THE UNITED REPUBLIC OF TANZANIA

PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROPOSED STANDARD DRAWINGS FOR SCHOOL FACILITIES.

Schedule of Materials, Labour & Drawings for Two Classroom with Office Block – Hipped (Earthquake zone)

PROJECT AREA

TANZANIA MAINLAND

Ministry of Education, Science and Technology,

Government City - Mtumba,
AFYA -Street,
P. O. Box 10,
40479 DODOMA.

President's Office,
Regional Administration,
& Local Government
Government City - Mtumba
TAMISEMI Street,
P. O. Box 1923,
41185 DODOMA.

NOVEMBER, 2022 (REVISED I)

PO-RALG

Schedule of Material

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	MATERIALS				
A	**SUB-STRUCTURE -**PROVISIONAL				
1	**Strip Foundation - Grade 15 Plain**				
	Aggregate (3/4")	12	M^3		
	Sand	6	M^3		
	Cement-50kgs (42.5)	60	Bags		
2	**Foundation Walls**				
	6" Cement & Sand block - Minimum Strength 3. 5 MPa	1,288	No		
	Sand	5	M^3		
	Cement -50kgs (42.5)	22	Bags		
3	**Moram, Hardcore & Site sterilization**				
	Moram ($4.5m^3$ lorry)	9	Trips		
	Hardcore 200mm thick - ($4.5m^3$ lorry)	9	Trips		
	Sand	9	M^3		
	Aldrin solution or other and equal approved (1000mls)	2	Bottle		
4	**Oversite Concrete 100mm thick - 15 grade ,Ground Beam and base column - 25 grade**				
	DPM	186	M^2		
	Cement -50kgs (42.5)	135	Bags		
	Aggregates (1/2")	11	M^3		
	Sand	21	M^3		
	Reinforcement - 12mm diameter high tensile 460N/mm2	49	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm2	44	PC'S		
	Binding Wire - 25kg	12	Kg		
	Timber 1" X 10 " (5.2m long)	15	PC'S		
	Timber 2" X 2"	10	PC'S		
	Nails-4"	10	Kgs		
	Nails-3"	13	Kgs		
	Supporting props	12	PC'S		
	SUB-TOTAL SUBSTRUCTURE				
B.	**SUPERSTRUCTURE**				
1	**Walls Ring beam & Columns**				
	6" Cement & Sand block - Minimum Strength 3. 5 MPa	2,600	No		
	DPC 25m	1	Roll		
	Sand	15	M^3		
	Cement-50kgs (42.5)	93	Bags		
	Aggregates (1/2")	5	M^3		
	Reinforcement - 12mm diameter high tensile 460N/mm2	36	PC'S		
	Reinforcement - 8mm diameter high tensile 460N/mm2	38	PC'S		
	Binding Wire - 25kg	14	Kg		
	Timber 1" X 10" to Sides (5.2m long)	32	PC'S		
	Timber 1" X 5" (Plates)	5	PC'S		
	Timber 2" X 2"	22	PC'S		
	Supporting Props	25	PC'S		
	SUB-TOTAL SUPER STRUCTURE				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
C.	**ROOF STRUCTURE & COVERING**				
1	**Roof Structure -** Provisional				
	Timber 2 " X 3" Purlins	78	PC'S		
	Timber 2" X 4" King Post, wall plate and struts	85	PC'S		
	Timber 2" X 6" Rafter and Tie beam	83	PC'S		
	Fascia board 1" X 10" -ref. Semi Hardwood (5.2m long)	15	PC'S		
	Nails -5"	75	Kgs		
	Nails -4"	50	Kgs		
	Nails -3"	25	Kgs		
	16mm diameter bolt	40	Pc's		
	NOTE: The above softwood timber structure should be pressure impregnated treated				
2	**Roof Covering**				
	28G IT5 resin coated sheet	288	m^2		
	Hips/Ridge and valley - 28 G IT resin coated	14	PC'S		
	Roofing Nails	29	Packet		
3	**Gutter's**				
	Upvc 100mm half round (6m long)-5"	12	PC'S		
	Upvc 75mm diameter down pipe; Class B	3	PC'S		
	PVC outlet	4	PC'S		
	PVC bend 90'	4	PC'S		
	PVC bend 45'	4	PC'S		
	Gutter support bracket	62	PC'S		
	Gutter Clamp 3"	30	PC'S		
	Connector/reducer	8	PC'S		
	Connector outer	4	PC'S		
	Corner Inner	4	PC'S		
	Water storage tank; 5000 litres capacity with dust and insect proof lid; 20mm 3Nr tank connectors; 25mm 1Nr wash - out tank connector; 20mm high pressure ball float operated stop valve; all connections to IPS	2	PC'S		
	SUB-TOTAL ROOF STRUCTURE & COVERING				
D.	**CEILING**				
	Gypsum board -9mm thick	65	PC'S		
	Plain Cornice (8ft)	53	PC'S		
	Screw 1.25" 500pcs/box	3	Box		
	Gypsum powder	12	Bags		
	Fiber tape (90m)	2	Roller		
	Treated softwood Timber 2" X 2"	124	PC'S		
	Nails 4"	20	Kgs		
	Nails 3"	25	Kgs		
	SUB-TOTAL FOR CEILING				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
E.	**DOOR**				
1	**40mm thick hardwood Matchboarded door shutter**				
	820 x 2100mm high	3	PC'S		
2	**45 X 145mm Frames (hardwood) & Varnish**				
	900 x 2500 mm high door frame	3	PC'S		
	5mm thick clear glass to Vents	1	m2		
	16mm diametere burglar bars -1100mm long	9	Pcs		
	Brush 3"	3	Pcs		
	Sand paper (msasa) No.80	3	LM		
	Clear Varnish - 4Litres	1	TIN		
	Thinner for Varnish	3	Litres		
3	**Ironmongeries - ref. Union**				
	Mortice lock Three lever	3	No		
	Brass butt hinges - 100mm	4.5	Pairs		
	SUB-TOTAL FOR DOORS				
F.	**WINDOWS**				
1	**Aluminium sliding Window comprising 100mm x 1.2mm thick standard aluminium profile ex-china/Turkey infill with 5mm thick glass complete with mosquito proofing panel, including all accessories, ironmongeries, cutting and pinning lugs**				
	1500 X 1500mm high	11	PC'S		
	1100 X 1500mm high	1	PC'S		
2	**25 x 4mm thick flat bar grill painted red-oxide with 25 x 25mm square pipes frame and all necessary accessories**				
	1500 X 1500mm high	1	PC'S		
	1100 X 1500mm high	1	PC'S		
	SUB-TOTAL FOR WINDOWS				
G.	**FINISHING**				
1	**Bedding/Backing; cement sand and Chipping (1:2:2); to steel finishing**				
	40mm Thick granolithic floor screed steel toweling to smooth finishing				
	Sand	10	M^3		
	Cement-50kgs (42.5)	65	Bags		
	Chipping	15	M^3		
	2mm thick plastic Strips	233	M		
2	**Wall Finishing-15mm thick (1:4)**				
	Sand	13	M3		
	Cement-50kgs (42.5)	82	Bags		
	Sand paper (msasa) No.120	11	M		
	White cement - 40kg	5	Bags		
	Gypsum powder	11	Bags		
	SUB-TOTAL FOR FINISHING				
H.	**BALUSTERS & HANDRAIL**				
	Supply and fix steel balustrade overall height 900mm high, comprising				
	50mm diameter hollow section mild steel pipe top and bottom rail,				
	38mm diameter intermediate rails, 50mm diameter vertical rails				
	900mm high spaced at interval of 450mm centres to centres				
	including all bolts, plates and associated accessories and welded				
	red oxed and painted as per Architectural drawing and approved	18	m		
	SUB-TOTAL BALUSTERS & HANDRAIL				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
J.	**PAINTING & DECORATION**				
	Emulsion Paint - 20 LTRS	9	buckets		
	Weather guard Paint - 20 LTRS	3	buckets		
	Washable paint -20 LTRS	4	buckets		
	Primer paint -20 LTRS	2	buckets		
	Solvent - 5LTRS	2	TIN		
	Brush 3"	4	Pcs		
	Roller	4	Pcs		
	Blackboard paint	4	Litres		
	Gloss paint-4LTR	3	TIN		
	Bitumen paint - 4Litres	4	TIN		
	SUB-TOTAL FOR PAINTING&DECORATION				
K.	**ELECTRICAL INSTALLATION**				
	Single fluorescent fitting Complete,LED philips or other equal approved	22	No		
	Double switch socket ABB or other equal approved	8	No		
	Main switch 6way,1PH with integral RCD 100A/300mmA ABB other equal approved	1	No		
	NB: Cables for 1.5sqmm 2.5sqmm and 4sqmm should be EURO or other equal approved				
	Single core wire 1.5sqmm - Red	2	Roll		
	Single core wire 1.5sqmm - Black	2	Roll		
	Single core wire 1.5sqmm -green	2	Roll		
	Single core wire 2.5sqmm - red	1	Roll		
	Single core wire 2.5sqmm	1	Roll		
	Single core wire 2.5sqmm green	1	Roll		
	Ceiling fan National or other equal approved	14	PC's		
	3gang 1 way switch ABB or other equal approved	4	No		
	2gang 1 way switch ABB or other equal approved	3	No		
	Earth rod approved copper 16mm not less than 1200mm	1	No		
	Earth wire 4sqmm	20	M		
	Metal box twin	8	No		
	Metal box single	7	No		
	Junction box	20	No		
	Conduit pipe	120	PC's		
	Elbow	20	PC's		
	Conduit coupling	20	PC's		
	Round cover	10	PC's		
	Round box	10	PC's		
	Fine screw	2	PACKET		
	plastic clips 22mm	2	BOX		
	Bulk head light fitting	4	PCS		
	ELECTRICAL INSTALLATION				

	SUMMARY	**AMOUNT TZS**
	2NO. CLASSROOM BLOCK WITH OFFICE - EARTHQUAKE ZONE	
A.	SUB-STRUCTURE -PROVISIONAL	
B.	SUPERSTRUCTURE	
C.	ROOF STRUCTURE & COVERING	
D.	CEILING	
E.	DOOR	
F.	WINDOWS	
G.	FINISHING	
H.	BALUSTERS & HANDRAILS	
J.	PAINTING & DECORATION	
K.	ELECTRICAL INSTALLATION	
	TOTAL BUILDING MATERIALS CARRIED TO GENERAL SUMMARY	

	ADD:	
	LABOUR COST CARRIED TO GENERAL SUMMARY : (Improve and Fill the respective Labour form)	
	Note:	
	i. Refer attached specification and number of Furniture(s) for two classroom with office Block	
	ii. Refer General Summary for: Preliminary, Transportation and Supervision Costs	
	iii. Preliminary cover the following item:	
	- Setting out working tools, Equipments, Temporary toilets, water for the works, Scaffolding,	
	- Power for the works, Security, store, Materials test, levelling, holdings and removal of rubbish.	
	iv. Supervision cost depend on guideline of the specific project	
	v. Installation of Ceiling Fan is an option, depend on whether condition of specific area .	

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION SCIENCE AND TECHNOLOGY

IN COLLABORATIONS WITH

PRESIDENT'S OFFICE, REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

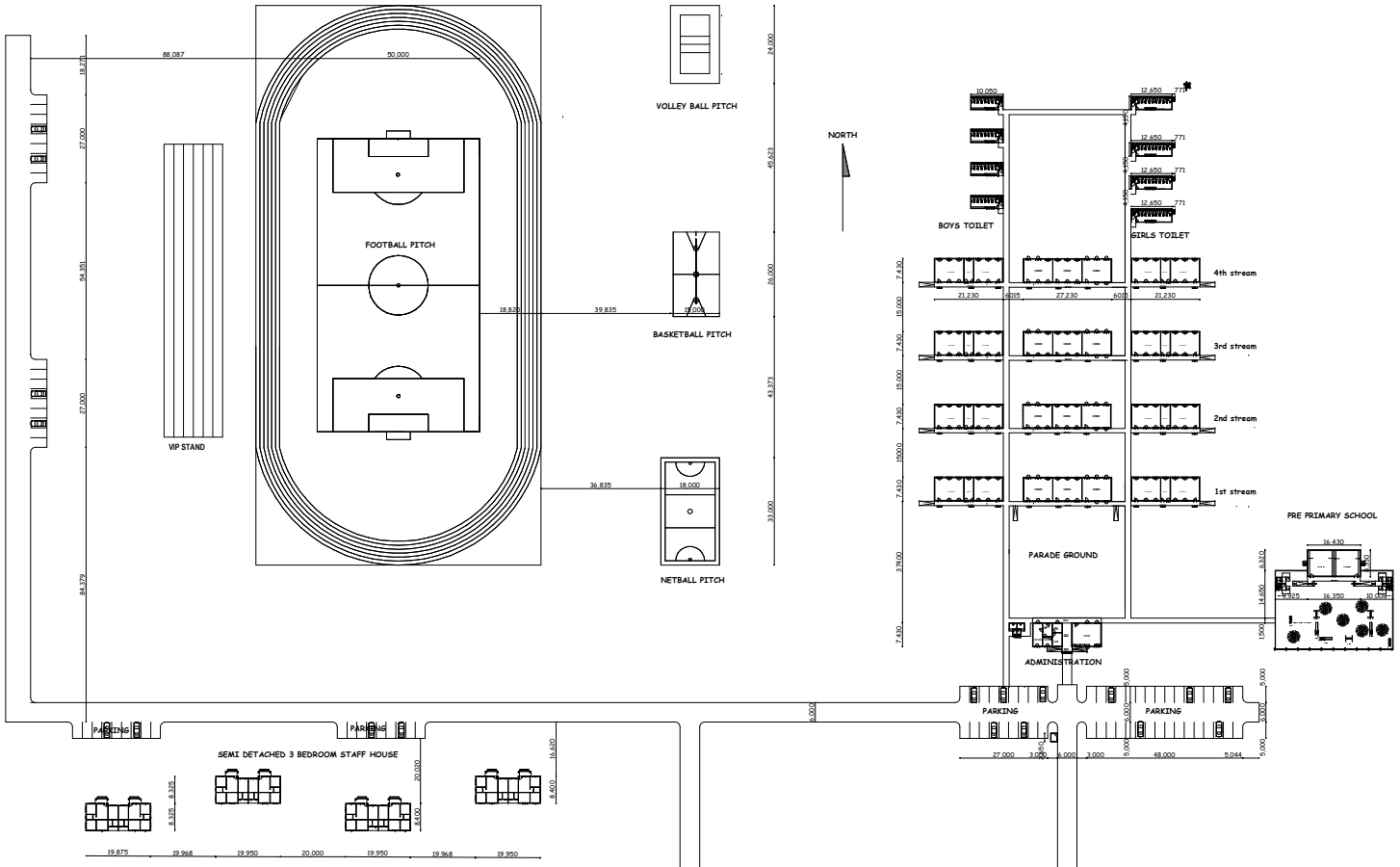
PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS

Ministry of Education, Science and Technology
Government City-Mtumba,
Afya Street,
P.O. Box 10,
40479 DODOMA

President's Office, Regional Administration
and Local Government.
Government City-Mtumba,
TAMISEMI Street,
P.O. Box 1923,
41185 DODOMA

JANUARY, 2023

ARCHITECTURAL DRAWINGS



MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
IN COLABORATION WITH
PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROVISIO OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS

PROPOSED STANDARD DESIGN FOR PRE PRIMARY SCHOOL CLASSROOMS

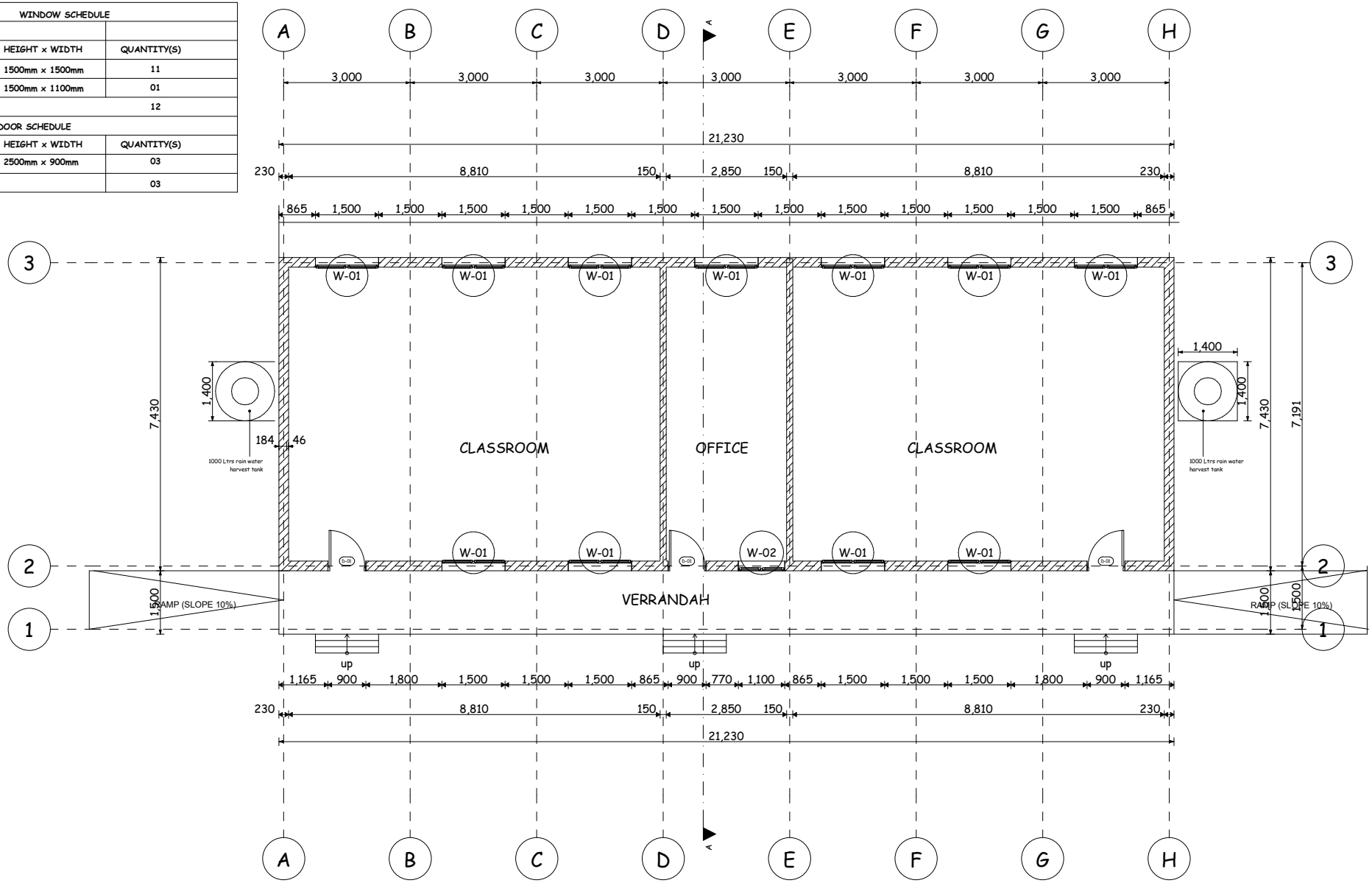
DRAWING TITLE:
SAMPLE SITE PLAN

DRAWING NO: ARC/PPS/01

Date	December, 2022
Drawn by	IAS
Checked by	AAL
Scale	To fit

CLASSROOM BLOCK TYPE A - 2 ROOMS WITH OFFICE HIPPED

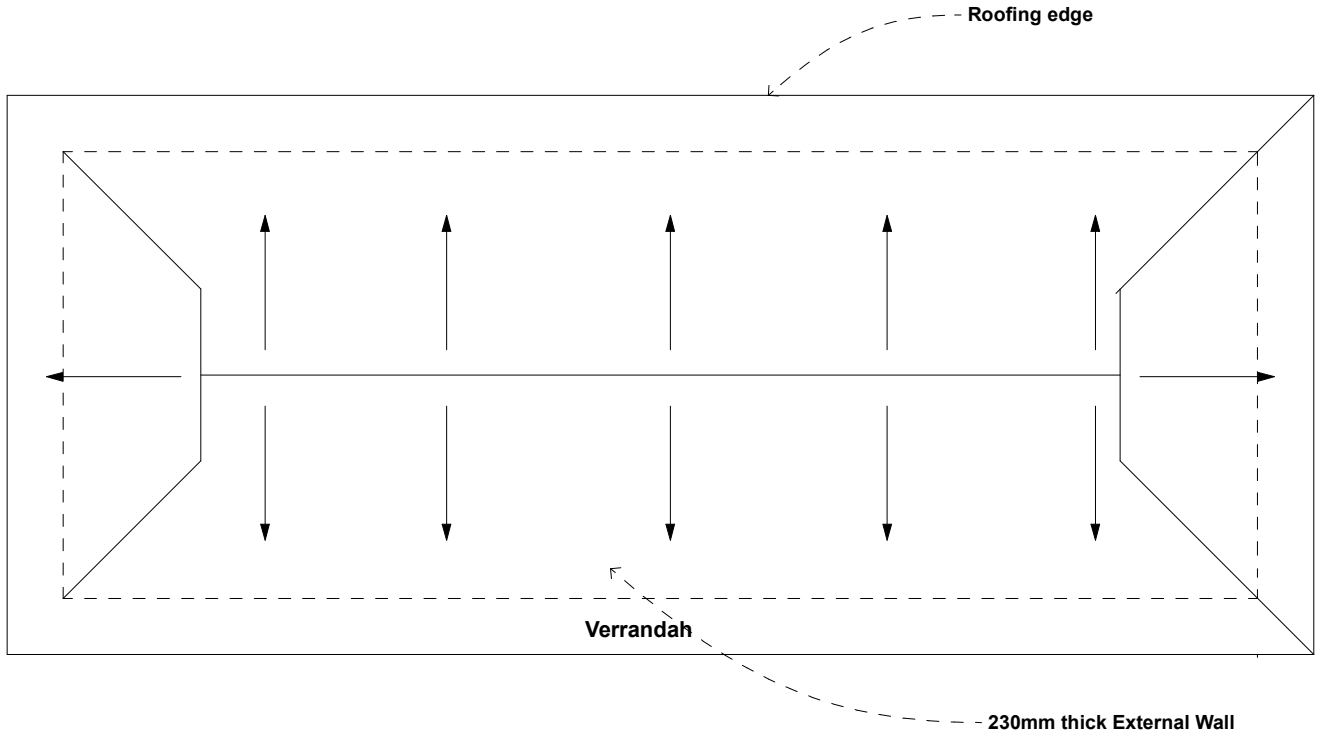
WINDOW SCHEDULE		
WINDOW TYPE	HEIGHT x WIDTH	QUANTITY(S)
W1	1500mm x 1500mm	11
W2	1500mm x 1100mm	01
TOTAL		12
DOOR SCHEDULE		
DOORTYPE	HEIGHT x WIDTH	QUANTITY(S)
D1	2500mm x 900mm	03
TOTAL		03



TOTAL FLOOR AREA = 189.6 SQM

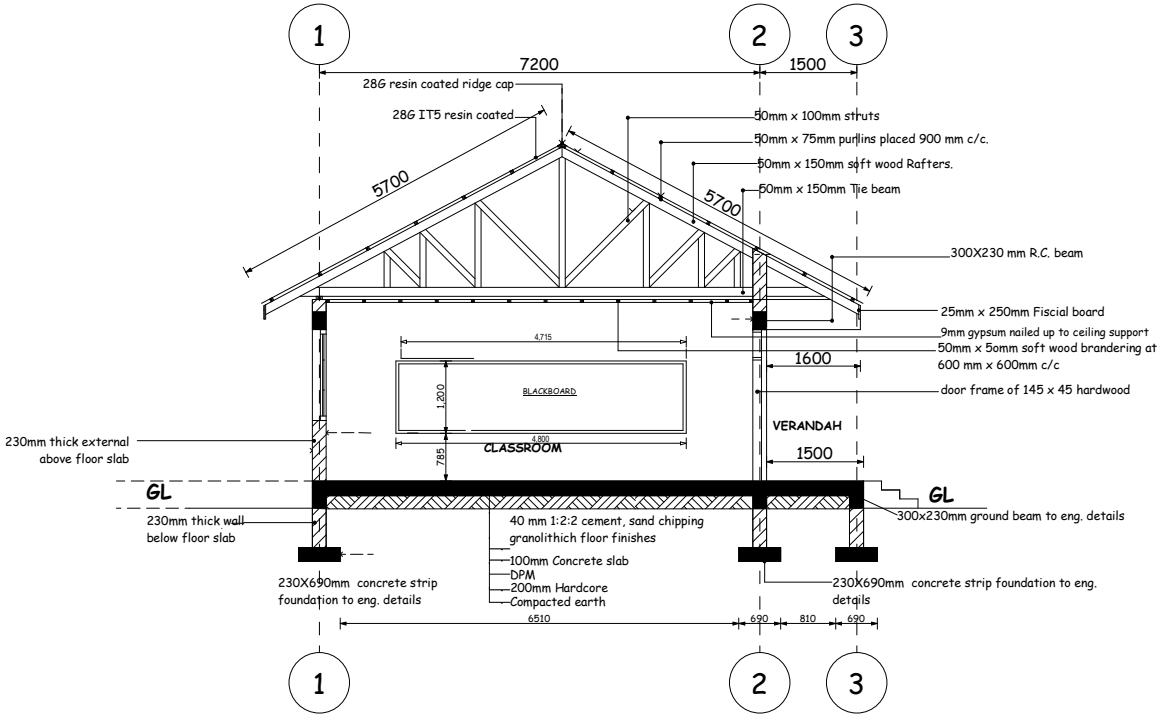
REVISED 1

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY *IN COLLABORATION WITH* **PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT**	**PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS** PROPOSED 2- CLASSROOMS BLOCK WITH OFFICE	DRAWING TITLE: **FLOOR PLAN AREA PRONE TO EARTH QUAKE** DRAWING NO: ARC/2CRHO/01	Date: December 2022 Drawn by: IAS Checked by: JR Scale: To fit

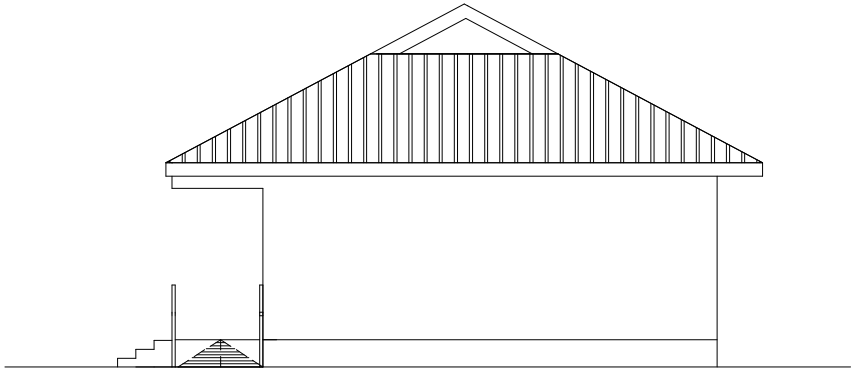


REVISED 1

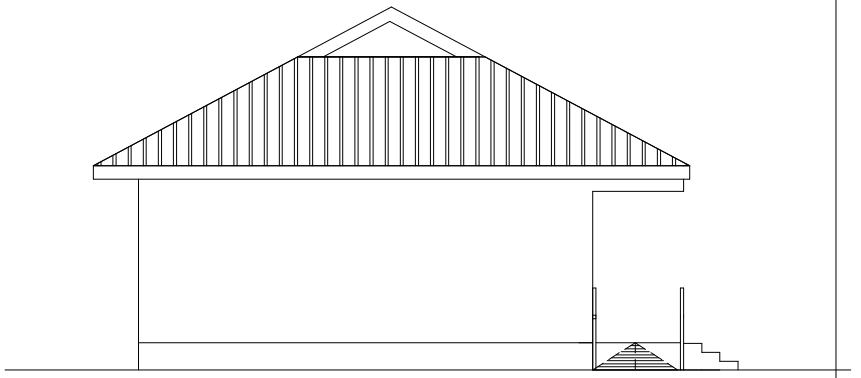
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY *IN COLLABORATION WITH* **PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT**	**PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS** PROPOSED 2- CLASSROOMS BLOCK WITH OFFICE	DRAWING TITLE: **ROOF PLAN** **AREA PRONE TO EARTH QUAKE** DRAWING NO: ARC/2CRHO/02	Date	December 2022
			Drawn by	IAS
			Checked by	JR
			Scale	To fit



TYPICAL SECTION



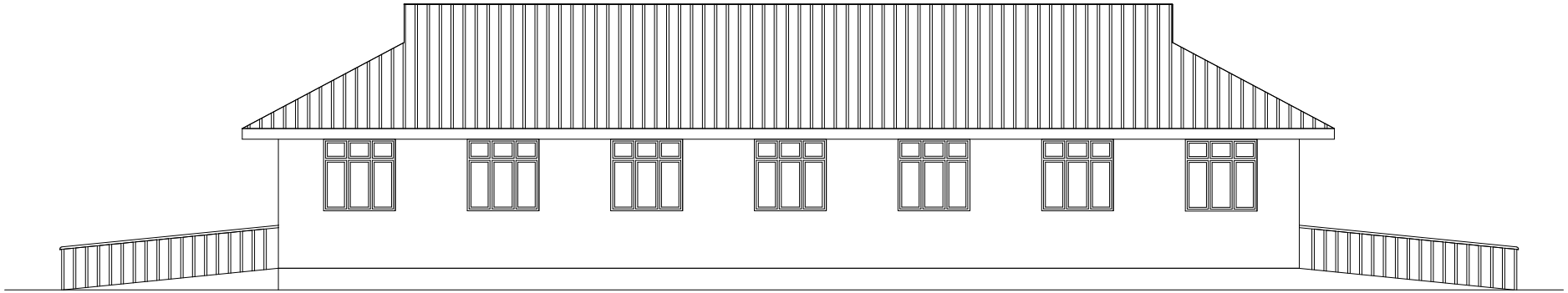
SIDE ELEVATION



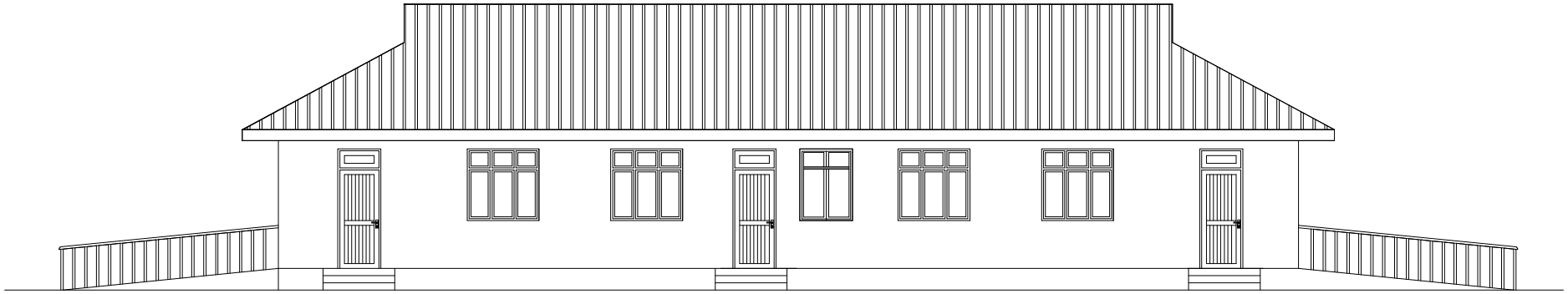
SIDE ELEVATION

REVISED 1

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY *IN COLLABORATION WITH* **PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT**	**PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS** PROPOSED 3- CLASSROOMS BLOCK HIPPED TYPE	DRAWING TITLE: **TYPICAL SECTION - SIDE ELEVATIONS AREA PRONE TO EARTH QUAKE** DRAWING NO: ARC/3CRBH/03	Date: December 2022 Drawn by: IAS Checked by: JR Scale: To fit



REAR ELEVATION



FRONT ELEVATION

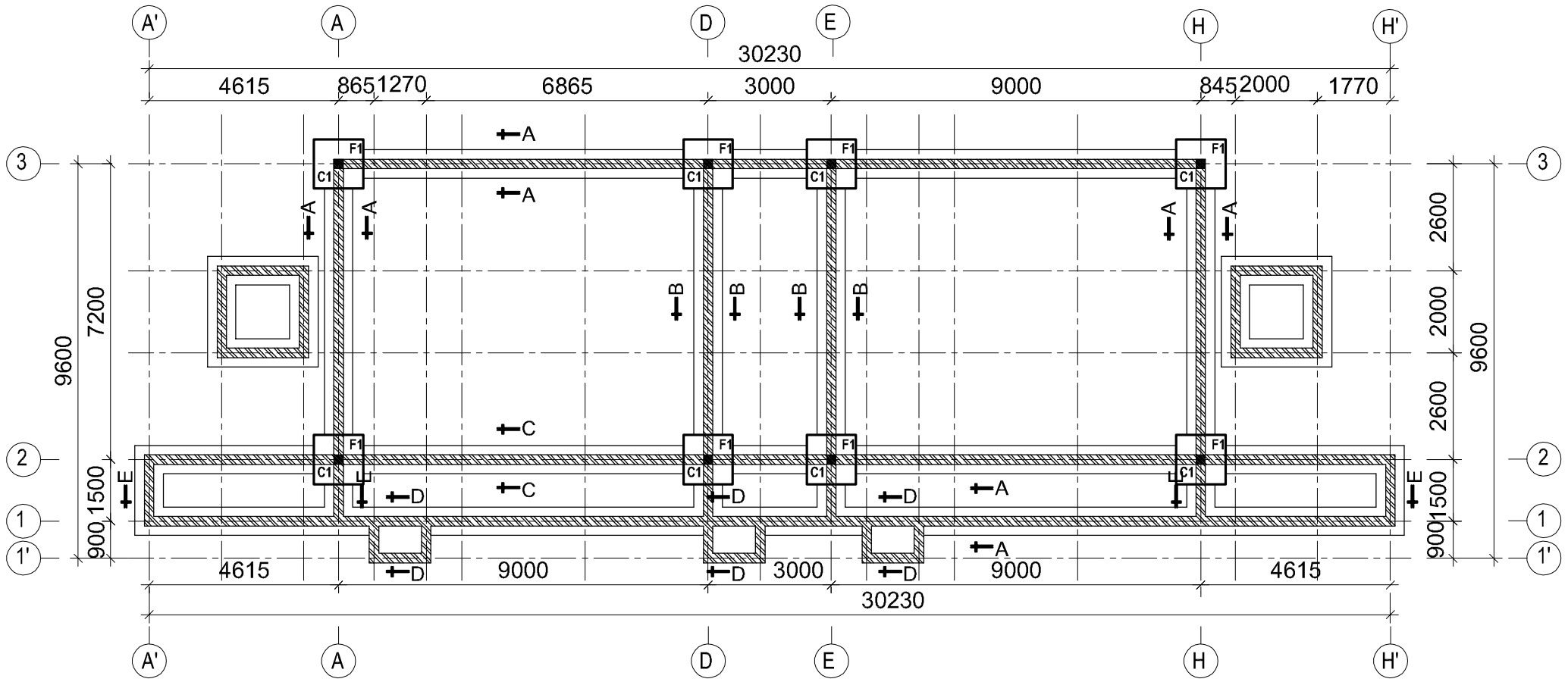
REVISED 1

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY *IN COLLABORATION WITH* **PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT**	**PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS** PROPOSED 2- CLASSROOMS BLOCK WITH OFFICE	DRAWING TITLE: **FRONT & REAR ELEVATIONS AREA PRONE TO EARTH QUAKE** DRAWING NO: ARC/2CRHO/04	Date	December 2022
			Drawn by	IAS
			Checked by	JR
			Scale	To fit

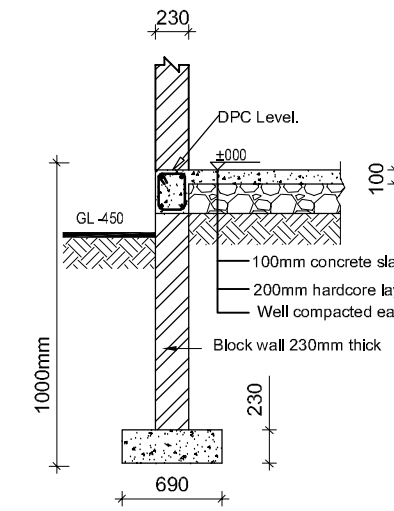
STRUCTURAL DRAWINGS

FOR

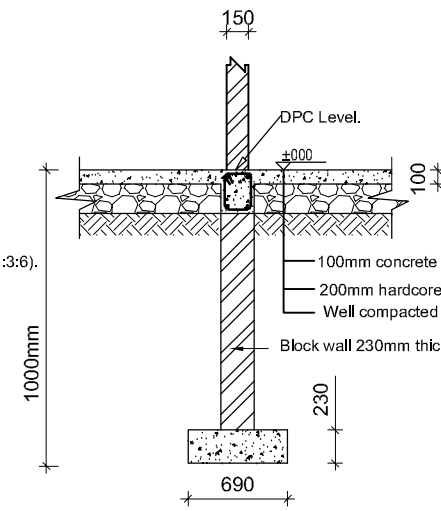
TWO CLASSROOM WITH OFFICE BLOCK TYPE A - 2 ROOMS - HIPPED
AREA PRONE TO EARTHQUAKE



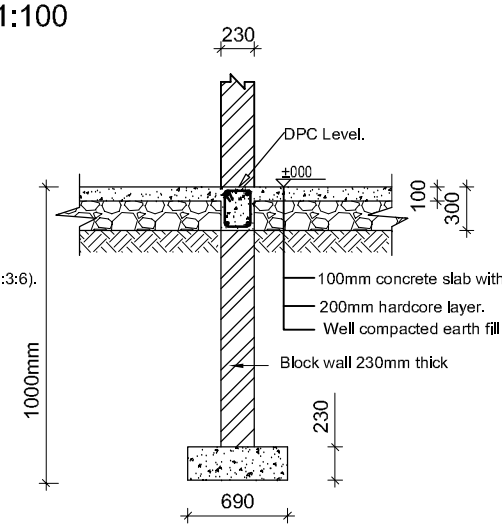
FOUNDATION LAYOUT PLAN
Scale 1:100



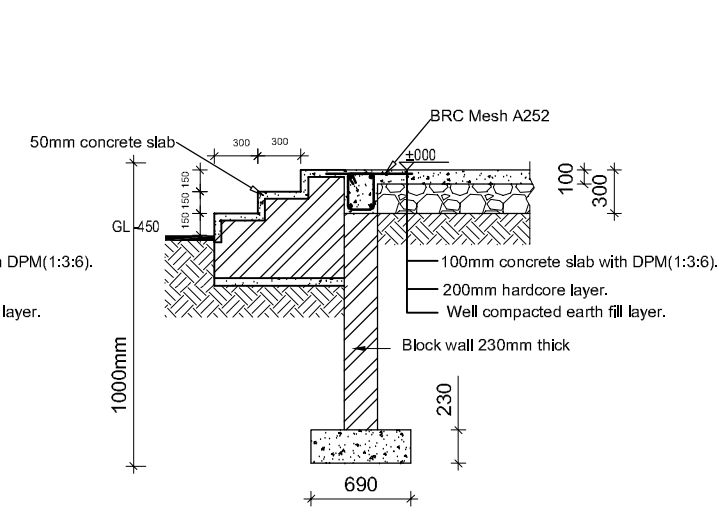
EXTERIOR WALL FOUNDATION SECTION A-A.
Scale 1:50



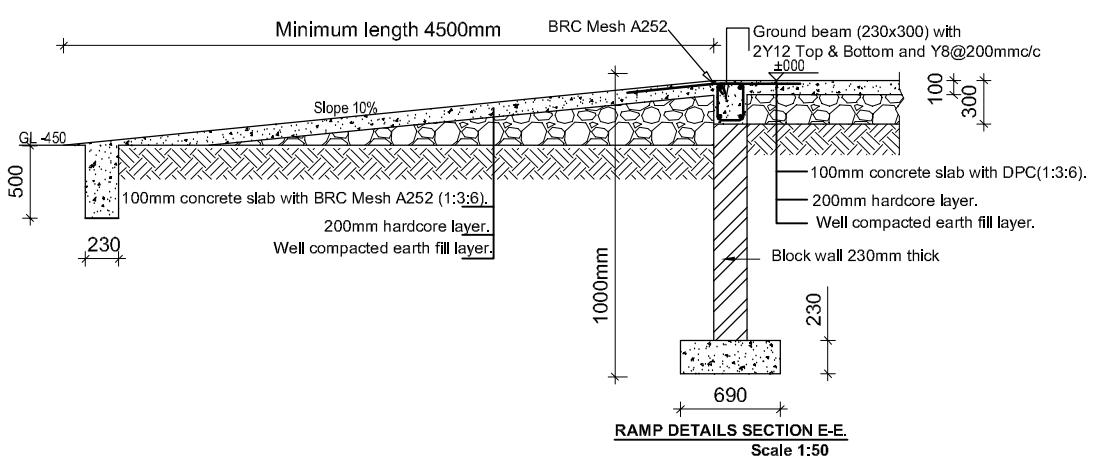
INTERIOR WALL FOUNDATION SECTION B-B.
Scale 1:50



INTERIOR WALL FOUNDATION SECTION C-C.
Scale 1:50



EXTERIOR WALL FOUNDATION SECTION D-D.
Scale 1:50



RAMP DETAILS SECTION E-E.
Scale 1:50

NOTE:

1. All dimensions are in millimetres unless otherswise stated. In case of discrepancy, consult the Structural Engineer.
2. All structural engineering drawings should be read in conjunction with relevant architectural drawings.
3. All Reinforced concrete shall be Grade 20 - Nominal volumetric proportion 1: 2: 4 cube strength not less than 20N/mm² at 28 days.
4. Steel for reinforced concrete shall comply with BS4449 whereby fy = 460N/mm².
5. Bars lap length should be at least 50 times the diameter of the bars lapped.
6. Structural Engineer shall be furnished with copies of the manufacturers certificates of tests for the steel reinforcement to be used.
7. Cement for works shall comply with BS12 and shall be "Ordinary Portland Cement"
8. Clear cover for reinforcement shall be as follows:
   - Slabs 25mm
   - Beams 25mm
   - Columns 25mm
   - Footings.....50mm
7. All concrete work to be done in one operation.
8. All steel fixing, shuttering and concreting works to be done under close supervision of Structural Engineer.
9. Sand borrow pits shall be clean and free from organic materials and shall be approved by Structural Engineers before use.
10. Minimum Compressive Strength for Blocks shall be 3.5N/mm².

PROJECT:

PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

IN COLLABORATION WITH

PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT.

Designed by: Eng. J.M.S
Checked by: Eng. N.T.B
Approved by:

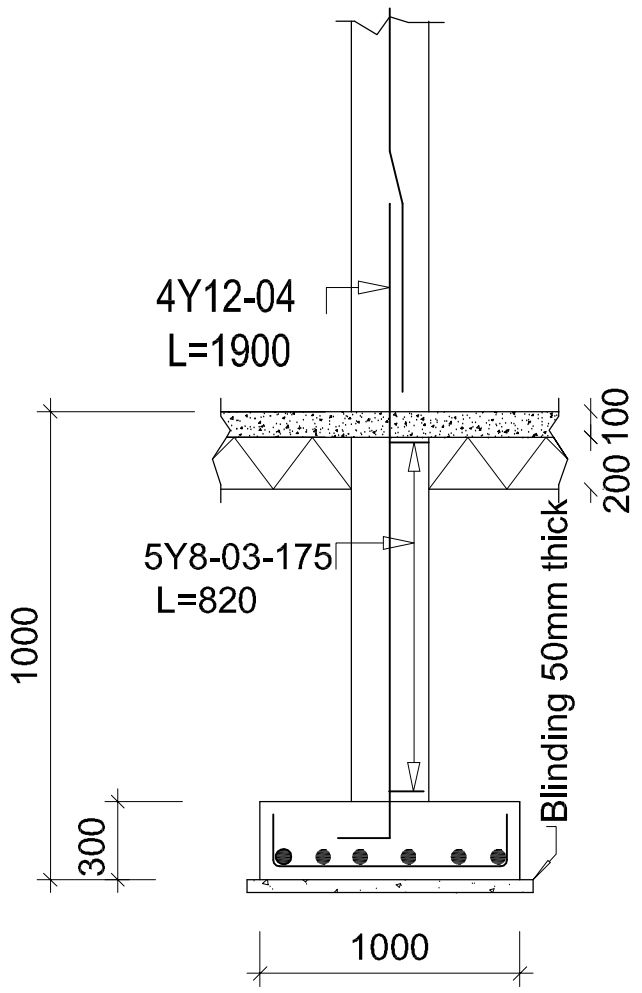
DRAWING TITLE:

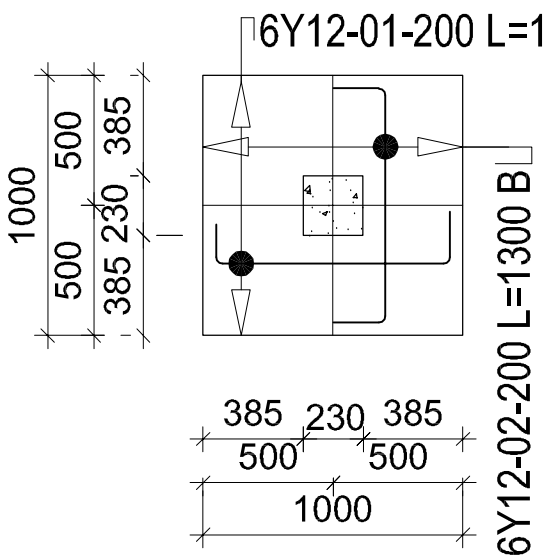
PROPOSED TWO - CLASSROOMS WITH OFFICE BLOCK

FOUNDATION LAYOUT PLAN (**REVISED - 1**)

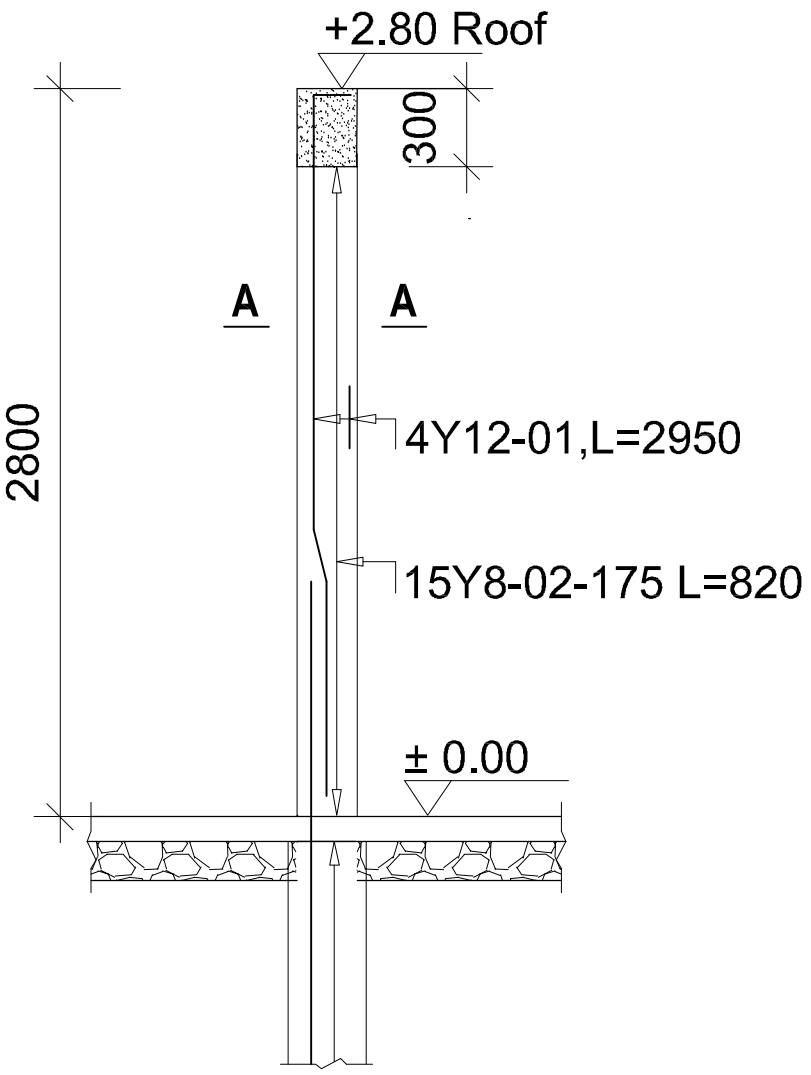
DRAWING USE:
For Building permit: ☐
For Construction: ☑

Drawn by:	J.M.S
Date: 2022	Scale:
Drawing No:STR.CR	Sheet: 01/08





FOOTING F1 (1000x1000x300) 8Nos.
Scale 1:50



COLUMN C1(230 x 230), 8Nos
Scale 1:100

Section A - A
Scale 1:50

NOTE:

1. All dimensions are in millimetres unless otherswise stated. In case of discrepancy, consult the Structural Engineer.
2. All structural engineering drawings should be read in conjunction with relevant architectural drawings.
3. All Reinforced concrete shall be Grade 20 - Nominal volumetric proportion 1: 2: 4 cube strength not less than 20N/mm² at 28 days.
4. Steel for reinforced concrete shall comply with BS4449 whereby fy = 460N/mm².
5. Bars lap length should be at least 50 times the diameter of the bars lapped.
6. Structural Engineer shall be furnished with copies of the manufacturers certificates of tests for the steel reinforcement to be used.
7. Cement for works shall comply with BS12 and shall be "Ordinary Portland Cement"
8. Clear cover for reinforcement shall be as follows:
   - Slabs 25mm
   - Beams 25mm
   - Columns 25mm
   - Footings.....50mm
7. All concrete work to be done in one operation.
8. All steel fixing, shuttering and concreting works to be done under close supervision of Structural Engineer.
9. Sand borrow pits shall be clean and free from organic materials and shall be approved by Structural Engineers before use.
10. Minimum Compressive Strength for Blocks shall be 3.5N/mm².

PROJECT:

PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

IN COLLABORATION WITH

PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT.

Designed by: Eng. J.M.S
Checked by: Eng. N.T.B
Approved by:

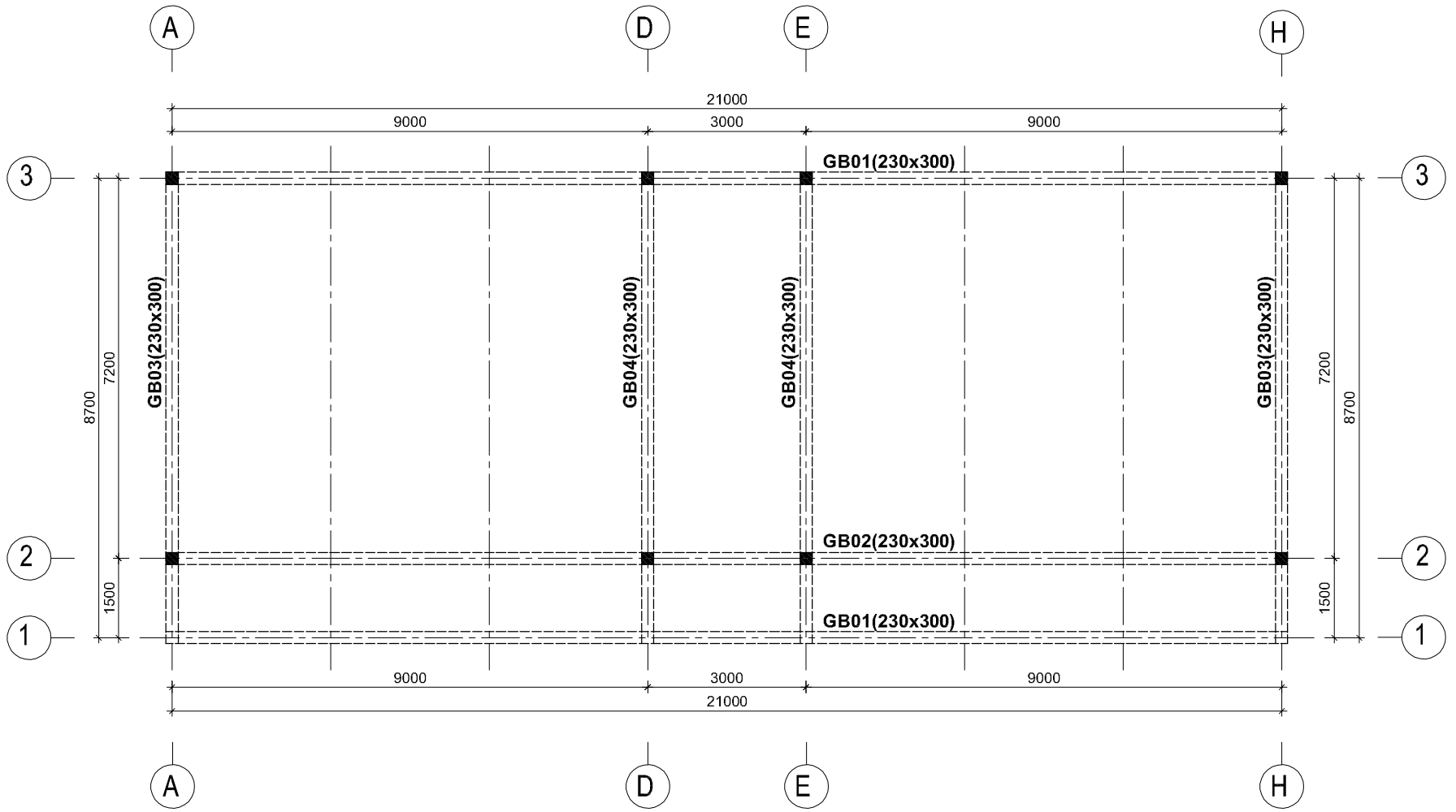
DRAWING TITLE:

PROPOSED TWO - CLASSROOMS WITH OFFICE BLOCK

COLUMN FOOTINGS AND COLUMNS DETAILS
(**REVISED - 1**)

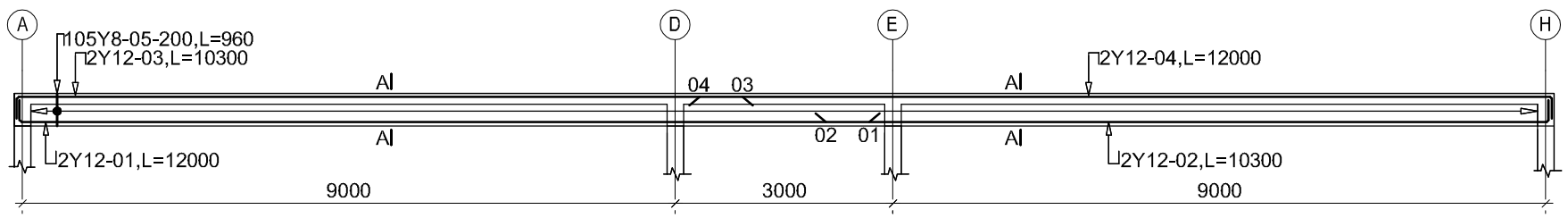
DRAWING USE:
For Building permit: ☐
For Construction: ☑

Drawn by:	J.M.S
Date: 2022	Scale:
Drawing No:STR.CR	Sheet: 02/08



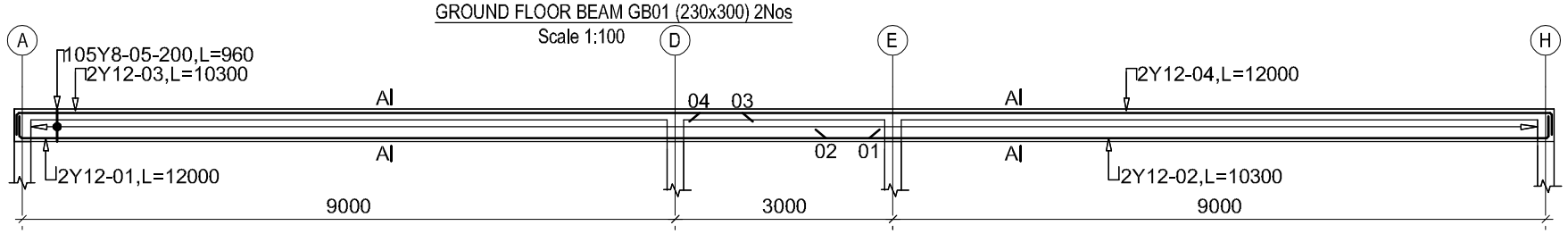
GROUND FLOOR BEAMS LAYOUT PLAN

Scale 1:100



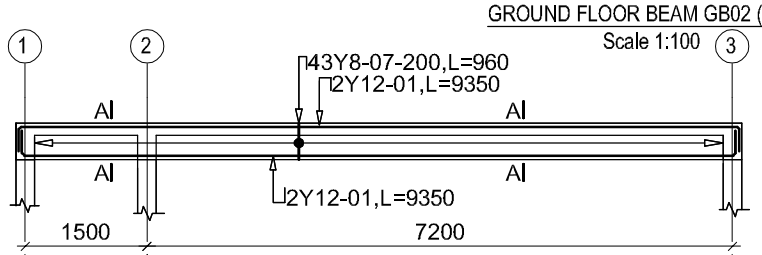
GROUND FLOOR BEAM GB01 (230x300) 2Nos

Scale 1:100



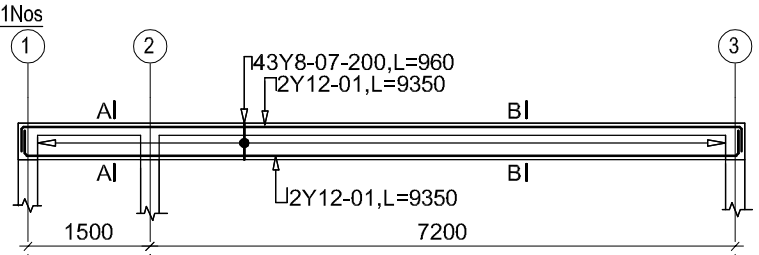
GROUND FLOOR BEAM GB02 (230x300) 1Nos

Scale 1:100



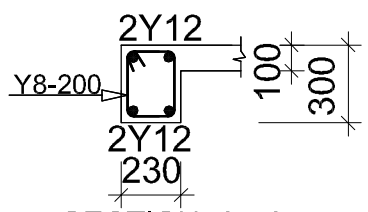
GROUND FLOOR BEAM GB03 (230x300) 2Nos

Scale 1:100



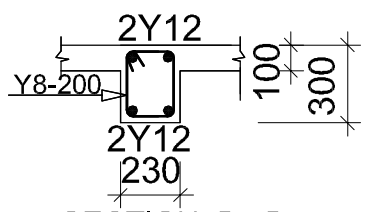
GROUND FLOOR BEAM GB04 (230x300) 2Nos

Scale 1:100



SECTION A - A

Scale 1:50



SECTION B - B

Scale 1:50

NOTE:

1. All dimensions are in millimetres unless otherswise stated. In case of discrepancy, consult the Structural Engineer.
2. All structural engineering drawings should be read in conjunction with relevant architectural drawings.
3. All Reinforced concrete shall be Grade 20 - Nominal volumetric proportion 1: 2: 4 cube strength not less than 20N/mm² at 28 days.
4. Steel for reinforced concrete shall comply with BS4449 whereby fy = 460N/mm².
5. Bars lap length should be at least 50 times the diameter of the bars lapped.
6. Structural Engineer shall be furnished with copies of the manufacturers certificates of tests for the steel reinforcement to be used.
7. Cement for works shall comply with BS12 and shall be "Ordinary Portland Cement"
8. Clear cover for reinforcement shall be as follows:
   - Slabs 25mm
   - Beams 25mm
   - Columns 25mm
   - Footings.....50mm
7. All concrete work to be done in one operation.
8. All steel fixing, shuttering and concreting works to be done under close supervision of Structural Engineer.
9. Sand borrow pits shall be clean and free from organic materials and shall be approved by Structural Engineers before use.
10. Minimum Compressive Strength for Blocks shall be 3.5N/mm².

PROJECT:

PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

IN COLLABORATION WITH

PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT.

Designed by: Eng. J.M.S

Checked by: Eng. N.T.B

Approved by:

DRAWING TITLE:

PROPOSED TWO - CLASSROOMS WITH OFFICE BLOCK

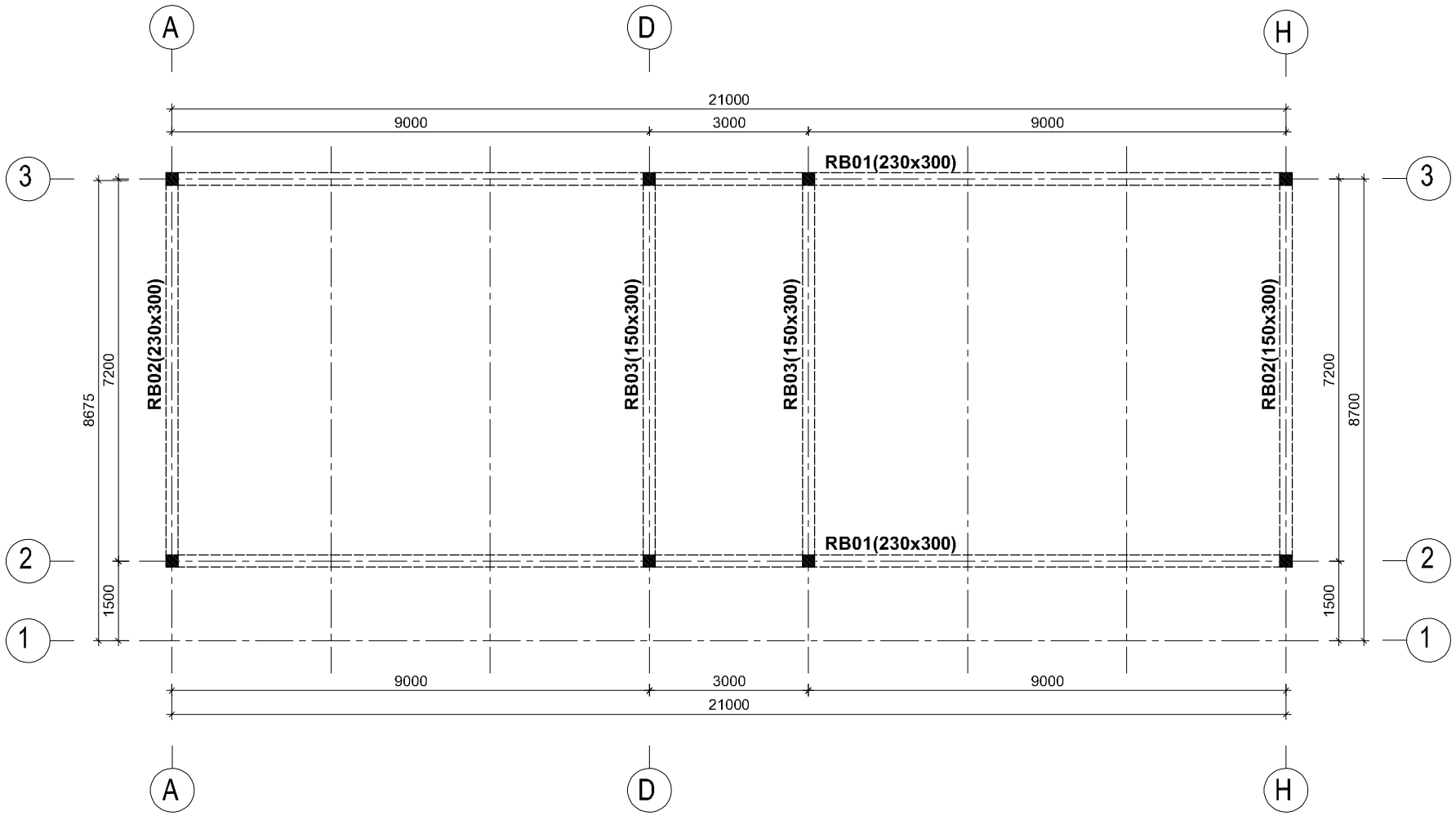
GROUND FLOOR BEAMS LAYOUT PLAN AND SECTION DETAILS (**REVISED - 1**)

DRAWING USE:

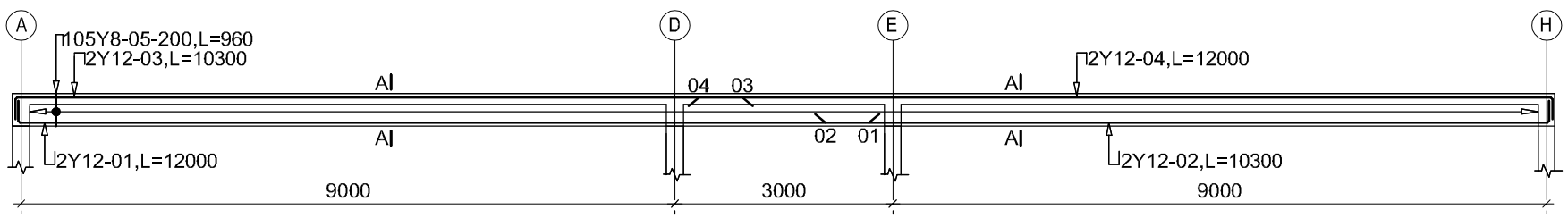
For Building permit: ☐

For Construction: ☑

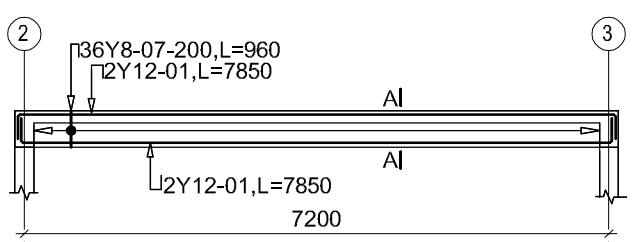
Drawn by:	J.M.S
Date: 2022	Scale:
Drawing No:STR.CR	Sheet: 03/08



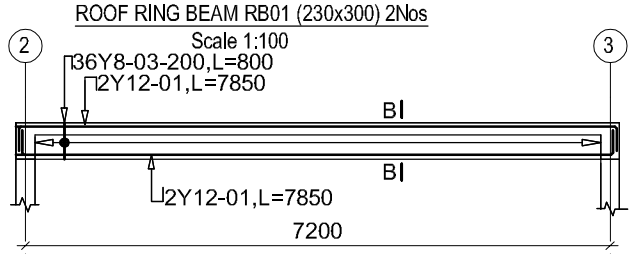
ROOF RING BEAMS LAYOUT PLAN
Scale 1:100



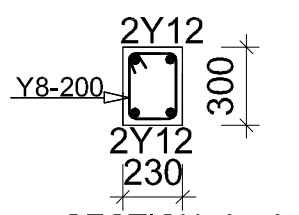
ROOF RING BEAM RB01 (230x300) 2Nos
Scale 1:100



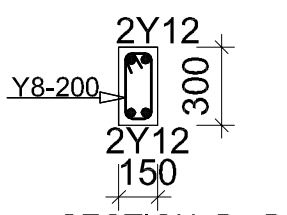
ROOF RING BEAM RB02 (230x300) 2Nos
Scale 1:100



ROOF RING BEAM RB03 (150x300) 2Nos
Scale 1:100



SECTION A - A
Scale 1:50



SECTION B - B
Scale 1:50

NOTE:

1. All dimensions are in millimetres unless otherswise stated. In case of discrepancy, consult the Structural Engineer.
2. All structural engineering drawings should be read in conjunction with relevant architectural drawings.
3. All Reinforced concrete shall be Grade 20 - Nominal volumetric proportion 1: 2: 4 cube strength not less than 20N/mm² at 28 days.
4. Steel for reinforced concrete shall comply with BS4449 whereby fy = 460N/mm².
5. Bars lap length should be at least 50 times the diameter of the bars lapped.
6. Structural Engineer shall be furnished with copies of the manufacturers certificates of tests for the steel reinforcement to be used.
7. Cement for works shall comply with BS12 and shall be "Ordinary Portland Cement"
8. Clear cover for reinforcement shall be as follows:
   - Slabs 25mm
   - Beams 25mm
   - Columns 25mm
   - Footings.....50mm
7. All concrete work to be done in one operation.
8. All steel fixing, shuttering and concreting works to be done under close supervision of Structural Engineer.
9. Sand borrow pits shall be clean and free from organic materials and shall be approved by Structural Engineers before use.
10. Minimum Compressive Strength for Blocks shall be 3.5N/mm².

PROJECT:

PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

IN COLLABORATION WITH

PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT.

Designed by: Eng. J.M.S
Checked by: Eng. N.T.B
Approved by:

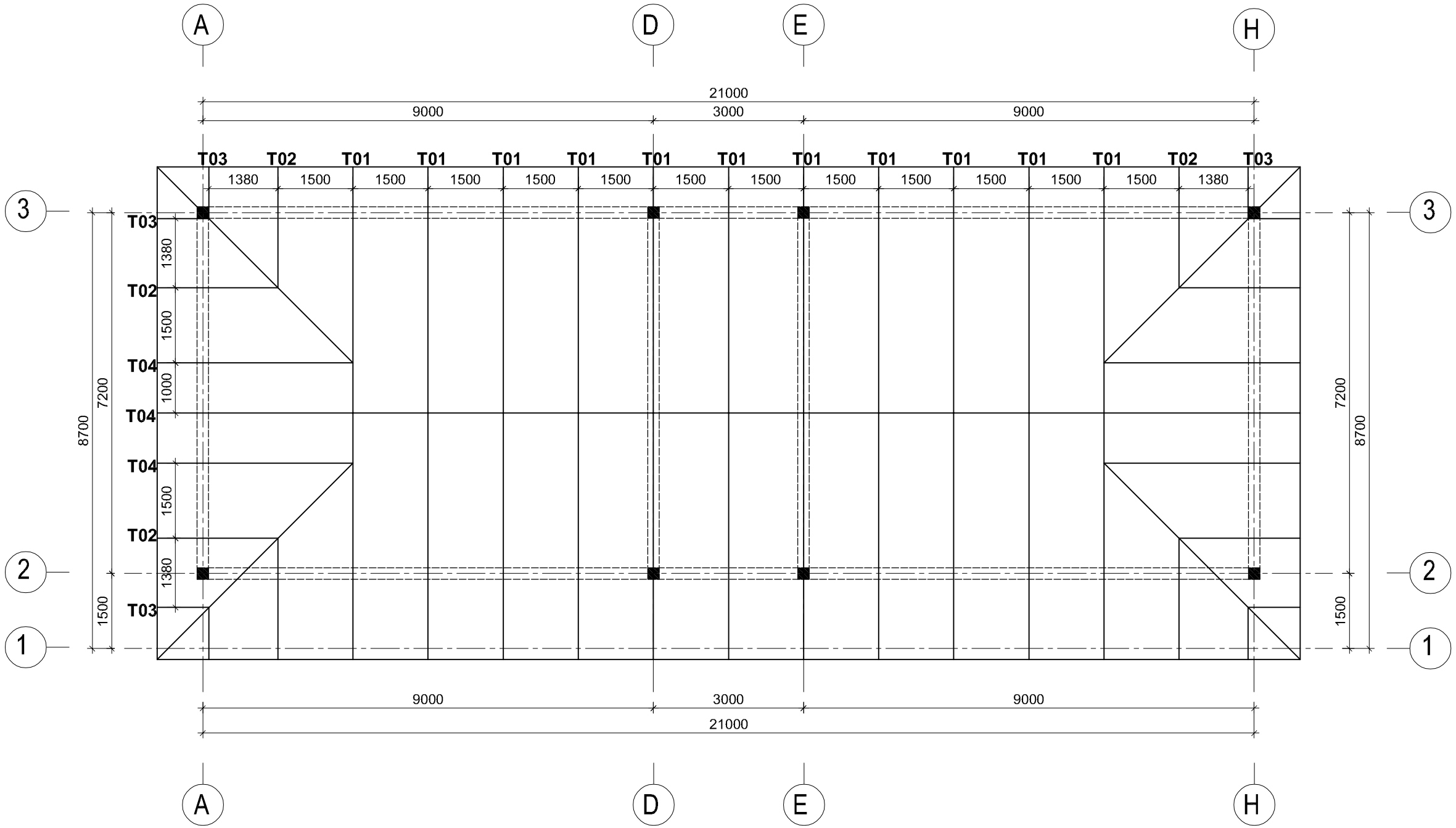
DRAWING TITLE:

PROPOSED TWO - CLASSROOMS WITH OFFICE BLOCK

ROOF RING BEAMS LAYOUT PLAN AND SECTION DETAILS (**REVISED - 1**)

DRAWING USE:
For Building permit: ☐
For Construction: ☑

Drawn by:	J.M.S
Date: 2022	Scale:
Drawing No:STR.CR	Sheet: 04/08



ROOF TRUSS LAYOUT PLAN

Scale 1:100

NOTE:

1. All dimensions are in millimetres unless otherswise stated. In case of discrepancy, consult the Structural Engineer.
2. All structural engineering drawings should be read in conjunction with relevant architectural drawings.
3. All Reinforced concrete shall be Grade 20 - Nominal volumetric proportion 1: 2: 4 cube strength not less than 20N/mm² at 28 days.
4. Steel for reinforced concrete shall comply with BS4449 whereby fy = 460N/mm².
5. Bars lap length should be at least 50 times the diameter of the bars lapped.
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8. Clear cover for reinforcement shall be as follows:
   - Slabs 25mm
   - Beams 25mm
   - Columns 25mm
   - Footings.....50mm
7. All concrete work to be done in one operation.
8. All steel fixing, shuttering and concreting works to be done under close supervision of Structural Engineer.
9. Sand borrow pits shall be clean and free from organic materials and shall be approved by Structural Engineers before use.
10. Minimum Compressive Strength for Blocks shall be 3.5N/mm².

PROJECT:

PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

IN COLLABORATION WITH

PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT.

Designed by: Eng. J.M.S
Checked by: Eng. N.T.B
Approved by:

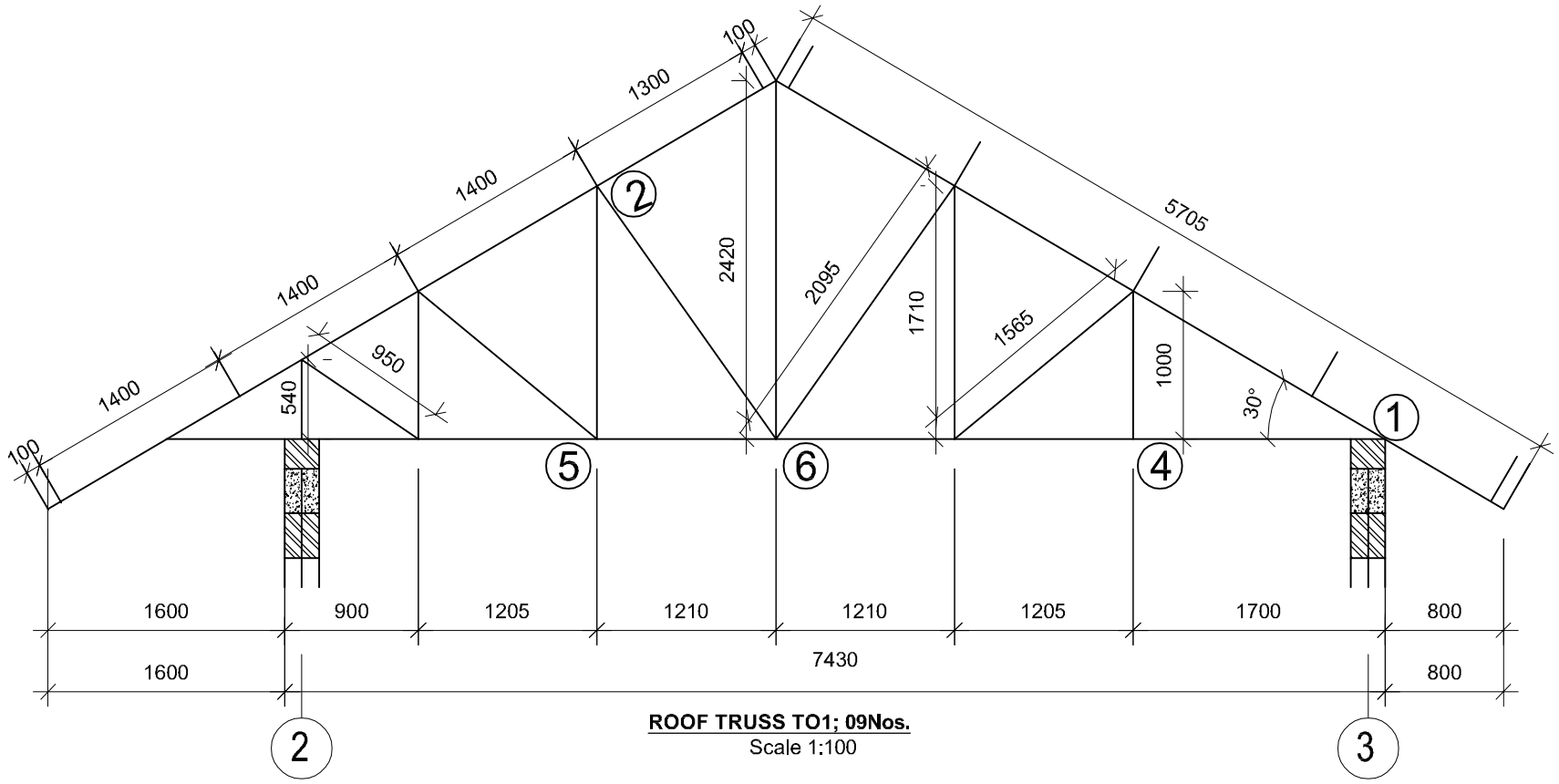
DRAWING TITLE:

PROPOSED TWO - CLASSROOMS WITH OFFICE BLOCK

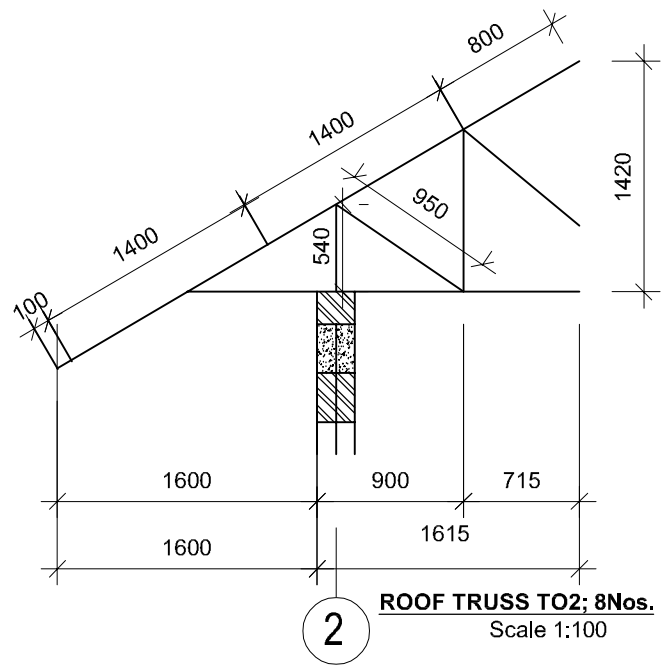
ROOF TRUSS LAYOUT PLAN (**REVISED - 1**)

DRAWING USE:
For Building permit: ☐
For Construction: ☑

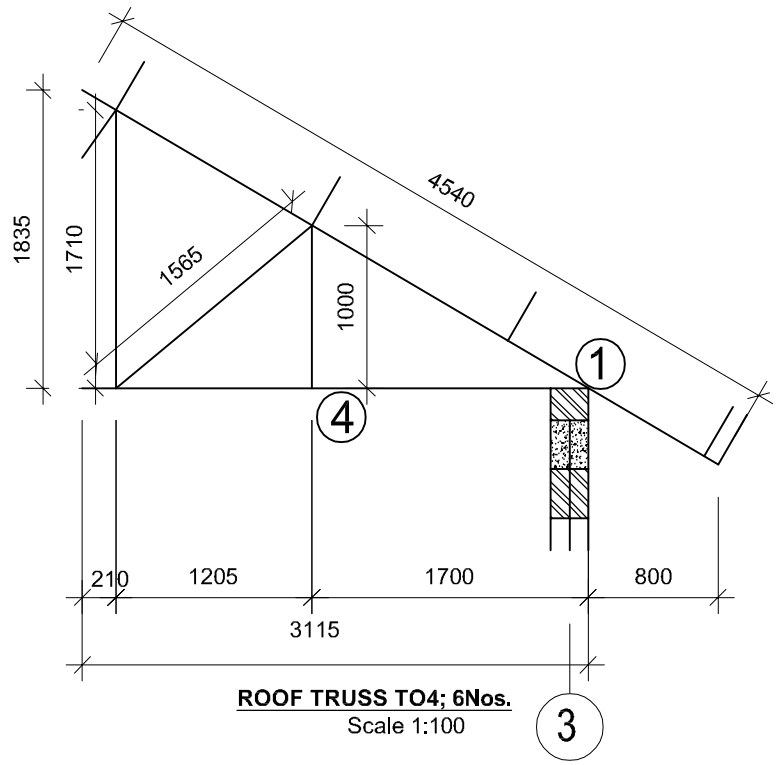
Drawn by:	J.M.S
Date: 2022	Scale:
Drawing No:STR.CR	Sheet: 05/08



ROOF TRUSS TO1; 09Nos.
Scale 1:100



ROOF TRUSS TO2; 8Nos.
Scale 1:100



ROOF TRUSS TO4; 6Nos.
Scale 1:100

NOTE:

1. All dimensions are in millimetres unless otherswise stated. In case of discrepancy, consult the Structural Engineer.
2. All structural engineering drawings should be read in conjunction with relevant architectural drawings.
3. All Reinforced concrete shall be Grade 20 - Nominal volumetric proportion 1: 2: 4 cube strength not less than 20N/mm² at 28 days.
4. Steel for reinforced concrete shall comply with BS4449 whereby fy = 460N/mm².
5. Bars lap length should be at least 50 times the diameter of the bars lapped.
6. Structural Engineer shall be furnished with copies of the manufacturers certificates of tests for the steel reinforcement to be used.
7. Cement for works shall comply with BS12 and shall be "Ordinary Portland Cement"
8. Clear cover for reinforcement shall be as follows:
   - Slabs 25mm
   - Beams 25mm
   - Columns 25mm
   - Footings.....50mm
7. All concrete work to be done in one operation.
8. All steel fixing, shuttering and concreting works to be done under close supervision of Structural Engineer.
9. Sand borrow pits shall be clean and free from organic materials and shall be approved by Structural Engineers before use.
10. Minimum Compressive Strength for Blocks shall be 3.5N/mm².

PROJECT:

PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

IN COLLABORATION WITH

PRESIDENT'S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT.

Designed by: Eng. J.M.S
Checked by: Eng. N.T.B
Approved by:

DRAWING TITLE:

PROPOSED TWO - CLASSROOMS WITH OFFICE BLOCK

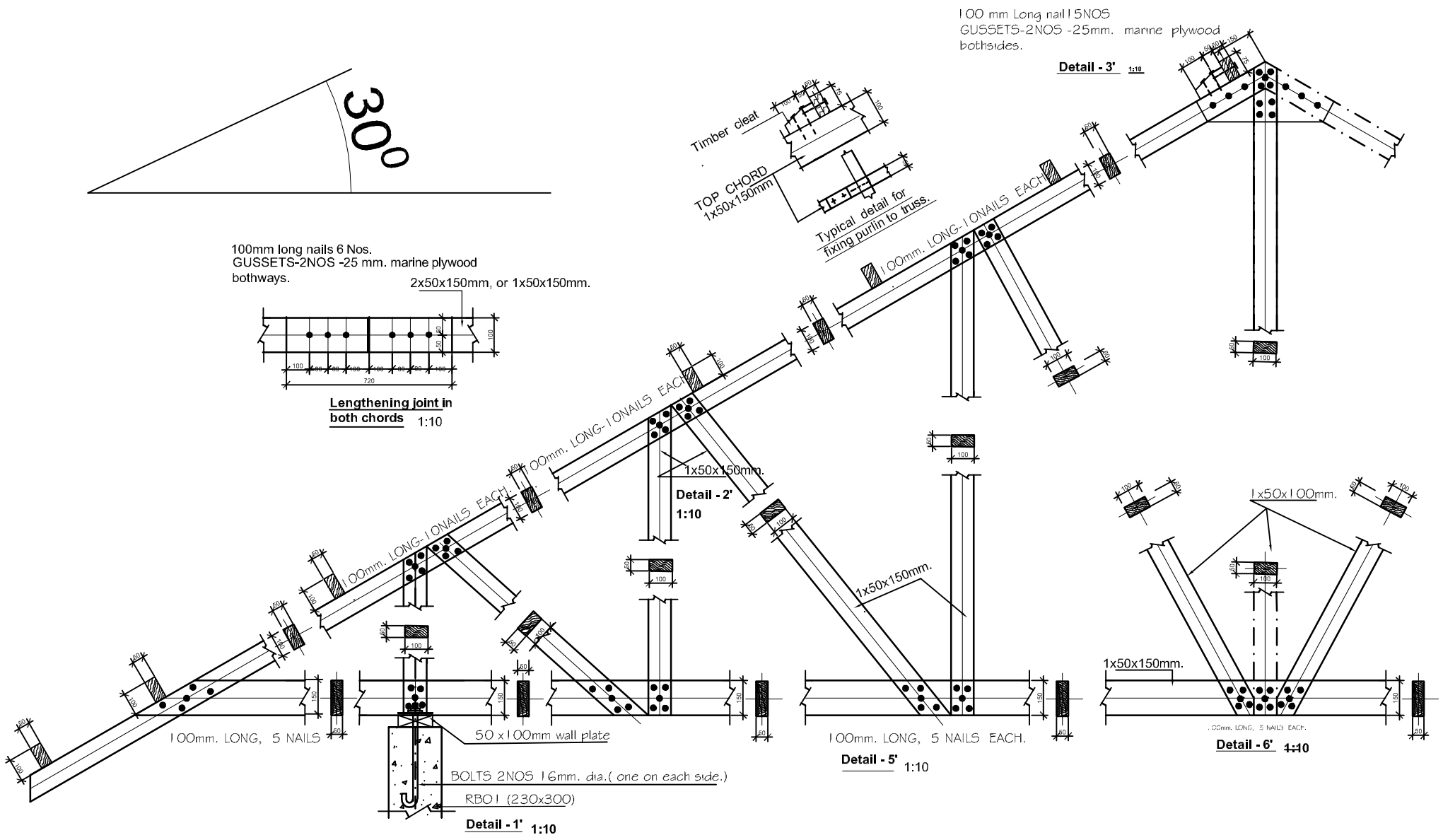
ROOF TRUSS DETAILS

(**REVISED - 1**)

DRAWING USE:
For Building permit: ☐
For Construction: ☑

Drawn by:	J.M.S
Date: 2022	Scale:
Drawing No:STR.CR	Sheet: 06/08

Lengthening joint in both chords 1:10



TYPICAL TRUSS CONNECTIONS DETAIL

NOTE:

1. All dimensions are in millimetres unless otherswise stated. In case of discrepancy, consult the Structural Engineer.
2. All structural engineering drawings should be read in conjunction with relevant architectural drawings.
3. All Reinforced concrete shall be Grade 20 - Nominal volumetric proportion 1: 2: 4 cube strength not less than 20N/mm² at 28 days.
4. Steel for reinforced concrete shall comply with BS4449 whereby fy = 460N/mm².
5. Bars lap length should be at least 50 times the diameter of the bars lapped.
6. Structural Engineer shall be furnished with copies of the manufacturers certificates of tests for the steel reinforcement to be used.
7. Cement for works shall comply with BS12 and shall be "Ordinary Portland Cement"
8. Clear cover for reinforcement shall be as follows:
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   - Beams 25mm
   - Columns 25mm
   - Footings.....50mm
7. All concrete work to be done in one operation.
8. All steel fixing, shuttering and concreting works to be done under close supervision of Structural Engineer.
9. Sand borrow pits shall be clean and free from organic materials and shall be approved by Structural Engineers before use.
10. Minimum Compressive Strength for Blocks shall be 3.5N/mm².

PROJECT:

PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

IN COLLABORATION WITH

PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT.

Designed by: Eng. J.M.S
Checked by: Eng. N.T.B
Approved by:

DRAWING TITLE:

PROPOSED TWO - CLASSROOMS WITH OFFICE BLOCK

ROOF TRUSS
CONNECTION DETAILS
(**REVISED - 1**)

DRAWING USE:
For Building permit: ☐
For Construction: ☑

Drawn by:	J.M.S
Date: 2022	Scale:
Drawing No:STR.CR	Sheet: 07/08

Page 1/2

Bar Bending Schedule

PROVISION OF PHYSICAL FACILITIES FOR PRIMARY SCHOOLS - PROPOSED TWO CLASSROOMS WITH OFFICE BLOCK
(COLUMN FOOTINGS, COLUMNS AND GROUND FLOOR BEAMS)

MEMBER TYPE	NUMBER OF MEMBER	MARK No.	BAR TYPE AND SIZE (mm)	LENGTH OF EACH BAR (mm)	NO.OF BARS	TOTAL LENGTH (m)	SKETCH OF BAR DIMENSIONS IN (mm)	NOTES
COLUMN FOOTING	8	01	Y12	1300	48	62.4	900 / 200	
COLUMN FOOTING	8	02	Y12	1300	48	62.4	900 / 200	
COLUMN STARTER	8	03	Y8	820	40	32.8	50 / 50 / 180 / 180	
COLUMN STARTER	8	04	Y12	1900	32	60.8	1600 / 300	
COLUMN	8	01	Y12	2950	32	94.4	2770 / 180	
COLUMN	8	02	Y8	820	120	98.4	50 / 50 / 180 / 180	
GROUND BEAM 1	2	01	Y12	12000	4	48	11750 / 250	
GROUND BEAM 1	2	02	Y12	10300	4	41.2	10050 / 250	
GROUND BEAM 1	2	03	Y12	10300	4	41.2	10050 / 250	
GROUND BEAM 1	2	04	Y12	12000	4	48	11750 / 250	
GROUND BEAM 1	2	05	Y8	960	210	201.6	50 / 50 / 250 / 180	
GROUND BEAM 2	1	01	Y12	12000	2	24	11750 / 250	
GROUND BEAM 2	1	02	Y12	10300	2	20.6	10050 / 250	
GROUND BEAM 2	1	03	Y12	10300	2	20.6	10050 / 250	
GROUND BEAM 2	1	04	Y12	12000	2	24	11750 / 250	
GROUND BEAM 2	1	05	Y8	960	105	100.8	50 / 50 / 250 / 180	
GROUND BEAM 3	2	01	Y12	9350	8	74.8	8850 / 250	
GROUND BEAM 3	2	02	Y8	960	86	82.56	50 / 50 / 250 / 180	
GROUND BEAM 4	2	01	Y12	9350	8	74.8	8850 / 250	
GROUND BEAM 4	2	02	Y8	960	86	82.56	50 / 50 / 250 / 180	

Page 2/2

Bar Bending Schedule

PROVISION OF PHYSICAL FACILITIES FOR PRIMARY SCHOOLS - PROPOSED TWO CLASSROOMS WITH OFFICE BLOCK
(ROOF RING BEAMS)

MEMBER TYPE	NUMBER OF MEMBER	MARK No.	BAR TYPE AND SIZE (mm)	LENGTH OF EACH BAR (mm)	NO.OF BARS	TOTAL LENGTH (m)	SKETCH OF BAR DIMENSIONS IN (mm)	NOTES
ROOF BEAM 1	2	01	Y12	12000	4	48	11750 / 250	
ROOF BEAM 1	2	02	Y12	10300	4	41.2	10050 / 250	
ROOF BEAM 1	2	03	Y12	10300	4	41.2	10050 / 250	
ROOF BEAM 1	2	04	Y12	12000	4	48	11750 / 250	
ROOF BEAM 1	2	05	Y8	960	210	201.6	50 / 50 / 250 / 180	
ROOF BEAM 2	2	01	Y12	7850	8	62.8	7350 / 250	
ROOF BEAM 2	2	02	Y8	960	72	69.12	50 / 50 / 250 / 180	
ROOF BEAM 3	2	01	Y12	7850	8	62.8	7350 / 250	
ROOF BEAM 3	2	02	Y8	800	72	57.6	50 / 50 / 250 / 100	

NOTE:

1. All dimensions are in millimetres unless otherwise stated. In case of discrepancy, consult the Structural Engineer.
2. All structural engineering drawings should be read in conjunction with relevant architectural drawings.
3. All Reinforced concrete shall be Grade 20 - Nominal volumetric proportion 1: 2: 4 cube strength not less than 20N/mm² at 28 days.
4. Steel for reinforced concrete shall comply with BS4449 whereby fy = 460N/mm².
5. Bars lap length should be at least 50 times the diameter of the bars lapped.
6. Structural Engineer shall be furnished with copies of the manufacturers certificates of tests for the steel reinforcement to be used.
7. Cement for works shall comply with BS12 and shall be "Ordinary Portland Cement"
8. Clear cover for reinforcement shall be as follows:
   - Slabs 25mm
   - Beams 25mm
   - Columns 25mm
   - Footings.....50mm
7. All concrete work to be done in one operation.
8. All steel fixing, shuttering and concreting works to be done under close supervision of Structural Engineer.
9. Sand borrow pits shall be clean and free from organic materials and shall be approved by Structural Engineers before use.
10. Minimum Compressive Strength for Blocks shall be 3.5N/mm².

PROJECT:

PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

IN COLLABORATION WITH

PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT.

Designed by: Eng. J.M.S
Checked by: Eng. N.T.B
Approved by:

DRAWING TITLE:

PROPOSED TWO - CLASSROOMS WITH OFFICE BLOCK

GROUND FLOOR BEAMS AND ROOF RING BEAMS BAR BENDING SCHEDULES (**REVISED - 1**)

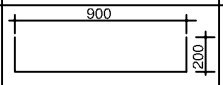
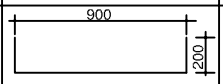
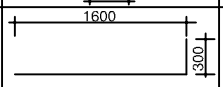
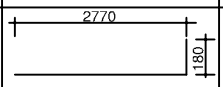
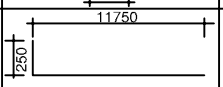
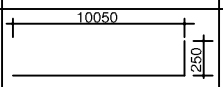
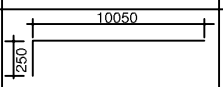
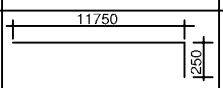
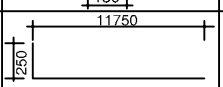
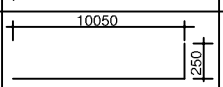
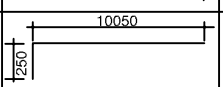
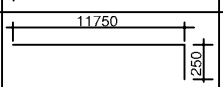
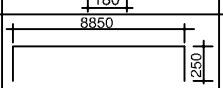
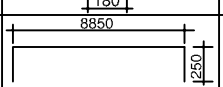
DRAWING USE:
For Building permit: ☐
For Construction: ☑

Drawn by: J.M.S
Date: 2022 | Scale:
Drawing No: STR.CR | Sheet: 08/08

Page 1/2

Bar Bending Schedule

PROVISION OF PHYSICAL FACILITIES FOR PRIMARY SCHOOLS - PROPOSED TWO CLASSROOMS WITH OFFICE BLOCK
(COLUMN FOOTINGS, COLUMNS AND GROUND FLOOR BEAMS)

MEMBER TYPE	NUMBER OF MEMBER	MARK No.	BAR TYPE AND SIZE (mm)	LENGTH OF EACH BAR (mm)	NO.OF BARS	TOTAL LENGTH (m)	SKETCH OF BAR DIMENSIONS IN (mm)	NOTES
COLUMN FOOTING	8	01	Y12	1300	48	62.4		
COLUMN FOOTING	8	02	Y12	1300	48	62.4		
COLUMN STARTER	8	03	Y8	820	40	32.8		
COLUMN STARTER	8	04	Y12	1900	32	60.8		
COLUMN	8	01	Y12	2950	32	94.4		
COLUMN	8	02	Y8	820	120	98.4		
GROUND BEAM 1	2	01	Y12	12000	4	48		
GROUND BEAM 1	2	02	Y12	10300	4	41.2		
GROUND BEAM 1	2	03	Y12	10300	4	41.2		
GROUND BEAM 1	2	04	Y12	12000	4	48		
GROUND BEAM 1	2	05	Y8	960	210	201.6		
GROUND BEAM 2	1	01	Y12	12000	2	24		
GROUND BEAM 2	1	02	Y12	10300	2	20.6		
GROUND BEAM 2	1	03	Y12	10300	2	20.6		
GROUND BEAM 2	1	04	Y12	12000	2	24		
GROUND BEAM 2	1	05	Y8	960	105	100.8		
GROUND BEAM 3	2	01	Y12	9350	8	74.8		
GROUND BEAM 3	2	02	Y8	960	86	82.56		
GROUND BEAM 4	2	01	Y12	9350	8	74.8		
GROUND BEAM 4	2	02	Y8	960	86	82.56		

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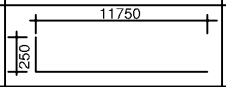
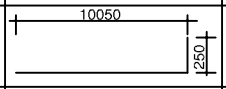
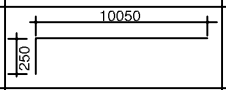
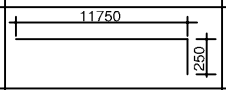
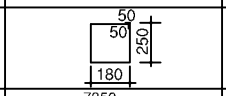
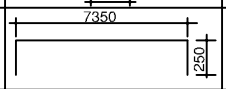
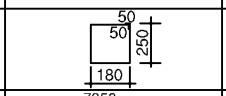
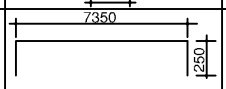
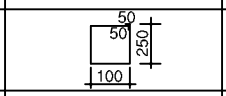
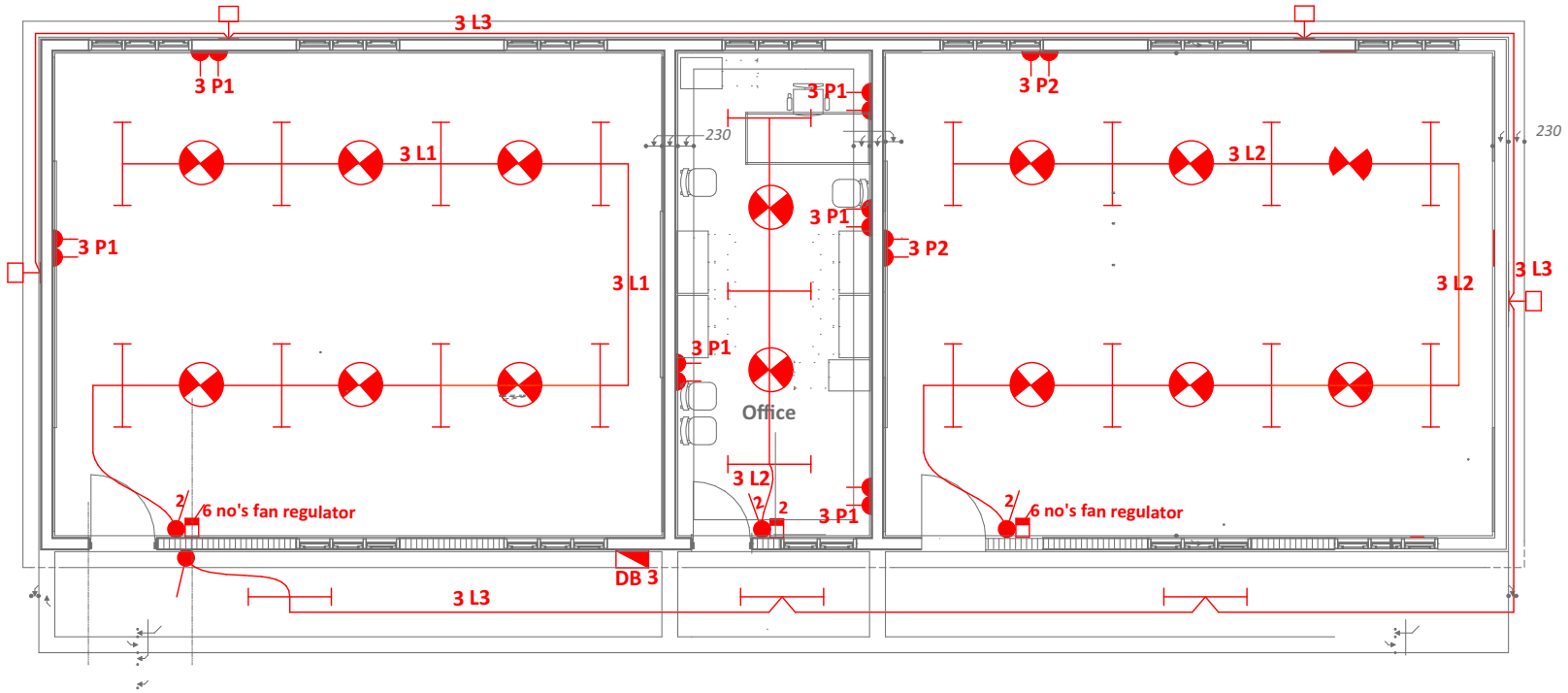
Bar Bending Schedule

PROVISION OF PHYSICAL FACILITIES FOR PRIMARY SCHOOLS - PROPOSED TWO CLASSROOMS WITH OFFICE BLOCK (ROOF RING BEAMS)

MEMBER TYPE	NUMBER OF MEMBER	MARK No.	BAR TYPE AND SIZE (mm)	LENGTH OF EACH BAR (mm)	NO.OF BARS	TOTAL LENGTH (m)	SKETCH OF BAR DIMENSIONS IN (mm)	NOTES
ROOF BEAM 1	2	01	Y12	12000	4	48		
ROOF BEAM 1	2	02	Y12	10300	4	41.2		
ROOF BEAM 1	2	03	Y12	10300	4	41.2		
ROOF BEAM 1	2	04	Y12	12000	4	48		
ROOF BEAM 1	2	05	Y8	960	210	201.6		
ROOF BEAM 2	2	01	Y12	7850	8	62.8		
ROOF BEAM 2	2	02	Y8	960	72	69.12		
ROOF BEAM 3	2	01	Y12	7850	8	62.8		
ROOF BEAM 3	2	02	Y8	800	72	57.6		

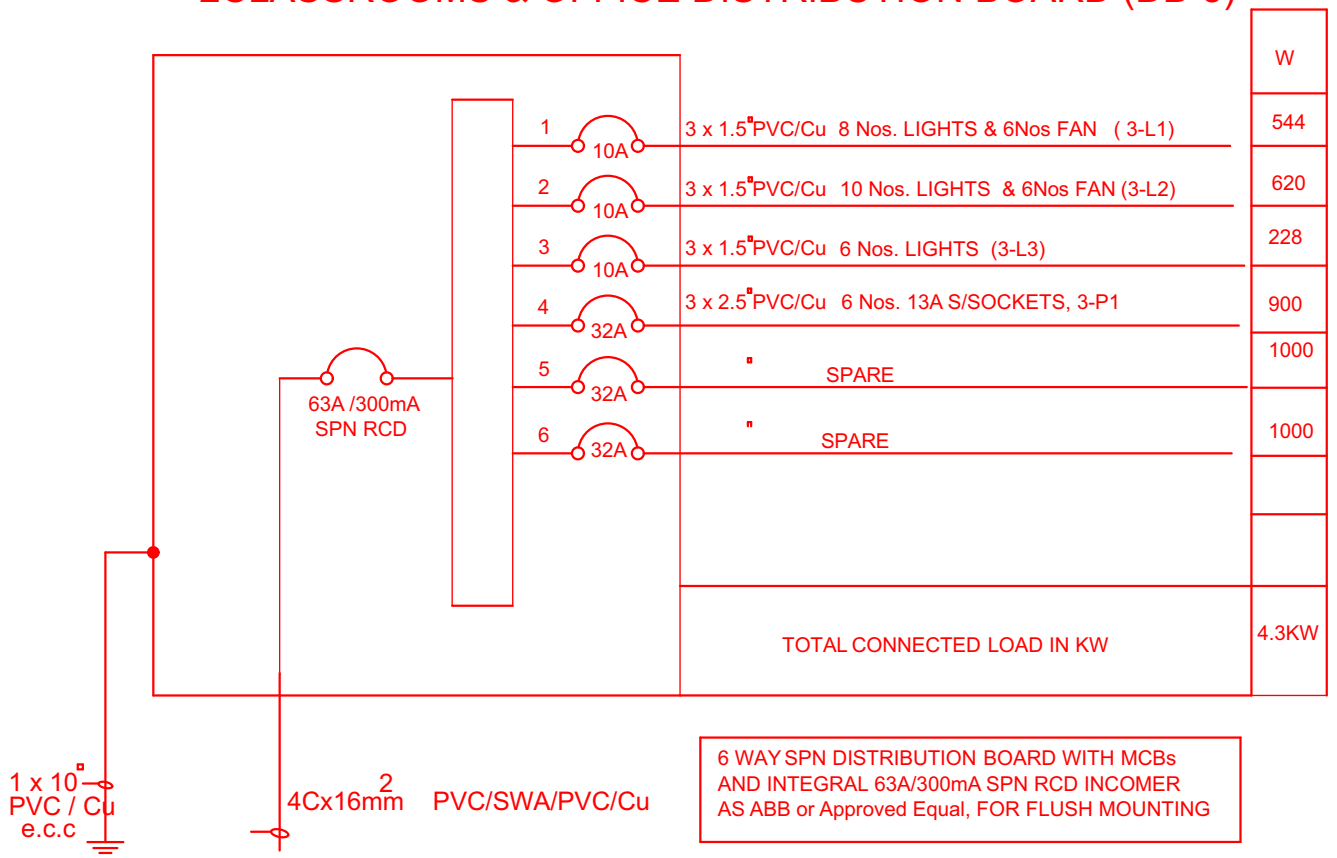
ELECTRICAL DRAWINGS



REVISED 1:

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY IN COLLABORATION WITH PRESIDENT'S OFFICE REGIONAL ADMINSTRATVE AND LOCAL GOVERNMENT	PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS	DRAWING TITLE: TWO CLASSROOM BLOCK FLOOR LIGHTING & POWER LAYOUT DRAWING NO:P/EL/CR/03	DRAWN BY EEC CHECKED BY EEC SCALE: NTS DEC 2022

2CLASSROOMS & OFFICE DISTRIBUTION BOARD (DB-3)



6 WAY SPN DISTRIBUTION BOARD WITH MCBs
AND INTEGRAL 63A/300mA SPN RCD INCOMER
AS ABB or Approved Equal, FOR FLUSH MOUNTING

REVISED 1:

MINISTRY OF EDUCATION,SCIENCE AND TECHNOLOGY IN COLLABORATION WITH PRESIDENTS OFFICE REGIONAL ADMINSTRATIVE AND LOCAL GORVENMENT	PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS	DRAWING TITLE: TWO CLASSROOM BLOCK SCHEMATIC LAYOUT DRAWING NO: P/EL/CR/03	DRAWN BY EEC CHECKED BY EEC SCALE: NTS DEC 2022

KEY TO SYMBOLS

SYMBOL	DESCRIPTION	MOUNTING HEIGHT
	Distribution Board with integral RCD	2000 mm AFFL
	Bulkhead light Fitting	Wall Mounted
	4FT Single Electronic Start Fluorecent Light	On Ceilling
	Ceilling Fan	On Ceilling
	Fan Regulator	1500 mm AFFL
	1 gang 1way Switch	1500 mm AFFL
	1 gang 2way Switch	1500 mm AFFL
	2 gang 2way Switch	1500 mm AFFL
	3 gang 1way Switch	
	2 gang 1way Switch	1500 mm AFFL
	4 gang 1way Switch	1500 mm AFFL
	Twin Switch Socket	450 mm AFFL
	Ceilling light complete with energy saver 11w	on level

MINISTRY OF EDUCATION,SCIENCE AND TECHNOLOGY IN COLLABORATION WITH PRESIDENTS OFFICE REGIONAL ADMINSTRATIVE AND LOCAL GORVENMENT	PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS	DRAWING TITLE: THREE CLASSROOM BLOCK **LEGEND** DRAWING NO: P/EL/CR/03	DRAWN BY EEC CHECKED BY EEC SCALE: NTS DEC 2022