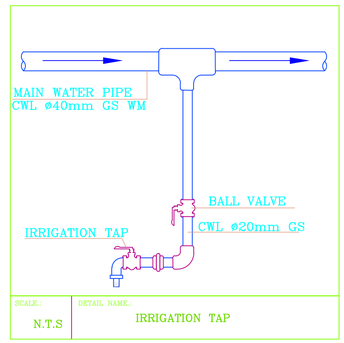
SCALE: N.T.S | DETAIL NAME: VALVE CHAMBER



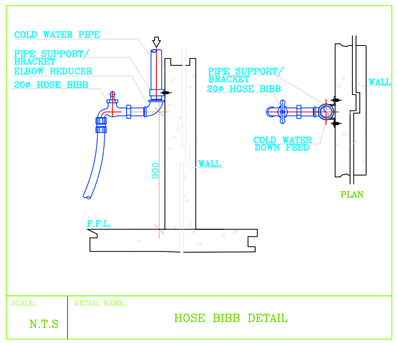
SCALE: N.T.S | DETAIL NAME: PUMP CONNECTION DETAILS



SCALE: N.T.S | DETAIL NAME: IRRIGATION TAP



SCALE: N.T.S | DETAIL NAME: IRRIGATION TAP



SCALE: N.T.S | DETAIL NAME: HOSE BIBB DETAIL

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: Resedential Building

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

WATER SUPPLY DETAILS

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

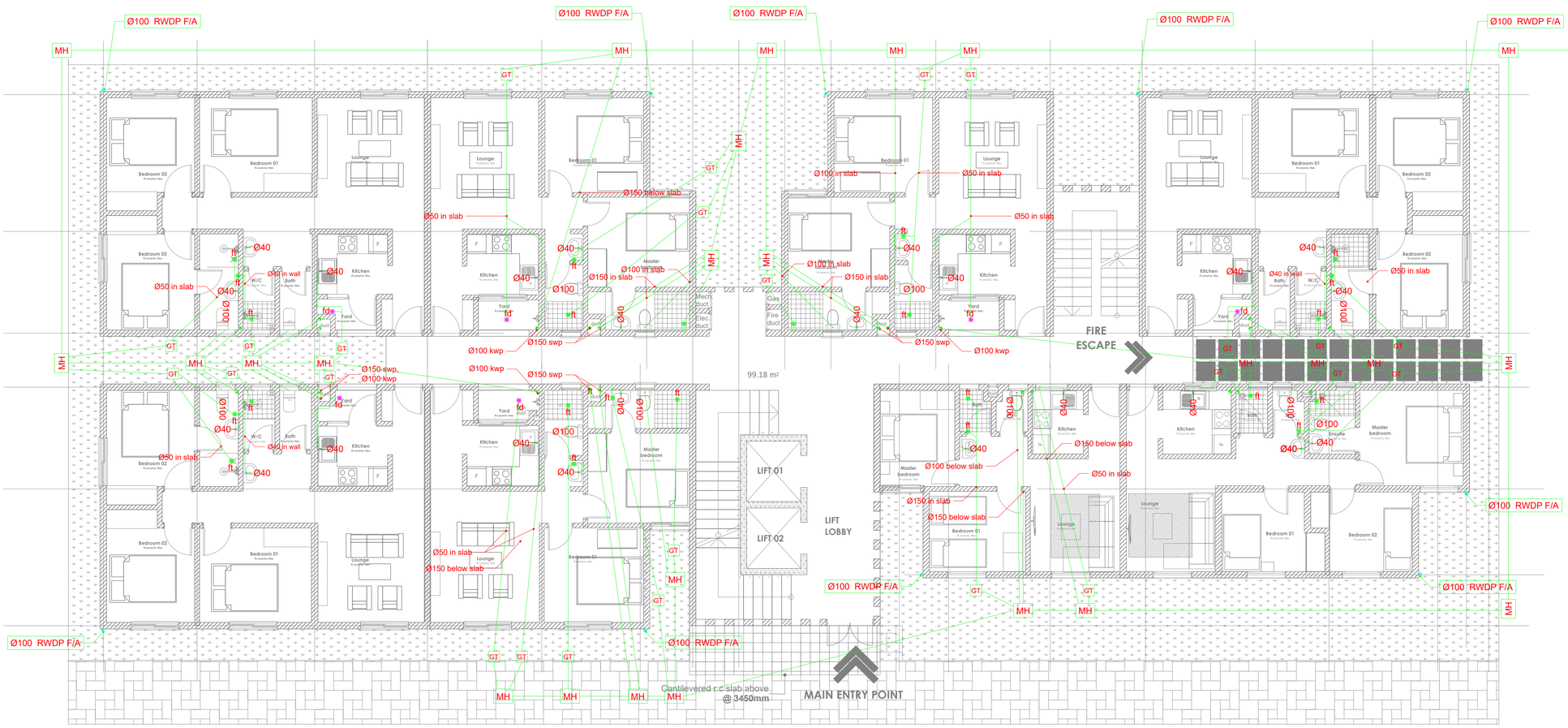
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



To Civil Work Details

PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_GROUND FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN			
AFFORDABLE UNITS		MARKET UNITS	
2_BEDROOM	3_BEDROOM	2_BEDROOM	3_BEDROOM
1	1	3	3

GENERIC BLOCK B(G+9) GROUND FLOOR DRAINAGE

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MARKET+ AFFORDABLE UNITS BLOCK TYPE B G+9

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

GENERIC BLOCK B(G+9) GROUND FLOOR DRAINAGE

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_TYPICAL 1ST-9TH FLOOR LEVEL

UNIT BREAK DOWN_ UNIT BREAK DOWN			
AFFORDABLE UNITS		MARKET UNITS	
2_BEDROOM	3_BEDROOM	2_BEDROOM	3_BEDROOM
1	1	3	3

GENERIC BLOCK B(G+9) TYPICAL FLOOR DRAINAGE

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MARKET+ AFFORDABLE UNITS BLOCK TYPE B G+9

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :
GENERIC BLOCK B(G+9) TYPICAL FLOOR DRAINAGE

SCALE : 1:100

DRAWN BY :

CHECKED BY :

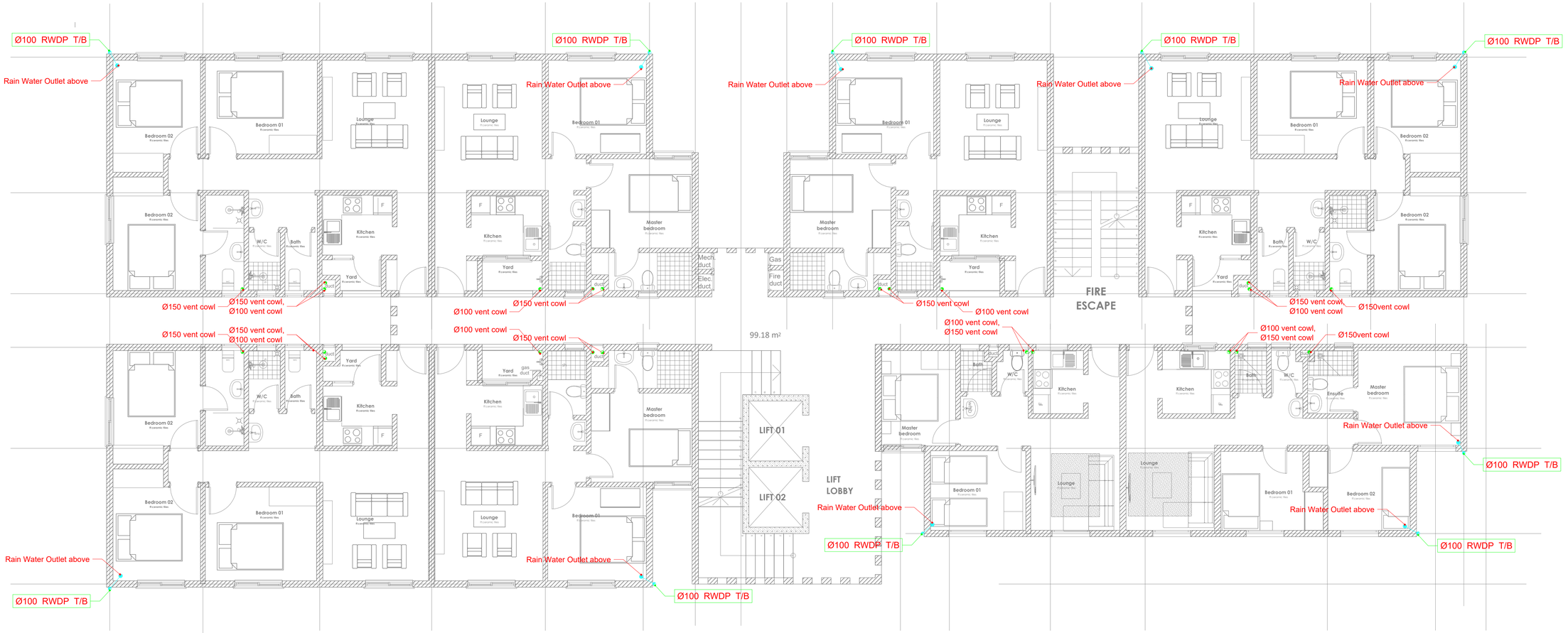
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL AFFORDABLE + MARKET UNITS BLOCK TYPE B_TYPICAL 1ST-9TH FLOOR LEVEL

UNIT BREAK DOWN_ UNIT BREAK DOWN			
AFFORDABLE UNITS		MARKET UNITS	
2_BEDROOM	3_BEDROOM	2_BEDROOM	3_BEDROOM
1	1	3	3

GENERIC BLOCK B(G+9) ROOF DRAINAGE

GENERAL NOTES

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3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MARKET+ AFFORDABLE UNITS BLOCK TYPE B G+9

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

GENERIC BLOCK B(G+9) ROOF DRAINAGE

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

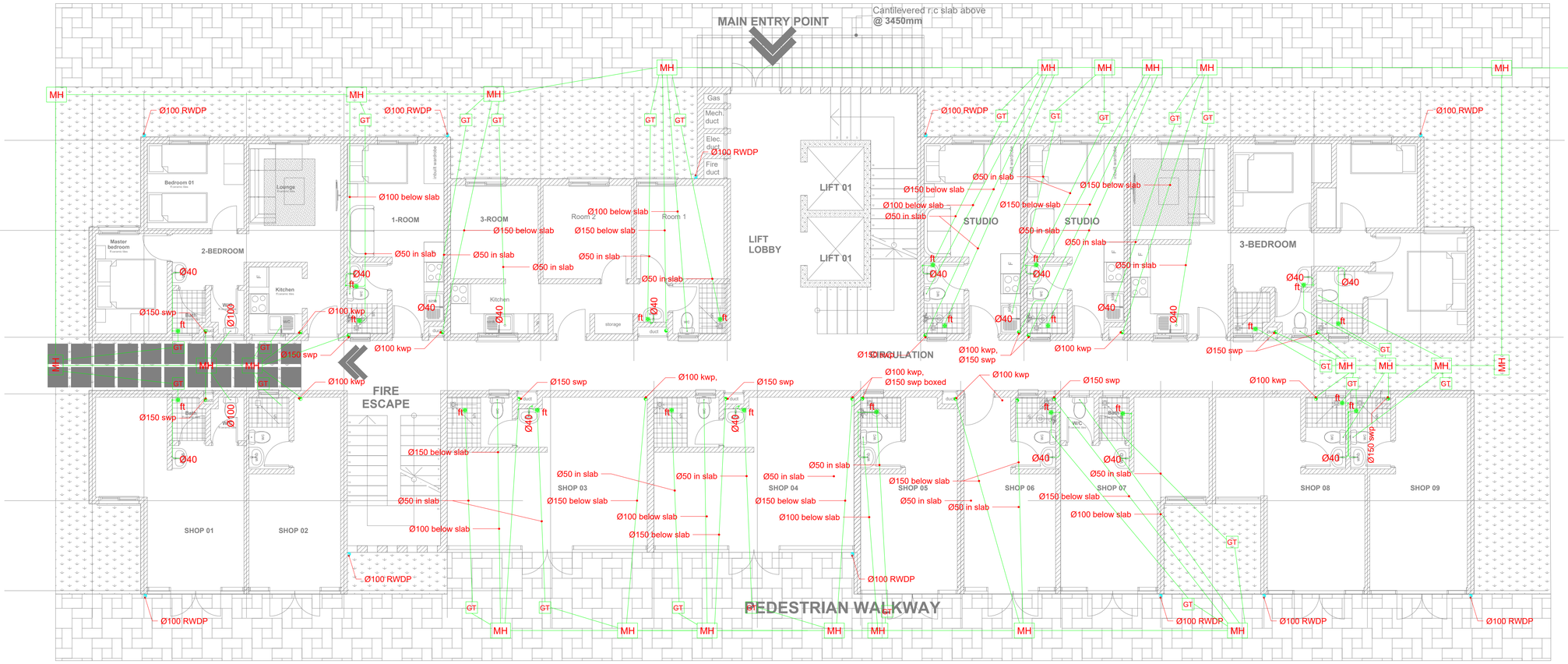
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

BLOCK TYPOLOGY C [G+9]



TYPE C GROUND FLOOR SOCIAL+ AFFORDABLE UNITS DRAINAGE LAYOUT

PROPOSED TYPICAL MIXED USE BLOCK TYPE C_GROUND FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN						
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM	RETAIL
1	2	1	2	1	1	9

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MIXED USE BLOCK TYPE C [G+9]

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

TYPE C GROUND FLOOR SOCIAL+ AFFORDABLE UNITS DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

PROPOSED TYPICAL MIXED USE BLOCK TYPE C_TYPICAL 1ST-14TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	3	4	1

TYPE C TYPICAL FLOOR SOCIAL+ AFFORDABLE UNITS DRAINAGE LAYOUT

GENERAL NOTES

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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☒ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MIXED USE BLOCK TYPE C [G+9]

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

TYPE C TYPICAL FLOOR SOCIAL+ AFFORDABLE UNITS DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

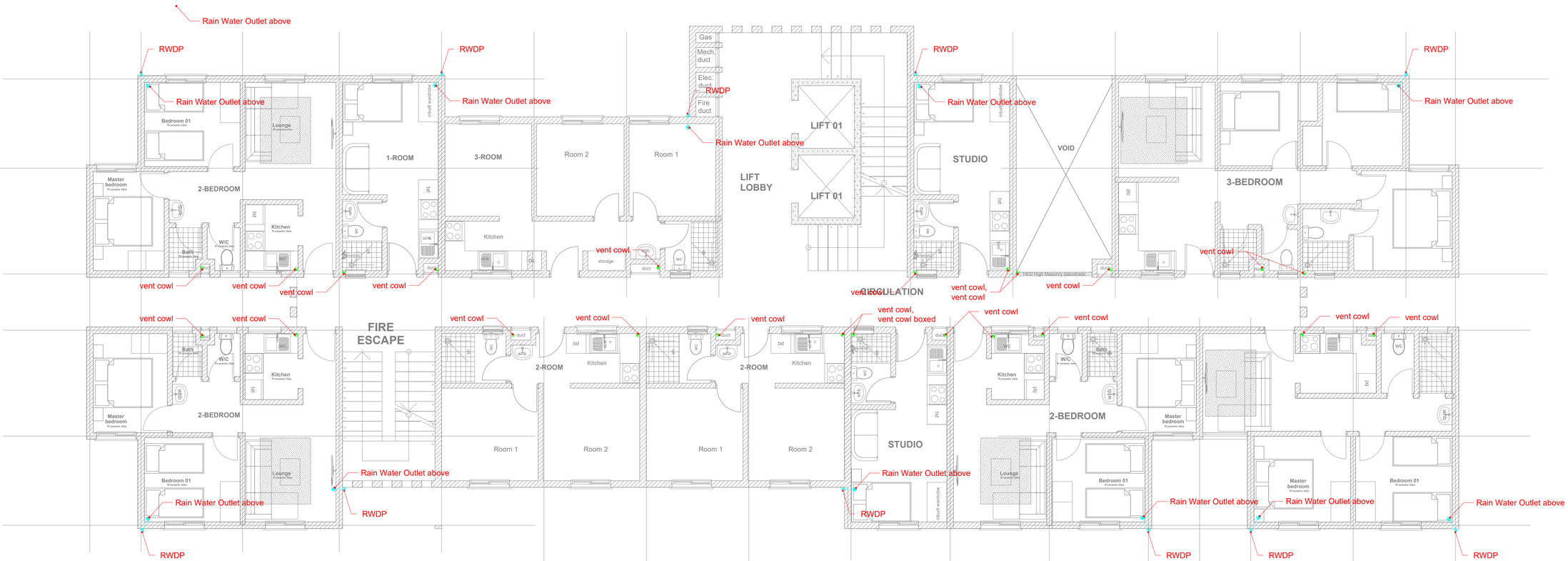
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



PROPOSED TYPICAL MIXED USE BLOCK TYPE C_TYPICAL 1ST-14TH FLOOR PLAN

UNIT BREAK DOWN_ UNIT BREAK DOWN					
1_ROOM	2_ROOM	3_ROOM	STUDIO	2_BEDROOM	3_BEDROOM
1	2	1	3	4	1

TYPE C ROOF FLOOR SOCIAL+ AFFORDABLE UNITS DRAINAGE LAYOUT

GENERAL NOTES

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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL MIXED USE BLOCK TYPE C [G+9]

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

TYPE C ROOF FLOOR SOCIAL+ AFFORDABLE UNITS DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

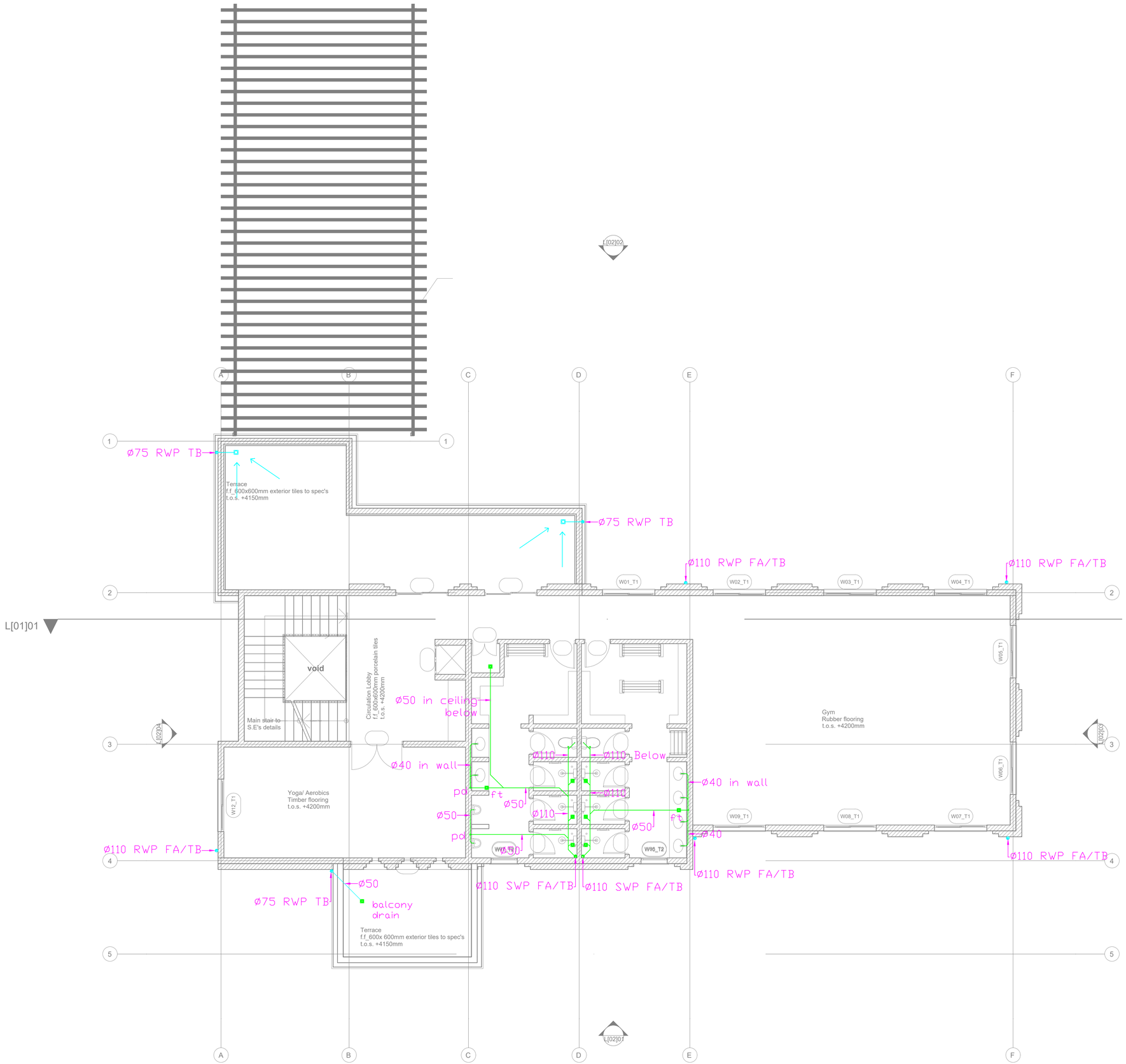
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **CLUB HOUSE**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE FIRST FLOOR DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

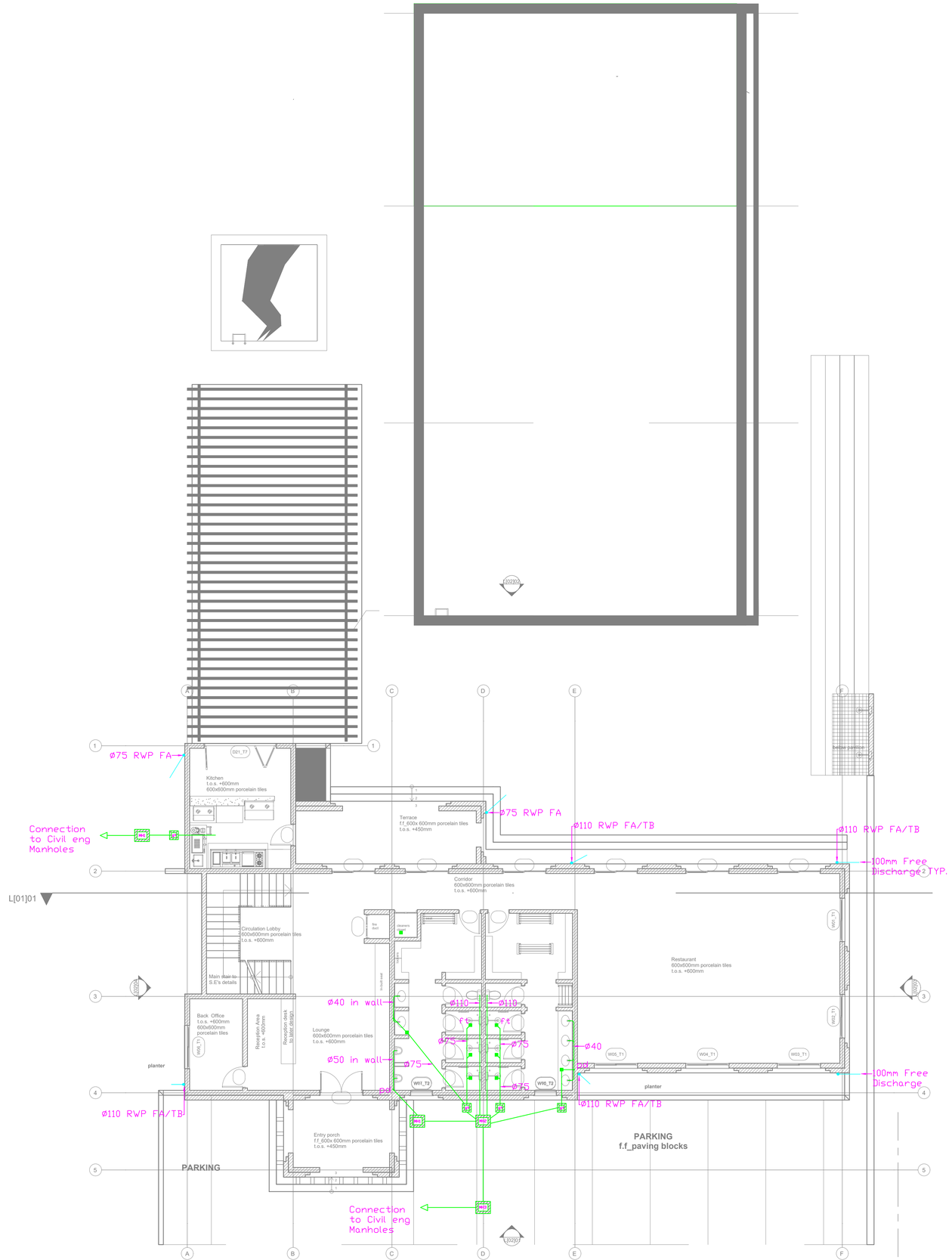
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[--]01_GROUND FLOOR PLAN
SCALE 1:100

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **CLUB HOUSE**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE GROUND FLOOR DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

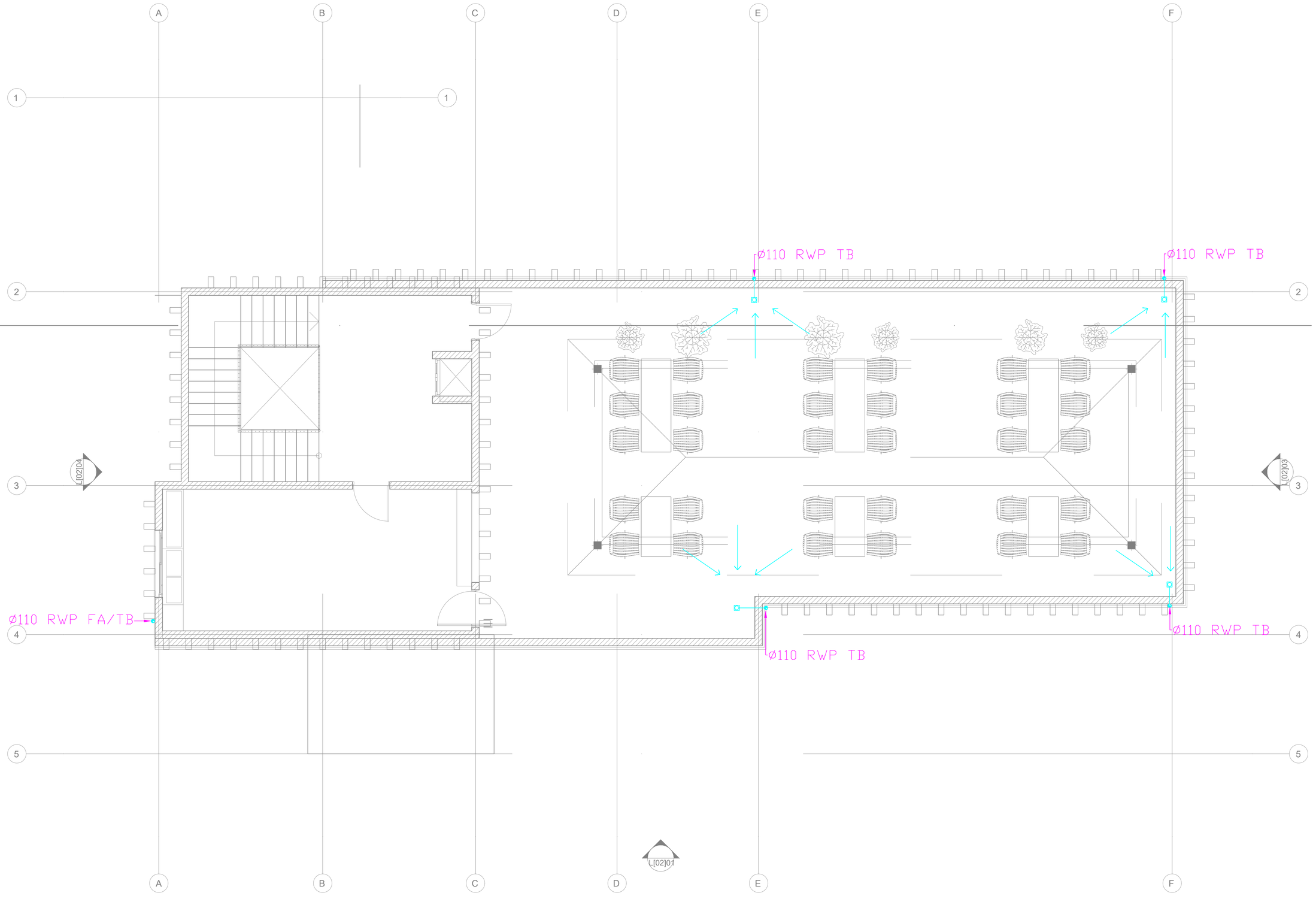
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



GENERAL NOTES

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3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **CLUB HOUSE**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE ROOF DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

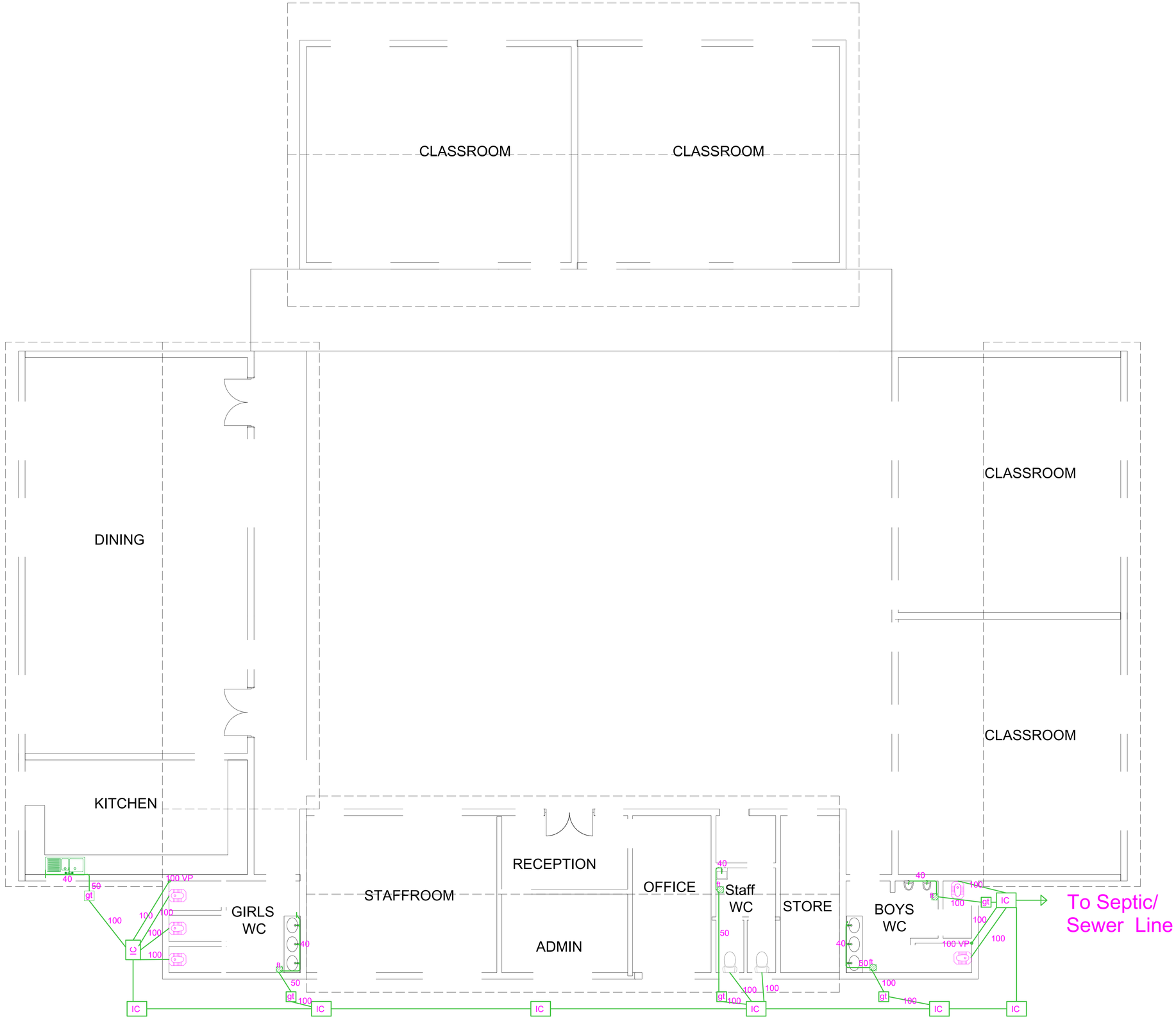
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



KINDERGARTEN DRAINAGE FLOOR PLAN

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **KINDERGARTEN**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

KINDERGARTEN DRAINAGE FLOOR PLAN

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

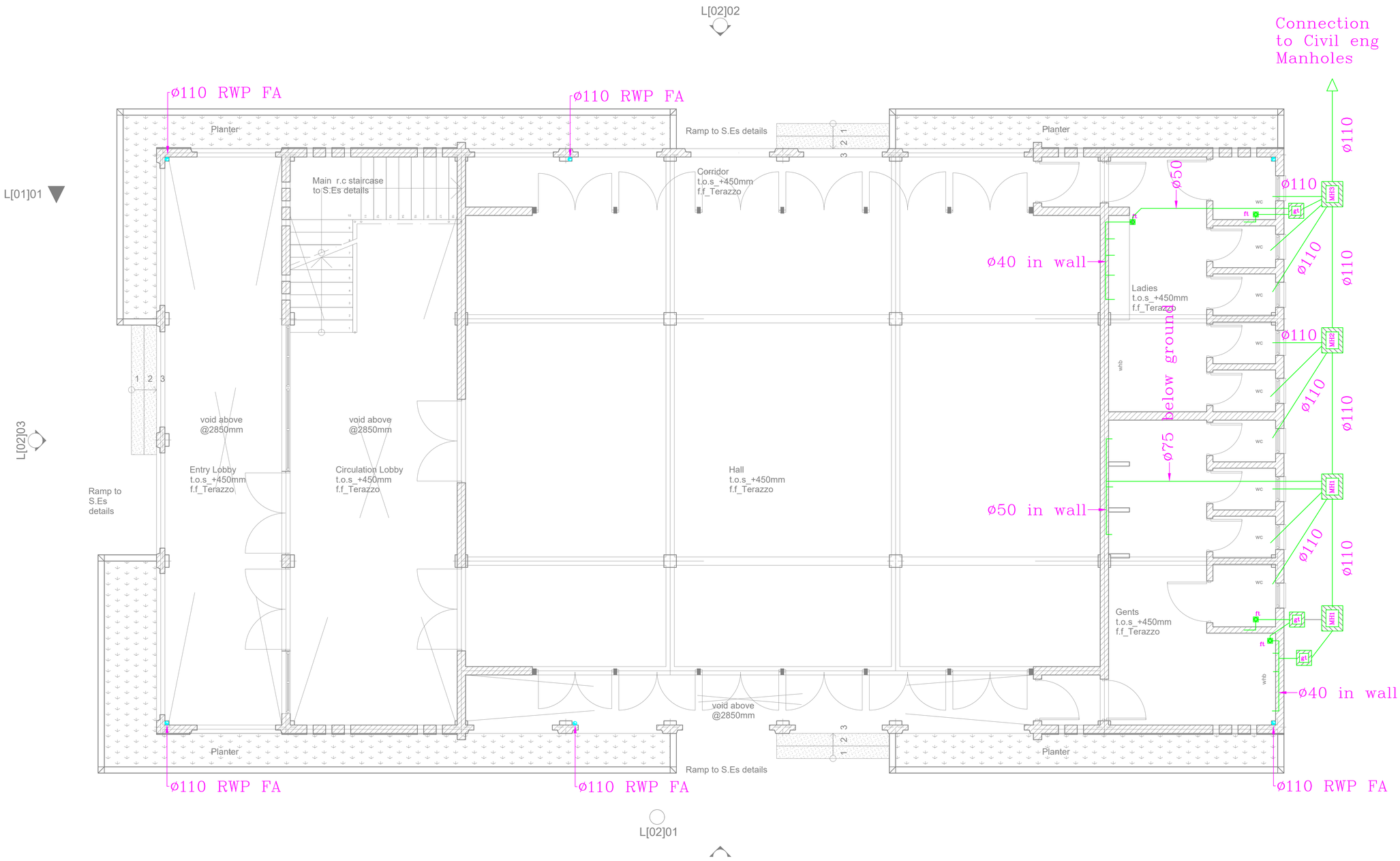
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



GROUND FLOOR DRAINAGE COMMUNITY CENTER

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

DRAWN BY :

CHECKED BY :

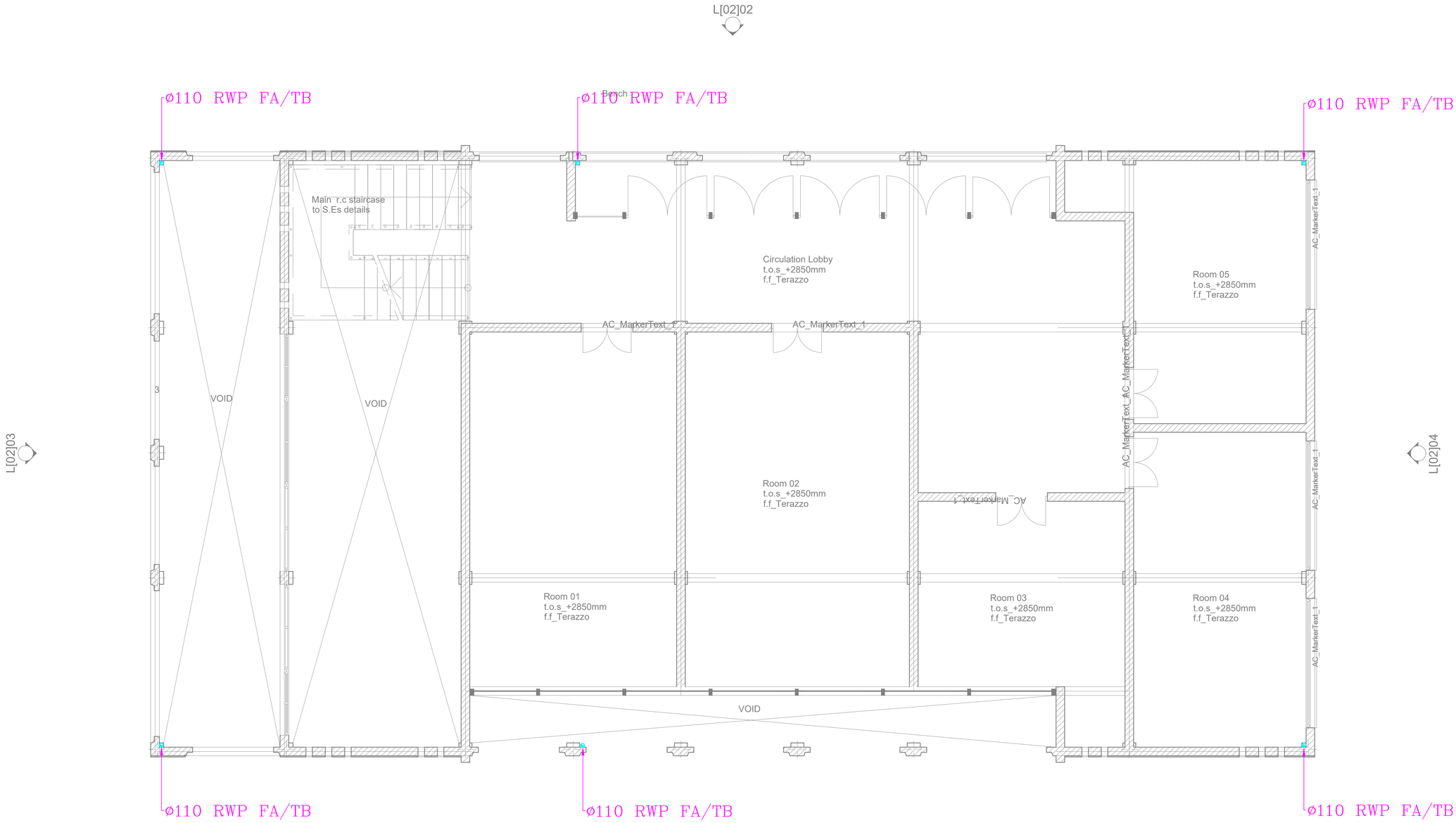
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



FIRST FLOOR DRAINAGE COMMUNITY CENTER

L[02]01

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

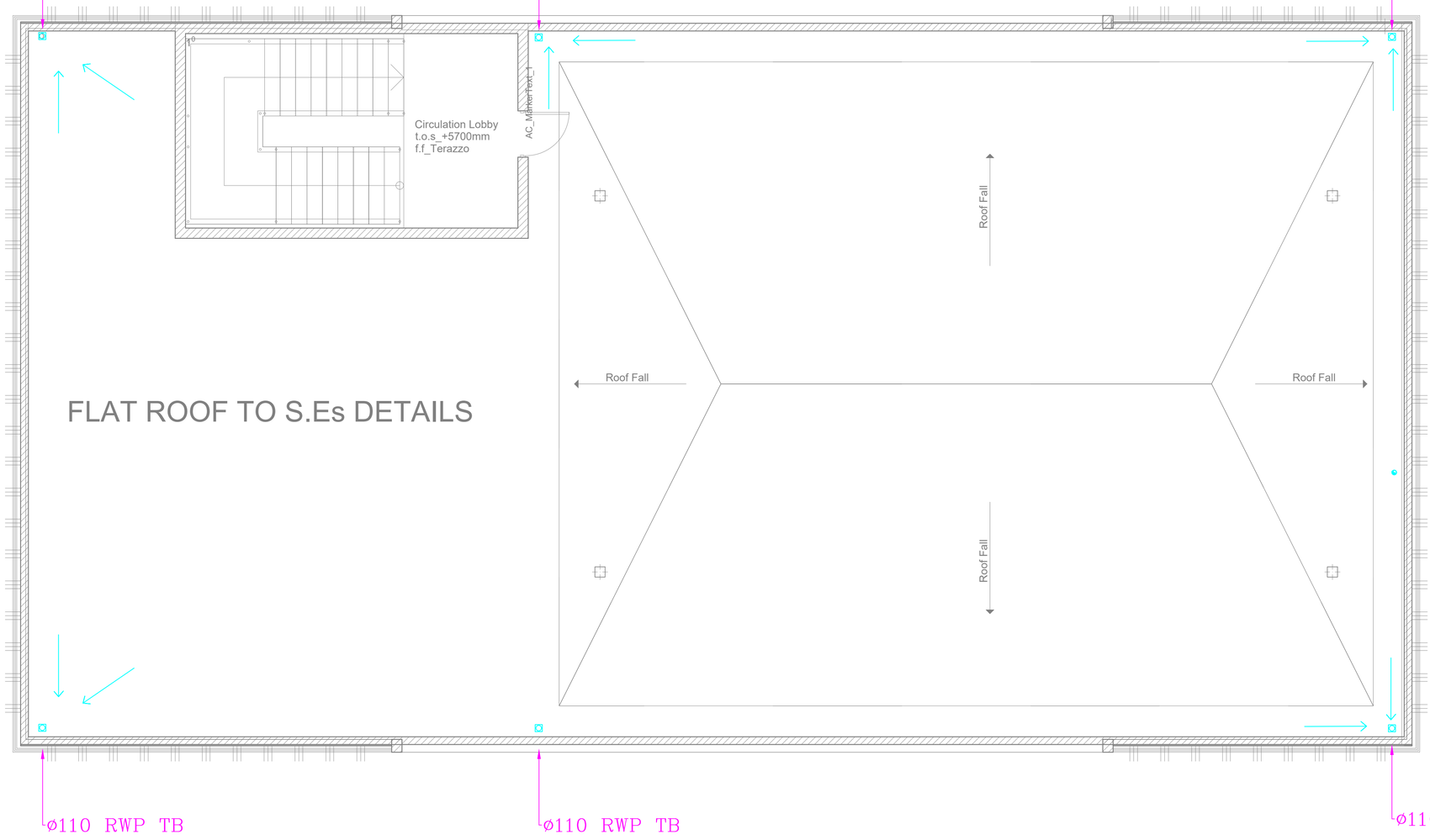
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

L[02]02

ø110 RWP FA/TB

ø110 RWP FA/TB

ø110 RWP FA/TB



L[02]03

FLAT ROOF TO S.Es DETAILS

ø110 RWP TB

ø110 RWP TB

ø110 RWP TB

L[02]01

ROOF DRAINAGE COMMUNITY CENTER

GENERAL NOTES

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4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

DRAWN BY :

CHECKED BY :

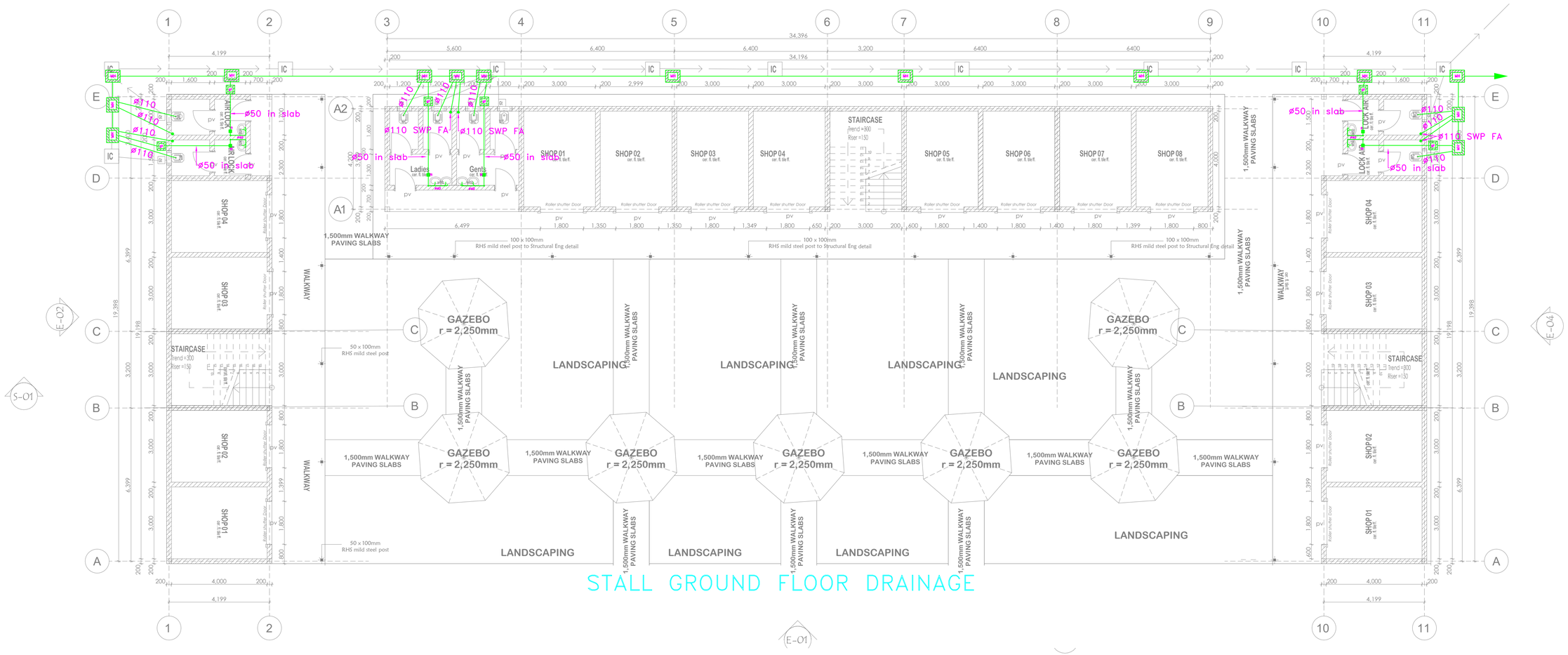
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



STALL GROUND FLOOR DRAINAGE

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **STALLS**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: NYALI ESTATE

DRAWING TITLE :

STALL GROUND FLOOR DRAINAGE

SCALE : 1:100

DRAWN BY :

CHECKED BY :

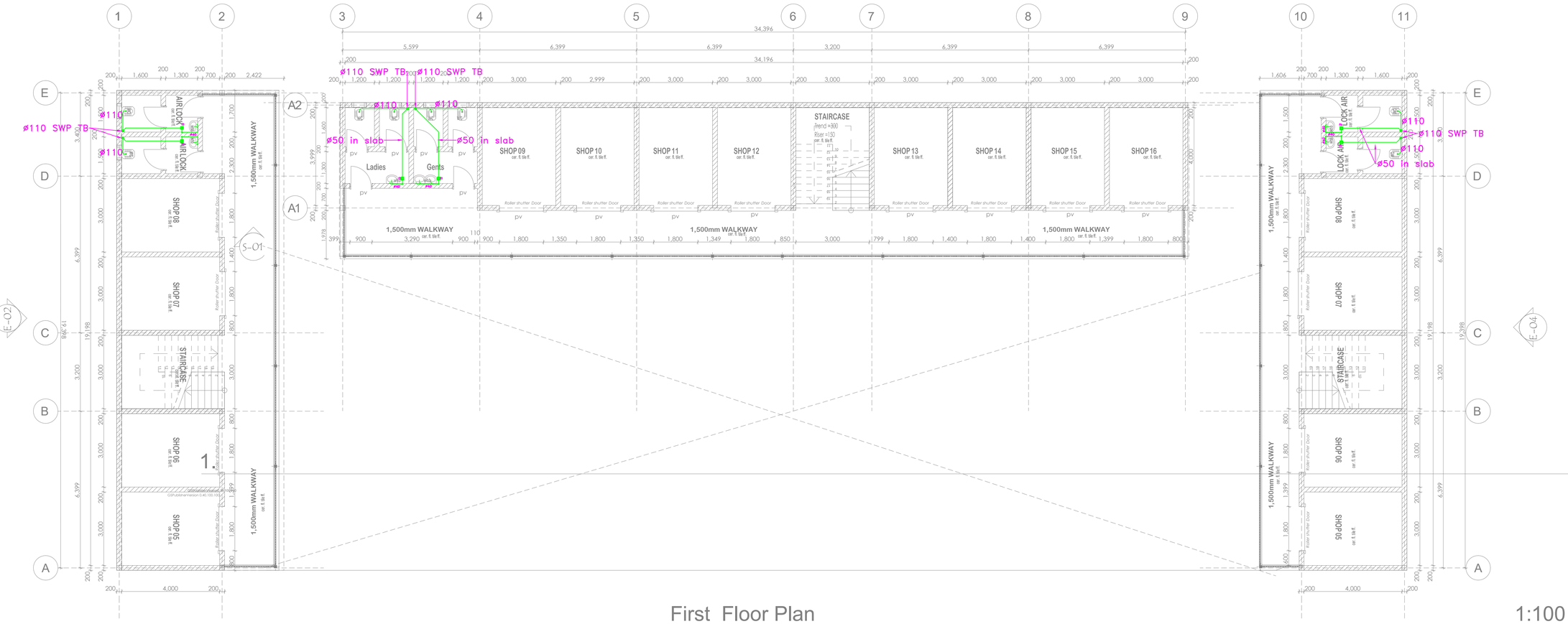
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



First Floor Plan

1:100

STALL FIRST FLOOR DRAINAGE

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **STALLS**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: NYALI ESTATE

DRAWING TITLE :

STALL FIRST FLOOR DRAINAGE

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

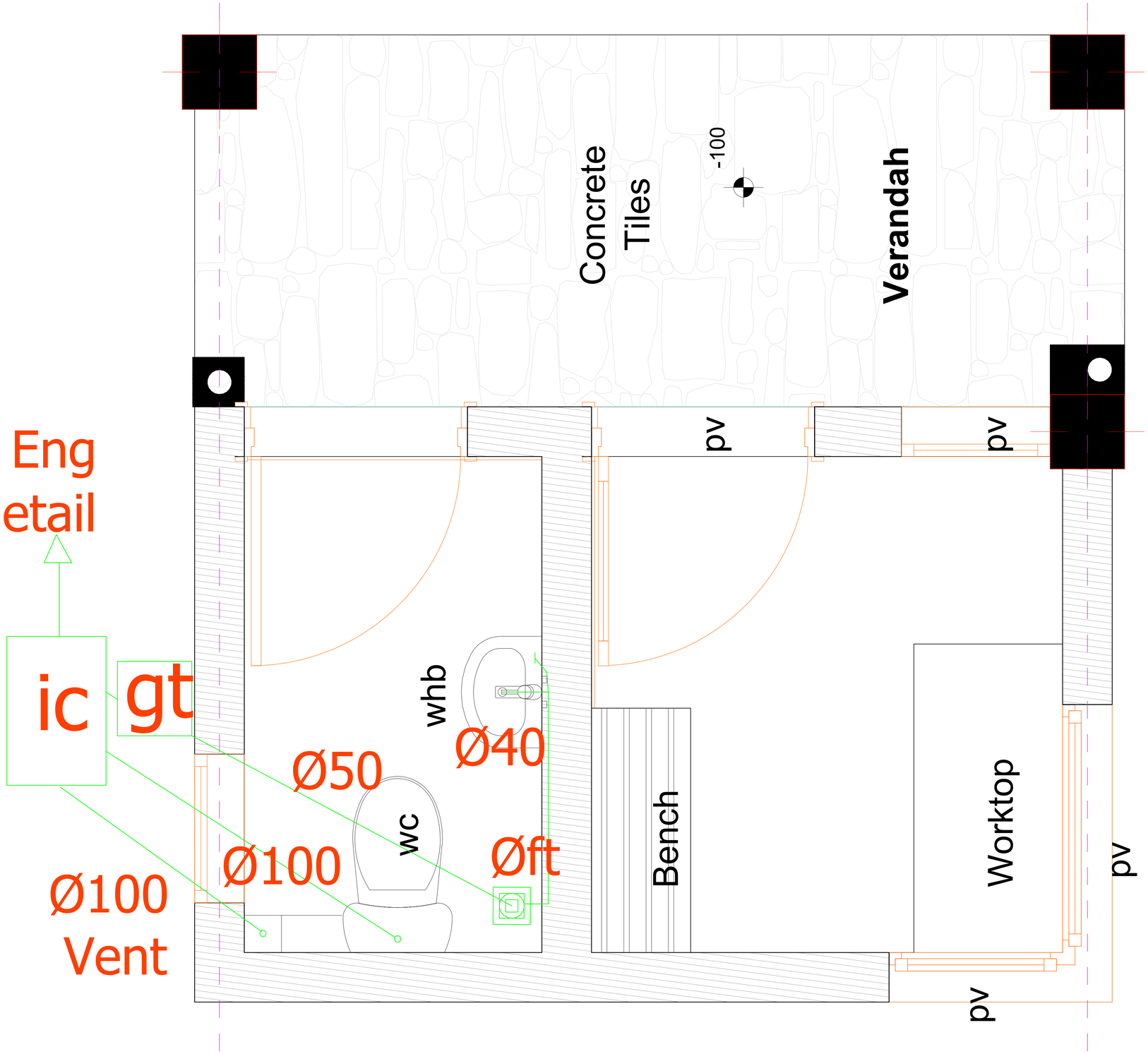
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



GATE HOUSE DRAINAGE

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

GATE HOUSE DRAINAGE

SCALE : **1:100**

DRAWN BY :

CHECKED BY :

Date : **Signature:**

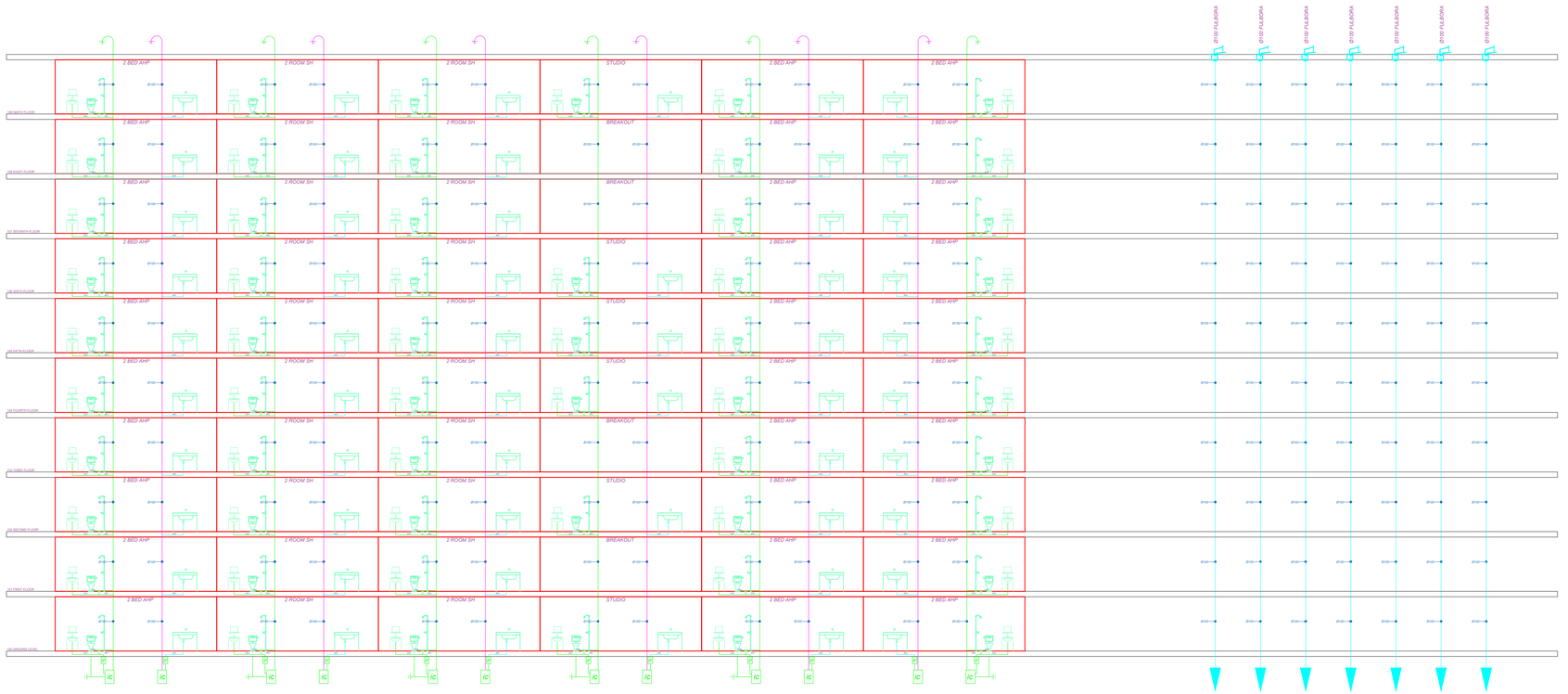
DATE :

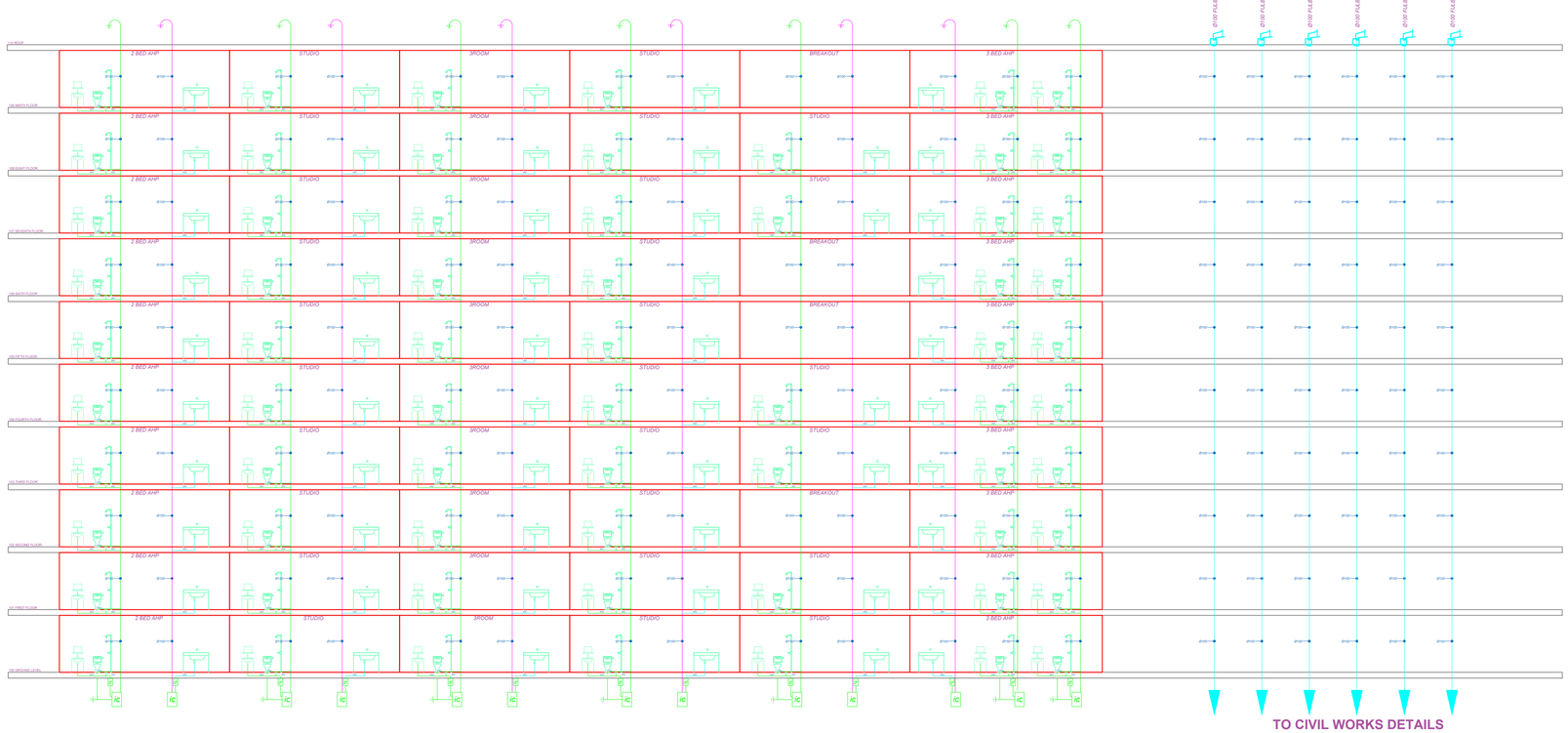
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA





TYPE C (G + 9) DRAINAGE SCHEMATIC

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL AFFORDABLE +MARKET BLOCK TYPE A G+9

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

DRAINAGE SCHEMATICS

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

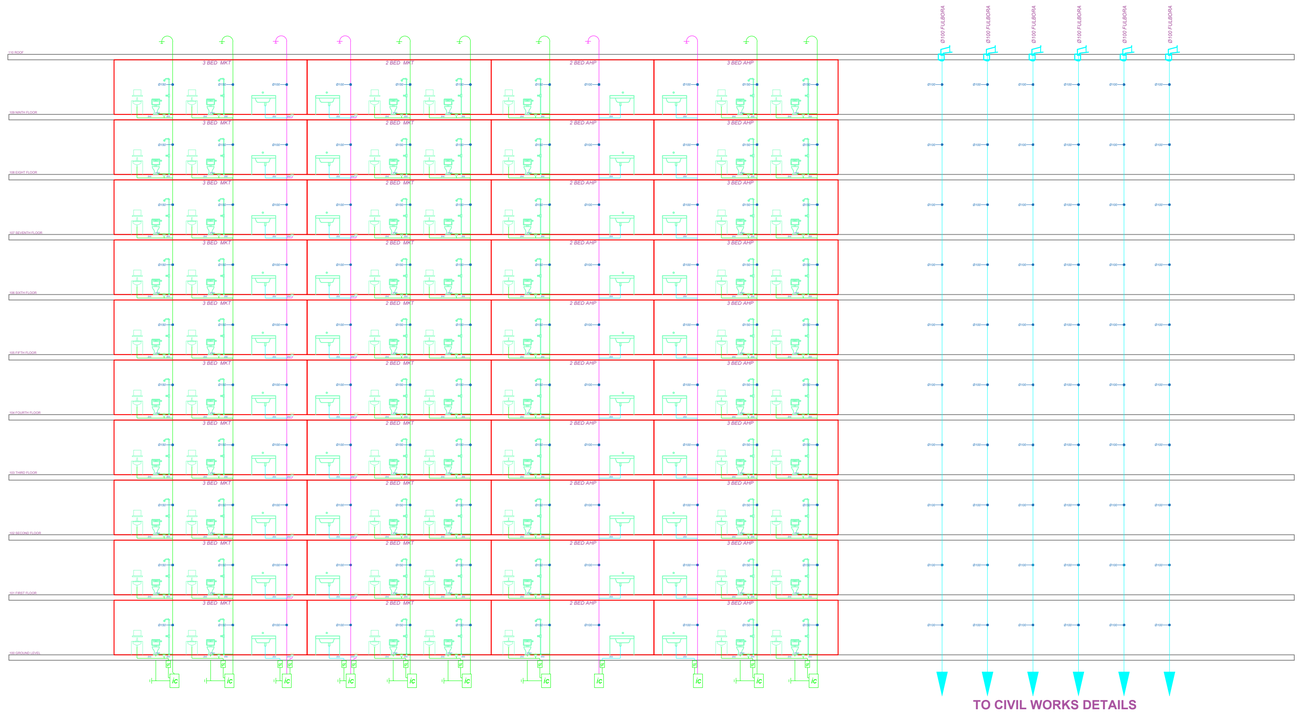
DATE :

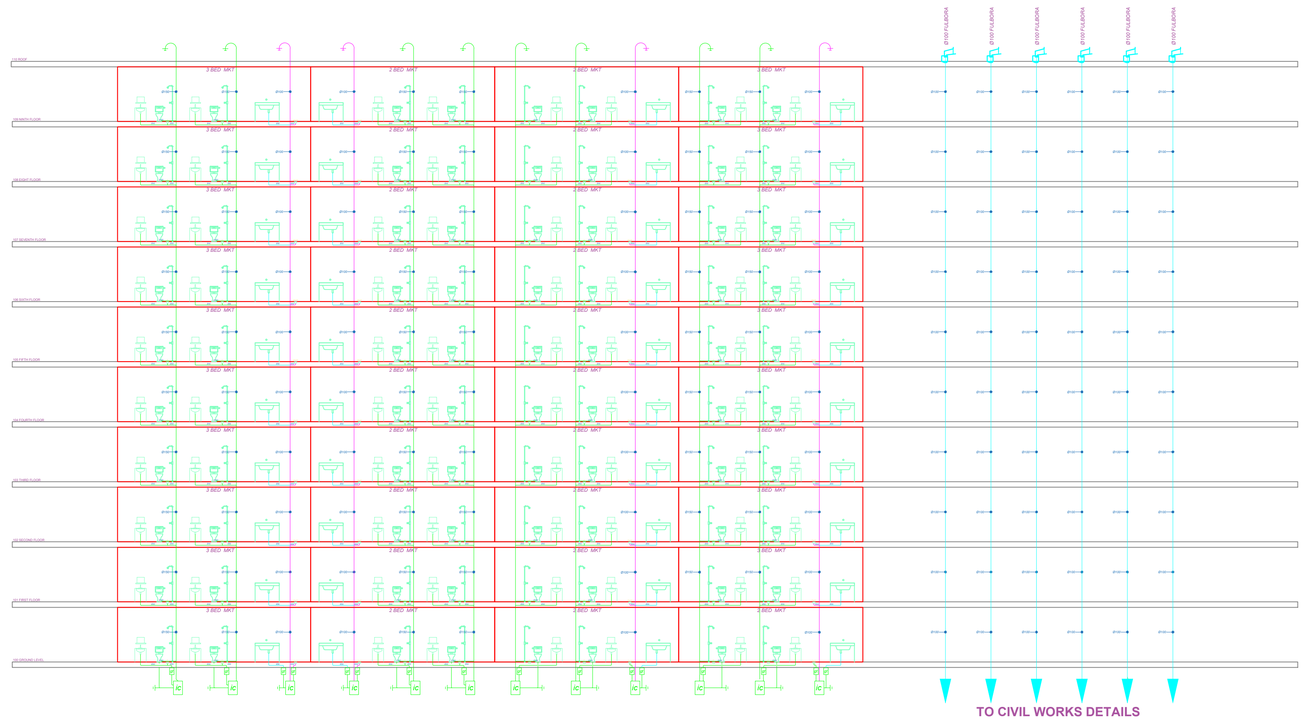
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA





TYPE B (G + 9) DRAINAGE SCHEMATIC

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT:
PROPOSED TYPICAL AFFORDABLE +MARKET BLOCK TYPE A G+9

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION: BAHATI

DRAWING TITLE :

DRAINAGE SCHEMATICS

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

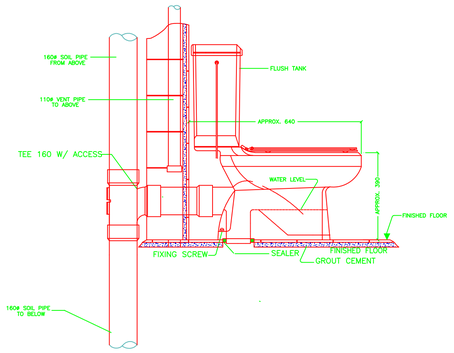
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

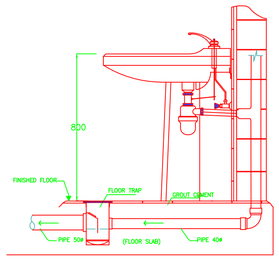
STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

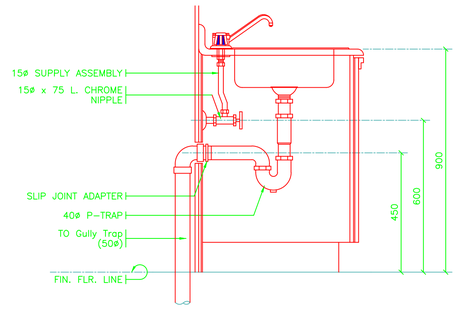
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



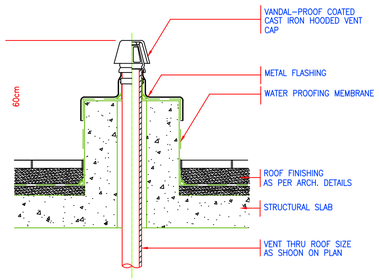
1 WATER CLOSET INSTALLATION DETAILS
NOT TO SCALE



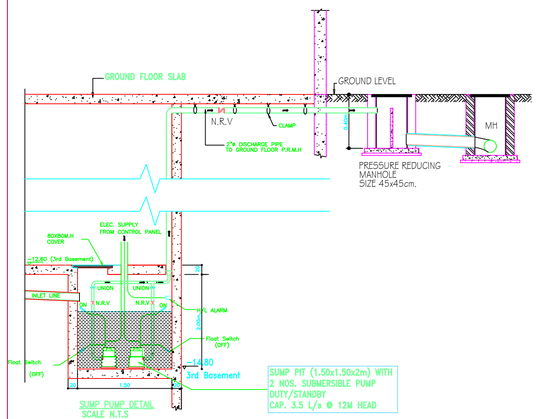
2 WASH HAND BASIN INSTALATION DETAILS
NOT TO SCALE



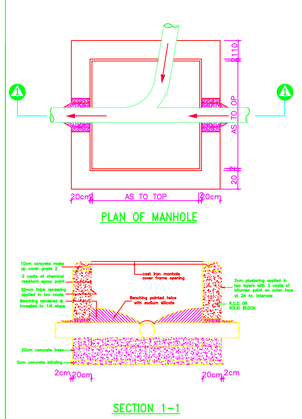
3 PANTRY SINK INSTALLATION DETAILS
NOT TO SCALE

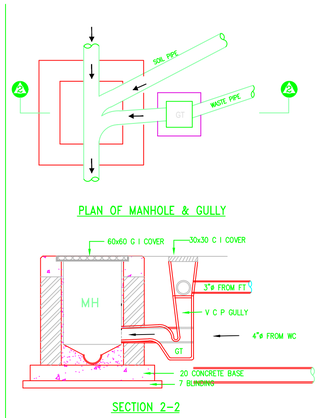


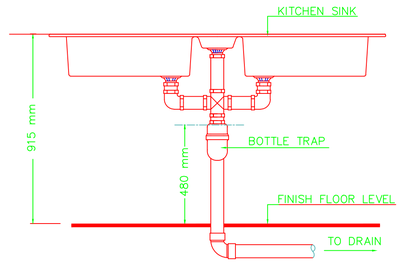
3 W-DR-401 DETAIL OF ROOF VENT TERMINAL
NTS



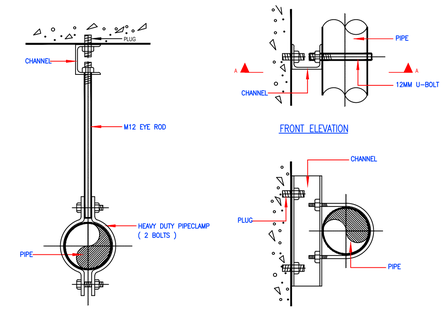
SUMP PUMP DETAIL
SCALE N.T.S



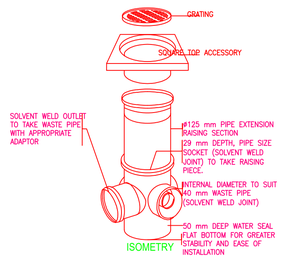




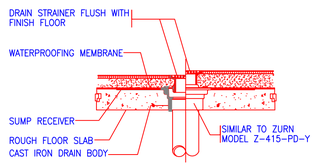
6 KITCHEN SINK INSTALLATION DETALS
NOT TO SCALE



3 W-DR-401 TYPICAL PIPE SUPPORT DETAILS
NTS



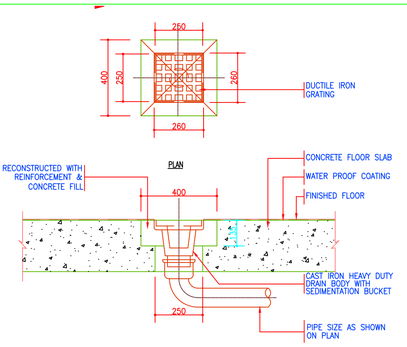
7 SUMP PUMP DETAIL
NOT TO SCALE



8 MANHOLE & GULLY TRAP DETAILS
NOT TO SCALE

SCHEDULES FOR PLUMBING FIXTURE OUTLETS	
DESCRIPTION	WASTE (ø in mm)
WATER CLOSET (FLUSH TANK)	110
LAVATORY	50
BATHUB	50
KITCHEN SINK	50
WASHING MACHINE	50
DISHWASHER	50
DRYER	50

9 FIXTURE CONNECTION SIZE SCHEDULE
NOT TO SCALE



7 W-DR-402 DETAIL FOR PARKING AREA DRAIN (CPD)
NTS

9 W-DR-402 FLOOR TRAP DETAIL
NTS

10 W-DR-402 BALCONY DRAIN DETAIL
NTS

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD
☐ DETAILED ☑ TENDER
☐ SHOP DWG ☐ AS BUILT

PROJECT: Resedential Building

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :
DRAINAGE DETAILS

SCALE : 1:100

DRAWN BY :

CHECKED BY :
Date : Signature:

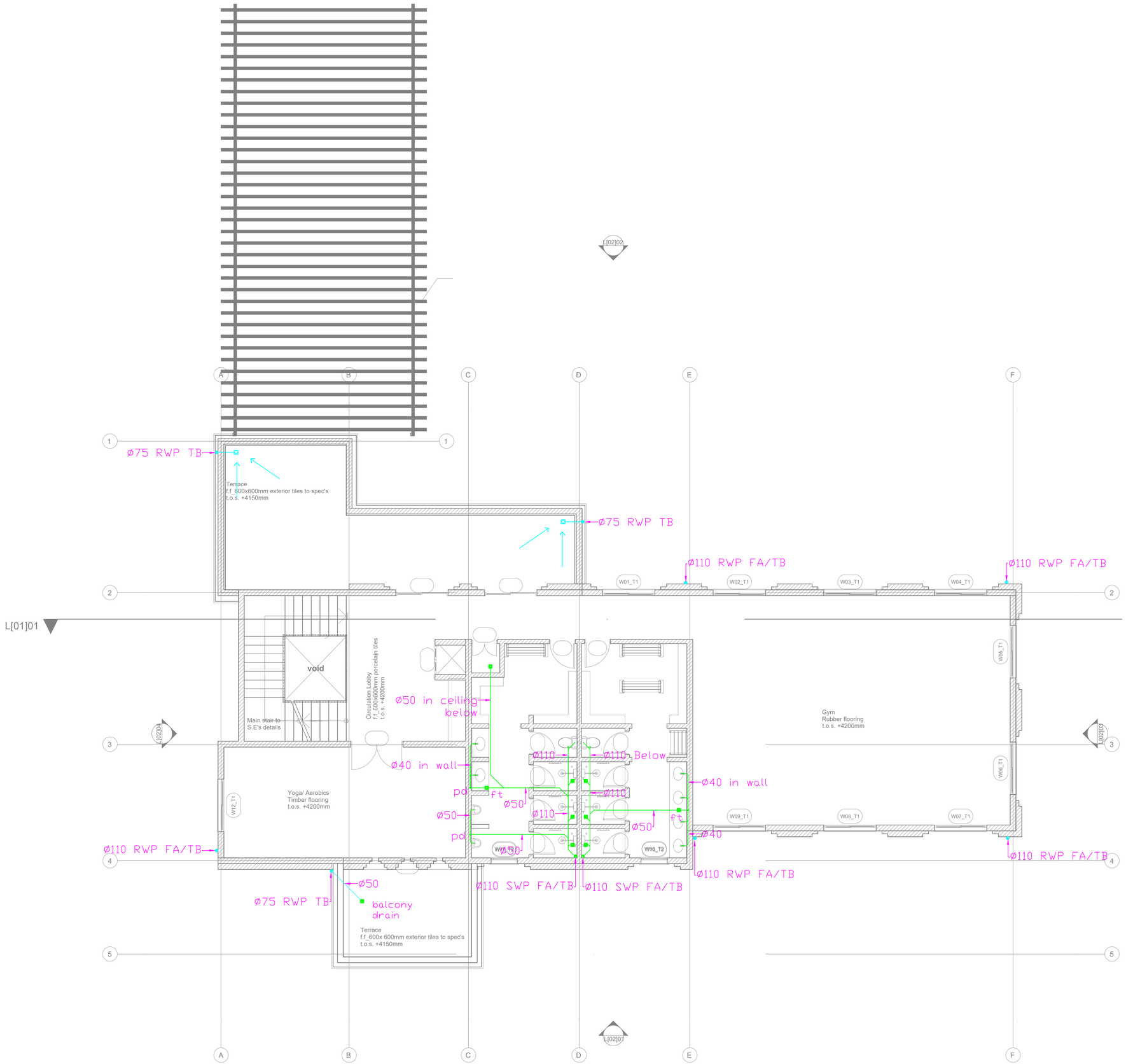
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **CLUB HOUSE**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE FIRST FLOOR DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

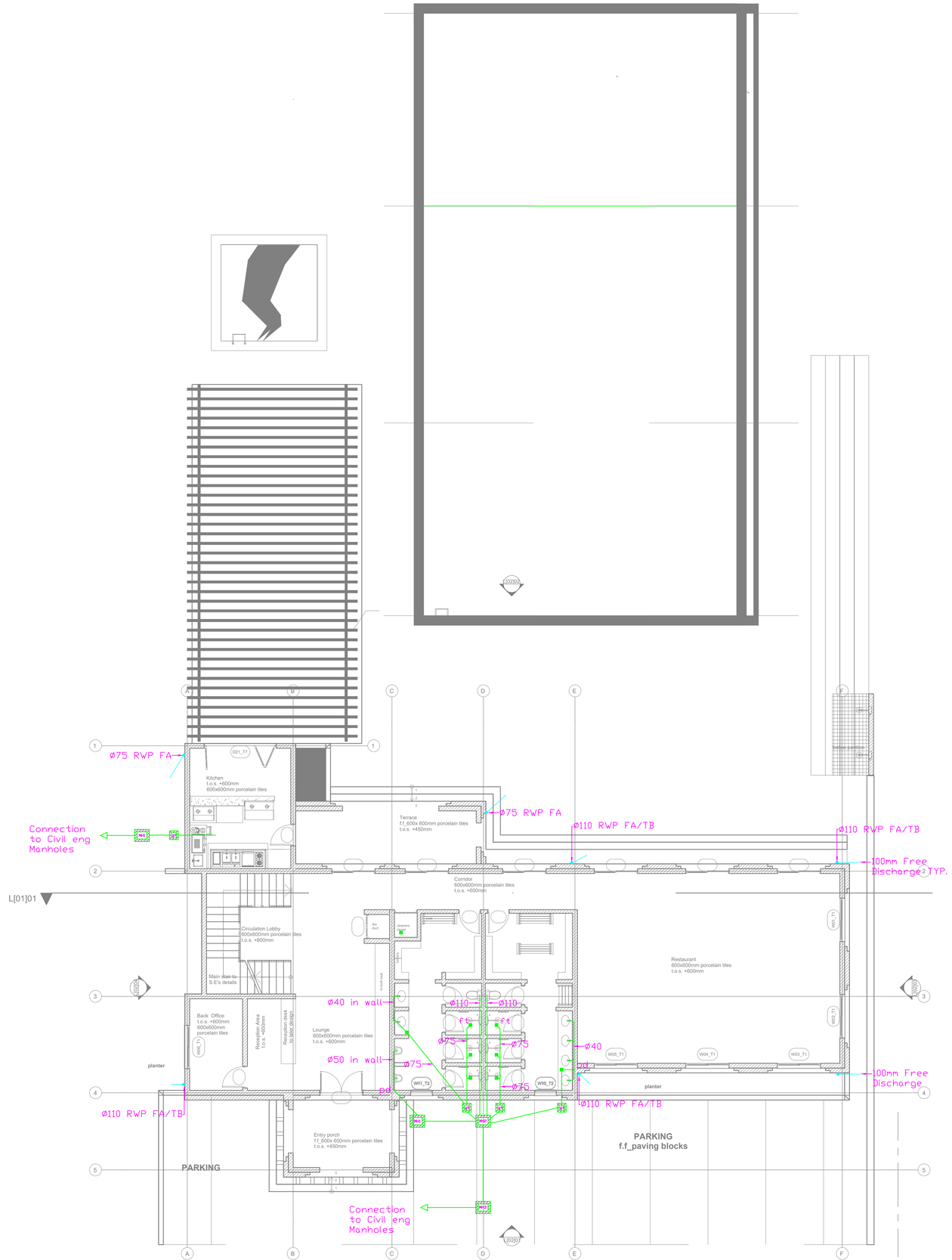
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[--]01_GROUND FLOOR PLAN
SCALE 1:100

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **CLUB HOUSE**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE GROUND FLOOR DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

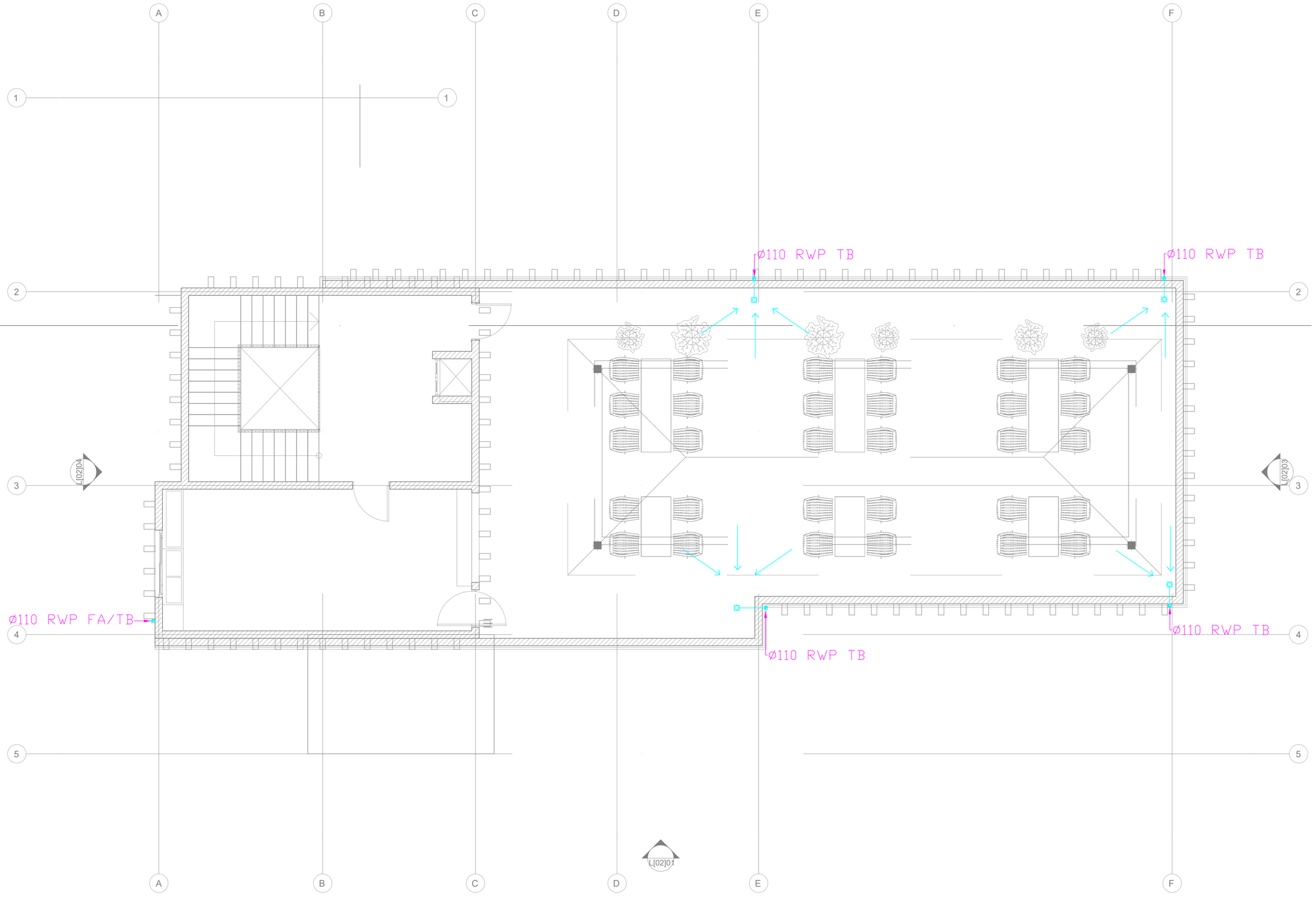
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **CLUB HOUSE**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE ROOF DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

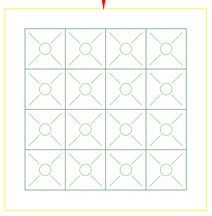
DATE :

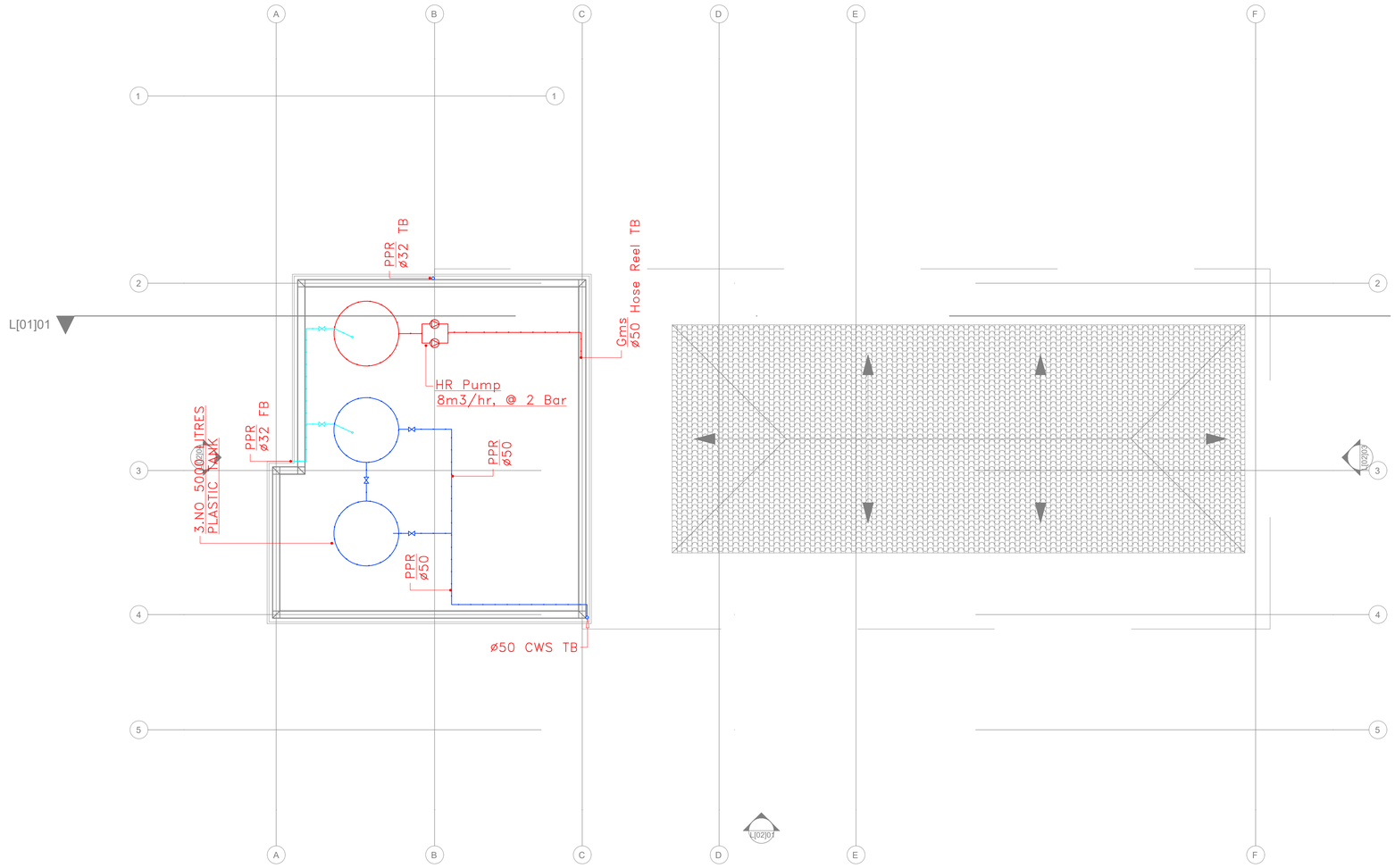
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

32 m3 GRP Tank on 600 mm dwarf walls to Structural Eng. details.
(Allow 500 mm wide walkway around Tank)





CLUB HOUSE ROOF WATER SUPPLY

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☐ SHOP DWG ☐ AS BUILT

PROJECT: **CLUB HOUSE**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE ROOF WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

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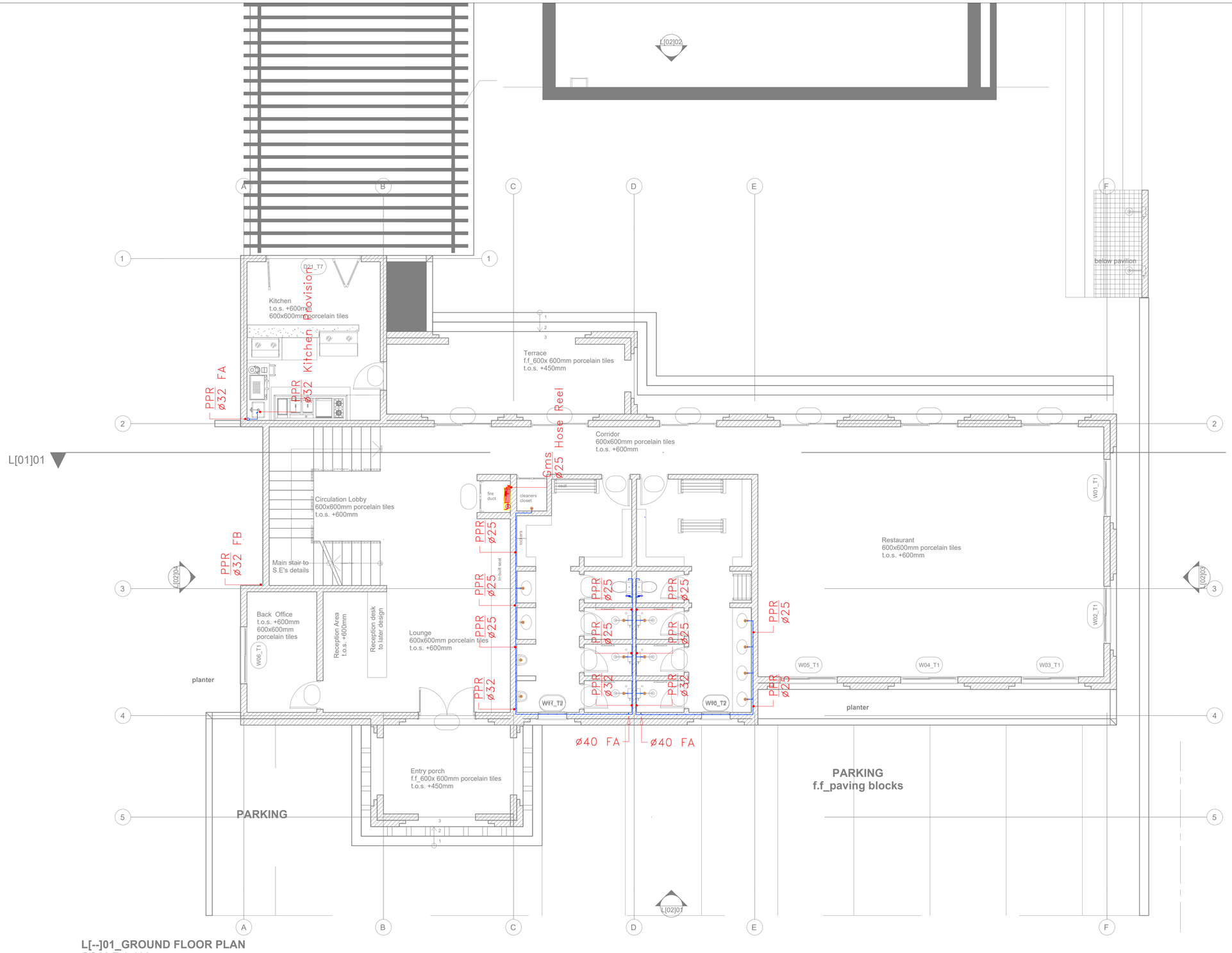
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[--]01_GROUND FLOOR PLAN
SCALE 1:100

CLUB HOUSE GROUND FLOOR WATER SUPPLY

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- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE GROUND FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

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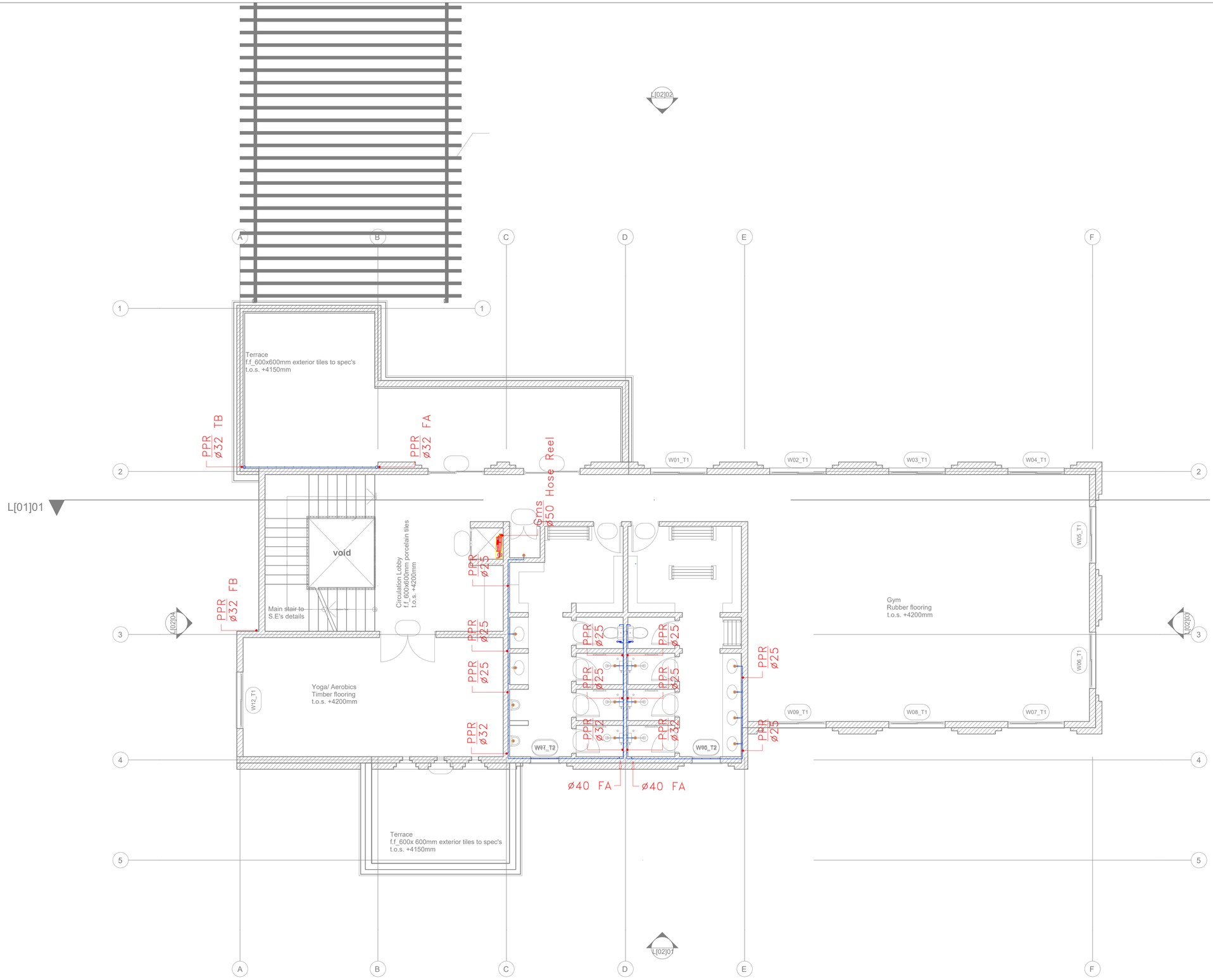
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



CLUB HOUSE FIRST FLOOR FLOOR WATER SUPPLY

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☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE FIRST FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

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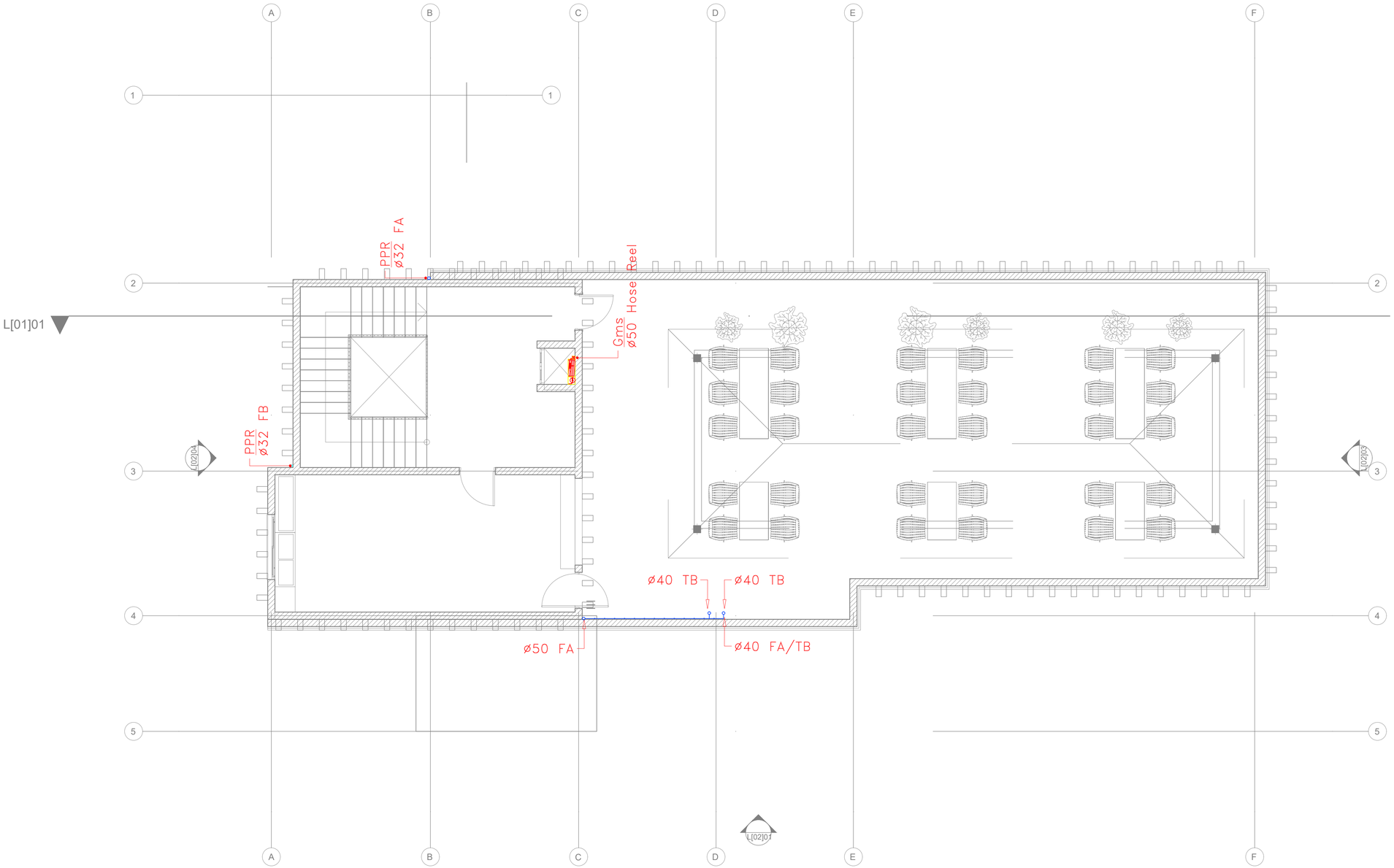
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



CLUB HOUSE TERRACE GROUND FLOOR WATER SUPPLY

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REV.	DATE	DESCRIPTION

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☐ DETAILED ☒ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE TERRACE WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

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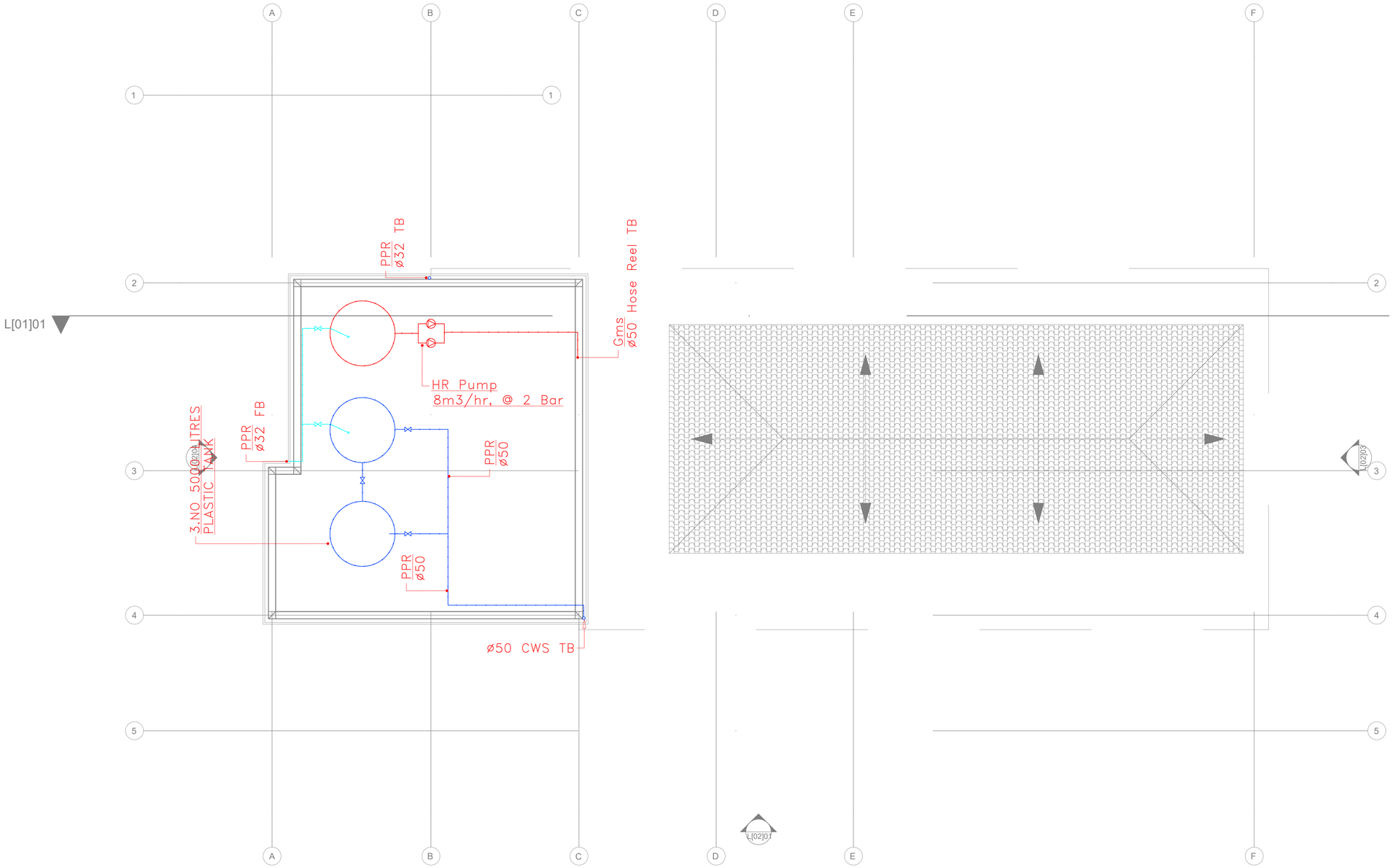
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



CLUB HOUSE ROOF WATER SUPPLY

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☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLUB HOUSE ROOF WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

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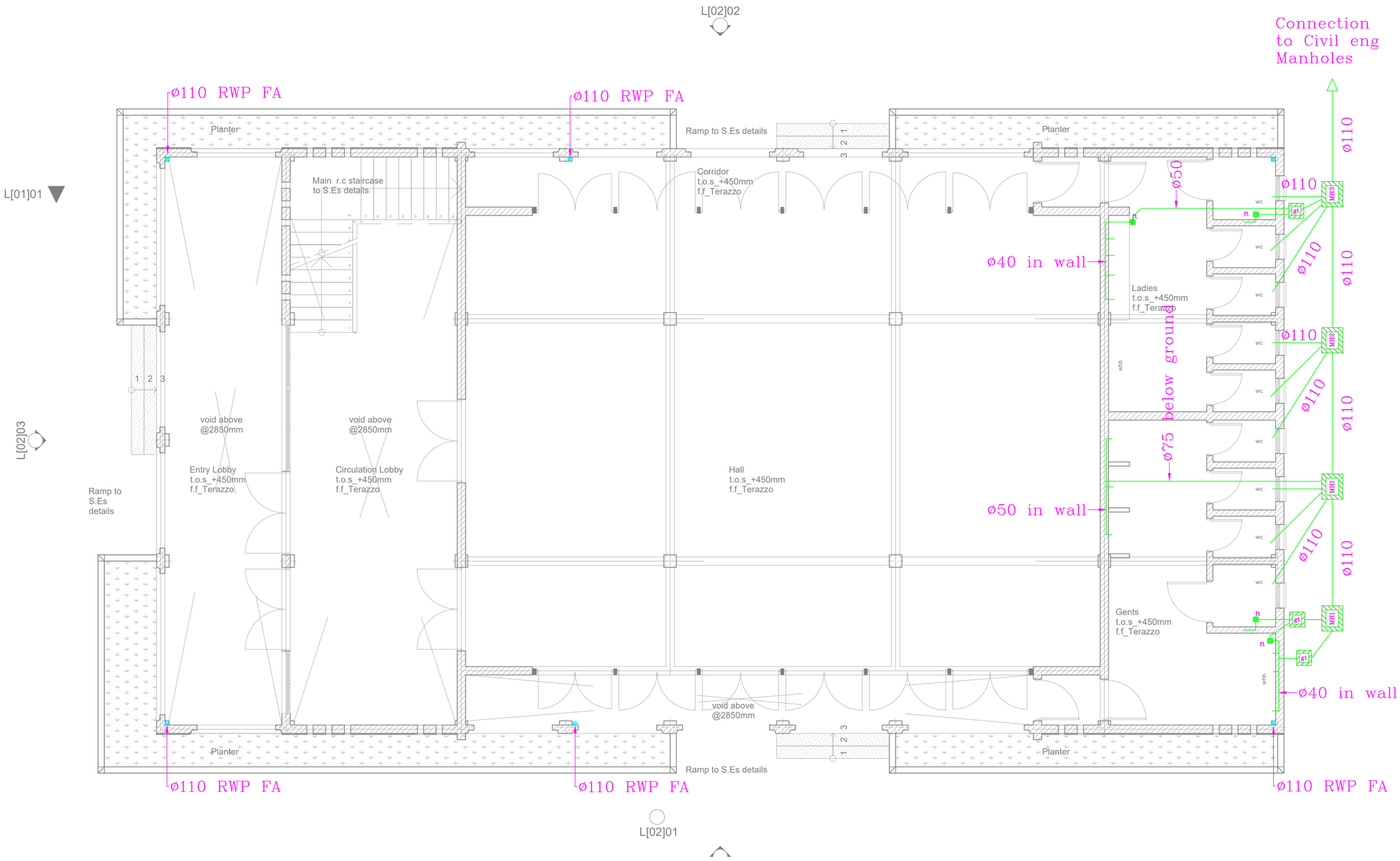
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



GROUND FLOOR DRAINAGE COMMUNITY CENTER

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PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

DRAWN BY :

CHECKED BY :

Date : Signature:

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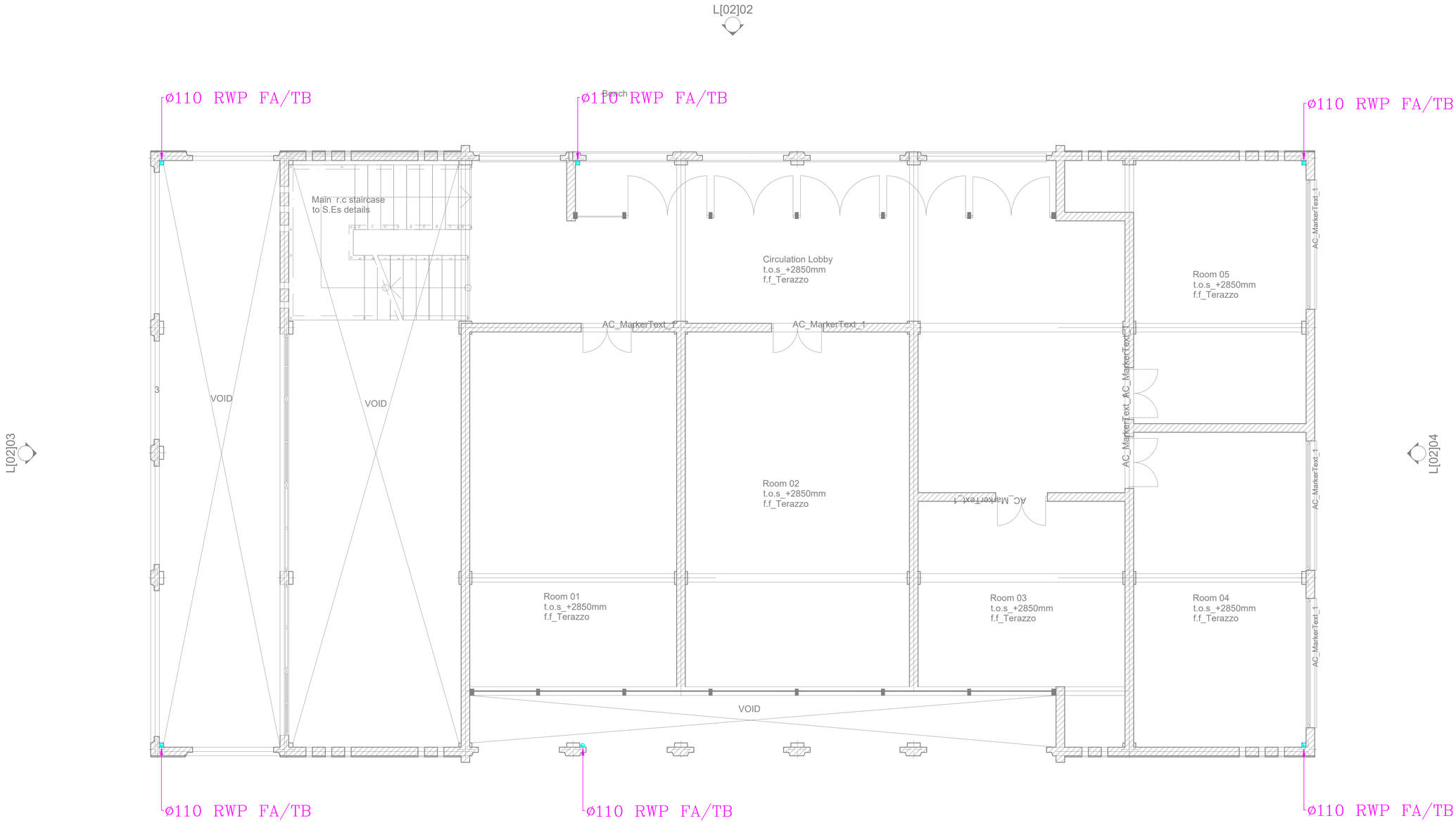
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



FIRST FLOOR DRAINAGE COMMUNITY CENTER

L[02]01

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☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

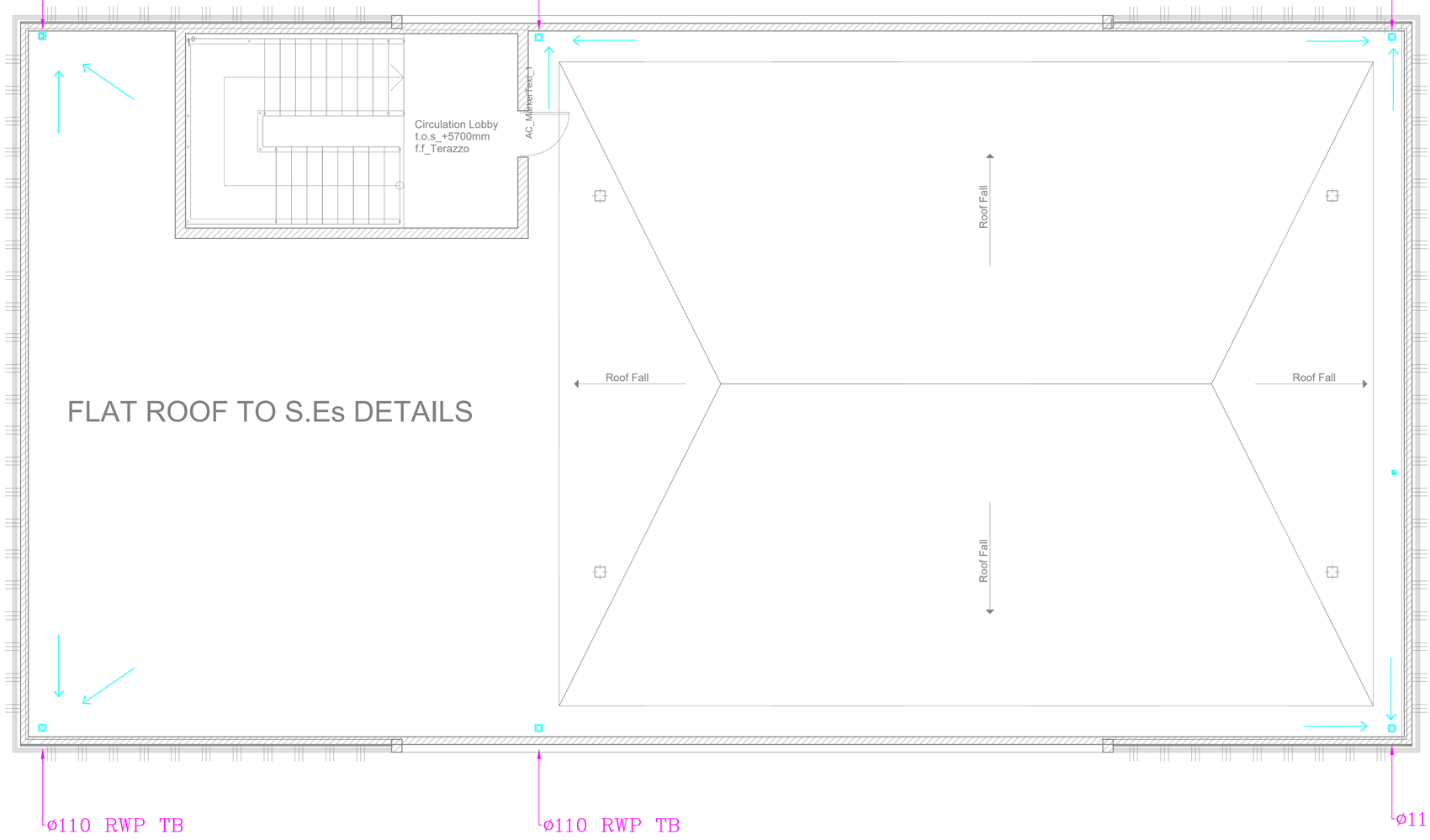
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

L[02]02

ø110 RWP FA/TB

ø110 RWP FA/TB

ø110 RWP FA/TB



L[02]03

FLAT ROOF TO S.Es DETAILS

ø110 RWP TB

ø110 RWP TB

ø110 RWP TB

L[02]01

ROOF DRAINAGE COMMUNITY CENTER

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PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

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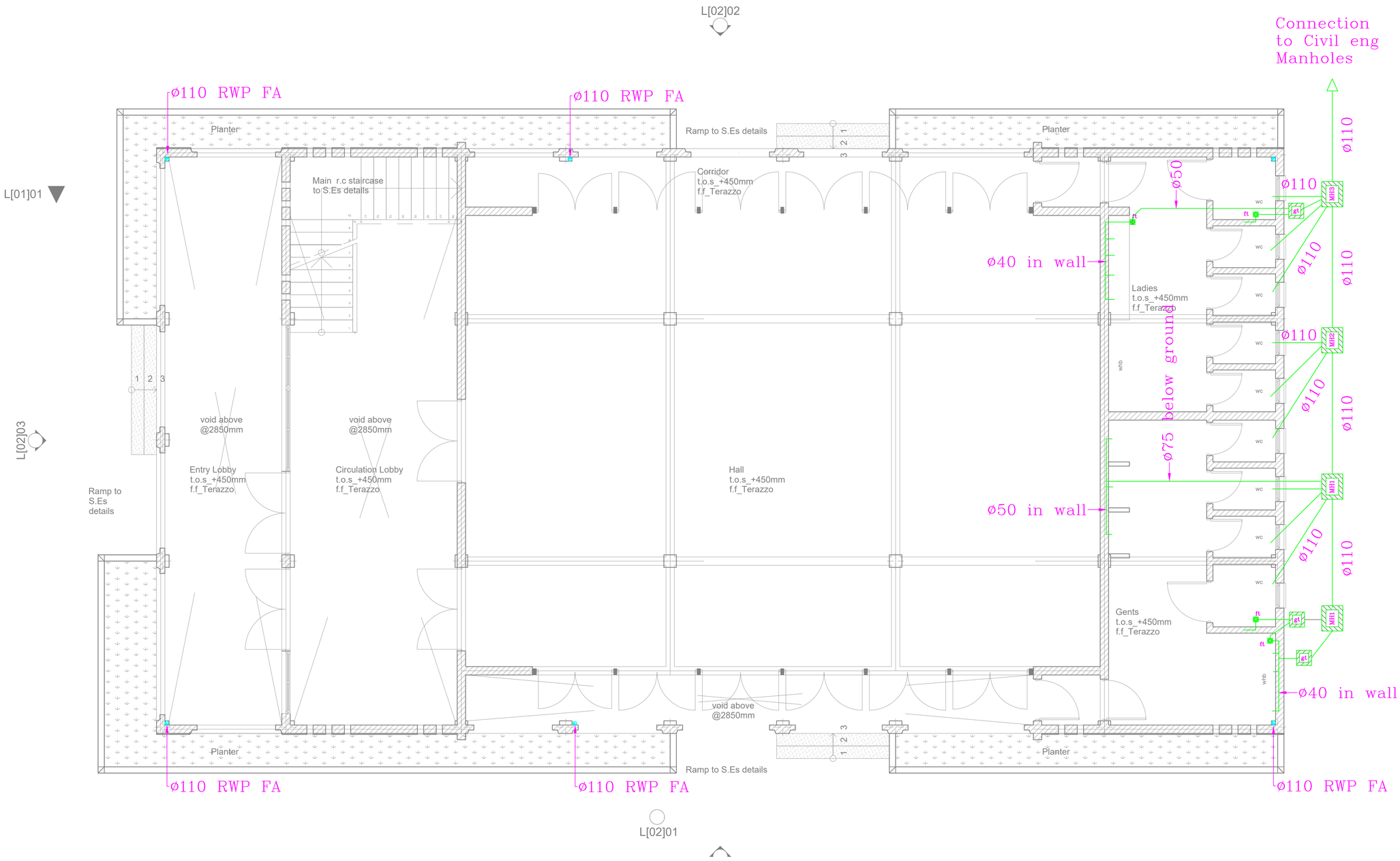
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



GROUND FLOOR DRAINAGE COMMUNITY CENTER

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PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

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COMMUNITY CENTER

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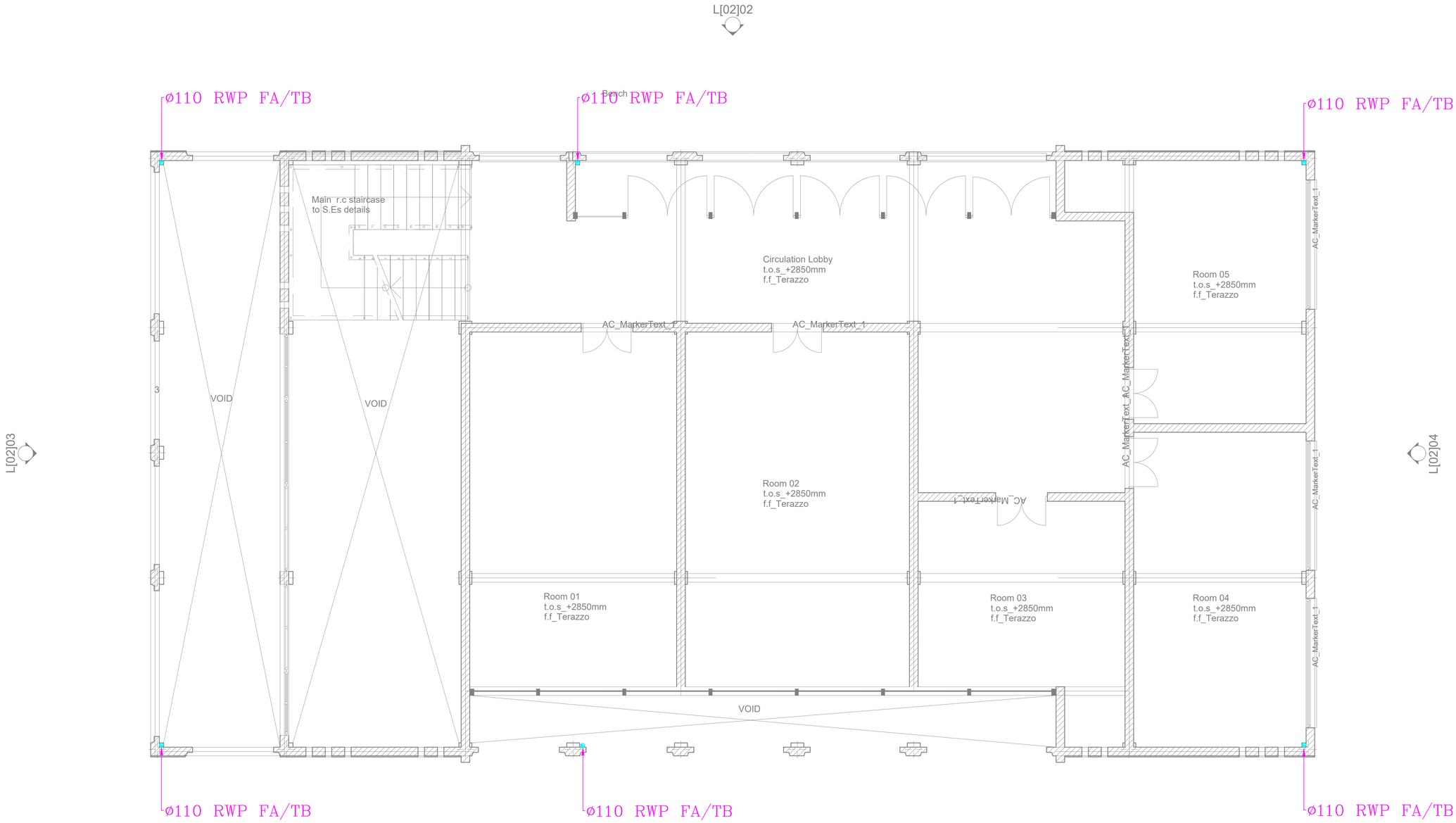
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



FIRST FLOOR DRAINAGE COMMUNITY CENTER

L[02]01

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PROJECT: **AHP**

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LOCATION:

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COMMUNITY CENTER

SCALE : 1:50

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MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

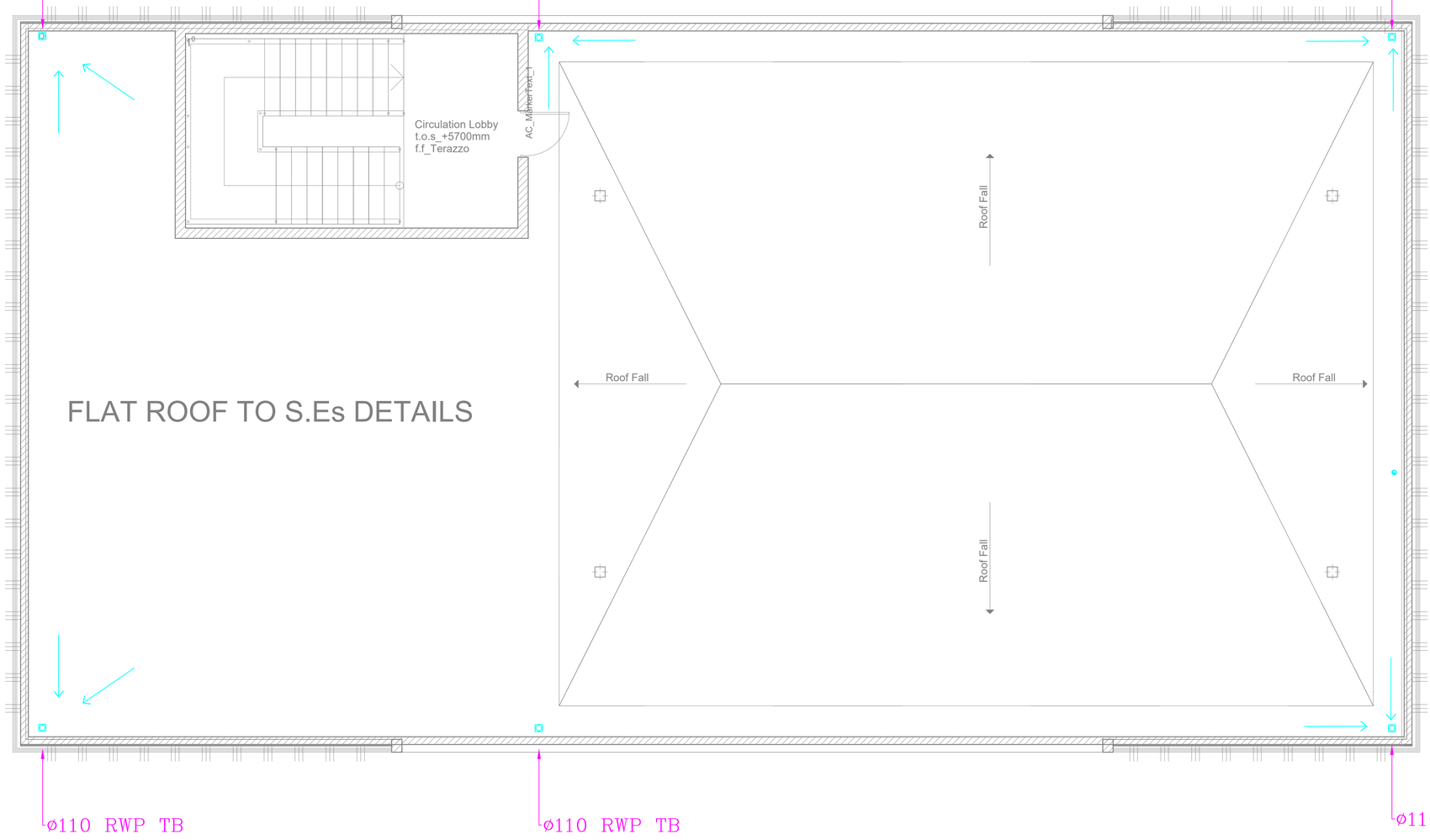
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

L[02]02

ø110 RWP FA/TB

ø110 RWP FA/TB

ø110 RWP FA/TB



L[02]03

FLAT ROOF TO S.Es DETAILS

ø110 RWP TB

ø110 RWP TB

ø110 RWP TB

L[02]01

ROOF DRAINAGE COMMUNITY CENTER

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STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

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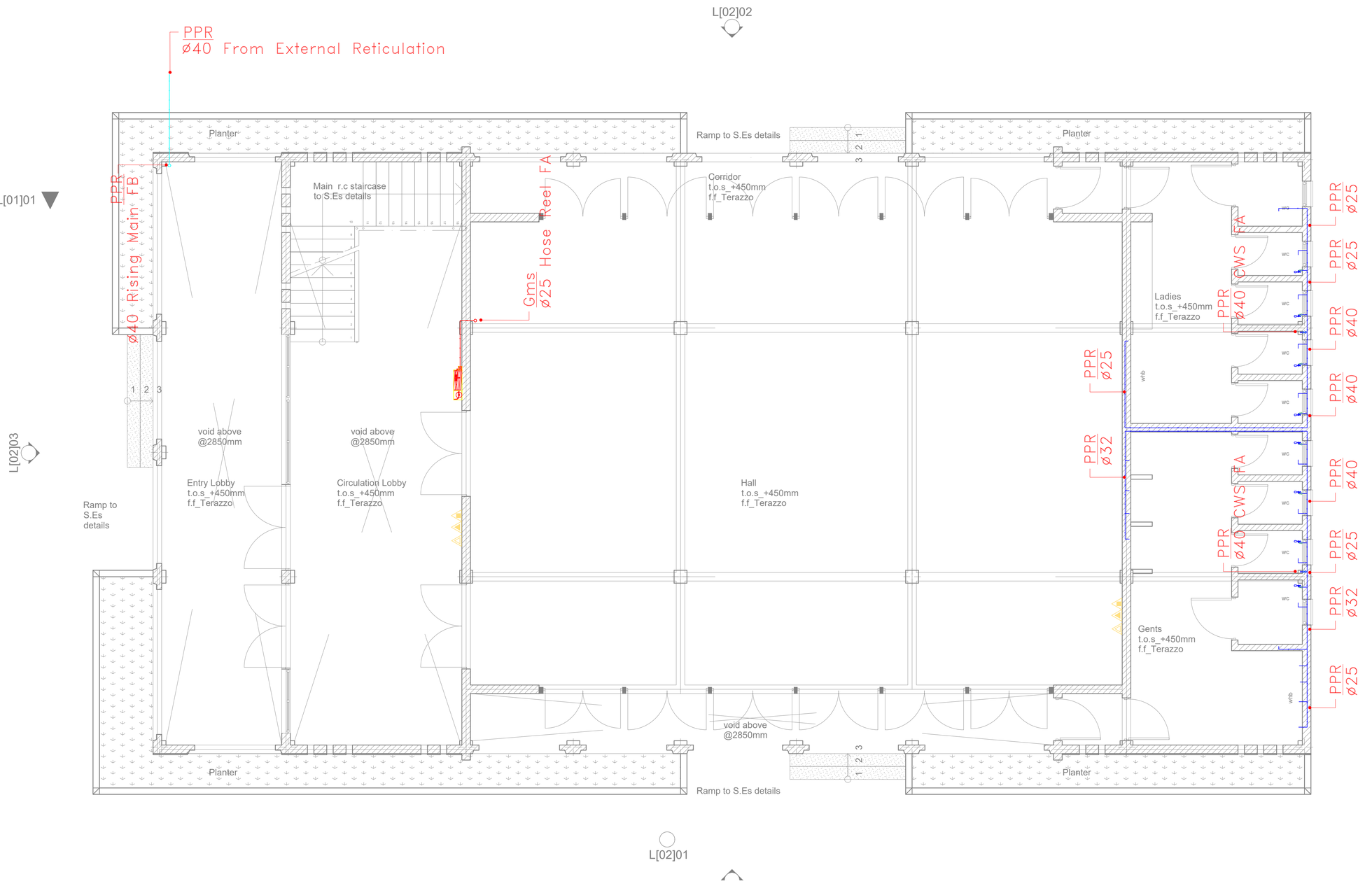

GROUND FLOOR WATER SUPPLY COMMUNITY CENTER

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PROJECT: **AHP**

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COMMUNITY CENTER

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MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

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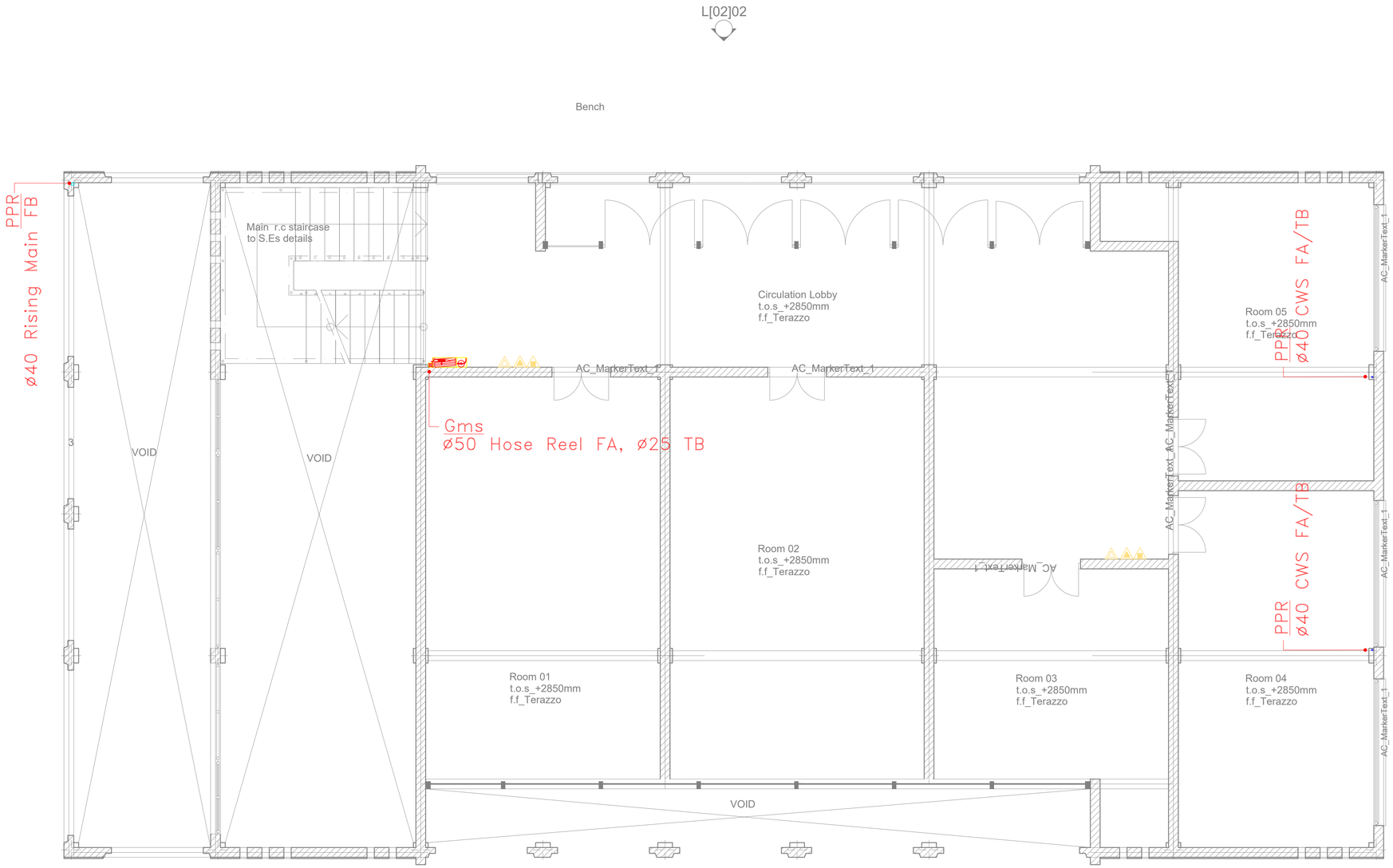
FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



FIRST FLOOR WATER SUPPLY COMMUNITY CENTER

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PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

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COMMUNITY CENTER

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MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

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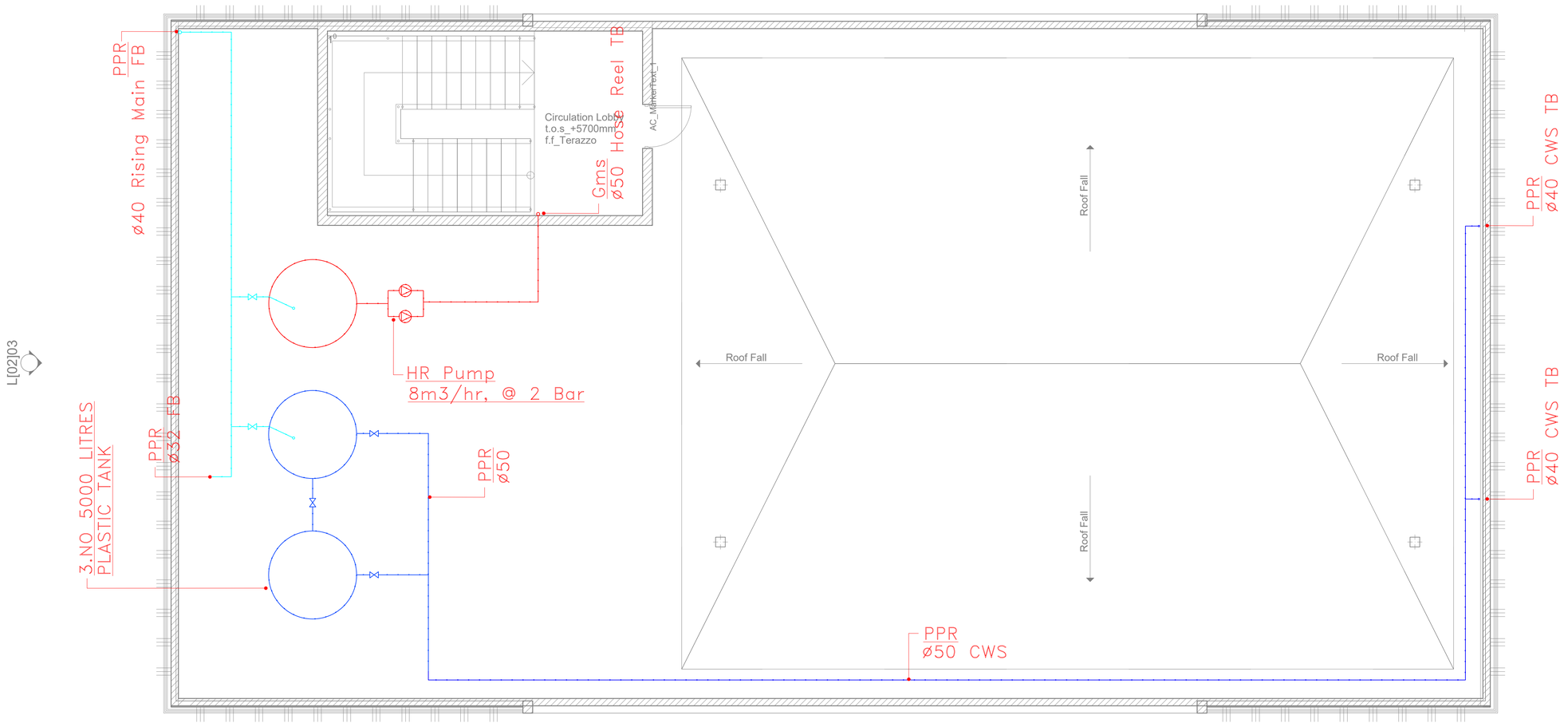
HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

L[02]02



L[02]03

L[02]01

ROOF WATER SUPPLY COMMUNITY CENTER

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PROJECT: **AHP**

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MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

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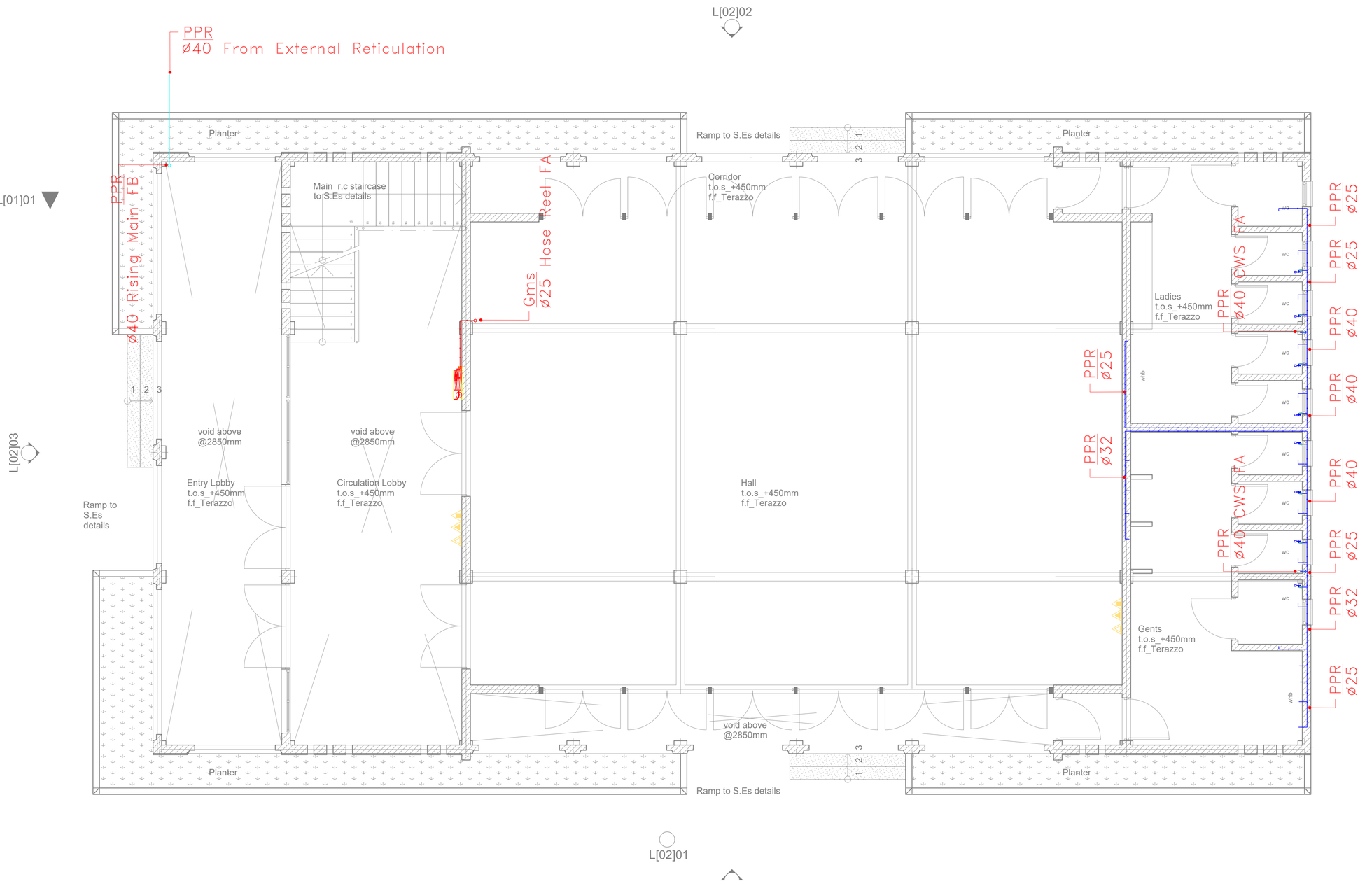

GROUND FLOOR WATER SUPPLY COMMUNITY CENTER

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PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

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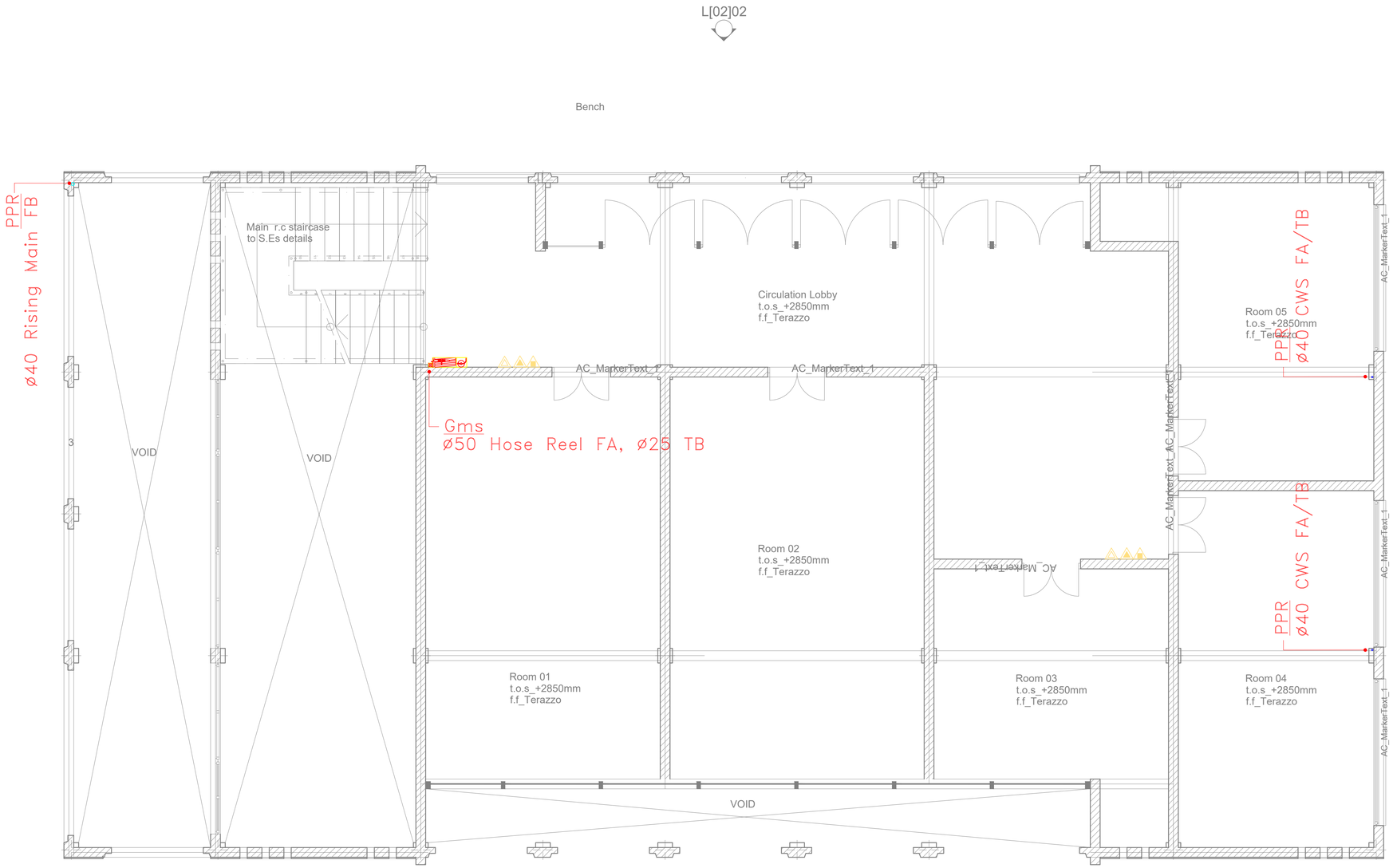

FIRST FLOOR WATER SUPPLY COMMUNITY CENTER

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- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

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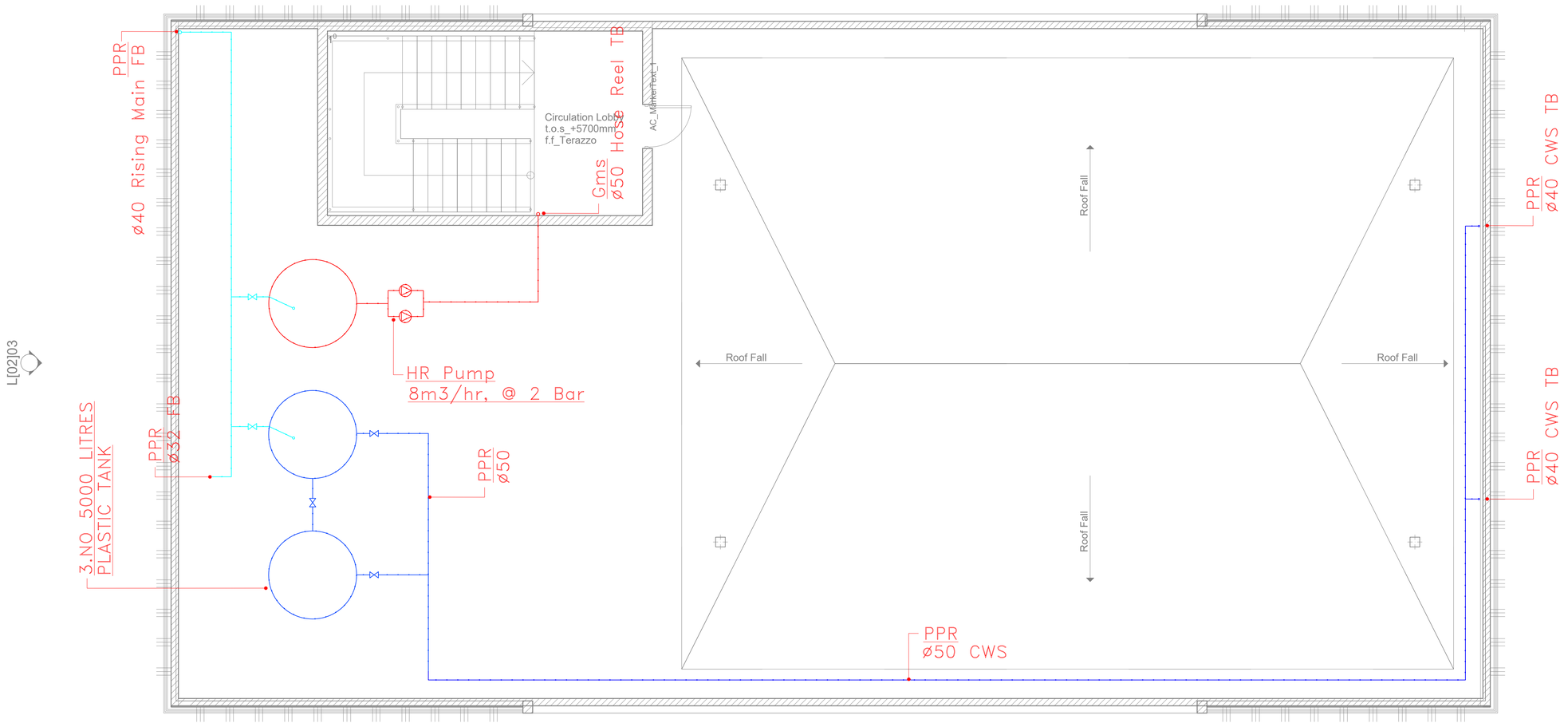
MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

L[02]02



L[02]03

L[02]01

ROOF WATER SUPPLY COMMUNITY CENTER

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

COMMUNITY CENTER

SCALE : 1:50

DRAWN BY :

CHECKED BY :

Date : Signature:

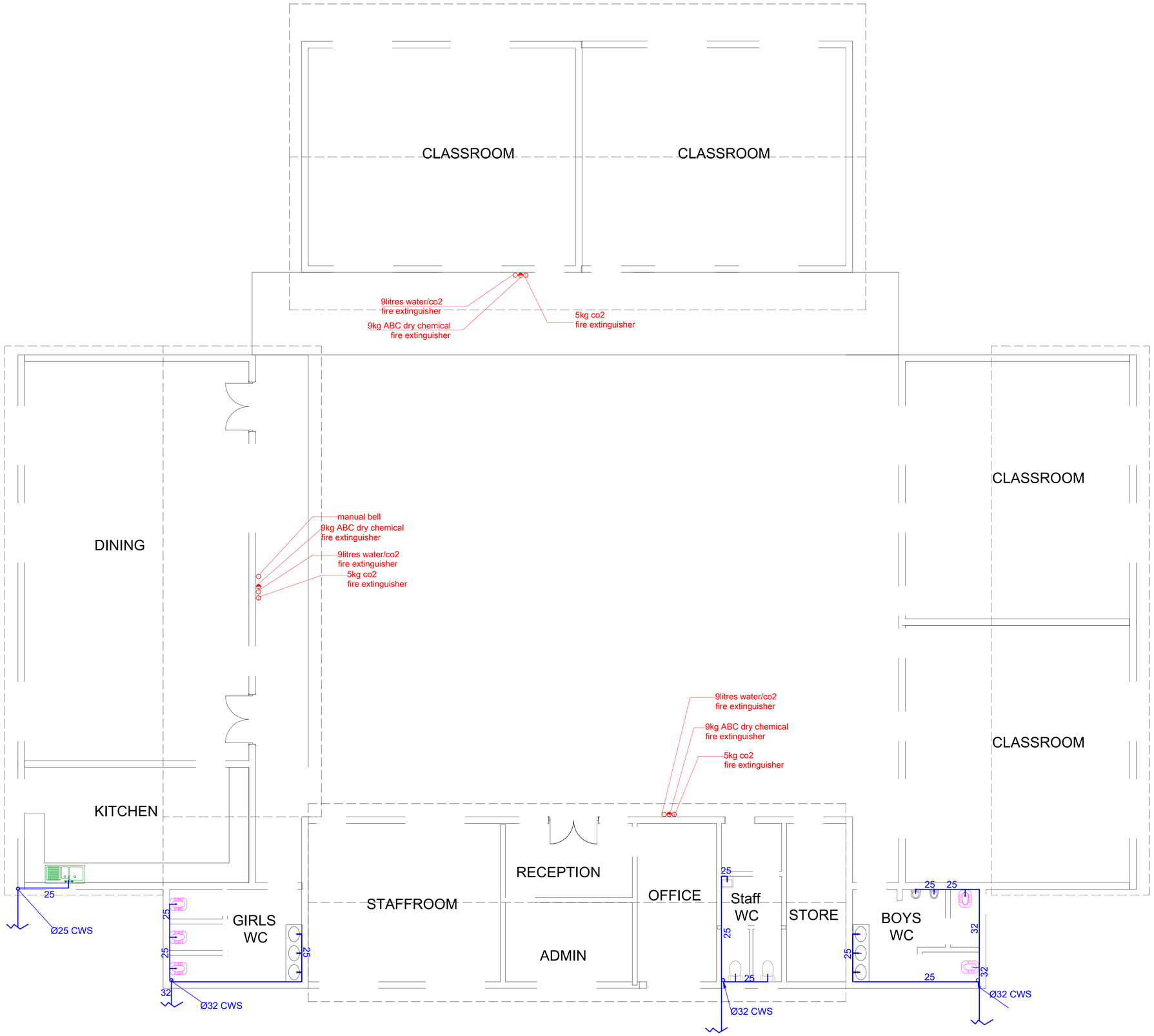
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



KINDERGARTEN TYPICAL PLUMBING AND FIRE FIGHTING FLOOR PLAN

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **KINDERGARTEN**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

KINDERGARTEN TYPICAL PLUMBING AND FIRE FIGHTING FLOOR PLAN

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

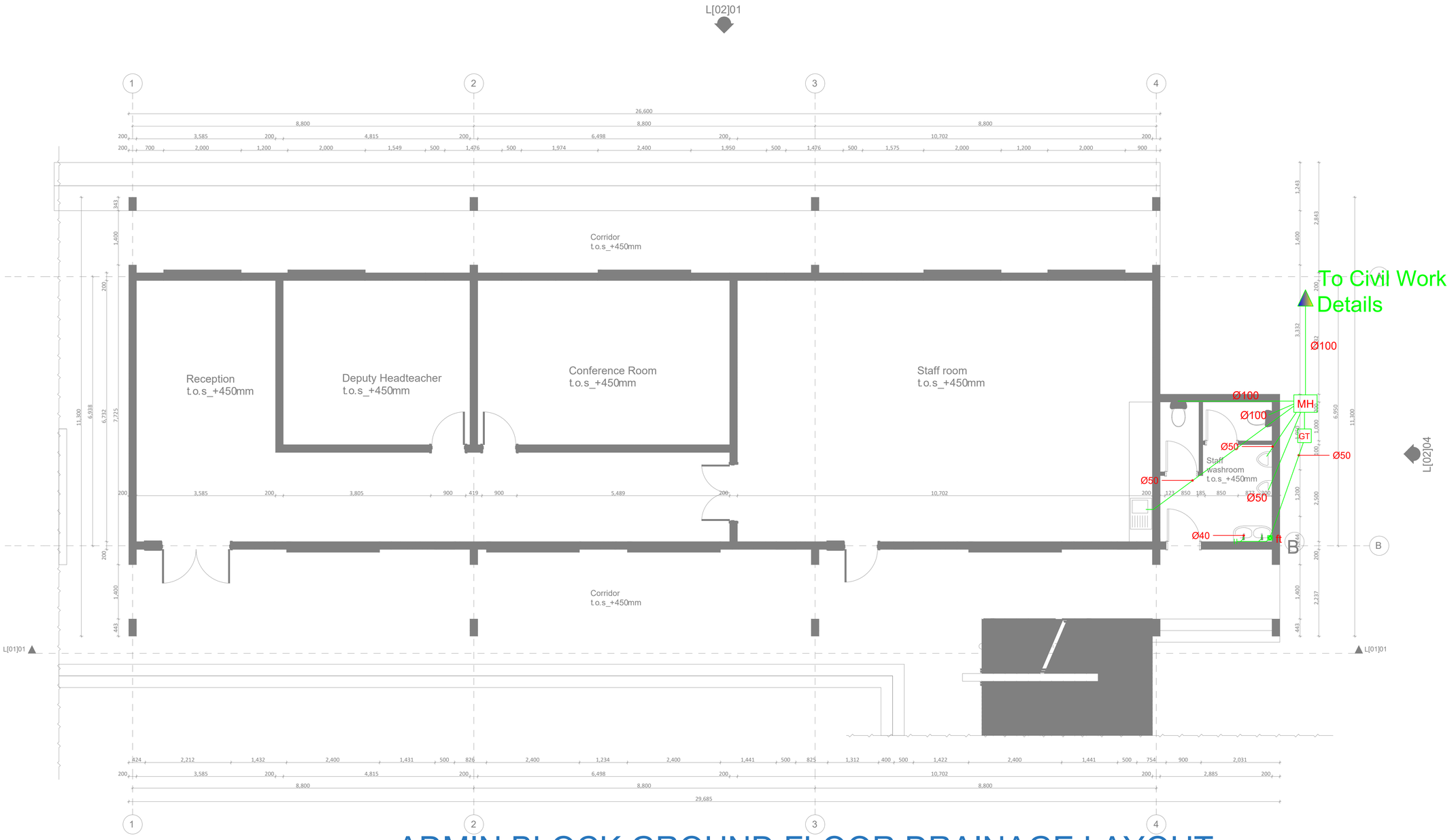
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[--]01_Administration Block_Ground Floor Plan
Scale: 1_100

ADMIN BLOCK GROUND FLOOR DRAINAGE LAYOUT

L[02]02

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **SCHOOL**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

ADMIN BLOCK GROUND FLOOR DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

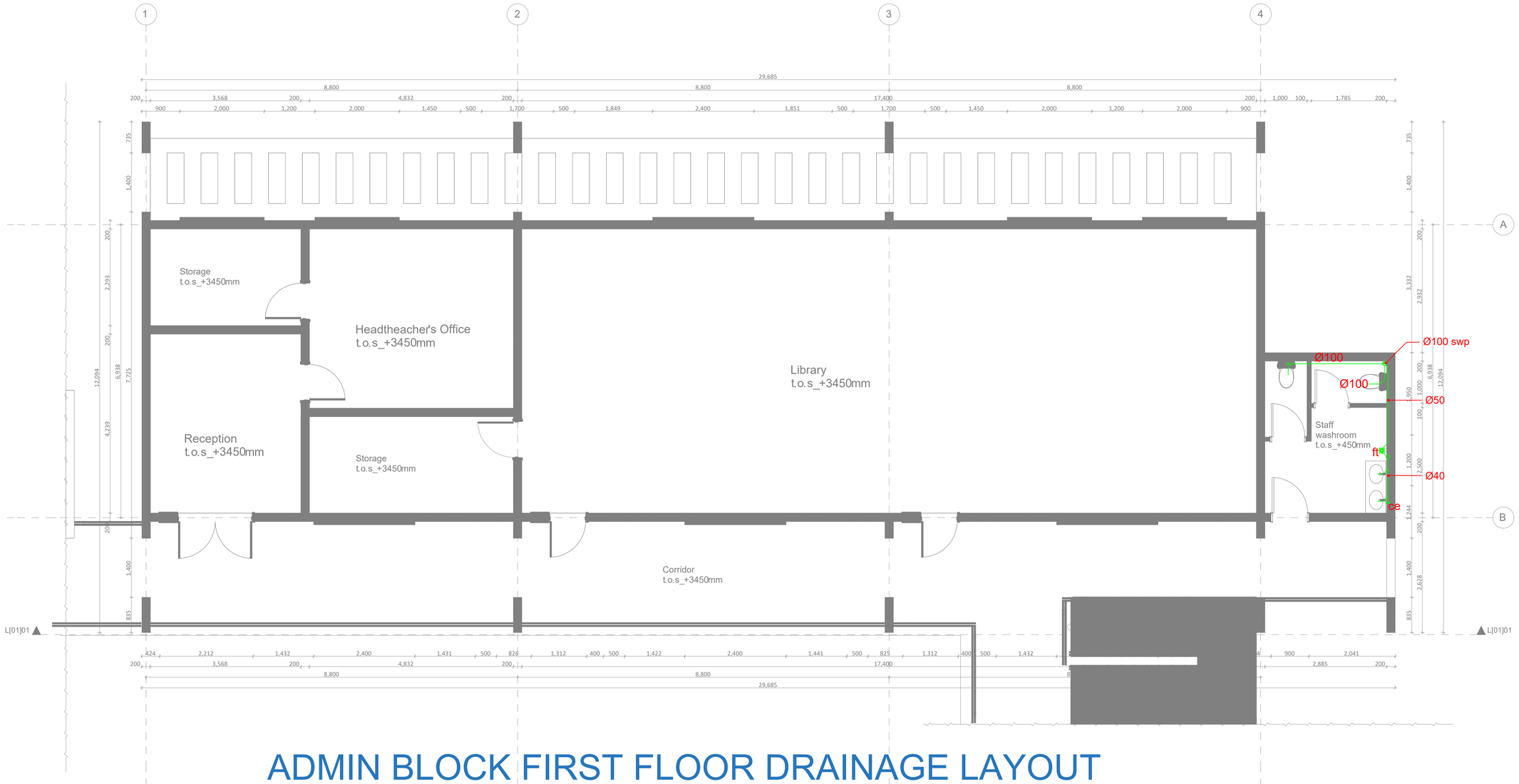
STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

Scale: 1_100

L[02]02



ADMIN BLOCK FIRST FLOOR DRAINAGE LAYOUT

L[--]02_Administration Block_First Floor Plan
Scale: 1_100

L[02]02

L[02]01

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **SCHOOL**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

ADMIN BLOCK FIRST FLOOR DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

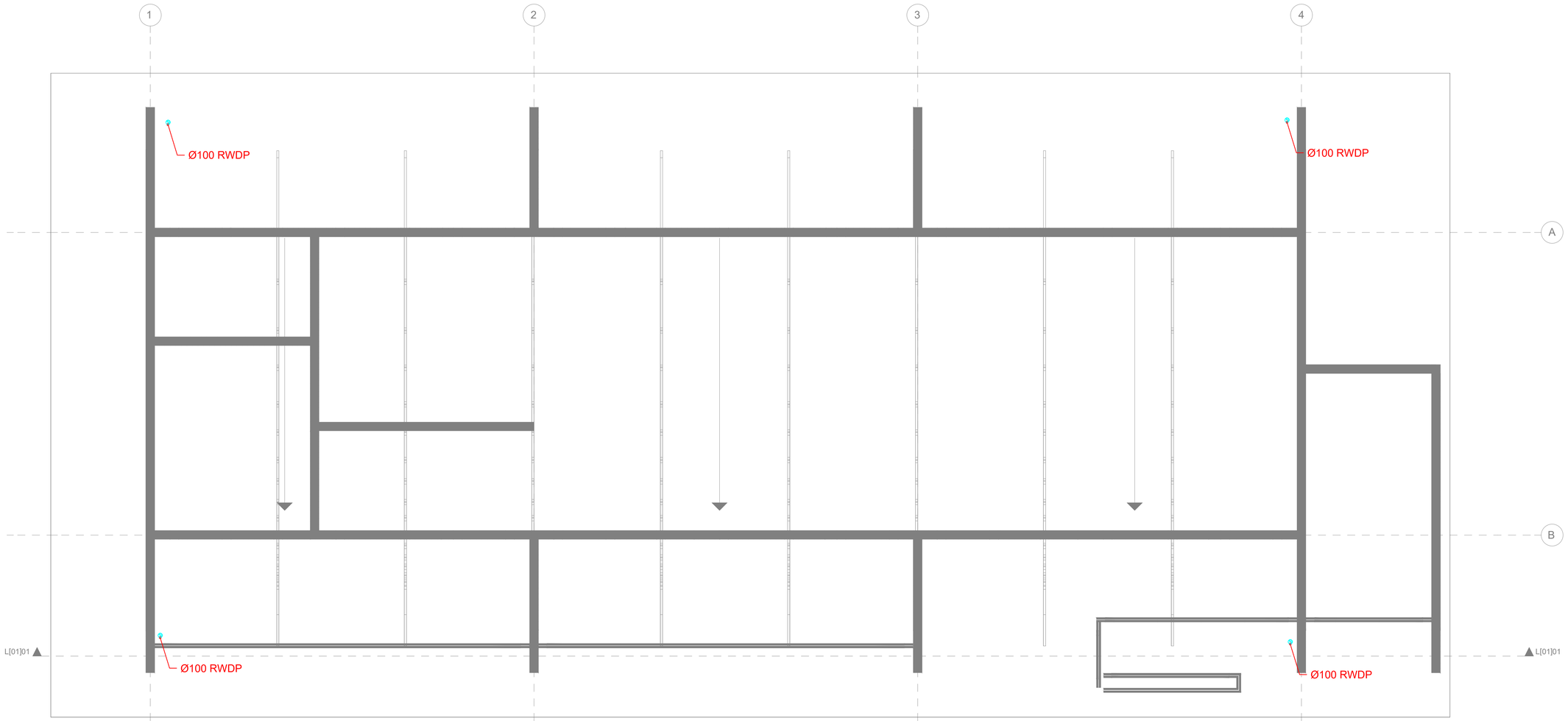
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA

L[02]01



ADMINISTRATION BLOCK ROOF DRAINAGE LAYOUT

L[--]03_Administration Block_Roof Plan
Scale: 1_100

L[02]02

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **SCHOOL**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

ADMINISTRATION BLOCK ROOF DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

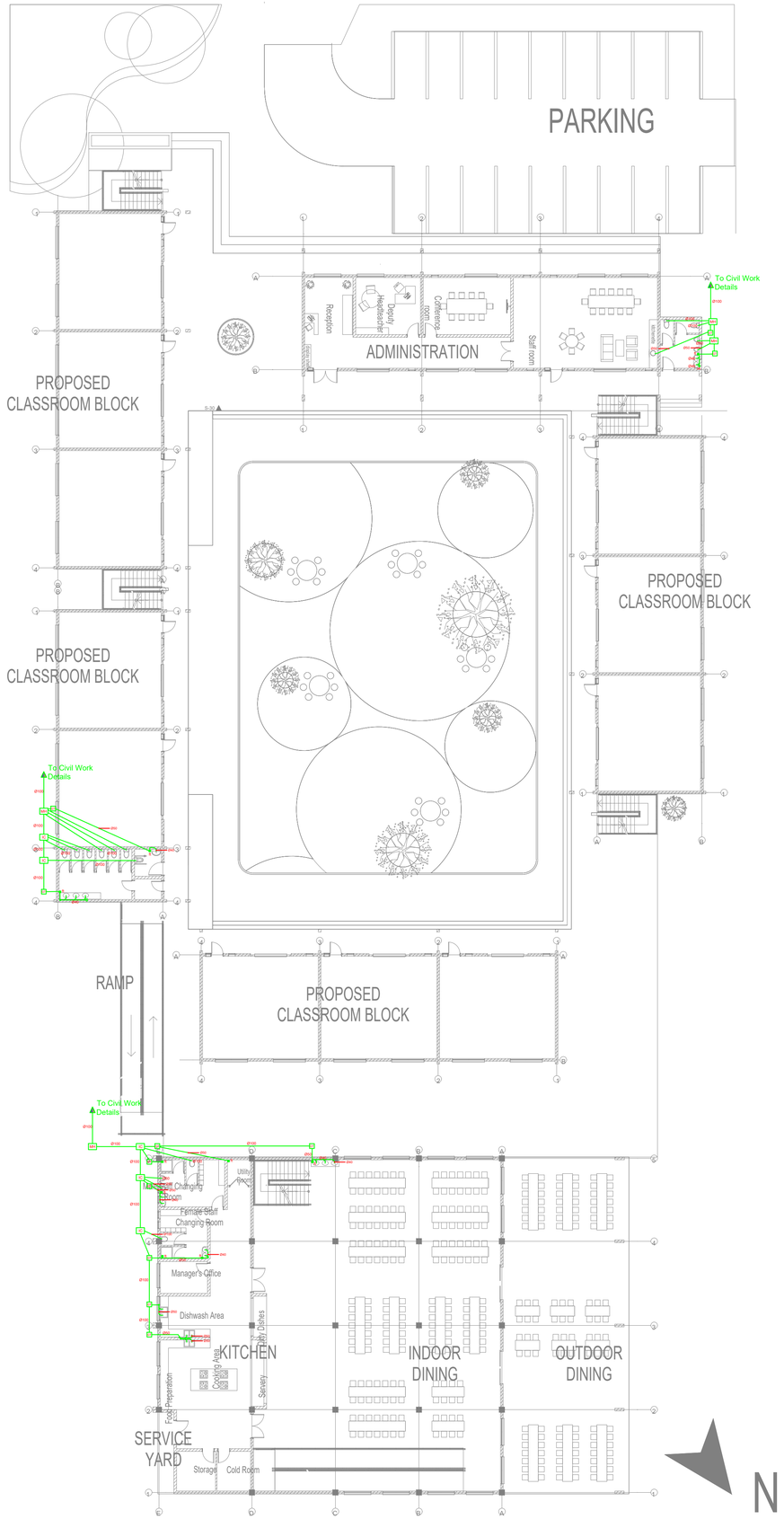
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



GENERIC SCHOOL GROUND FLOOR DRAINAGE LAYOUT

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
2. All dimensions are in mm unless otherwise specified.
3. Drawings are not to be scaled . Only figured dimensions should be used .
4. The contractor must check and verify all dimensions before commencement of work and if necessary confirm with the architect .

REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **SCHOOL**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

GENERIC SCHOOL GROUND FLOOR DRAINAGE LAYOUT

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

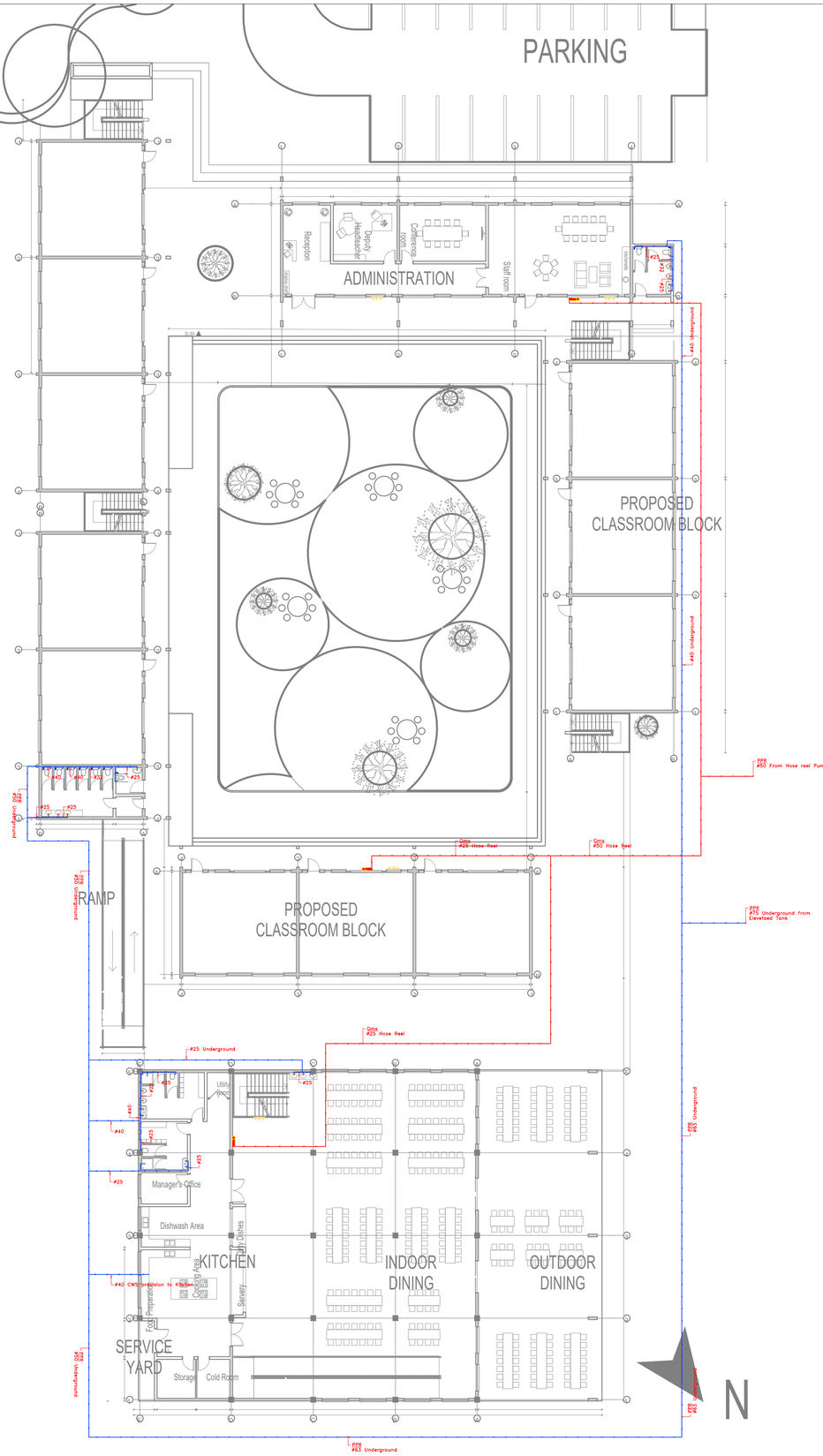
DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

HARAMBEE

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



ADMINSTRATION BLOCK FLOOR WATER SUPPLY

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☒ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

ADMINSTRATION BLOCK FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

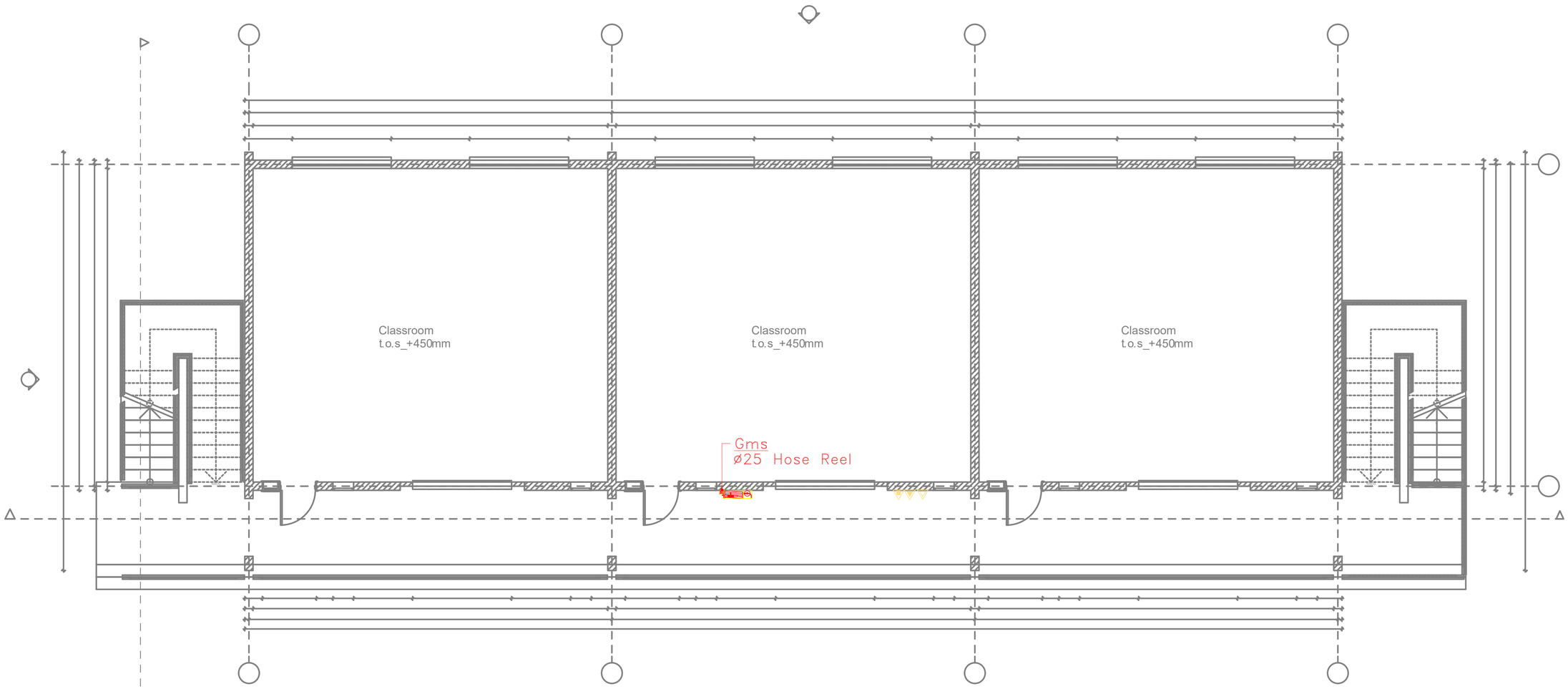
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



CLASSROOM BLOCK GROUND FLOOR WATER SUPPLY

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLASSROOM BLOCK FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

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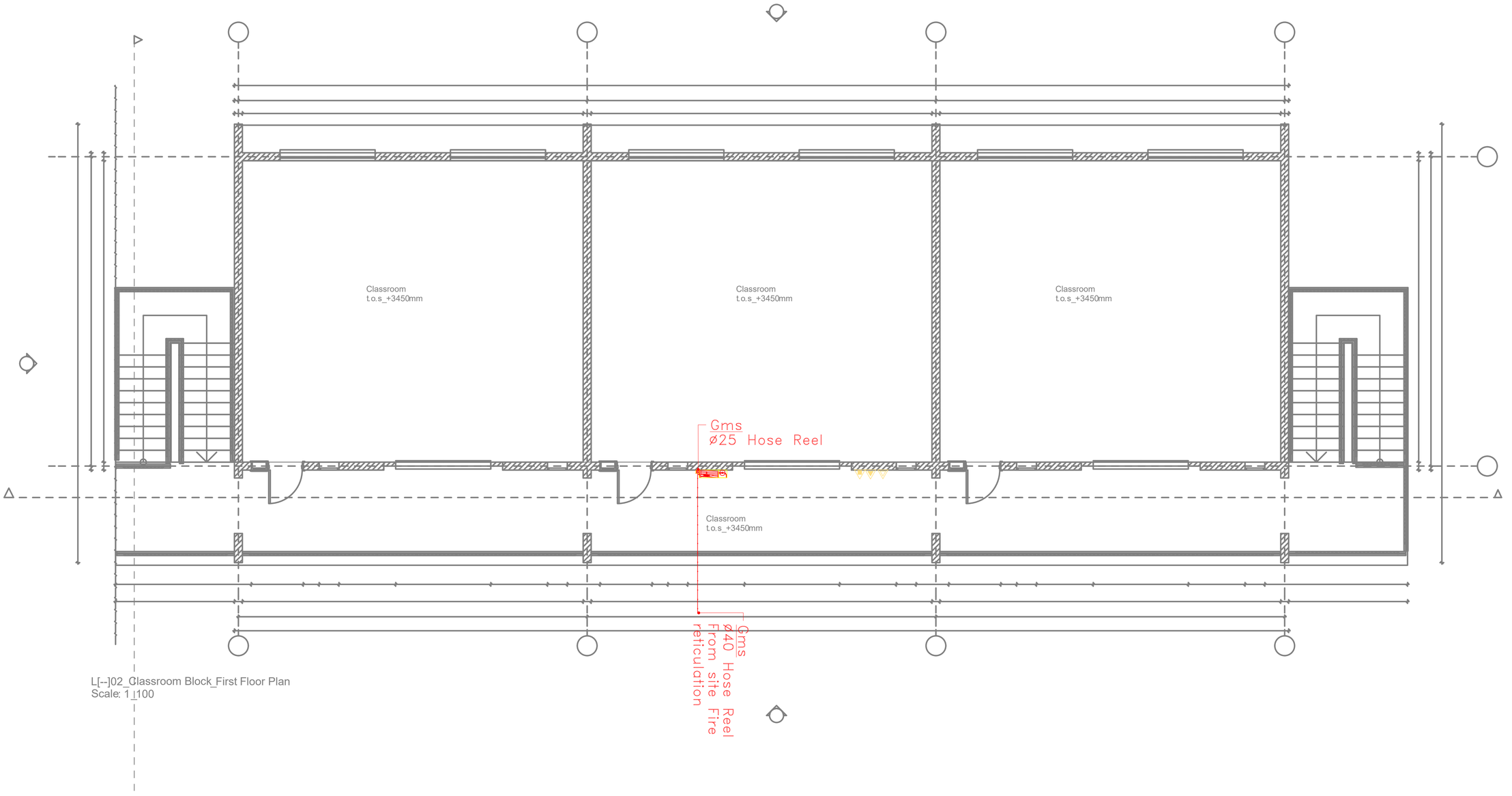
STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[--]02_Classroom Block_First Floor Plan
Scale: 1_100

CLASSROOM BLOCK FIRST FLOOR WATER SUPPLY

GENERAL NOTES

1. This drawing to be read in conjunction with architectural drawings.
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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☒ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

ADMINSTRATION BLOCK FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

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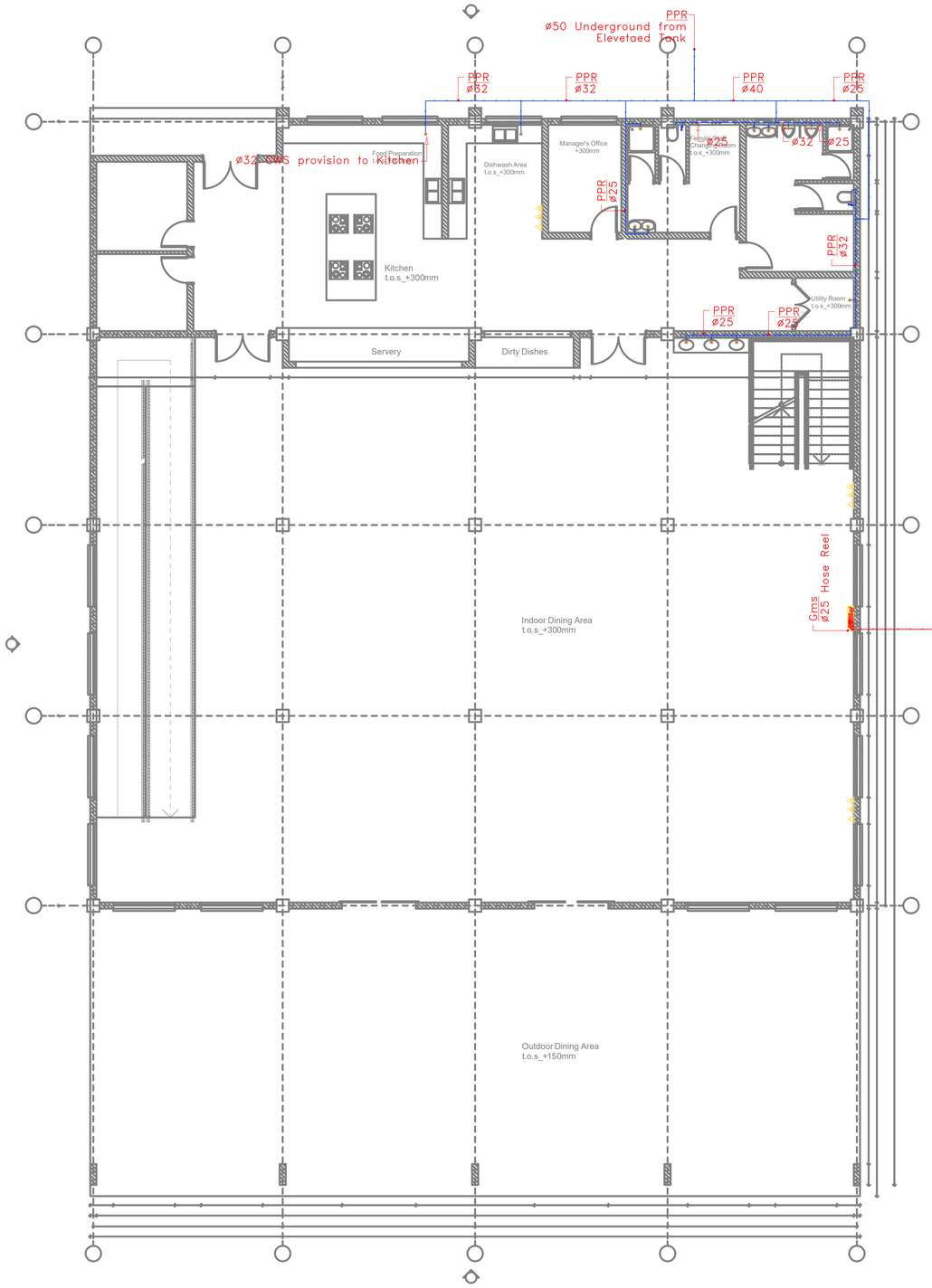
STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



CAFFETERIA GROUND FLOOR WATER SUPPLY

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

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- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

CLASSROOM BLOCK FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

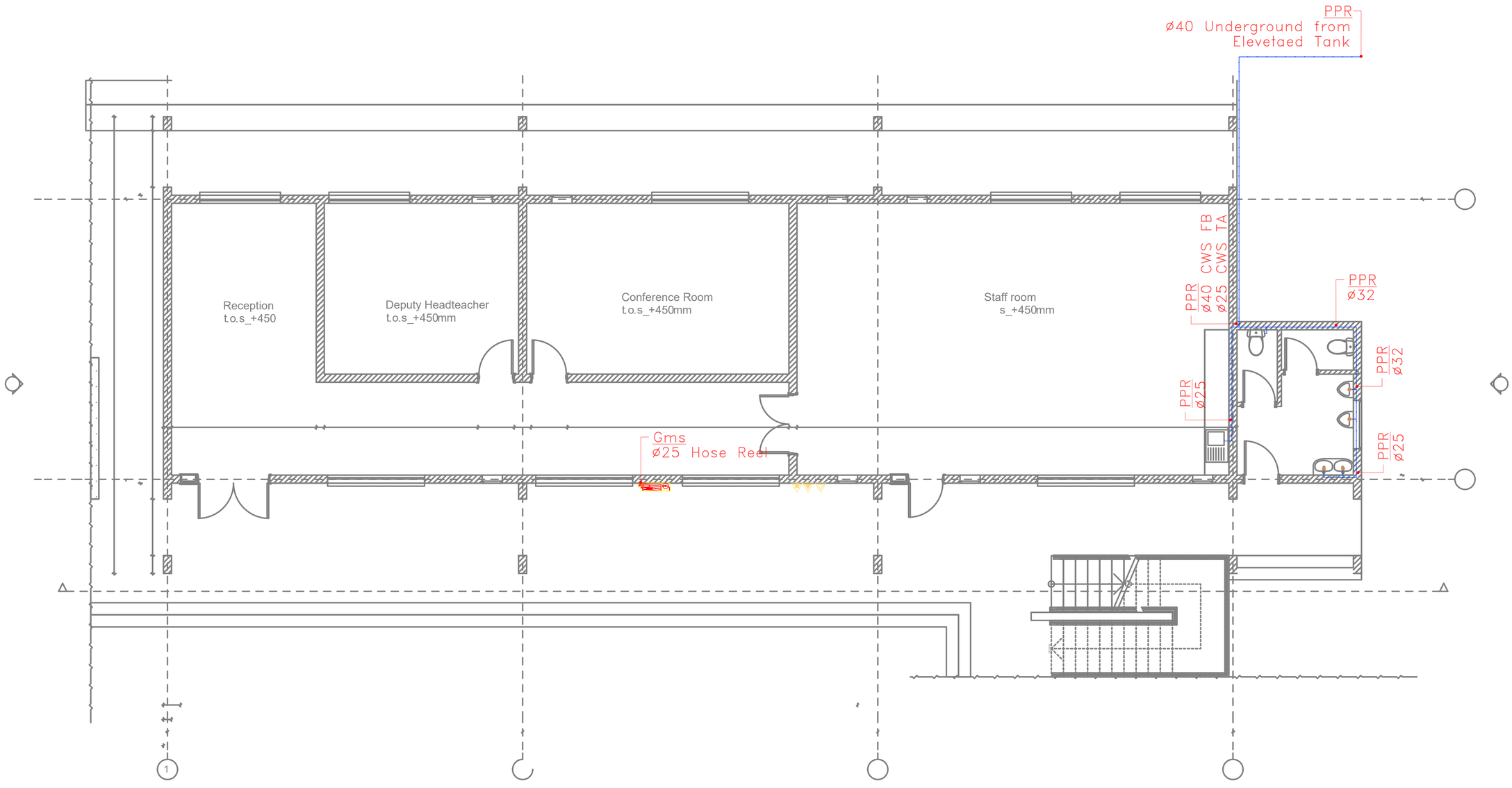
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



L[--]01_Administration Block_Ground Floor Plan
Scale: 1_100

ADMINSTRATION BLOCK GROUND FLOOR WATER SUPPLY

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

☐ APPROVAL ☐ RECORD

☐ DETAILED ☑ TENDER

☐ SHOP DWG ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

ADMINSTRATION BLOCK FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

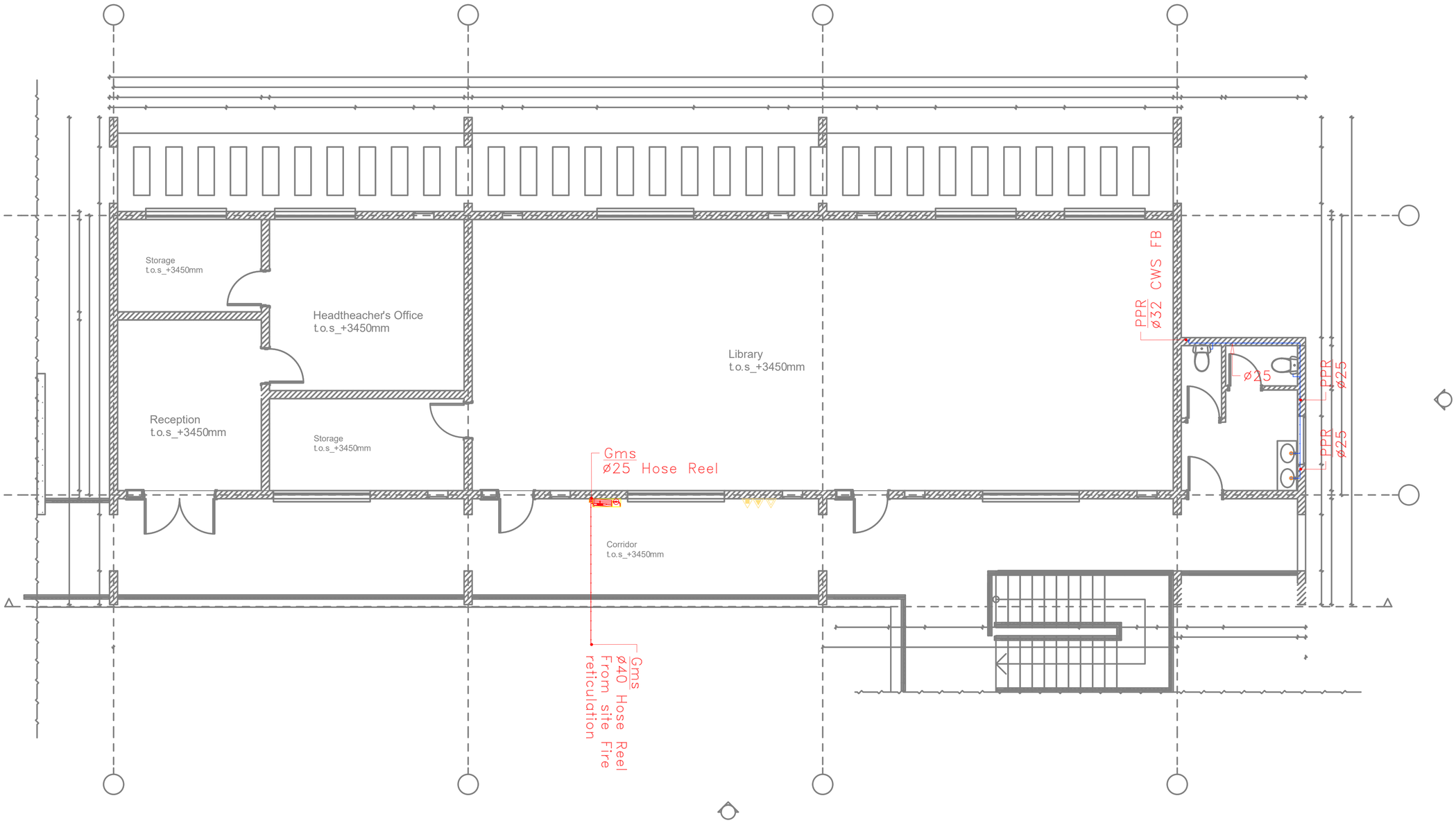
Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA



ADMINSTRATION BLOCK FIRST FLOOR WATER SUPPLY

GENERAL NOTES

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REV.	DATE	DESCRIPTION

DRAWING ISSUED FOR:

- ☐ APPROVAL
- ☐ RECORD
- ☐ DETAILED
- ☑ TENDER
- ☐ SHOP DWG
- ☐ AS BUILT

PROJECT: **AHP**

CLIENT: SATE DEPARTMENT FOR HOUSING AND URBAN DEVELOPMENT

LOCATION:

DRAWING TITLE :

ADMINSTRATION BLOCK FLOOR WATER SUPPLY

SCALE : 1:100

DRAWN BY :

CHECKED BY :

Date : Signature:

DATE :

MINISTRY OF LANDS, PUBLIC WORKS HOUSING AND URBAN DEVELOPMENT

STATE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FOR THE GOVERNMENT OF THE REPUBLIC OF KENYA