

PROPOSED 12 CLASS ROOM
L. GAN
Hamad Bin Khalifa Althani School
(03 Storey)

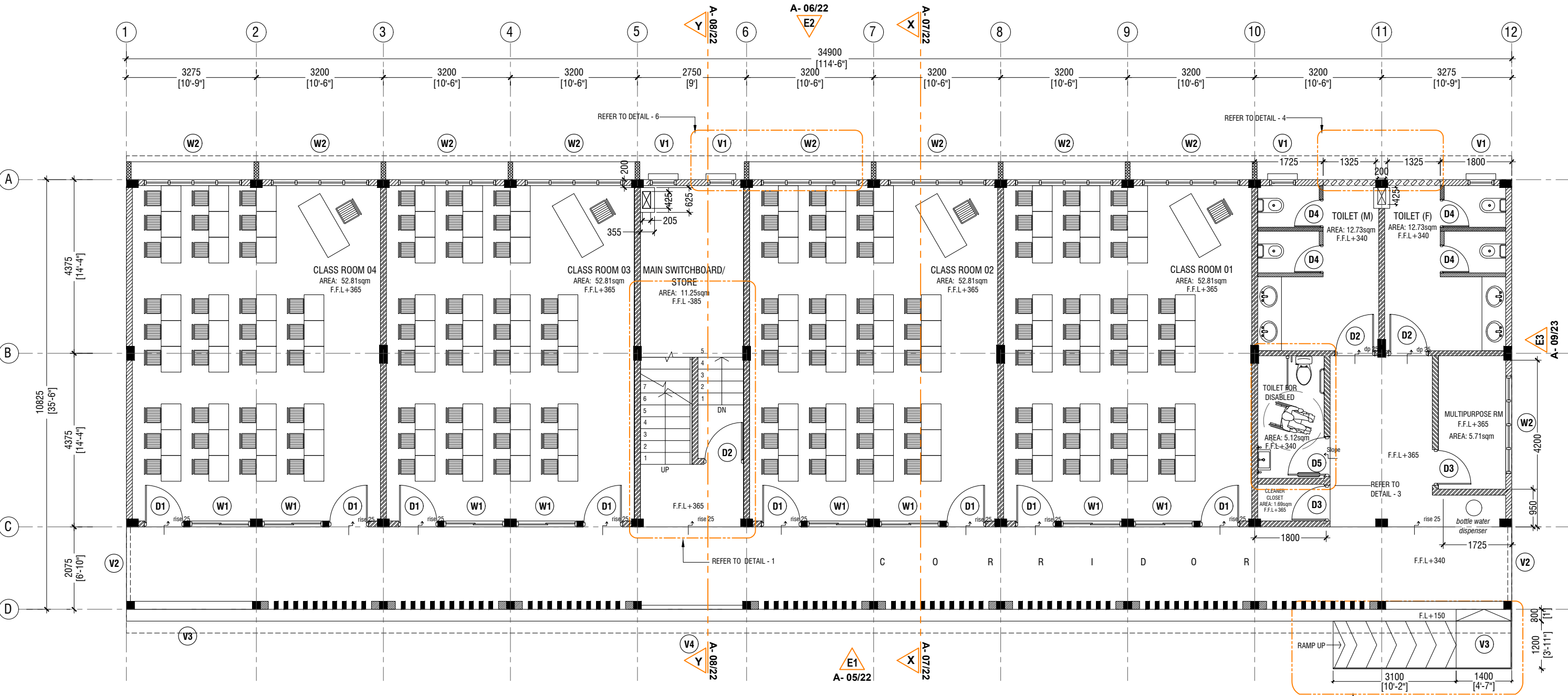
ARCHITECTURAL & STRUCTURAL DRAWINGS
Ministry of Education

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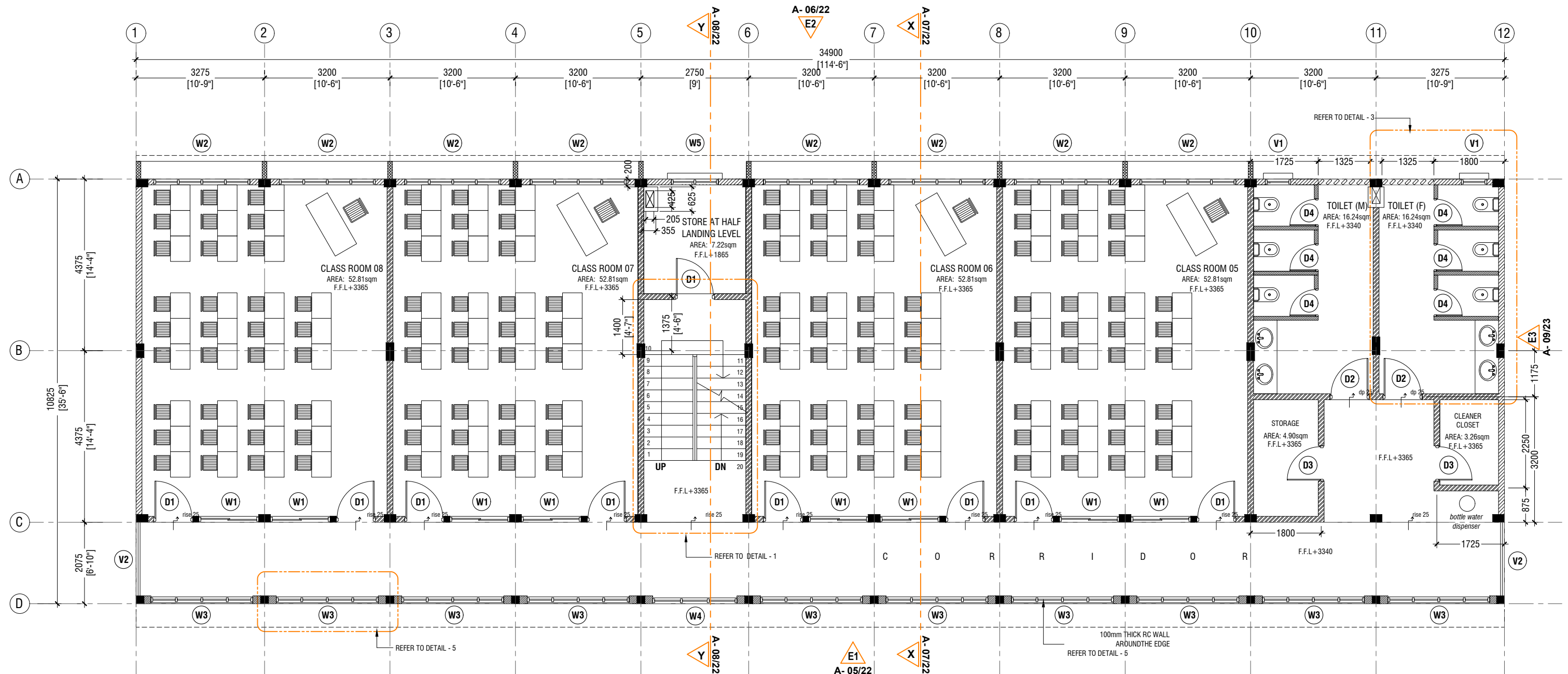


DEMOLITION OF EXISTING BUILDING'S STEPS (FOR THE CONNECTION OF
PROPOSED BUILDING TO THE EXISTING BUILDING) AND TREES AT THE
PROPOSED SITE LOCATION
DEMOLITION OF EXISTING STAGE (TO BE CONFIRMED BY THE SCHOOL)



GROUND FLOOR PLAN
SCALE 1:100

- NOTE:**
- PROPOSED 150mm THICK SOLID BLOCK - INTERIOR MASONRY WALL WITH 16mm PLASTERING, GROUND SMOOTH IN SELECTED PAINT FINISH
 - PROPOSED 150mm THICK SOLID BLOCK - EXTERIOR MASONRY WALL WITH 20mm PLASTERING, GROUND SMOOTH IN SELECTED PAINT FINISH
 - PROPOSED 100mm THICK SOLID BLOCK - INTERIOR MASONRY WALL WITH 16mm PLASTERING, GROUND SMOOTH IN SELECTED PAINT FINISH
 - PROPOSED 120mm THICK RC WALL TO BE WATER PROOFED WITH WATER PROOFING AGENT
 - PROPOSED 100mm THICK 2400mm HIGH SOLID BLOCK MASONRY WALL WITH 16mm PLASTERING, GROUND SMOOTH IN SELECTED PAINT FINISH
- THE SCREEDING AND TILES ARE INCORPORATED IN THE FLOOR FINISH LEVELS
- REFER TO ARCHITECT FOR FURTHER ASSISTANCE.

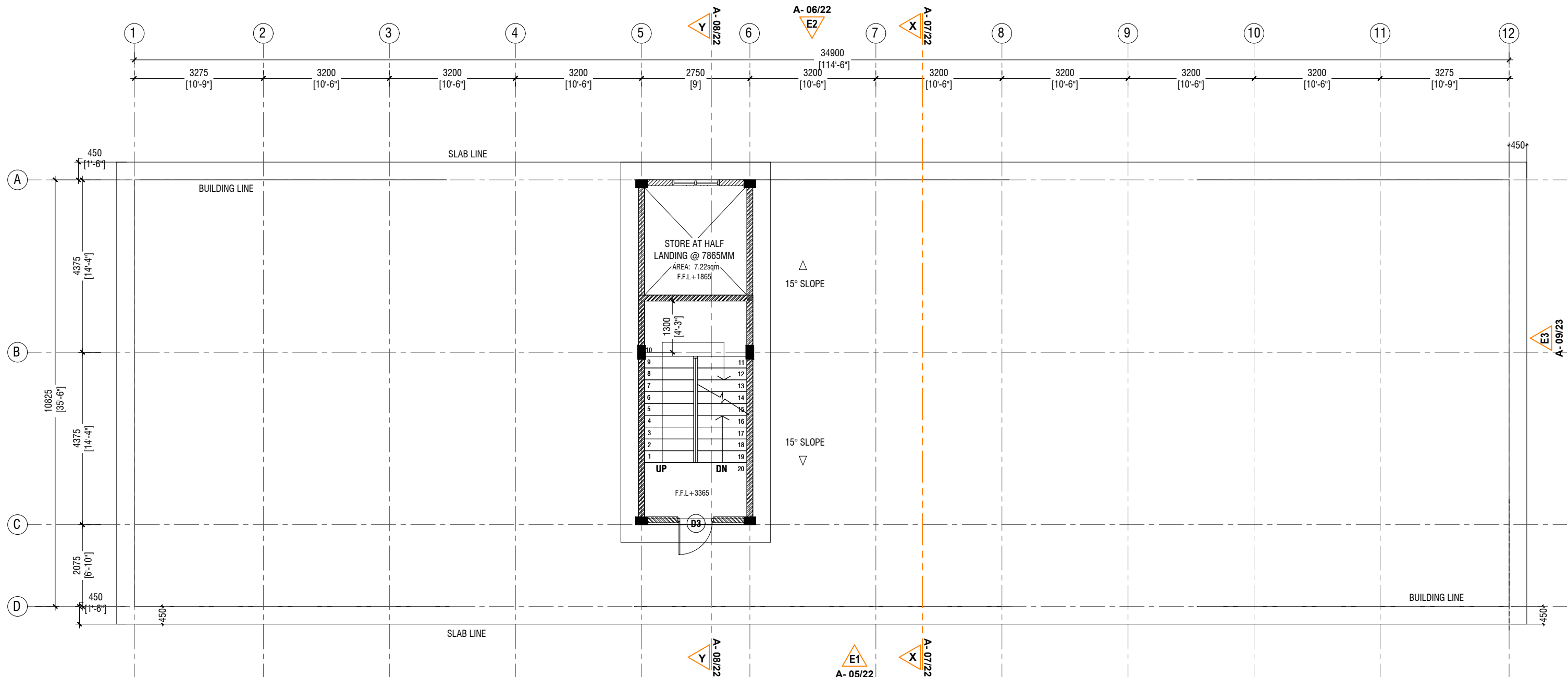


FIRST - SECOND FLOOR PLAN

SCALE 1:100

0 0.5 1 2 3 4 5

- NOTE:**
- PROPOSED 150mm THICK SOLID BLOCK - INTERIOR MASONRY WALL WITH 16mm PLASTERING, GROUND SMOOTH IN SELECTED PAINT FINISH
 - PROPOSED 150mm THICK SOLID BLOCK - EXTERIOR MASONRY WALL WITH 20mm PLASTERING, GROUND SMOOTH IN SELECTED PAINT FINISH
 - PROPOSED 100mm THICK SOLID BLOCK - INTERIOR MASONRY WALL WITH 16mm PLASTERING, GROUND SMOOTH IN SELECTED PAINT FINISH
 - PROPOSED 120mm THICK RC WALL TO BE WATER PROOFED WITH WATER PROOFING AGENT
 - PROPOSED 100mm THICK 2400mm HIGH SOLID BLOCK MASONRY WALL WITH 16mm PLASTERING, GROUND SMOOTH IN SELECTED PAINT FINISH
- THE SCREEDING AND TILES ARE INCORPORATED IN THE FLOOR FINISH LEVELS
- REFER TO ARCHITECT FOR FURTHER ASSISTANCE.



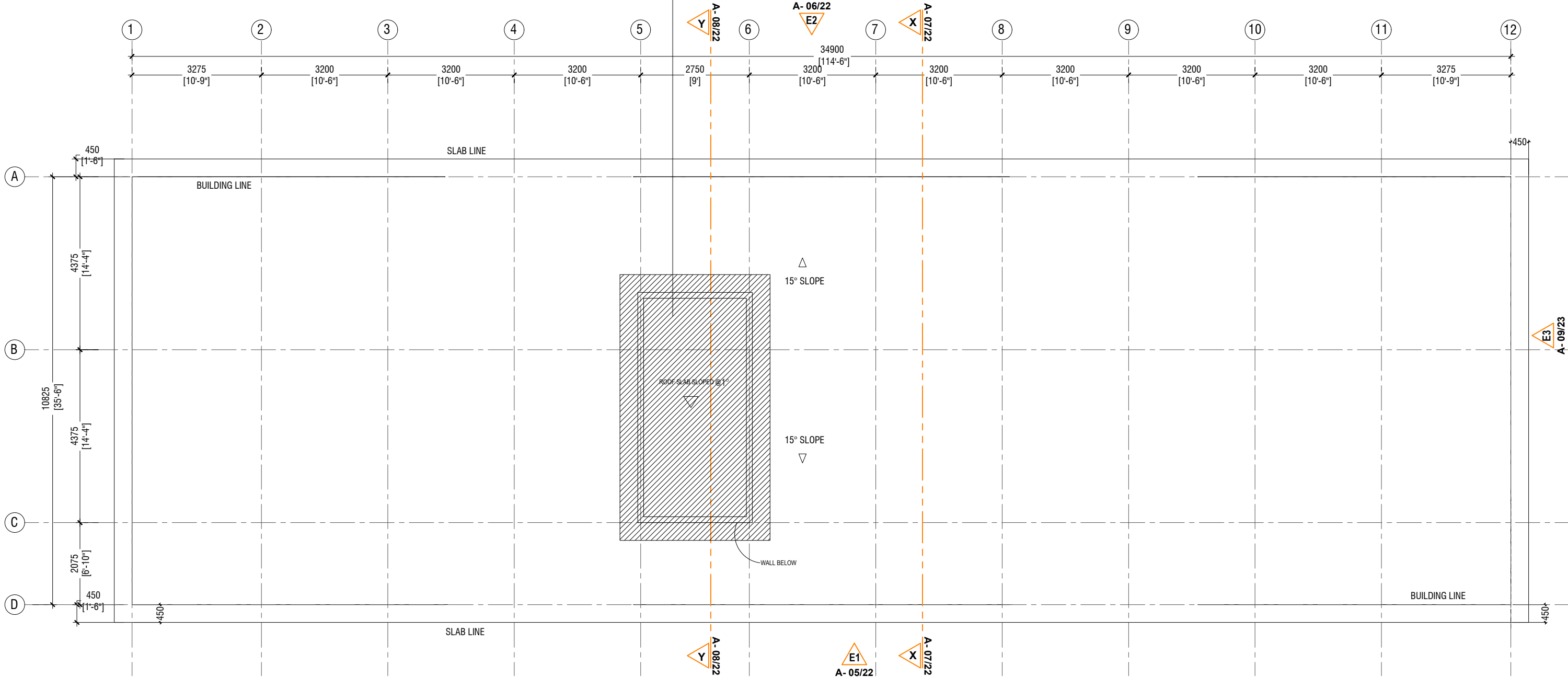
NOTE:

ROOF MATERIAL: LYSAGHT COLOURBOND ROOFING SHEETS
ROOF SLOPE : 15°
ROOF OVERHANG: 600mm

TERRACE FLOOR PLAN

SCALE 1:100





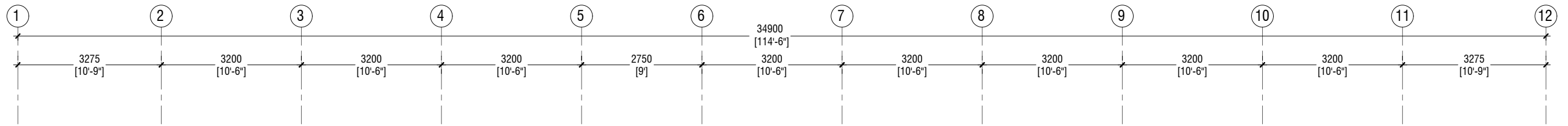
NOTE:

ROOF MATERIAL: LYSAGHT COLOURBOND ROOFING SHEETS
ROOF SLOPE : 15°
ROOF OVERHANG: 600mm

ROOF SLAB PLAN

SCALE 1:100

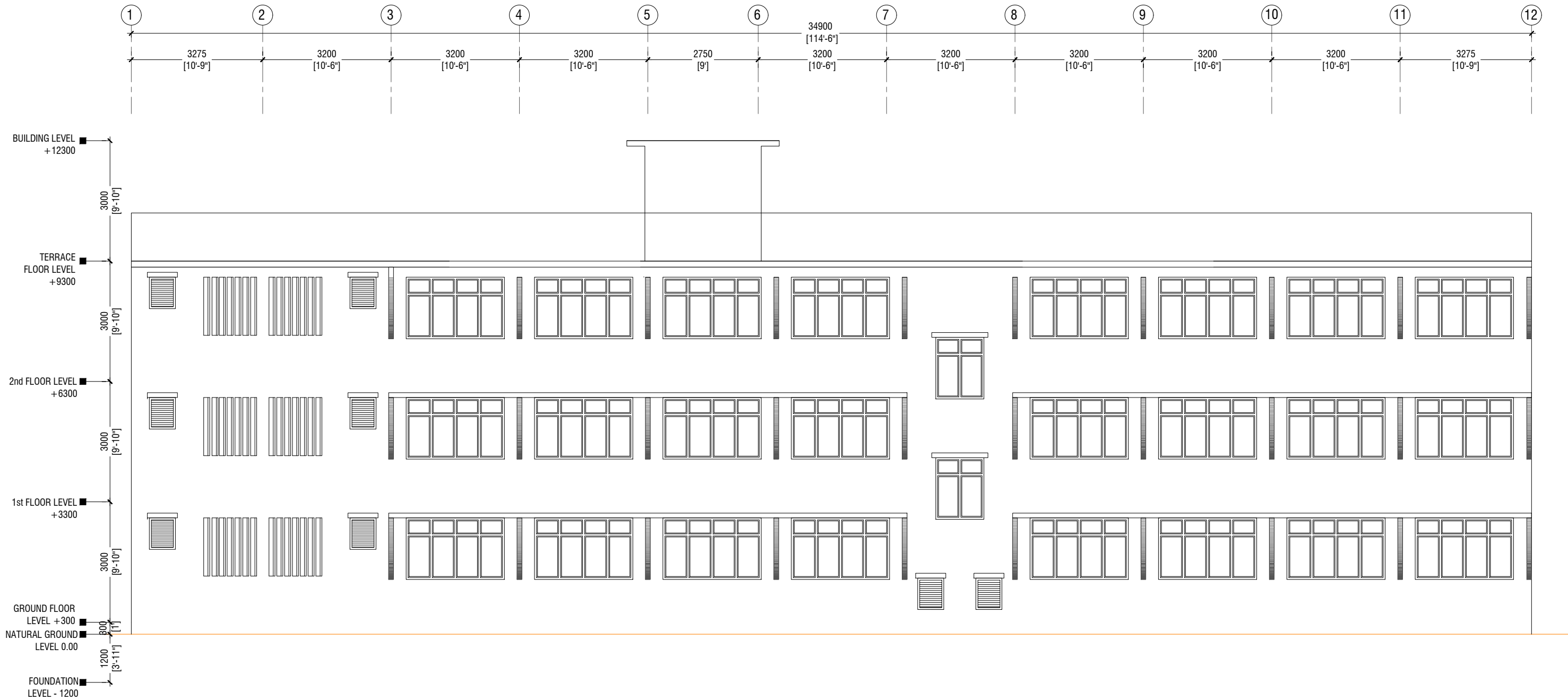




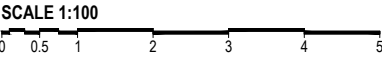
ELEVATION E1

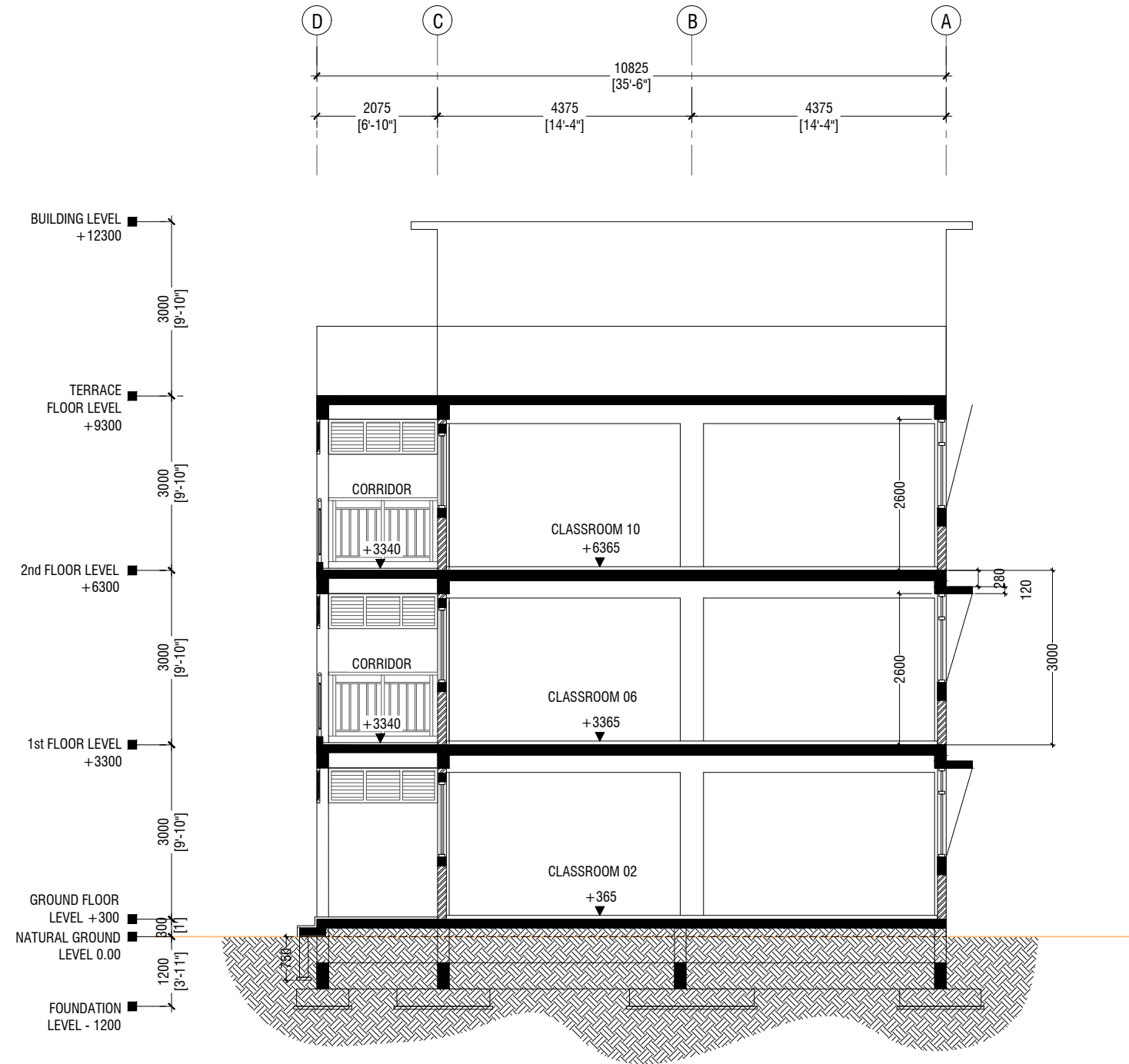
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ELEVATION E2

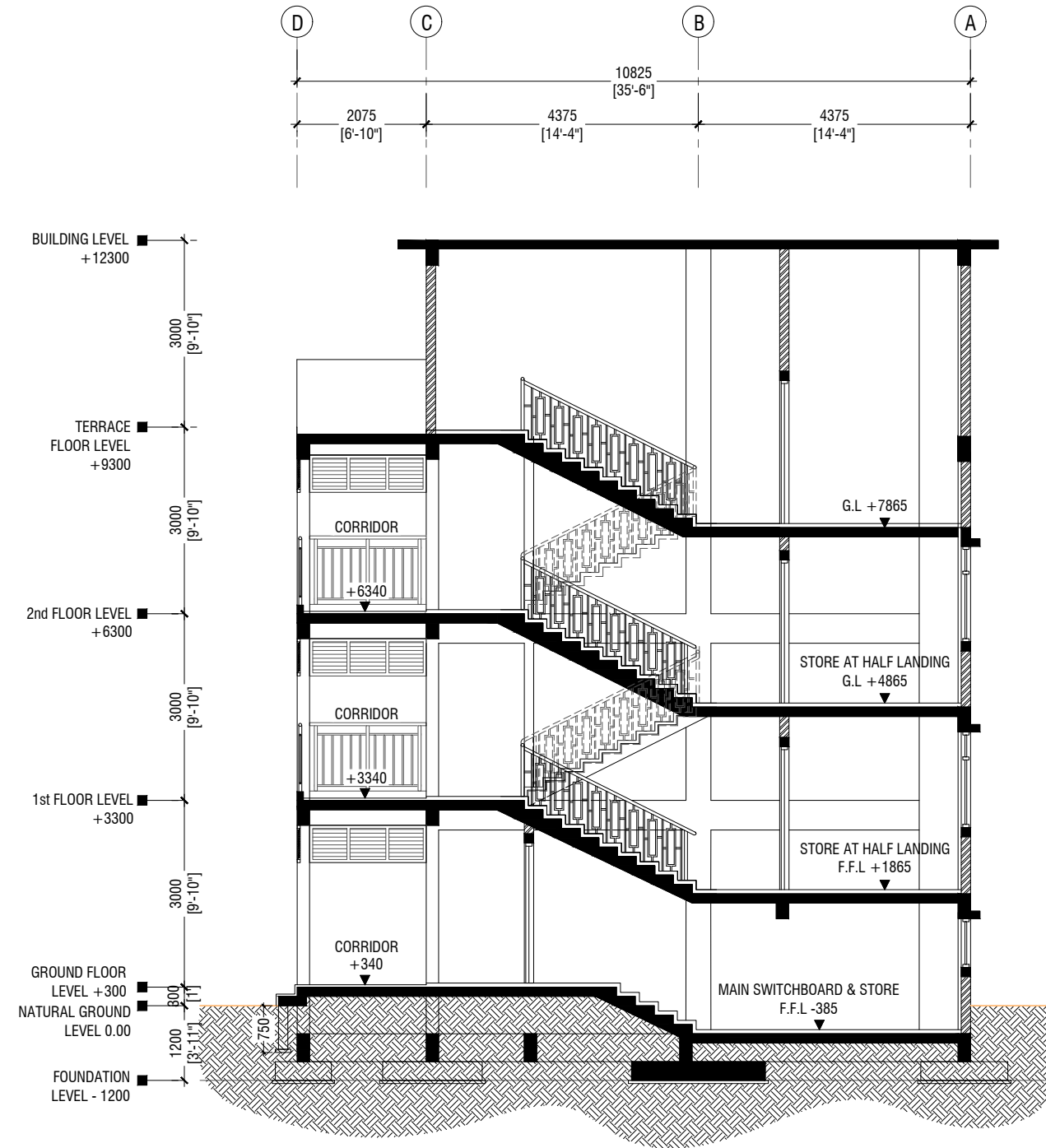




SECTION X-X

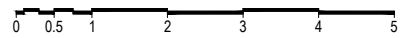
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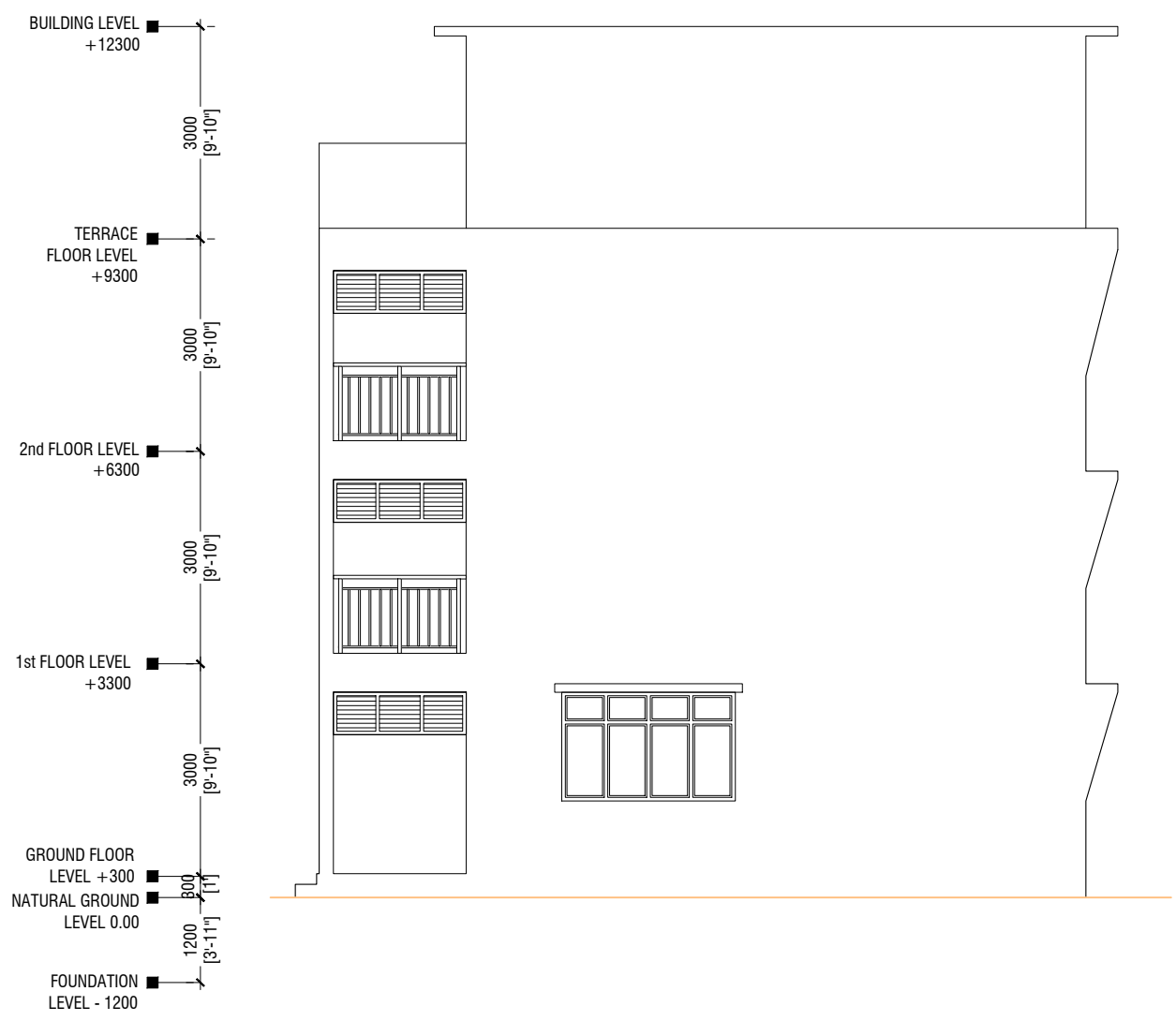




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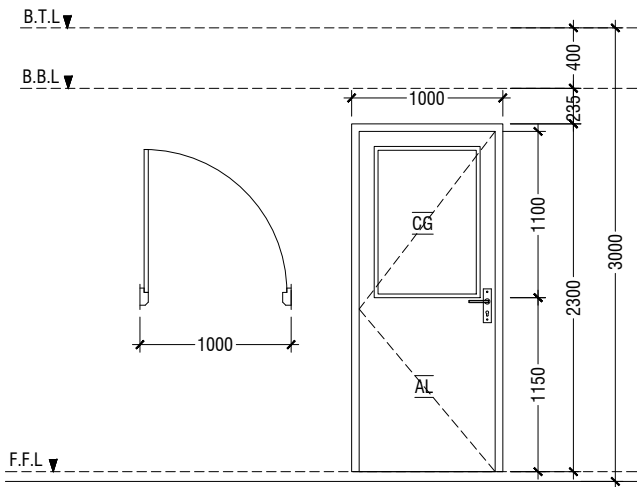
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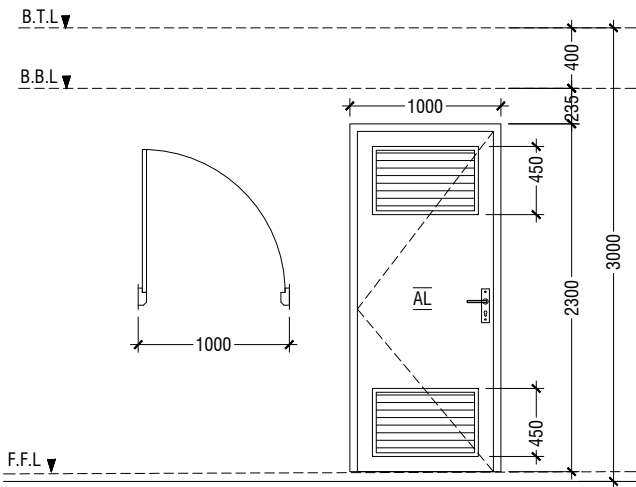


ELEVATION E3

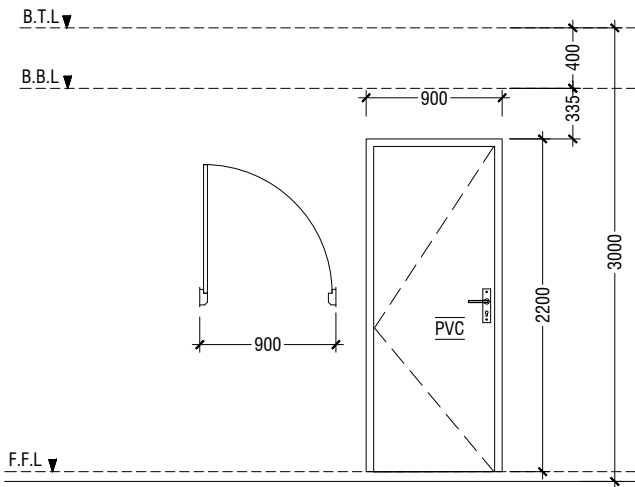




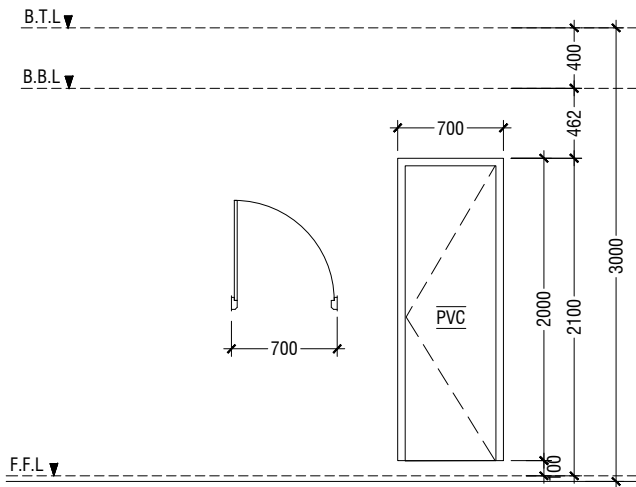
D1	SWING DOOR
REMARKS	50mm THICK WHITE POWDER COATED (60 MICRONS) ALUMINUM FRAMED WITH ALUMINIUM PANEL AND 6mm THICK CLEAR GLASS
LOCATION	CLASSROOMS & HALF LANDING STORE ROOM
QUANTITY	26 NOS
OPEN AREA	2.03 sqm



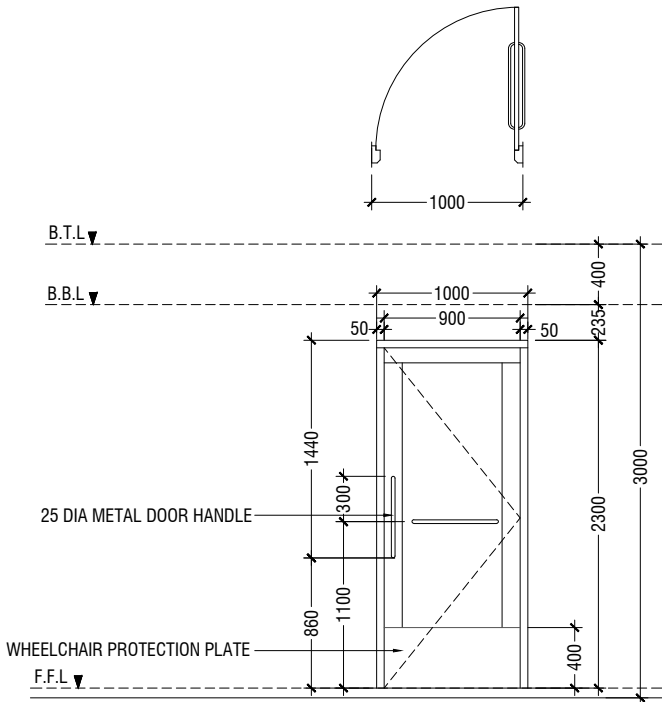
D2	SWING DOOR WITH ALUMINIUM LOUVERS
REMARKS	50mm THICK WHITE POWDER COATED (60 MICRONS) ALUMINUM FRAMED WITH ALUMINIUM PANEL AND ALUMINUM LOUVERS
LOCATION	TOILETS & MAIN SWITCH BOARD STORE
QUANTITY	07 NOS
OPEN AREA	2.03 sqm



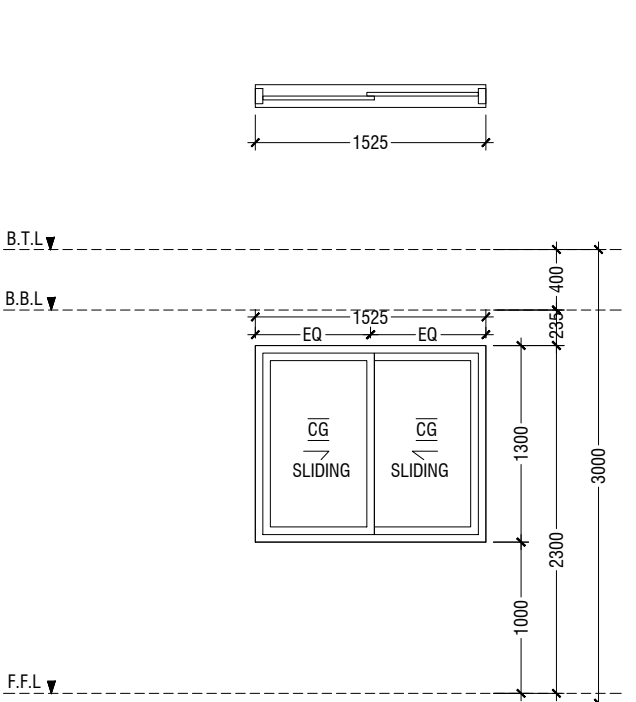
D3	PVC SWING DOOR
REMARKS	PVC WHITE FRAME AND PANEL
LOCATION	STORE & CLEANER CLOSET
QUANTITY	06 NOS
OPEN AREA	1.72 SQM



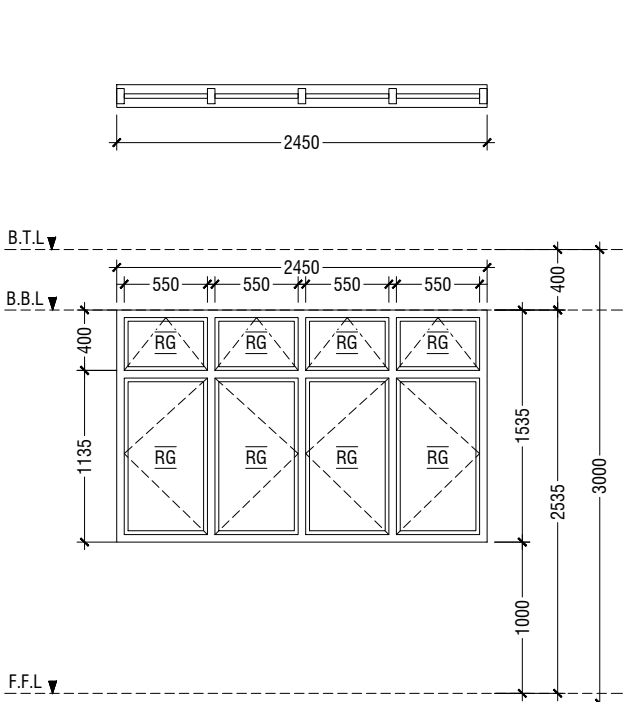
D4	PVC SWING DOOR
REMARKS	PVC WHITE FRAME AND PANEL
LOCATION	TOILETS STALLS
QUANTITY	15 NOS
OPEN AREA	1.17 SQM



D5	SWING DOOR
REMARKS	50mm THICK WHITE POWDER COATED (60 MICRONS) ALUMINUM FRAMED WITH ALUMINIUM PANEL
LOCATION	DISABLED TOILET
QUANTITY	01 NOS
OPEN AREA	2.03 sqm



W1	SLIDING WINDOW
REMARKS	50mm THICK WHITE POWDER COATED (60 MICRONS) ALUMINUM FRAMED WITH ALUMINIUM PANEL AND 6mm THICK CLEAR GLASS
LOCATION	CLASSROOMS
QUANTITY	24 NOS
OPEN AREA	0.83 sqm



W2	SWING WINDOW
REMARKS	50mm THICK WHITE POWDER COATED (60 MICRONS) ALUMINUM FRAMED WINDOW WITH 6mm THICK REFLECTIVE GLASS
LOCATION	CLASSROOMS
QUANTITY	25 NOS
OPEN AREA	2.97 sqm

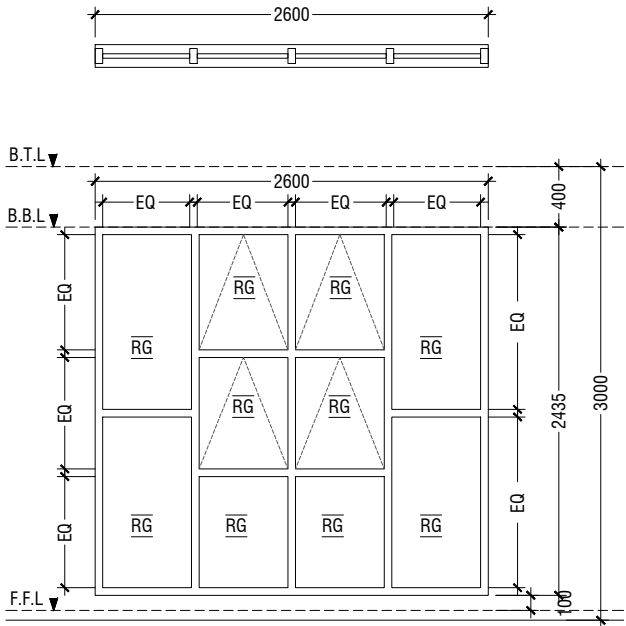
LEGEND:
CG - CLEAR GLASS
RG - REFLECTED GLASS
AL - ALUMINIUM
PVC - POLYVINYL CHLORIDE

NOTE:-
1. FLOOR TO FLOOR HEIGHT VARIES AND WILL BE SUBJECTED TO CHANGES
2. MAINTAIN FLOOR TO WINDOW SILL STANDARD HEIGHT REGULATION OF 1M.
3. REFER TO ARCHITECT FOR FURTHER ASSISTANCE.
4. ALL DOORS & WINDOWS TO BE CHECKED ON SITE BEFORE FABRICATION.
5. ALL DOOR & WINDOWS VIEWED FROM EXTERIOR, FOR DOOR SWING, REFER TO FLOOR PLANS.
6. THE DOORS / WINDOWS WHICH DO NOT TOUCH THE BEAM SHALL HAVE A LINTEL BEAM (LB) ABOVE THE DOOR / WINDOW.
7. FOR ALL THE WINDOWS PUT A SILL BEAM BELOW THE WINDOW (SB)
8. FOR SAFETY PURPOSES REFER TO TECHNICAL SPECIFICATIONS FOR GLASS THICKNESS.

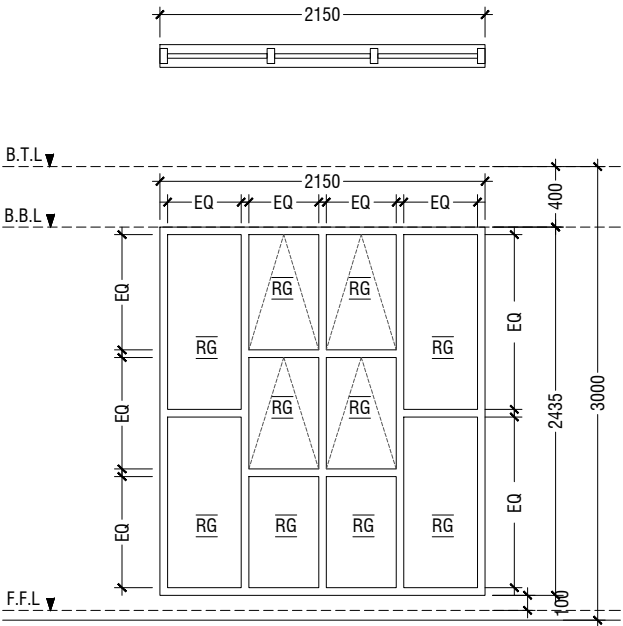
DOOR & WINDOW SCHEDULE - 1

SCALE 1:50

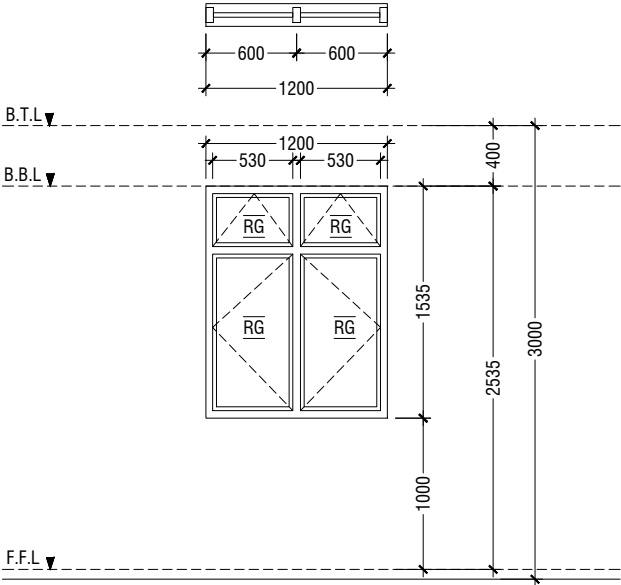




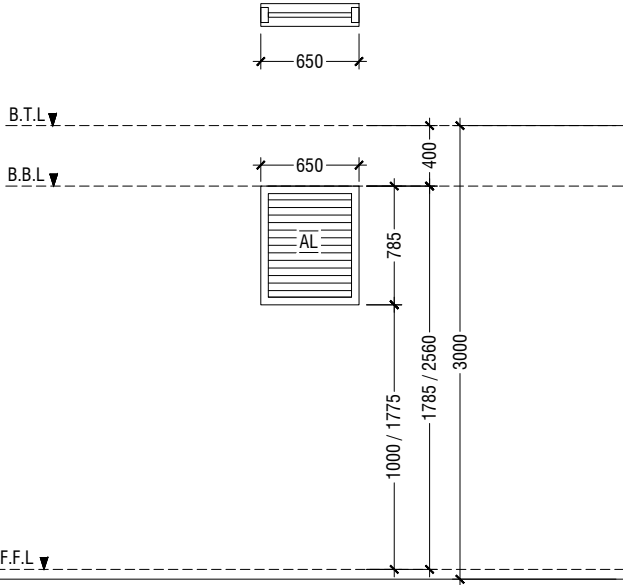
W3	TOP HUNG WINDOW
REMARKS	50mm THICK WHITE POWDER COATED (60 MICRONS) ALUMINUM FRAMED WINDOW WITH 6mm THICK REFLECTIVE GLASS
LOCATION	CORRIDOR
QUANTITY	20 NOS
OPEN AREA	2.97 sqm



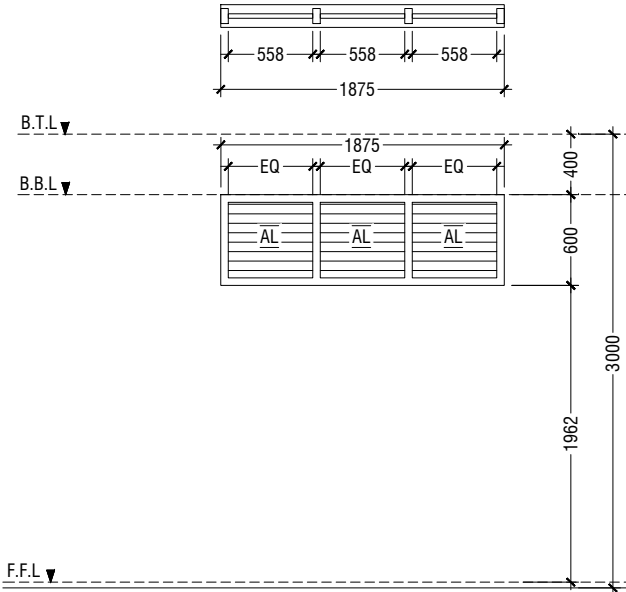
W4	TOP HUNG WINDOW
REMARKS	50mm THICK WHITE POWDER COATED (60 MICRONS) ALUMINUM FRAMED WINDOW WITH 6mm THICK REFLECTIVE GLASS
LOCATION	CORRIDOR
QUANTITY	02 NOS
OPEN AREA	2.97 sqm



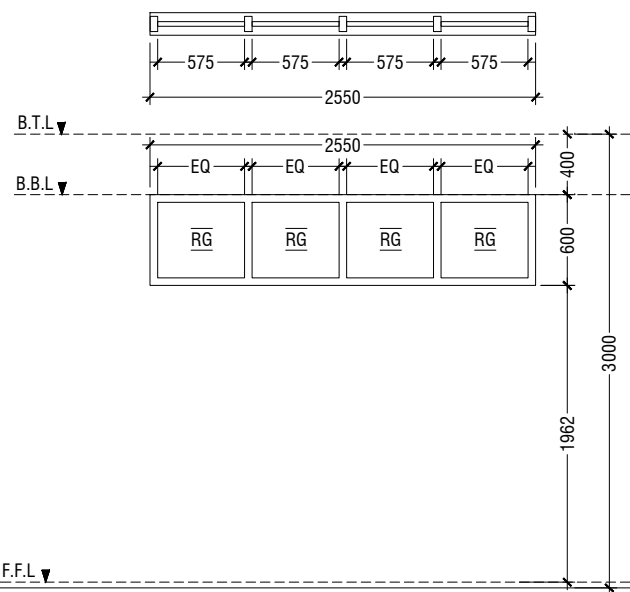
W5	SWING WINDOW
REMARKS	50mm THICK WHITE POWDER COATED (60 MICRONS) ALUMINUM FRAMED WINDOW WITH 6mm THICK REFLECTIVE GLASS
LOCATION	HALF LANDING STORE ROOM
QUANTITY	02 NOS
OPEN AREA	1.43 sqm



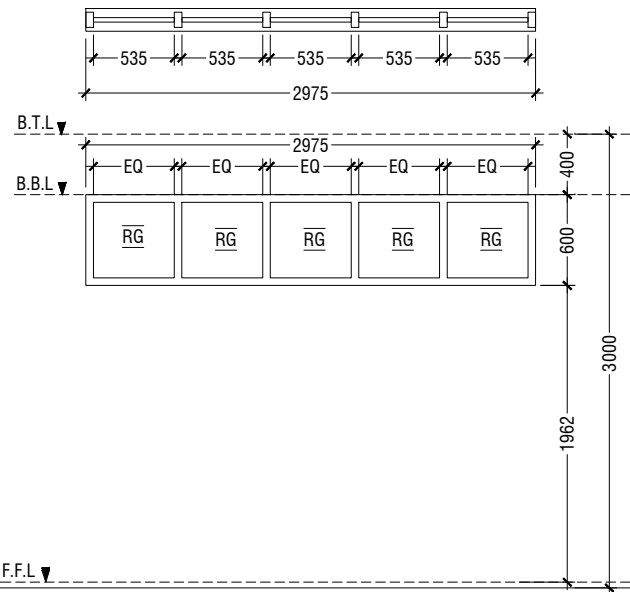
V1	WINDOW WITH ALUMINUM LOUVERS
REMARKS	50mm THICK WHITE POWDER COATED (60 MICRONS) ALUMINUM FRAMED WITH ALUMINUM LOUVERS
LOCATION	TOILETS & MAIN SWITCH BOARD STORE
QUANTITY	08 NOS
OPEN AREA	0.36 SQM



V2	SUNSHADING
REMARKS	50mm THICK WHITE POWDER COATED (60 MICRONS) ALUMINUM FRAMED WITH ALUMINUM LOUVERS
LOCATION	CORRIDOR
QUANTITY	06 NOS
OPEN AREA	0.84 SQM



V3	SUNSHADING
REMARKS	50mm THICK WHITE POWDER COATED (60 MICRONS) ALUMINUM FRAMED WITH ALUMINUM LOUVERS
LOCATION	CORRIDOR
QUANTITY	02 NOS
OPEN AREA	1.15 SQM



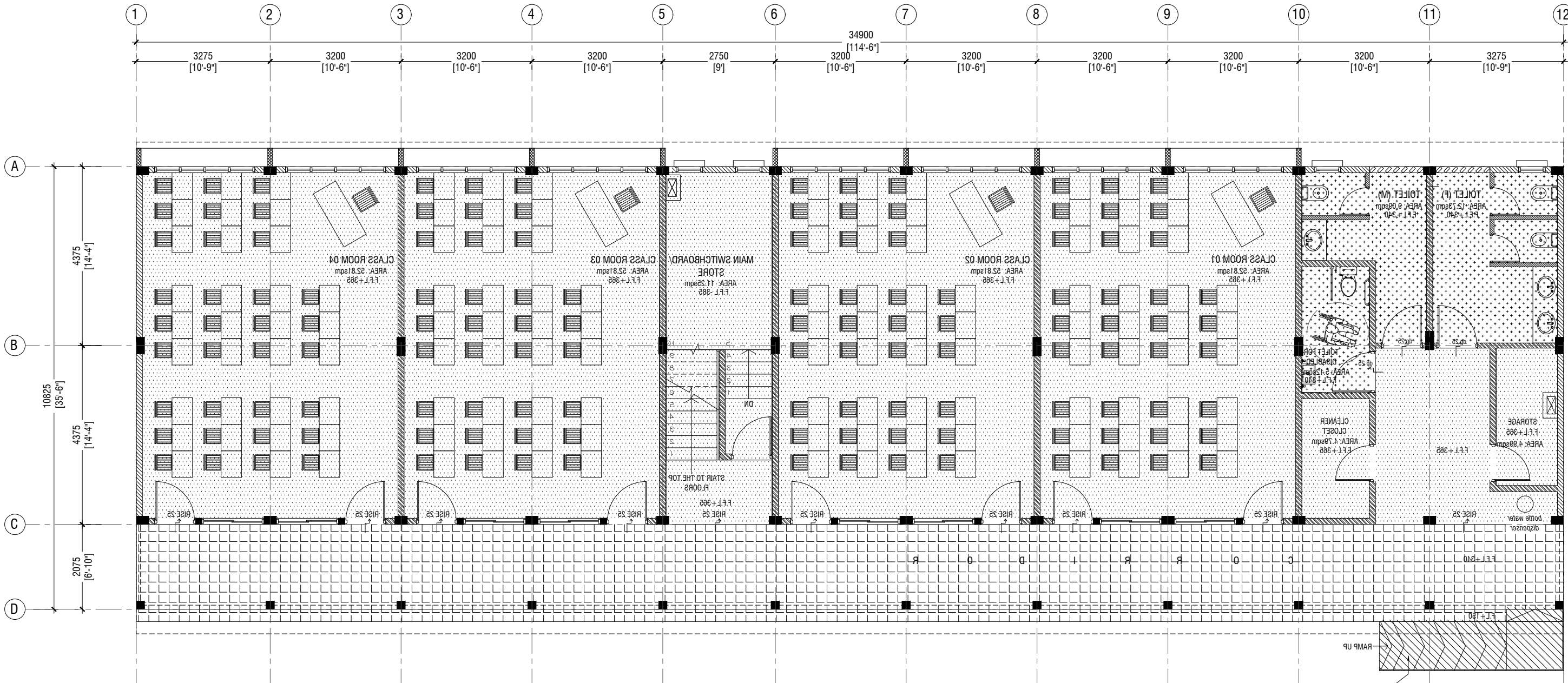
V4	SUNSHADING
REMARKS	50mm THICK WHITE POWDER COATED (60 MICRONS) ALUMINUM FRAMED WITH ALUMINUM LOUVERS
LOCATION	CORRIDOR
QUANTITY	01 NOS
OPEN AREA	1.35 SQM

LEGEND:
CG - CLEAR GLASS
RG - REFLECTED GLASS
AL - ALUMINIUM
PVC - POLYVINYL CHLORIDE

NOTE:-
1. FLOOR TO FLOOR HEIGHT VARIES AND WILL BE SUBJECTED TO CHANGES
2. MAINTAIN FLOOR TO WINDOW SILL STANDARD HEIGHT REGULATION OF 1M.
3. REFER TO ARCHITECT FOR FURTHER ASSISTANCE.
4. ALL DOORS & WINDOWS TO BE CHECKED ON SITE BEFORE FABRICATION.
5. ALL DOOR & WINDOWS VIEWED FROM EXTERIOR, FOR DOOR SWING, REFER TO FLOOR PLANS.
6. THE DOORS / WINDOWS WHICH DO NOT TOUCH THE BEAM SHALL HAVE A LINTEL BEAM (LB) ABOVE THE DOOR / WINDOW.
7. FOR ALL THE WINDOWS PUT A SILL BEAM BELOW THE WINDOW (SB)
8. FOR SAFETY PURPOSES REFER TO TECHNICAL SPECIFICATIONS FOR GLASS THICKNESS.

DOOR & WINDOW SCHEDULE - 2





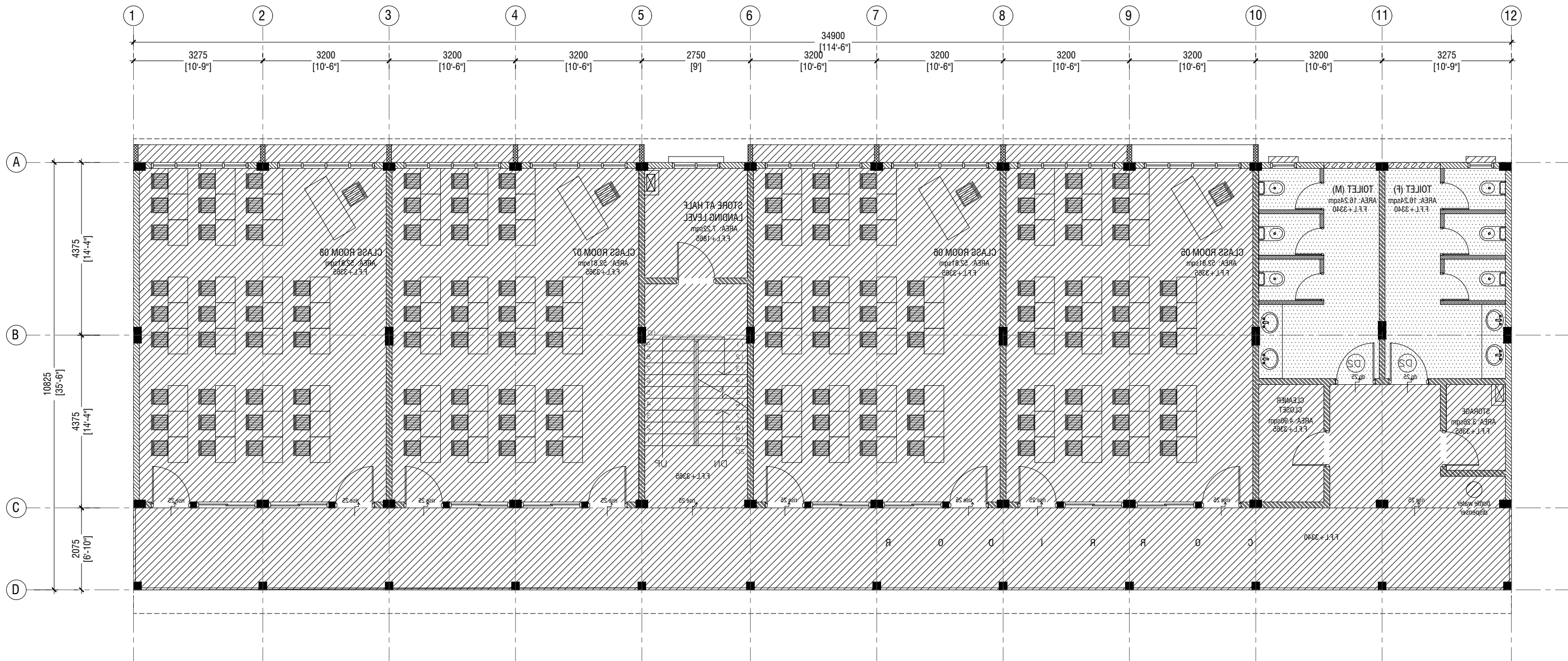
10mm GROOVES ON SCREED @ EQUAL SPACING

**GROUND FLOOR
FLOOR FINISHES PLAN**

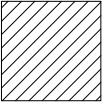

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0 0.5 1 2 3 4 5

LEGEND

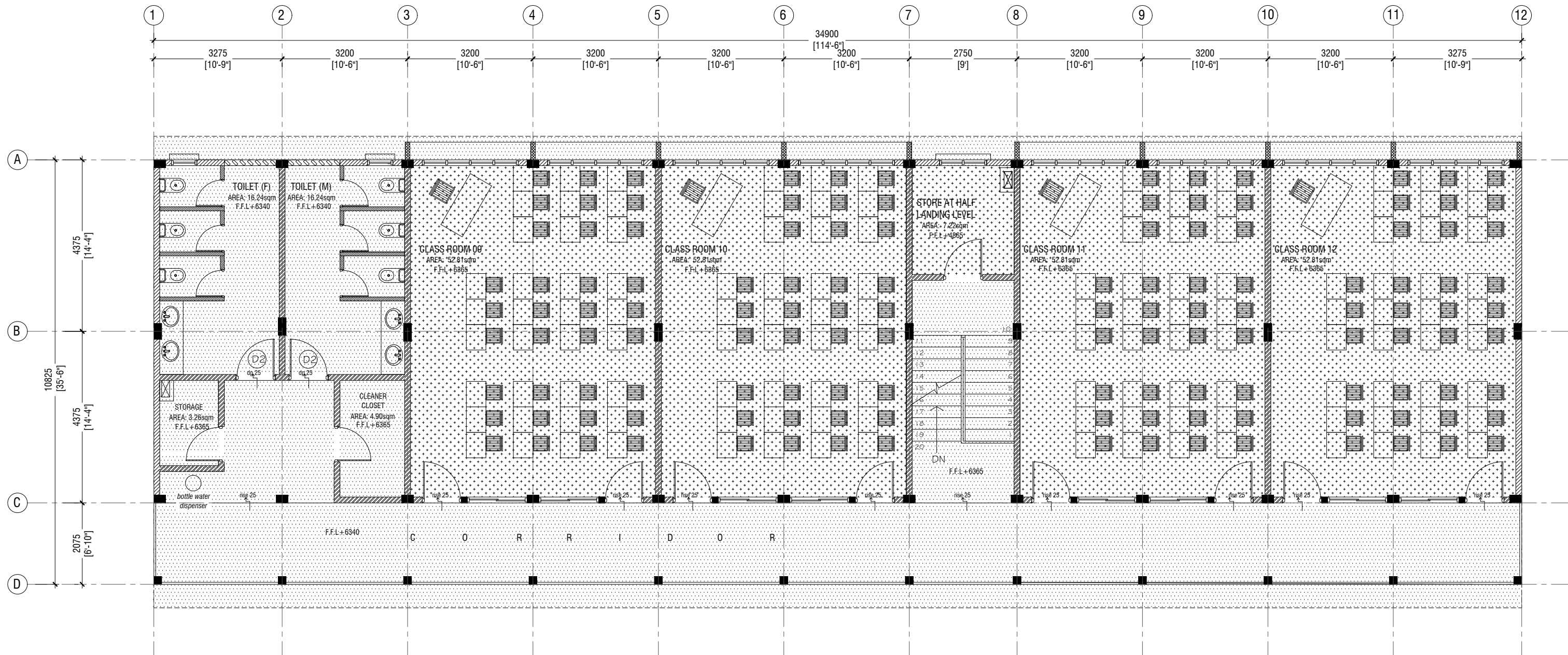
CODE	DESCRIPTION
	600X600mm HOMOGENOUS NON-SLIP TILES OVER 50mm SCREEDING
	2.5mm SELF LEVELING CEMENT WITH EPOXY FLOORPAINT (2 COATS OF EPOXY)
	300X300mm HOMOGENOUS NON-SLIP TILES OVER 25mm SCREEDING
	600X600mm HOMOGENOUS NON-SLIP TILES OVER 25mm SCREEDING (CEMENTITIOUS WATERPROOFING: MASTERSEAL 588 OR EQUIVALENT ON TOP OF THE SLAB)



**FIRST FLOOR
REFLECTED CEILING PLAN**
SCALE 1:100

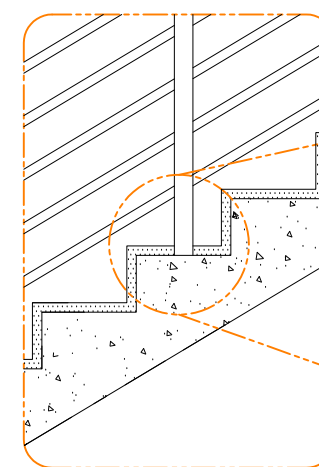
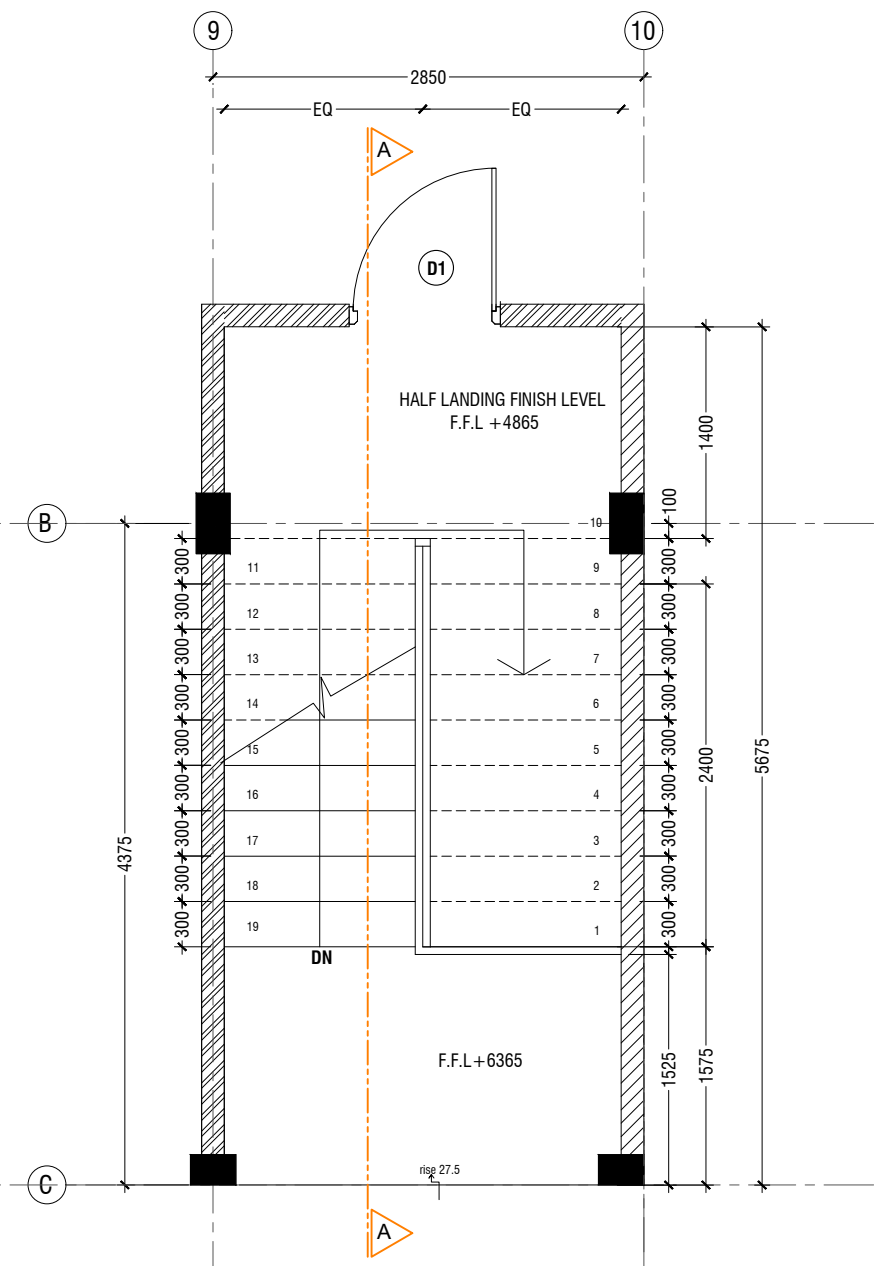
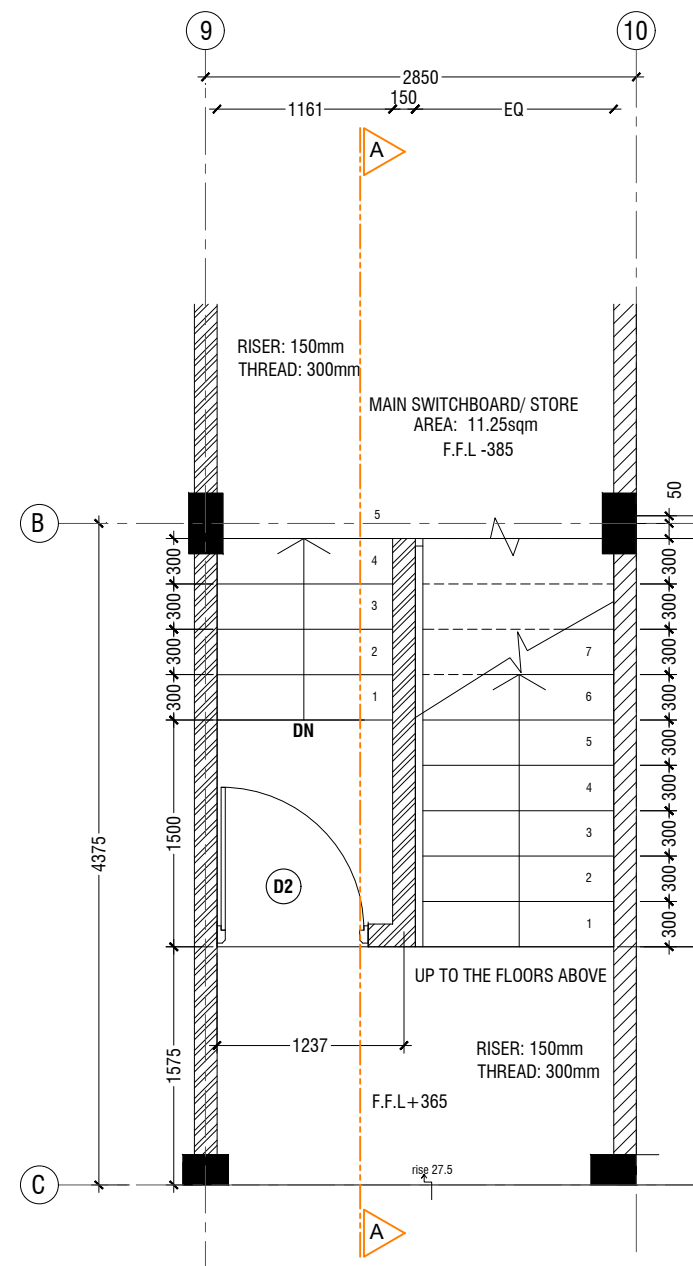
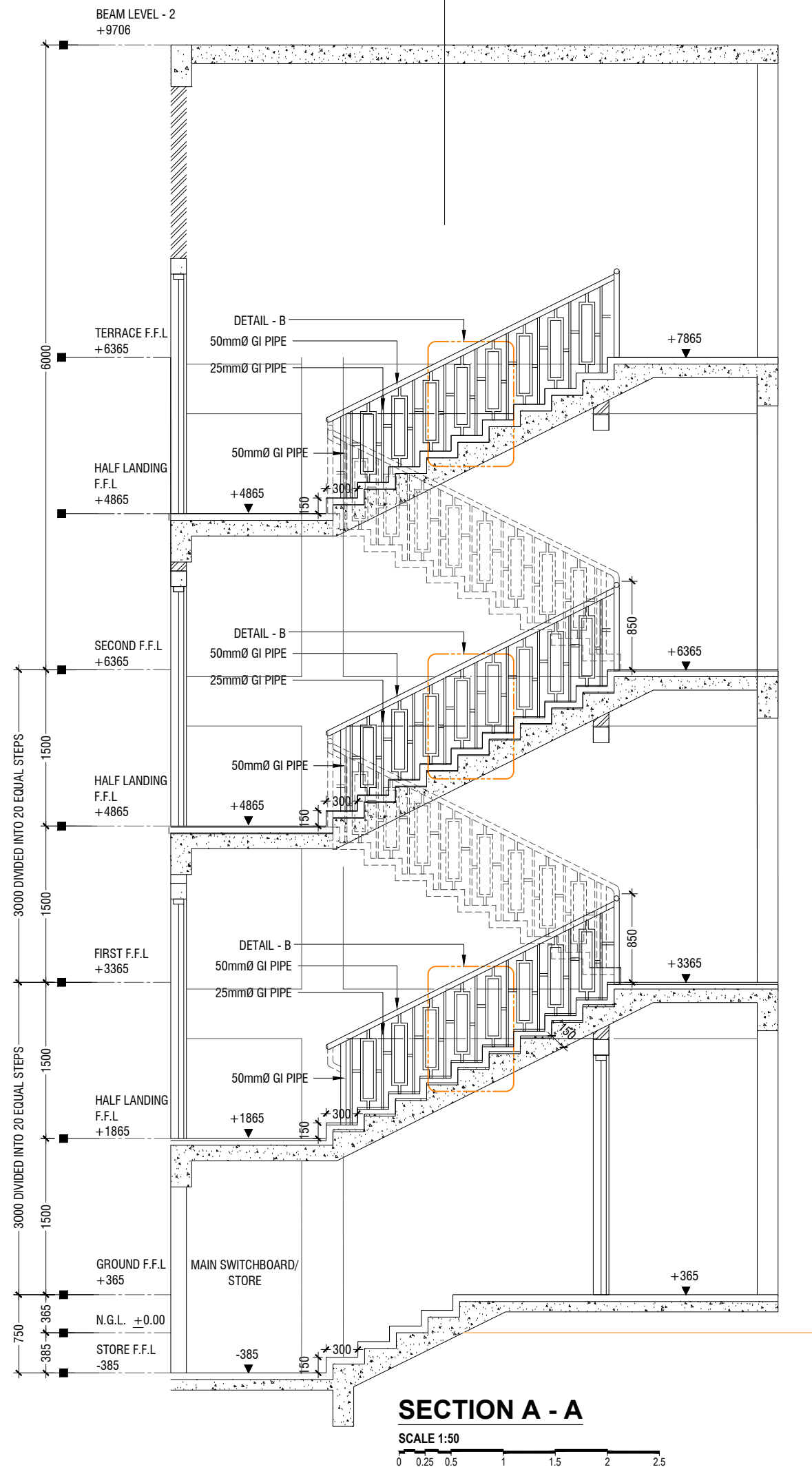
CODE	DESCRIPTION
	EXPOSED SLAB SOFFIT TO BE GROUND SMOOTH IN SELECT PAINT FINISH (ONE COAT OF PUTTY FOLLOWED BY SEALER AND 2 COATS OF PAINT)
	6mm THICK CEMENT BOARD ON ROOF EAVE/GABLE CEILING (ONE COAT OF PUTTY FOLLOWED BY SEALER AND 2 COATS OF PAINT)

NOTE : Have one opening on ceiling for access in each area



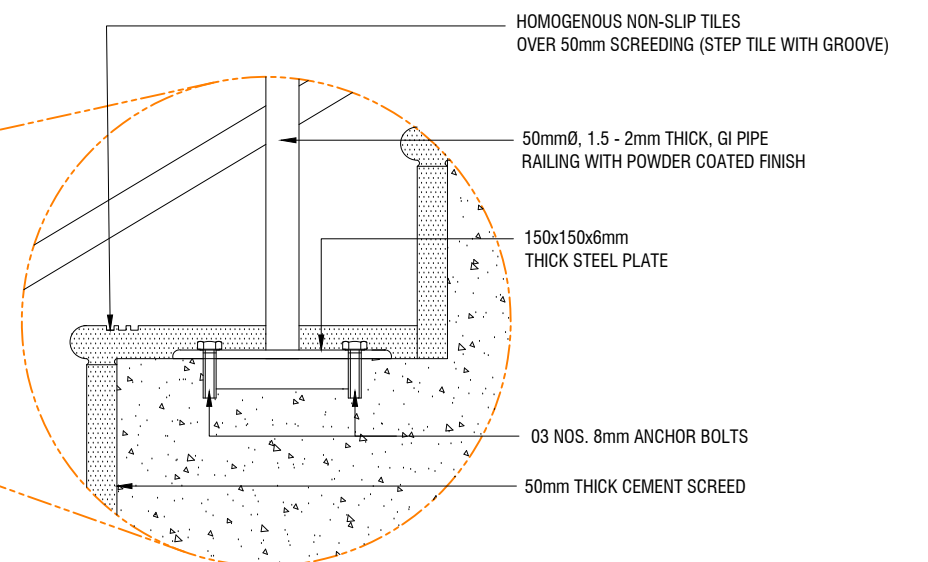
**SECOND FLOOR
REFLECTED CEILING PLAN**
SCALE 1:100

CODE	DESCRIPTION
	9mm THICK FIXED CEILING 'BORAL' OR EQUIVALENT PLASTERBOARD CEILING SYSTEM WITH TIMBER FRAMES, APPLIED WITH GROUND SMOOTH FINISH IN SELECTED PAINT
	6mm THICK CEMENT BOARD ON ROOF EAVE/GABLE CEILING (ONE COAT OF PUTTY FOLLOWED BY SEALER AND 2 COATS OF PAINT)



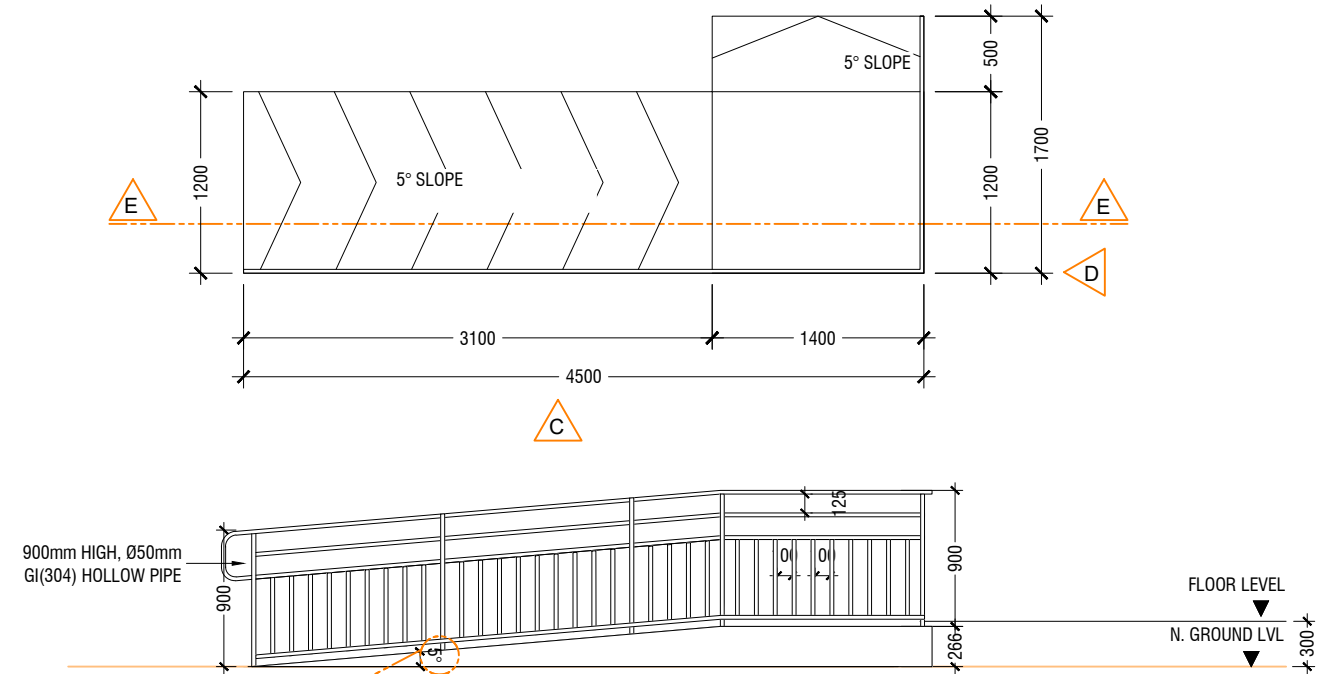
DETAIL B
SCALE 1:20

0 0.1 0.2 0.4 0.6 0.8 1

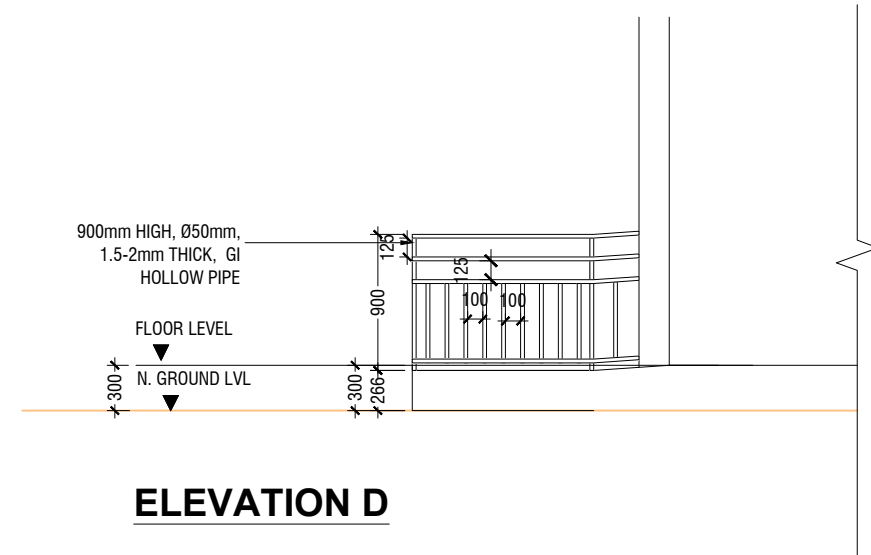


DETAIL - 1
STAIRCASE DETAILS
SCALE 1:20

0 0.1 0.2 0.4 0.6 0.8 1



ELEVATION C

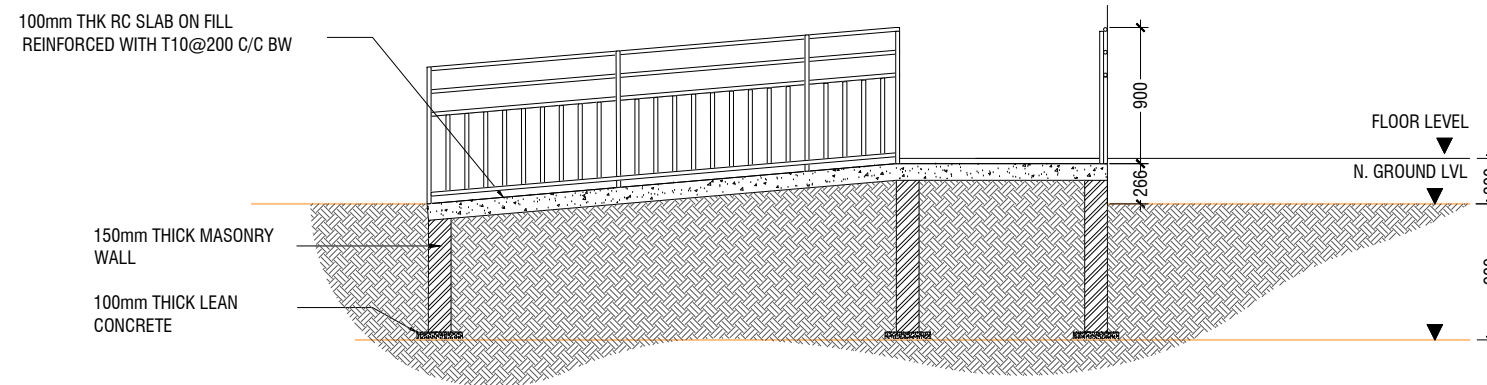


ELEVATION D

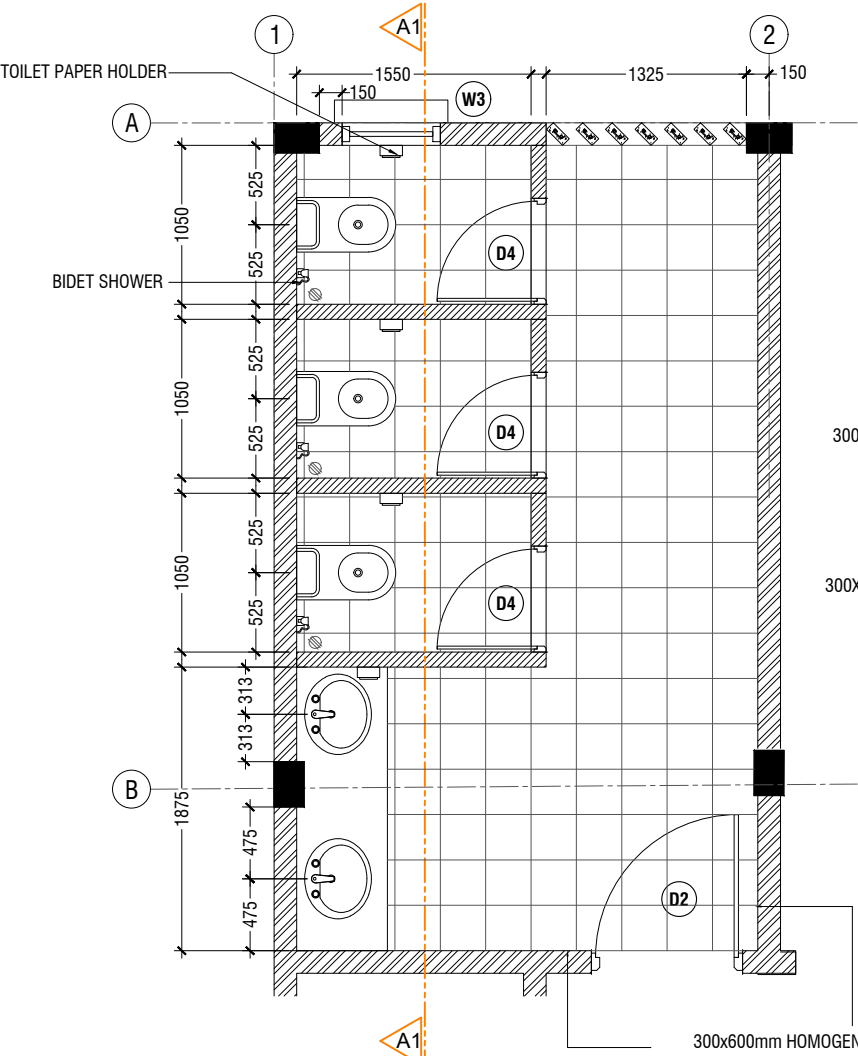
DETAIL - 2
MAIN ENTRANCE RAMP DETAILS

SCALE 1:50

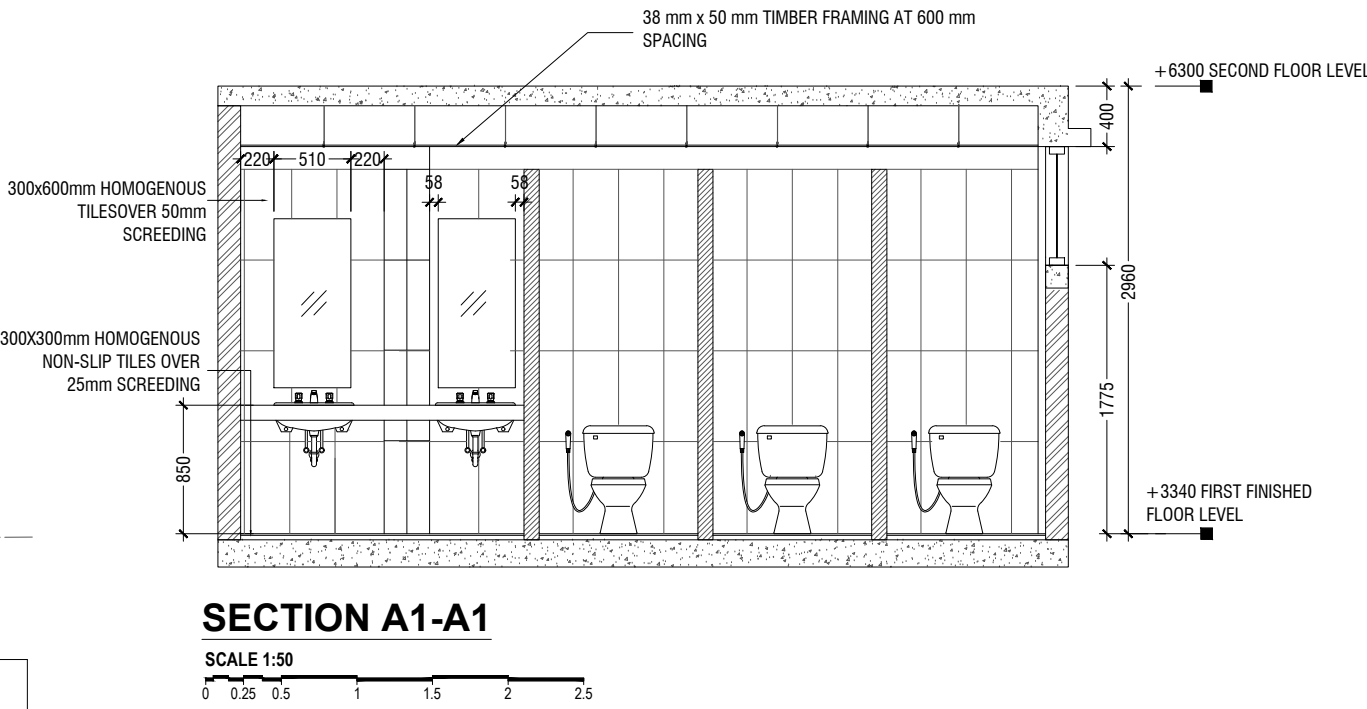
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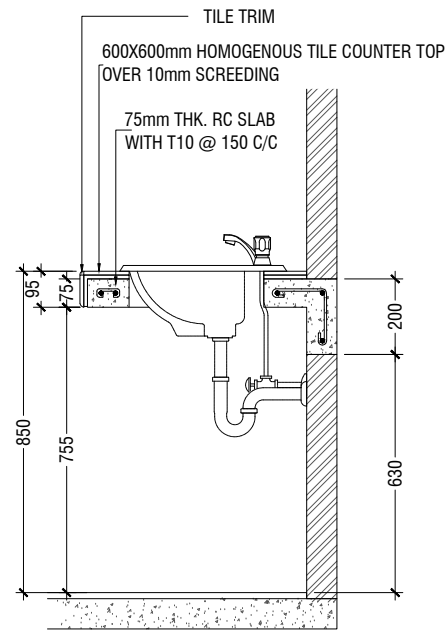
SECTION E-E



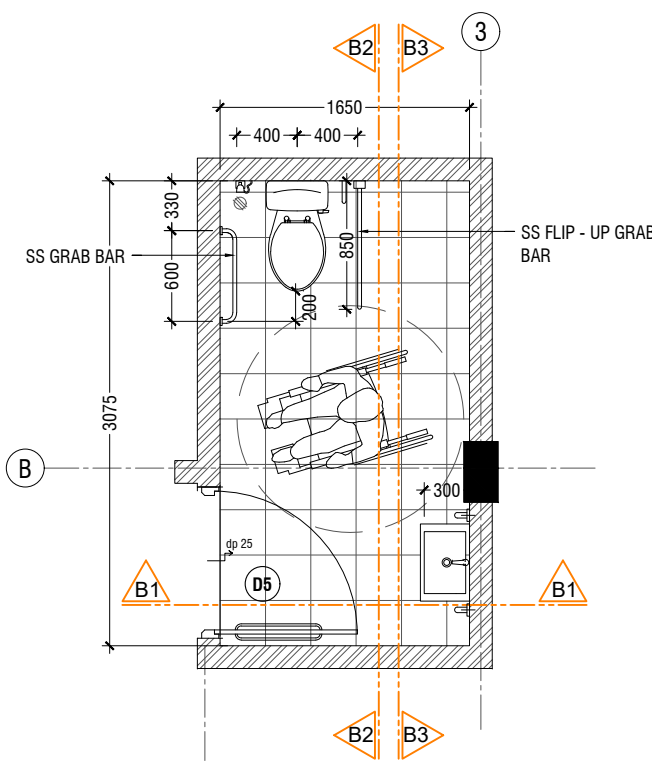
TYPICAL TOILET PLAN
SCALE 1:50



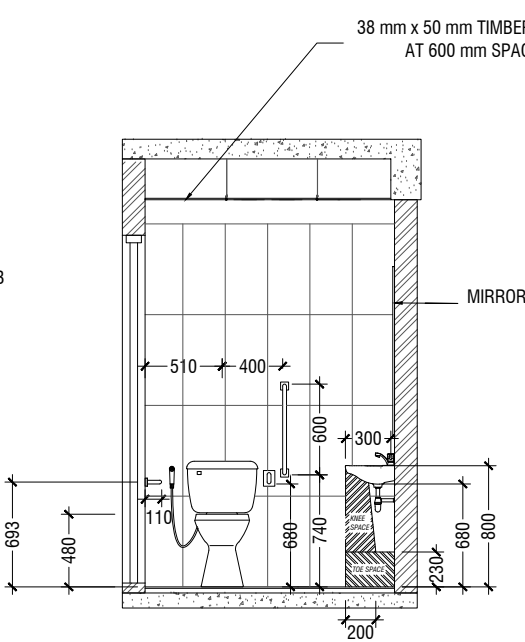
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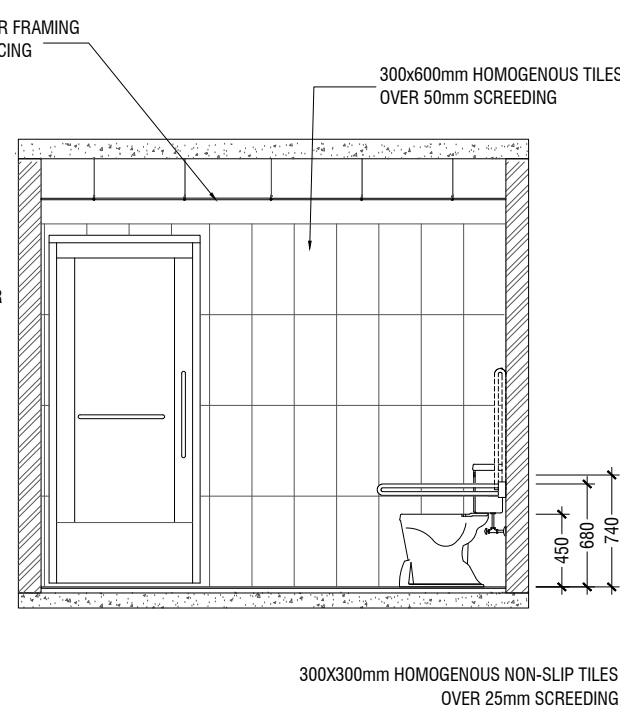
COUNTER TOP DETAILS
SCALE 1:20



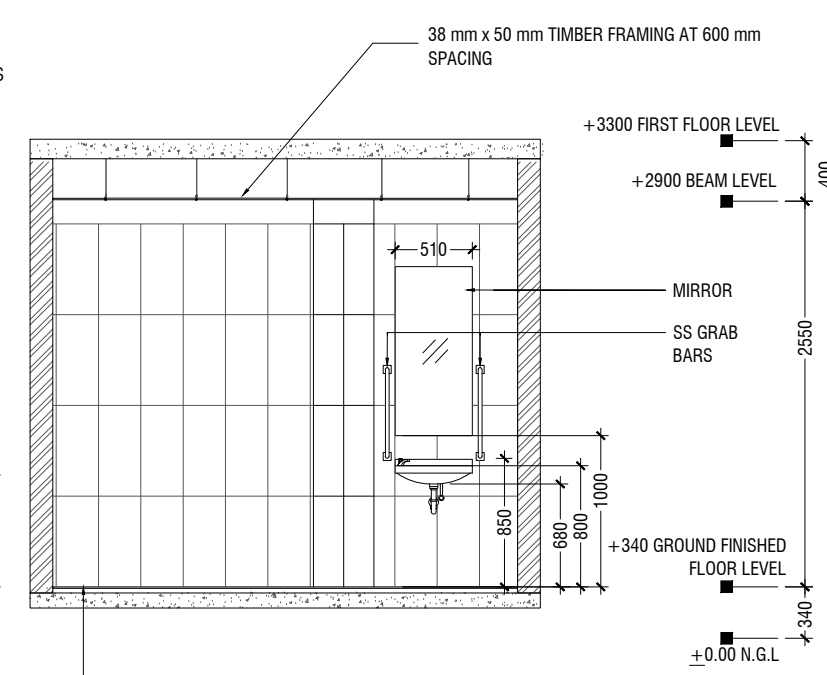
TOILET FOR PERSONS WITH DISABILITIES PLAN
SCALE 1:50



SECTION B1-B1
SCALE 1:50



SECTION B2-B2
SCALE 1:50



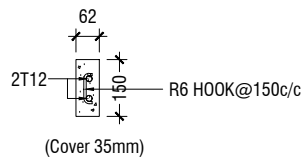
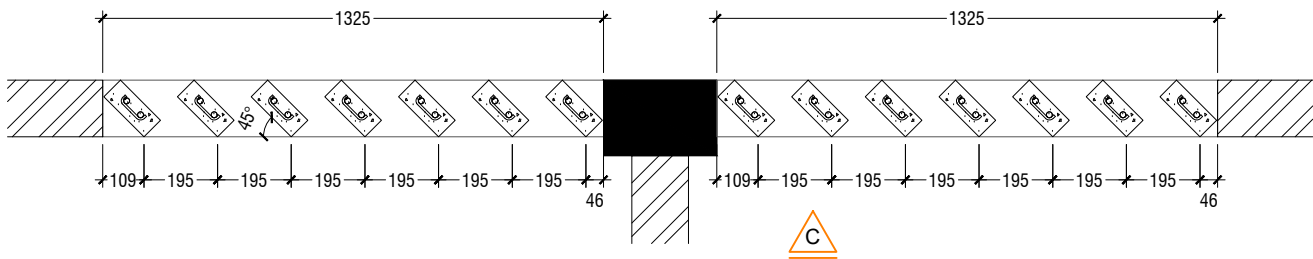
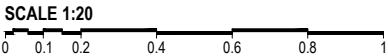
NOTE:
ALL THE MATERIALS FOR FIXTURES SHALL BE APPROVED
BY THE ARCHITECT/CONSULTANT BEFORE INSTALLATION

GRAB BARS OF THE DISABLE TOILET SHALL BE AS PER MANUFACTURE'S DETAIL

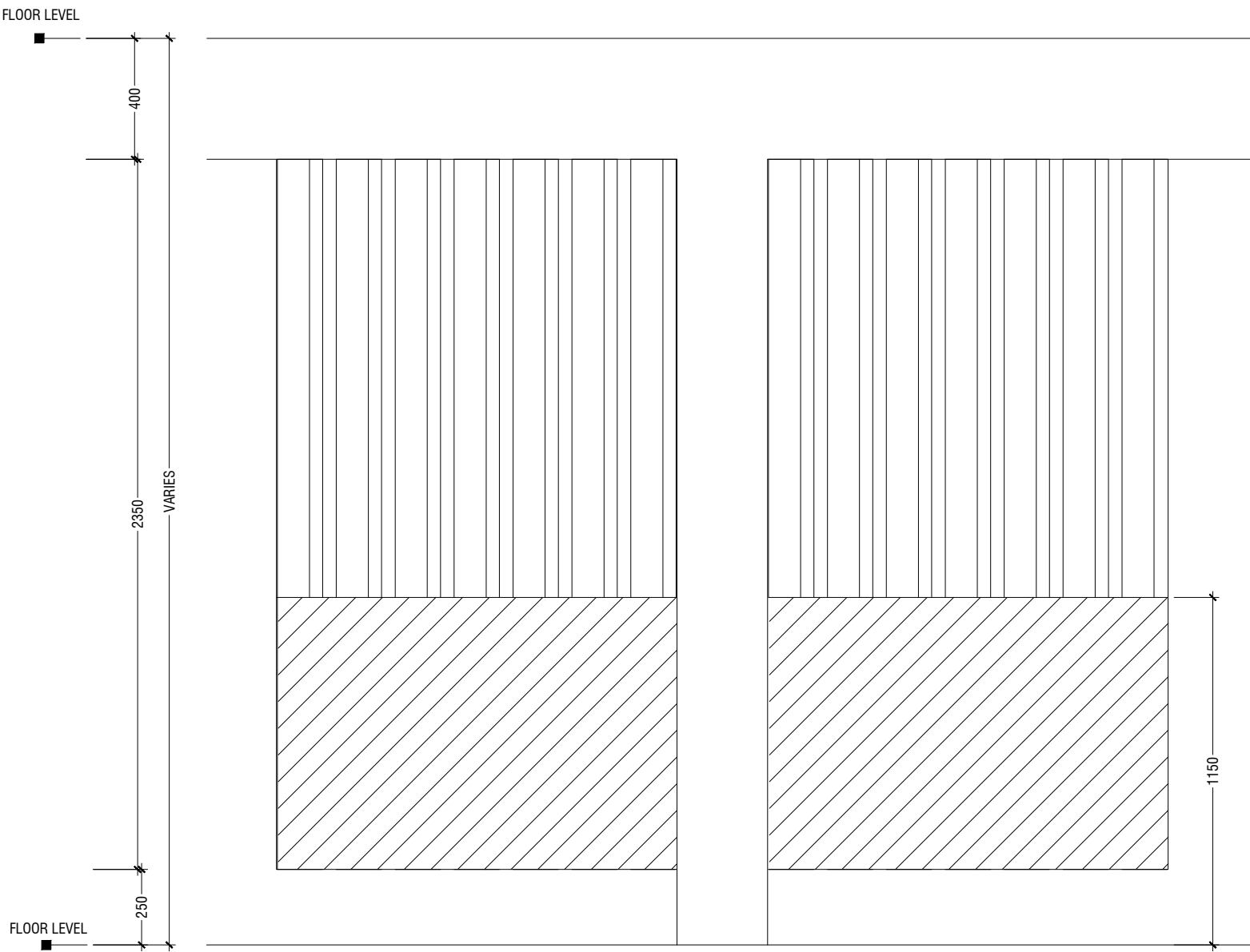
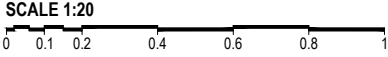
SECTION B3-B3
SCALE 1:50

**DETAIL - 3
TOILET DETAILS**
SCALE 1:50

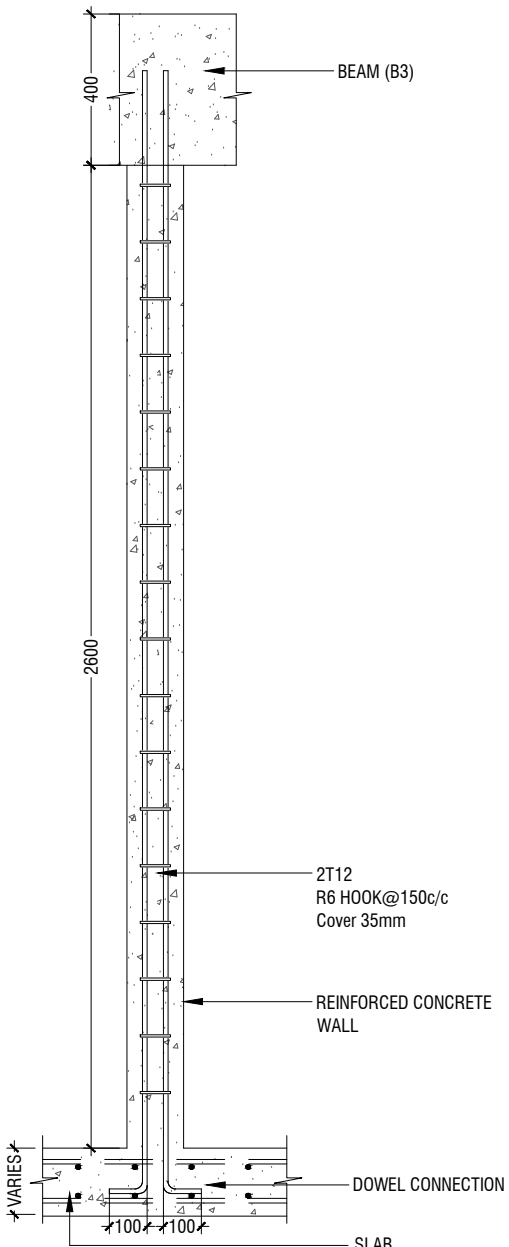
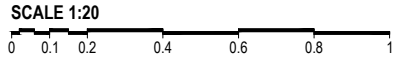
PLAN



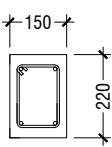
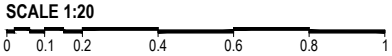
RC FIN DETAIL



ELEVATION - C



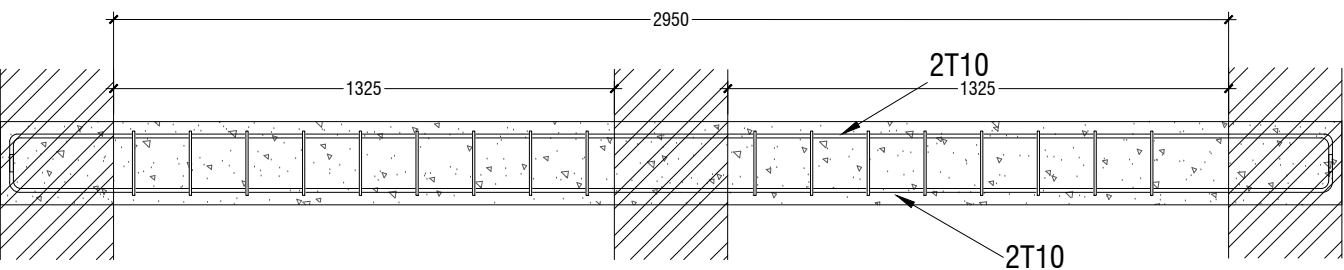
SECTION C-C




Span length= 2950mm
Wall thickness= 150mm
Overall Depth =220mm
Effective Depth= 182mm
Total Length of main bar=3630mm
Total length of Anchor Bar =3630mm
T length of Stirrup = 588mm

NOTE:-
FLOOR TO FLOOR HEIGHT VARIES AND WILL BE SUBJECTED TO CHANGES

DETAIL - 4
RC FIN DETAILS (TOILET)





PHYSICAL FACILITIES DEVELOPMENT
SECTION
MINISTRY OF EDUCATION,
MALE,
REPUBLIC OF MALDIVES

PROJECT : 06 CLASSROOM BLOCK
GDH.RATHAFANDHOO
(02 storey)

PROJECT
REFERENCE :

ARCHITECT : MOE

ENGINEER : MOE

DRAWN : MOE

CHECKED : MOE

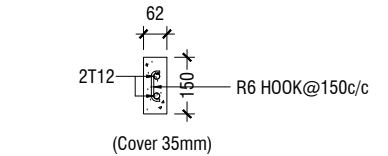
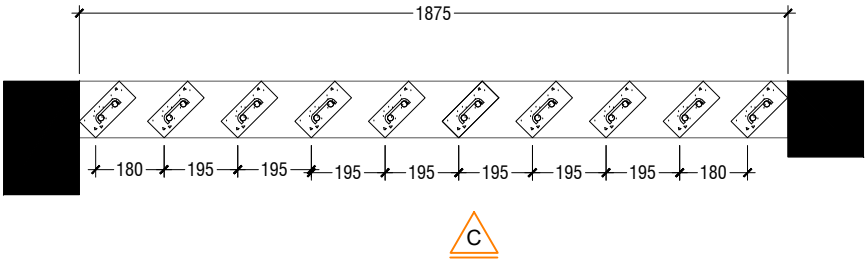
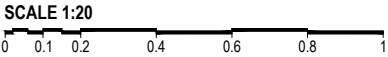
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DATE : 01.06.2022

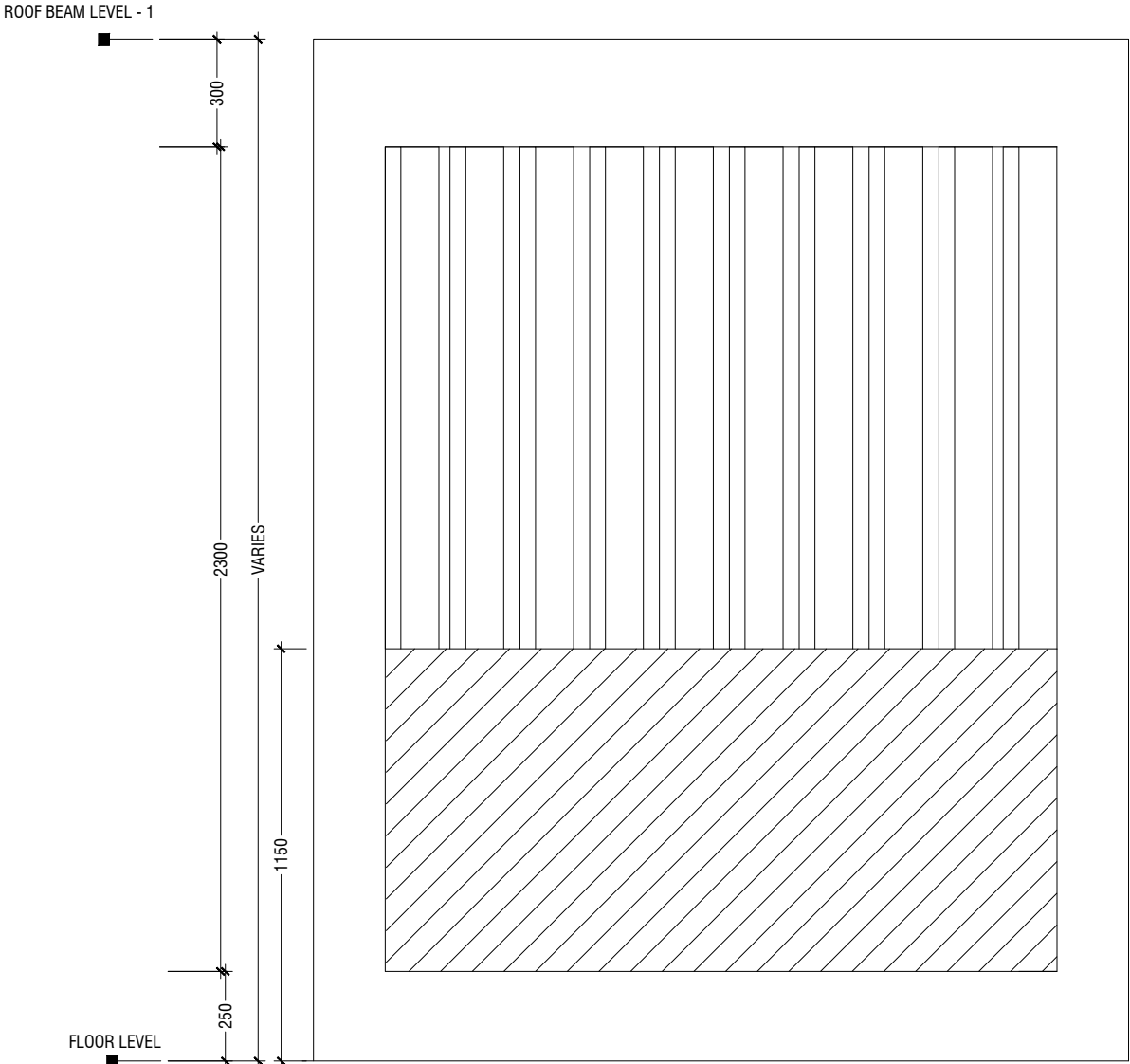
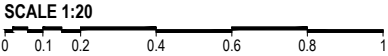
AMENDMENTS		
Issue	Date	Description

DWG NO : A - 18/ 22

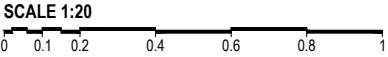
PLAN



RC FIN DETAIL



ELEVATION - C



NOTE:-
FLOOR TO FLOOR HEIGHT VARIES AND WILL BE SUBJECTED TO CHANGES

DETAIL - 5
RC FIN DETAILS (CORRIDOR)



PROJECT : 06 CLASSROOM BLOCK
GDH.RATHAFANDHOO
(02 storey)

PROJECT
REFERENCE :

ARCHITECT : MOE

ENGINEER : MOE

DRAWN : MOE

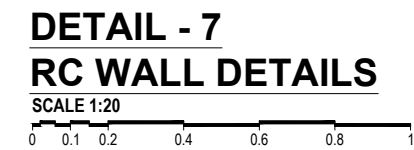
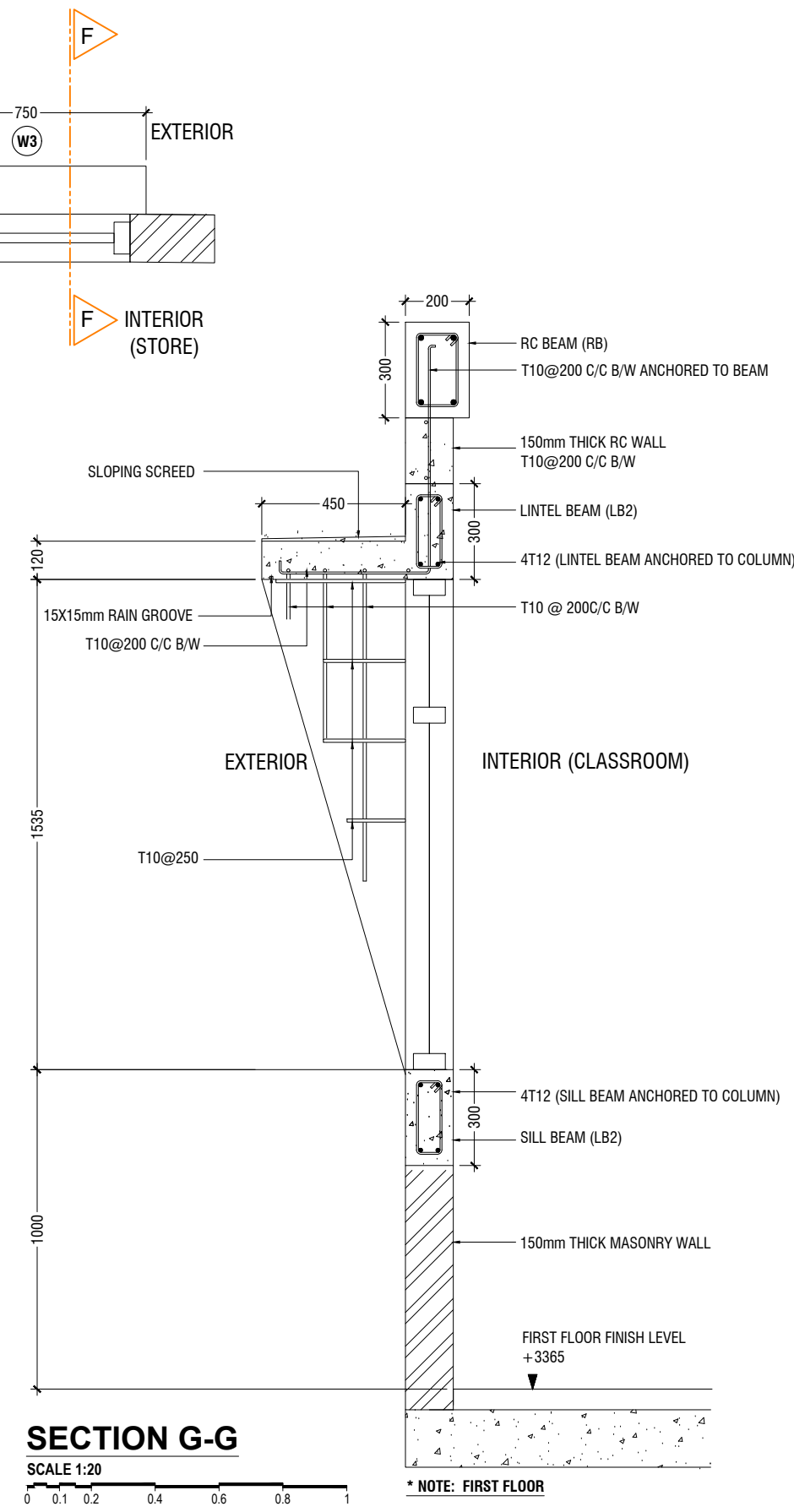
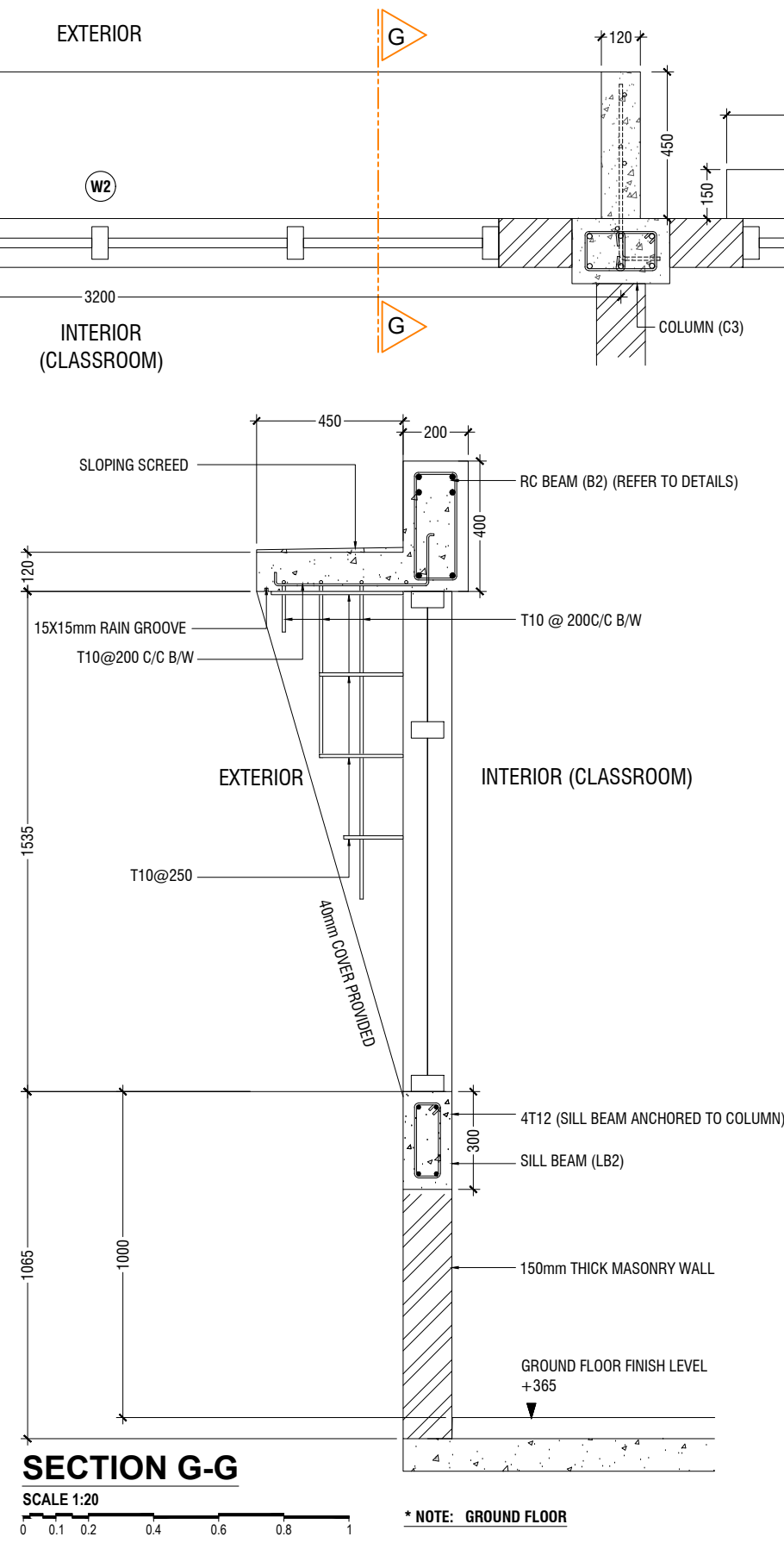
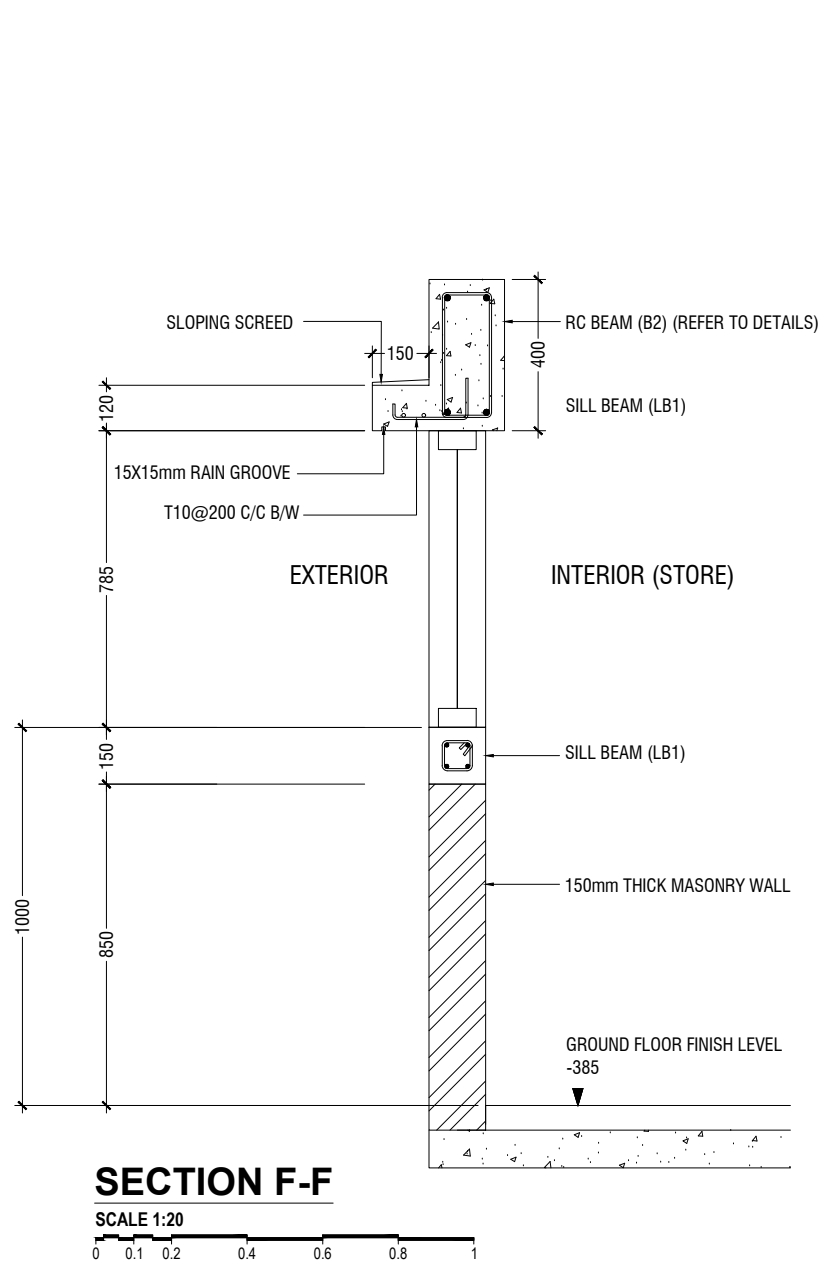
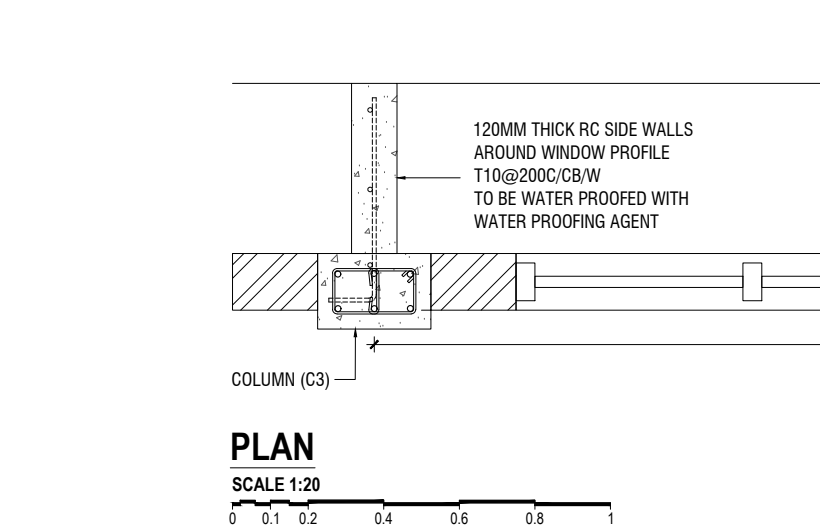
CHECKED : MOE


SCALE : AS GIVEN

DATE : 01.06.2022

AMENDMENTS

Issue	Date	Description



 PHYSICAL FACILITIES DEVELOPMENT SECTION MINISTRY OF EDUCATION, MALE, REPUBLIC OF MALDIVES		
PROJECT : 06 CLASSROOM BLOCK GDH.RATHAFANDHOO (02 storey)		
PROJECT REFERENCE :		
ARCHITECT : MOE		
ENGINEER : MOE		
DRAWN : MOE		
CHECKED : MOE		
SCALE : AS GIVEN		
DATE : 01.06.2022		
AMENDMENTS		
Issue	Date	Description
DWG NO : A - 21/ 22		

GENERAL NOTES

THE GENERAL NOTES SHALL BE READ IN CONJUNCTION WITH THE CONTRACT SPECIFICATIONS AND DRAWINGS. REGARDLESS OF WHETHER OR NOT SHOWN IN DRAWINGS OR OTHER TENDER DOCUMENTS, THE STANDARD PROVISIONS SPECIFIED HEREUNDER FOR COMPLIANCE BY THE CONTRACTOR SHALL APPLY TO ALL RELEVANT PORTIONS OF THE STRUCTURAL WORKS AND SHALL FORM PART OF THIS CONTRACT.

1.0 VERIFICATION OF DIMENSIONS AND LEVELS

- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LEVELS ON SITE, AND RESOLVE ALL DISCREPANCIES WITH THE ARCHITECT OR ENGINEER PRIOR TO COMMENCEMENT OF WORK.
- DRAWING INDICATES GENERAL & TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE OF SIMILAR CHARACTER TO DETAILS SHOWN AND ALTHOUGH NOT SPECIFICALLY INDICATED, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED SUBJECTED TO REVIEW BY THE ENGINEER.
- PRIOR TO COMMENCEMENT OF WORKS, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LEVELS IN THE CONTRACT DRAWINGS.
- DISCREPANCIES IN DRAWINGS ARISING FROM SUCH VERIFICATION WORKS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER.

2.0 SHOP DRAWINGS

- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ENSURING TOTAL COORDINATION OF ALL WORKS AND SHALL TAKE SITE MEASUREMENTS PRIOR TO THE PREPARATION OF ANY SHOP DRAWINGS OR BEFORE COMMENCING FABRICATION.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL SPECIALIST TRADES, SUCH AS PRESTRESSING, CURTAIN WALLING, ETC. FOR REVIEWS AND COMMENTS BY THE ARCHITECT/ENGINEER PRIOR TO COMMENCEMENT OF WORK. SUCH SHOP DRAWINGS SUBMITTED SHALL INCORPORATE ALL NECESSARY CONNECTION DETAILS TO THE STRUCTURAL MEMBERS SUCH AS CAST-IN INSERTS, EMBEDDED PLATES, ETC.

3.0 INCORPORATION OF M&E REQUIREMENTS IN THE STRUCTURE

- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ENSURING TOTAL COORDINATION OF STRUCTURAL, M & E PENETRATION DRAWINGS OF SERVICES AND SUBMIT SUCH SHOP DRAWINGS TO THE ARCHITECT/ENGINEER FOR REVIEWS AND APPROVAL PRIOR TO COMMENCEMENT OF WORK.
- THESE SHOP DRAWINGS SHALL INCORPORATE ALL MECHANICAL, ELECTRICAL AND SANITARY WORKS TO BE EMBEDDED IN CONCRETE AND ALL OPENINGS FOR ALL PIPE OR DUCT WORKS, BASED ON THE REQUIREMENTS OF M & E DRAWINGS IN HIS POSSESSION.
- HE SHALL CHECK AND RESOLVE ALL DISCREPANCIES WITH THE RESPECTIVE ENGINEER PRIOR TO PLACEMENT OF CONCRETE.

4.0 LEAN CONCRETE FOR SUSPENDED STRUCTURES

- UNLESS OTHERWISE STATED, 50 MM THICK LEAN CONCRETE WITH A MINIMUM 28-DAY CUBE STRENGTH OF 15N/MM2 SHALL BE PROVIDED ON ALL SOIL SURFACES FORMING THE UNDERSIDE OF STRUCTURAL CONCRETE MEMBERS.

5.0 STRUCTURAL ELEMENTS ON GRADE

- UNLESS OTHERWISE STATED, A SINGLE LAYER OF 0.25 MM(HEAVY DUTY) POLYTHENE SHEET, OR EQUIVALENT THERMOPLASTIC MATERIAL, LAID OVER A COMPACTED 60 MM THICK LAYER OF HARD CORE BLINDED WITH SAND TO PREVENT GROUT LOSS FROM SEEPAGE INTO THE GROUND SHALL BE PROVIDED ON ALL SOIL SURFACES FORMING THE UNDERSIDE OF THE NON-SUSPENDED SLABS.

6.0 SUBGRADE UNDER STRUCTURAL ELEMENTS

- WHERE THE CONTRACTOR REQUIRES REMOVAL AND SUBSEQUENT BACKFILL OF SUBGRADE PRIOR TO CASTING OF PILECAP/WALL/BEAM/SLAB, HE SHALL ENSURE THAT THE BACKFILL IS OF APPROVED MATERIAL AND THAT THE BACKFILL SHALL BE REASONABLY COMPACTED TO ENSURE THAT THE COMPACTED SOIL IS ABLE TO WITHSTAND THE WEIGHT OF THE WET CONCRETE. THE CONTRACTOR SHALL EXERCISE PROPER SKILL AND CARE TO AVOID DAMAGE TO ADJACENT INSTALLED STRUCTURES ARISING FROM HIS CONSTRUCTION SEQUENCE.

7.0 WATERPROOFING FOR STRUCTURES

- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND METHOD STATEMENTS FOR THE ENGINEER'S APPROVAL PRIOR TO COMMENCEMENT OF WORK. REQUIRED SHOP DRAWING DETAILS INCLUDE BUT ARE NOT LIMITED TO TREATMENT OF FLASHINGS, WATERSTOP AT CONSTRUCTION JOINTS, WALL AND SLAB PENETRATIONS.
- ALL PENETRATIONS THROUGH STRUCTURAL ELEMENTS SHALL BE CAST-IN, SLEEVED AND PROVIDED WITH APPROVED PUDDLE FLANGE DETAIL. IF FOR ANY REASON THE CONTRACTOR IS UNABLE TO LAY WATERSTOP AT CONSTRUCTION JOINTS AS INDICATED IN THE DRAWINGS, HE SHALL AT HIS OWN EXPENSES PROVIDE ADEQUATE GROUT TUBES FOR WATERPROOF PRESSURE GROUTING TO ENSURE WATERTIGHTNESS OF THE JOINT.
- ALL GROUT TUBES SHALL BE MARKED AND PROTECTED FROM BLOCKAGE.
- BACKFILLING OPERATIONS AGAINST VERTICAL SURFACE SHALL BE CARRIED OUT AS SOON AS THE WATERPROOFING BARRIER IS INSTALLED TO THE SATISFACTION OF THE ENGINEER.

8.0 CASTING LAYERS

- INCLINED CASTING LAYERS AND INCLINED CONSTRUCTION JOINTS SHALL BE AVOIDED.
- HORIZONTAL CASTING LAYERS SHALL NOT IN GENERAL EXCEED 0.6 M THICKNESS UNLESS OTHERWISE APPROVED BY THE ENGINEER.

9.0 FOUNDATIONS

- ALL FOUNDATIONS HAS BEEN DESIGNED FOR SAFE GROUND PRESSURE OF 150 KN/M.
- ALL BACKFILL SHOULD BE DONE WITH MATERIALS APPROVED BY THE CONSULTANT AND SOURCE. ALL BACKFILL SHOULD BE STRUCTURAL FILL, COMPACTED IN LAYERS AS SPECIFIED.
- WEAK POCKETS FOUND BELOW THE ASSUMED FOUNDATION LEVELS SHALL BE REMOVED AND REPLACED BY PLAIN CONCRETE.
- IN CASE OF EXCAVATIONS BELOW THE ASSUMED LEVEL OF THE FOUNDATION, THE SOIL SHALL BE REPLACED BY PLAIN CONCRETE.
- IN CASE GROUND WATER IS PRESENT ABOVE FOUNDATION LEVEL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING THE BELOW LEVEL OF FOUNDATIONS.
- THE CONTRACTOR SHALL MAINTAIN DRY WORKING CONDITIONS THROUGH OUT THE CONSTRUCTION PERIOD. RESTORING WATER TABLE CAN BE DONE AFTER BACKFILLING AND COMPACTION UP TO THE SLAB ON GRADE LEVEL, OR AS DIRECTED BY THE ENGINEER.
- NO BACK FILLING SHALL BE PLACED AGAINST WALLS RETAINING EARTH, UNLESS THE WALLS ACHIEVE SUFFICIENT STRENGTH TO PREVENT MOVEMENT OR STRUCTURAL DAMAGE.

10.0 CONSTRUCTION LOAD AND SHORING

- CONSTRUCTION LIVE LOAD IMPOSED ON ANY SINGLE FLOOR SHALL NOT EXCEED 1.5 KN/M2. UNLESS OTHERWISE APPROVED BY THE ENGINEER, DEAD LOAD OF THE TOP CONSTRUCTION FLOOR SHALL BE SUPPORTED BY TWO COMPLETED FLOORS DIRECTLY BELOW IT.
- PROPS TO BEAMS AND SLABS AT ANY FLOORS SHALL NOT BE REMOVED UNTIL THE TWO IMMEDIATE FLOORS ABOVE THAT LEVEL ARE CAPABLE OF SUPPORTING THEMSELVES AS WELL AS ANY LOADS IMPOSED DURING CONSTRUCTION. CONSIDERATIONS GOVERNING REMOVAL OF PROPS INCLUDE BUT ARE NOT LIMITED TO THE ATTAINMENT OF 28-DAY STRENGTH FOR THE CONCRETE, DESIGN LOAD CAPACITY OF THE FLOOR UNDER REVIEW AND THE COMPLETION OF PRESTRESSING AND GROUTING OPERATIONS IN THE CASE OF A PRESTRESSED STRUCTURAL FLOOR SYSTEM.

- PROPS SHALL BE LEFT IN PLACE FOR SUPPORTING THE CONSTRUCTION LOADS APPROVED BY THE ENGINEER.
- NO ALLOWANCE HAS BEEN MADE IN THE DESIGN OF THE PERIMETER BEAMS/WALLS FOR THE SUPPORT OF TEMPORARY SCAFFOLDINGS.
- THE CONTRACTER SHALL ENGAGE HIS OWN PROFESSIONAL ENGINEER TO DESIGN AND STRENGTHEN THE BEAMS/WALLS.
- THE CONTRACTER SHALL ENGAGE HIS OWN PROFESSIONAL ENGINEER CHECK THE ADEQUACY OF SHORING DETAIL PROVIDED PROCEEDING THE WORK, AS SHORING WAS DESIGNED, CONSIDERING THE STATUS OF THE BUILDING AT THE TIME OF DESIGN.

11.0 CONCRETE COVER

- MINIMUM COVER TO OUTERMOST REINFORCEMENT INCLUDING LINKS SHALL BE AS FOLLOWS.

STRUCTURAL ELEMENT	COVER (mm)
RAFT BEAM & SLAB (EARTH FACE)	60
RAFT BEAM & SLAB (INTERNAL FACE)	60
COLUMN	40
B.EAM	35
BEAM (EXTERNAL FACE)	40
SLAB	30
INTERNAL WALL	30
EXTERNAL WALL	40

- NOTE: EARTH FACE COVER OF BEAMS, COLUMNS & WALLS SHOULD BE 50mm

12.0 MATERIAL STRENGTHS

12.1 CONCRETE

- UNLESS OTHERWISE STATED, ORDINARY PORTLAND CEMENT CONFORMING TO BS 12, TO BE USED FOR ALL THE RC STRUCTURAL ELEMENTS.
- THE MINIMUM 28-DAY COMPRESSIVE CUBE STRENGTH OF CONCRETE FOR SPECIFIED STRUCTURAL ELEMENTS SHALL BE AS FOLLOWS UNLESS OTHERWISE STATED:

MAIN BUILDING		
LEAN CONCRETE		15 N/mm2
MASS CONCRETE		30 N/mm2
COLUMN, BEAM AND SLAB		30 N/mm2
EXTERNAL WORK		
PAVEMENTS		30 N/mm2
ALL OTHERS (CULVERT, DRAINS, MANHOLE, ETC)		30 N/mm2
FOUNDATION		
PILECAP, FOOTING, RAFT TIE-BEAM, CAPPING BEAM		30 N/mm2

- CEMENT SHALL BE ORDINARY PORTLAND CEMENT TO BS 12.

12.2 REINFORCEMENT

- UNLESS OTHERWISE STATED, BAR SIZE 10MM DIAMETER OR LARGER SHALL BE HIGH TENSILE TYPE II DEFORMED BARS. THE MINIMUM YIELD STRENGTH OF STEEL BAR REINFORCEMENT SHALL BE AS FOLLOWS:

MILD STEEL PLAIN BAR	250 N/mm2
HIGH TENSILE TYPE II DEFORMED BAR	415 N/mm2

12.25 REINFORCEMENT ANCHORAGE OR LAPPING IS AS FOLLOWS U.N.O.

	BAR GRADE 415
TENSION	45Ø
COMPRESSION	45Ø

Ø IS DIAMETER OF THE SMALLER SIZED LAPPED BAR.

- NO SPLICE SHALL BE MADE AT POINT OF MAXIMUM STRESS,EG IN BEAMS AND SLABS, THERE SHALL BE NO SPLICING OF TOP BARS OVER SUPPORTS NOR BOTTOM BARS AT MID-SPANS. SPLICES SHALL BE STAGGERED WHEREVER POSSIBLE. LAP LENGTH FOR UNEQUAL SIZE BARS (OR WIRES IN FABRIC) MAY BE BASED UPON THE SMALLER BAR. FOR BUNDLED BARS, THE EQUIVALENT DIAMETER SHALL BE USED. CRANKING OF BARS SHALL NOT EXCEED A SLOPE OF 1:10.
- FOR LAP LENGTH, WHERE SYMBOLS ARE NOT INDICATED, THE TENSION LAP LENGTH SHALL BE FOLLOWED.

13.0 STIRRUPS, LINKS AND TIES

- ALL STIRRUPS, LINKS AND TIES IN BEAMS, COLUMNS AND WALLS RESPECTIVELY SHALL TERMINATE NOT MORE THAN 75mm FROM THE FACE OF ANY ADJACENT STRUCTURAL MEMBERS.

14.0 SLAB DISTRIBUTION BARS

- REGARDLESS OF WHETHER OR NOT SHOWN ON PLAN, ALL DISTRIBUTION BARS FOR SLAB SHALL COMPRISE TYPICALLY ONE OF THE FOLLOWING COMBINATIONS, UNLESS OTHERWISE STATED IN THE RELEVANT DRAWINGS :

SLAB THICKNESS (mm)	MIN. DISTRIBUTION BAR
250 OR LESS	T10-300
GREATER THAN 250 BUT LESS THAN OR EQUAL TO 300	T10-200
GREATER THAN 300 BUT LESS THAN OR EQUAL TO 400	T10-150

15.0 FLOOR RENDERING

- THICKNESS OF SCREED RENDERING/MASS CONCRETE TOPPING EXCEEDING 60 OR MORE SHALL BE REINFORCED WITH ONE LAYER OF R6.

16.0 SHRINKAGE CRACKS

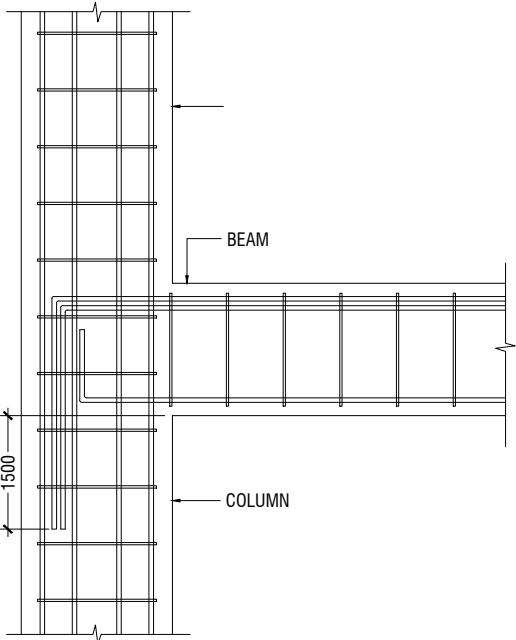
- THE SURFACE OF CONCRETE SHALL BE ADEQUATELY AND CONTINUOUSLY CURED TO SPECIFICATION TO PREVENT FORMATION OF SHRINKAGE CRACKS.THOUGH SHRINKAGE CRACKS HAVE NO EFFECT ON THE STRENGTH AND INTEGRITY OF THE STRUCTURE,THEY SHOULD BE SEALED BY EPOXY PRESSURE GROUTING. ALL COST INCURRED FOR THE NECESSARY SEALING UP OF SHRINKAGE CRACKS BY EPOXY PRESSURE GROUTING SHALL BE DEEMED TO BE INCLUDED IN THE CONCRETE WORK AS TENDERED.

17.0 STEEL BAR CORROSION PROTECTION

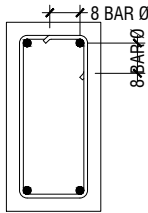
- ALL EXPOSED BARS FOR FUTURE CONSTRUCTION PURPOSES (EXCEEDING 3 MONTHS) MUST BE COATED WITH MASTER EMACO 8100 AP OR APPROVED EQUIVALENT AND PROVIDED WITH ADEQUATE MAINTENANCE.

18.0 SPACER BARS

- ALL SPACER BARS BETWEEN 2 OR MORE LAYERS OF REINFORCEMENT SHALL T25 OR BAR DIAMETER (WHICHEVER IS GREATER) AT ± 1-5M C/C.

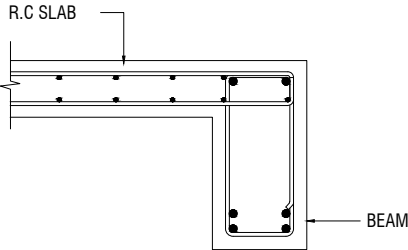


BEAM TO COLUMN CONNECTION

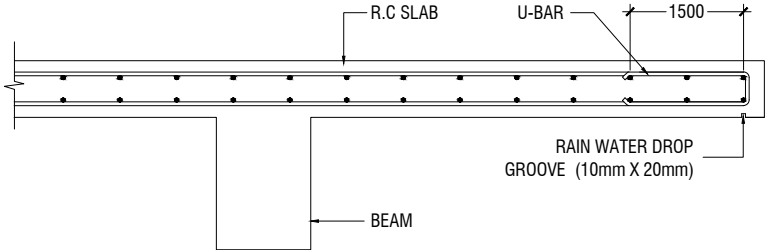


Ø = DIA OF LINK

SHEAR LINKS ANCHORAGE DETAIL



SLAB-BEAM ANCHORAGE DETAIL



CANTILEVERED SLAB EDGE DETAIL

19.0 STRUCTURAL TIMBER SPECIFICATION

19.1 THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE COMPLETED STRUCTURE, AND ARE NOT INTENDED TO INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, SEQUENCES, AND FOR JOB SAFETY.

19.2 THE ENGINEER DOES NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

19.3 ALL CONSTRUCTION IS IN COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL WORK IN COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS.

19.4 ALL TIMBER FOR STRUCTURAL USE SHALL BE HARDWOOD OR SOFTWOOD OF VISUAL GRADE C/D IN ACCORDANCE WITH BS 5756 WITH THE FOLLOWING MINIMUM GRADE STRESSES:

19.5 CONNECTIONS

- PLATES - STAINLESS STEEL GRADE 316 OF STATED THICKNESS
- BOLTS - SS GRADE 316

19.6 TIMBER TREATMENT

- MOISTURE - PRESSURE IMPREGNATION OF CCA
- INSECTS - TERMITE TREATMENT FOR TIMBER IN / NEAR GROUND

23.0 POST-INSTALLED ANCHORS

1. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE DRAWINGS. CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER OF RECORD (EOR) PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSINGS OR MISPLACED ANCHORS.

2. CARE SHALL BE GIVEN TO AVOID CONFLICTS WITH EXISTING REINFORCING WHEN DRILLING HOLES. HOLES SHALL BE DRILLED AND CLEANED PER THE MANUFACTURER'S INSTRUCTIONS. ANCHORS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AT NOT LESS THAN MINIMUM EDGE DISTANCES AND/OR SPACINGS INDICATED IN THE MANUFACTURER'S LITERATURE.

3. SPECIAL INSPECTION SHALL BE PROVIDED FOR ALL ADHESIVE AND MECHANICAL ANCHOR INSTALLATIONS AS REQUIRED BY THE EOR. INDEPENDENT ON-SITE PROOF LOAD TESTING SHALL BE PERFORMED AS REQUIRED BY THE EOR. CONTACT EOR FOR NUMBER OF ANCHORS REQUIRED TO BE TESTED AND REQUIRED PROOF LOAD MAGNITUDE.

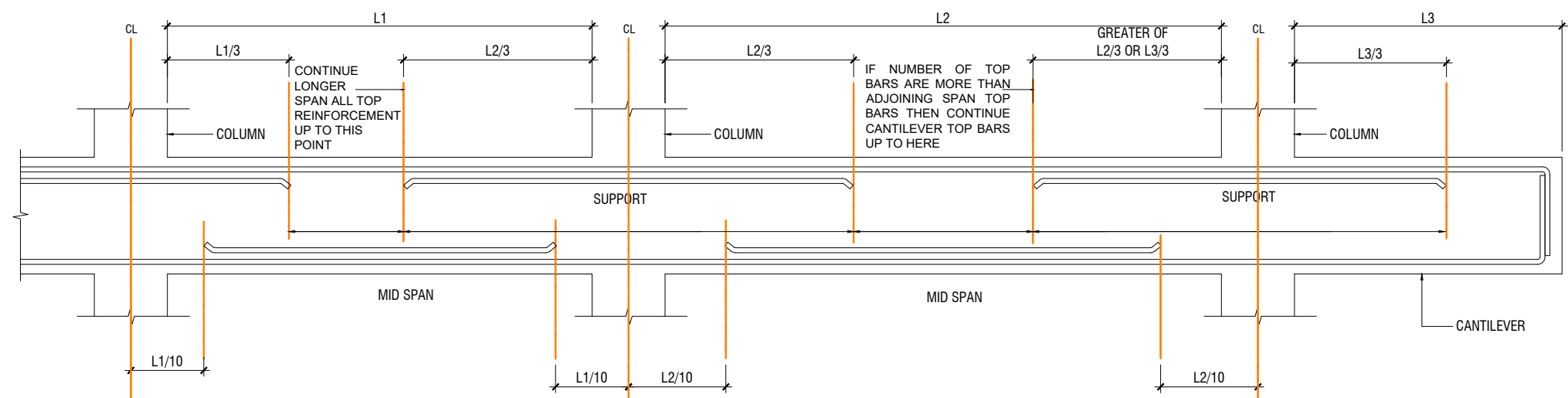
20.0 STRUCTURAL STEEL SPECIFICATION

1. SEE 21.0 ON PRIMARY CODES AND SPECIFICATIONS.

2. MATERIALS:

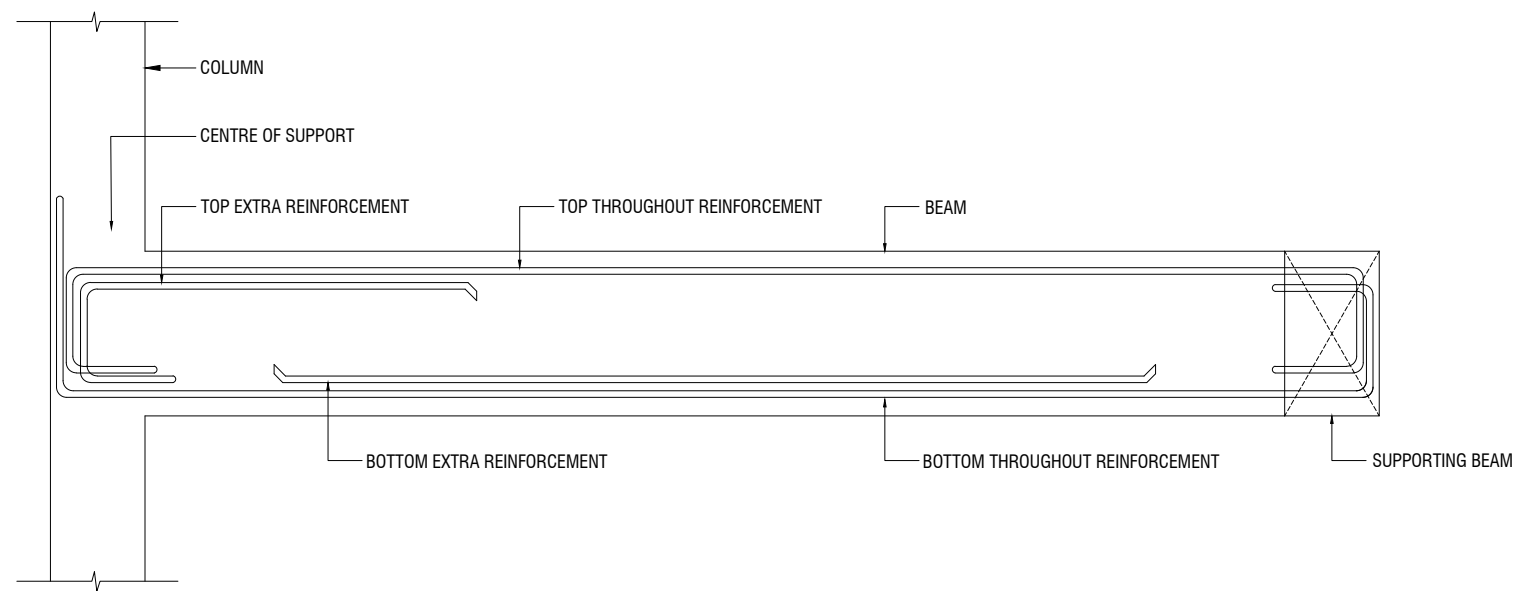
- W-SHAPES & WT-SHAPES..... ASTM A992
- S-SHAPES, M-SHAPES, HP-SHAPES..... ASTM A36
- ST-SHAPES & MT-SHAPES..... ASTM A36
- C-SHAPES & MC-SHAPES..... ASTM A36
- ANGLES & PLATES..... ASTM A36
- HSS SHAPES..... ASTM A500, GRADE B
- STEEL PIPE..... ASTM A53 (TYPE E OR S), GRADE B
- HIGH STRENGTH BOLTS..... ASTM A325
- MACHINE BOLTS..... ASTM A307
- ANCHOR RODS.....ASTM F1554, GRADE 55 TYPE S1(UNO)
- WELDED HEADED STUDS..... ASTM A108
- DEFORMED BAR ANCHORS..... ASTM A496
- WELDING ELECTRODES..... AWS D1.1, E70 SERIES

3. NON-SHRINK, NON-METALLIC GROUT WITH A 28 DAY STRENGTH OF 35MPa SHALL BE USED UNDER BASE PLATES AND SHALL CONFORM TO BS EN 12390-3 AND EN 196-1. MASTERFLOW 542 OR EQUIVALENT MAYBE USED.

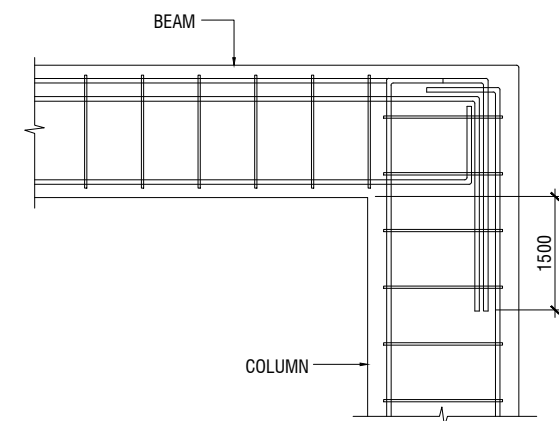


SIMPLIFIED DETAILING RULES FOR BEAMS (BS8110-1)

L1 = SHORTER SPAN
L2 = LONGER SPAN
L3 = CANTILEVER LENGTH

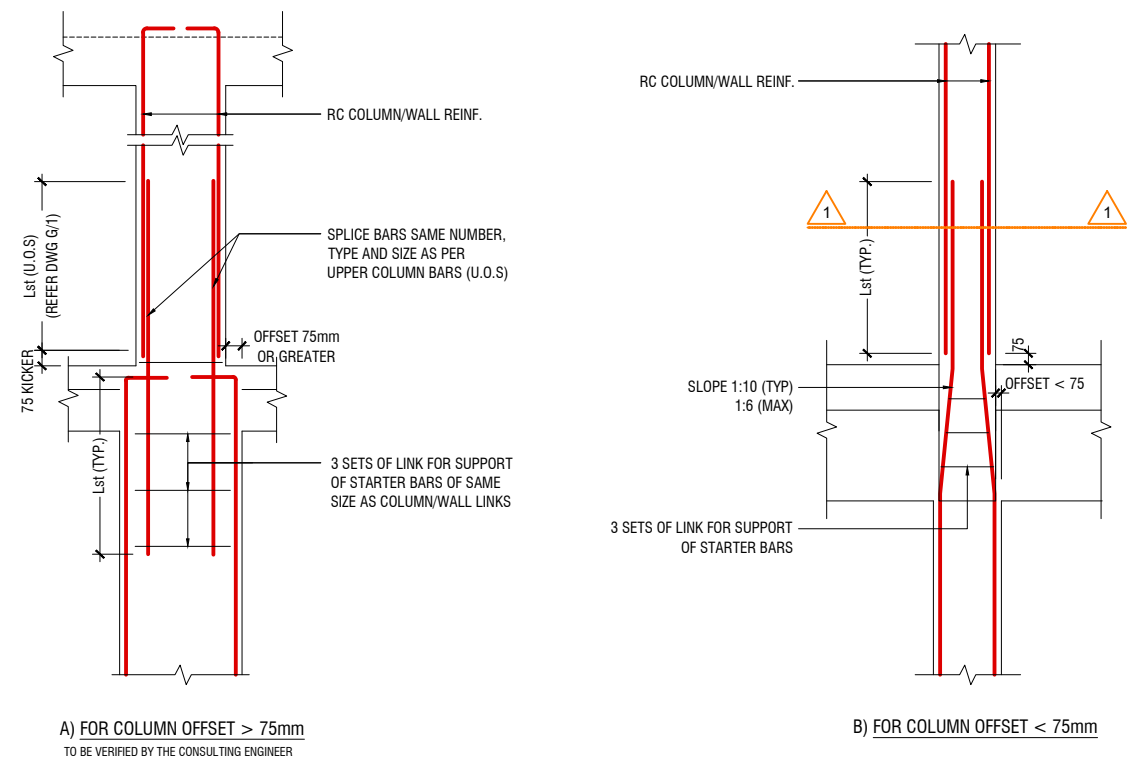


LONGITUDINAL SECTION OF TYPICAL SLAB BEAM SPANNING BETWEEN A COLUMN AND BEAM
SHOWING END SPAN MID SPAN REINFORCEMENT DETAILS

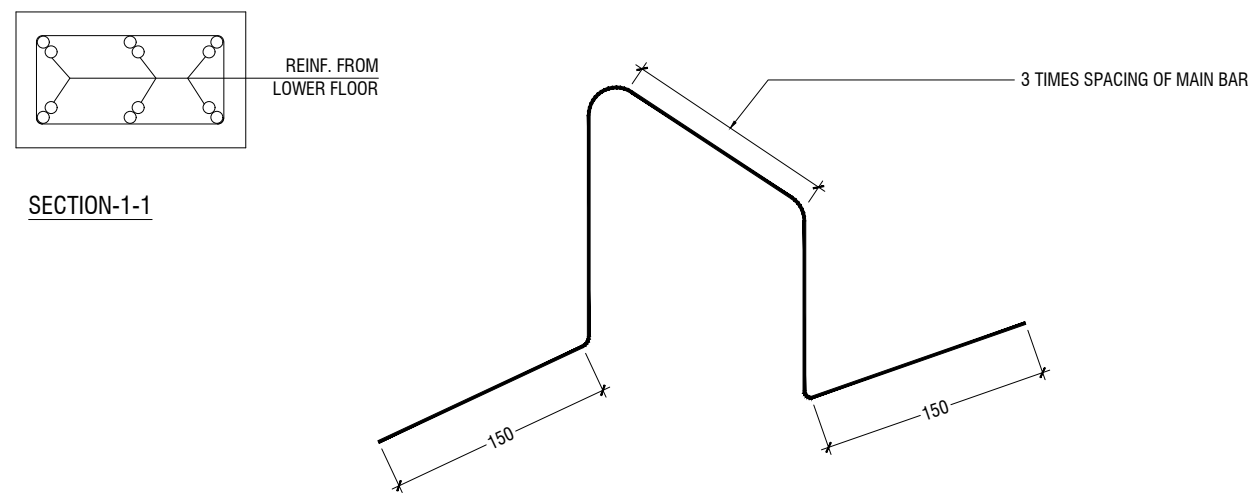


END COLUMN TO BEAM CONNECTION

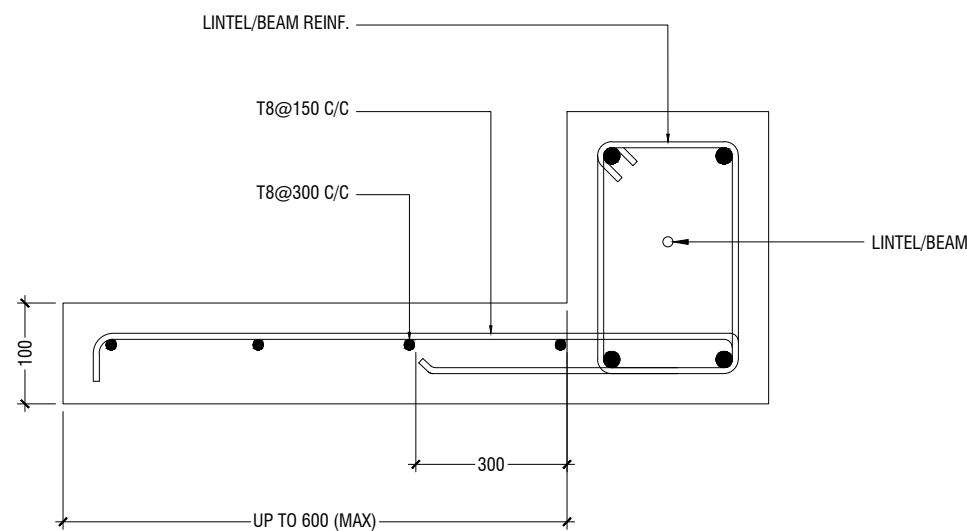
NOTE:
STANDARD DETAILS GIVEN HERE ALSO APPLIES TO FOUNDATION MEMBERS
OTHER DETAILS NOT FOUND HERE SHALL BE REFEREED TO IN RELEVANT BS
CODES OR SHALL BE APPROVED BY CLIENT'S ENGINEER



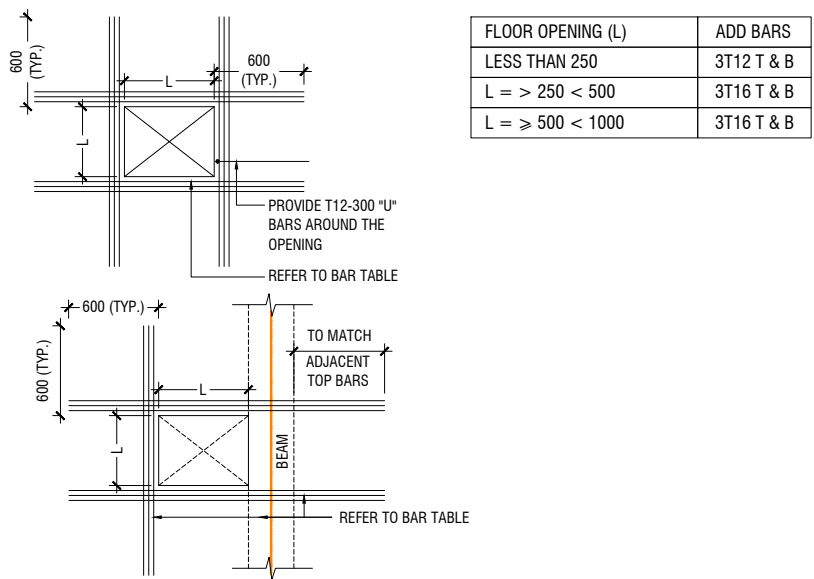
COLUMN/WALL REINF. LAPPING DETAIL AT FLOOR LEVEL



TYPICAL CHAIR DETAIL

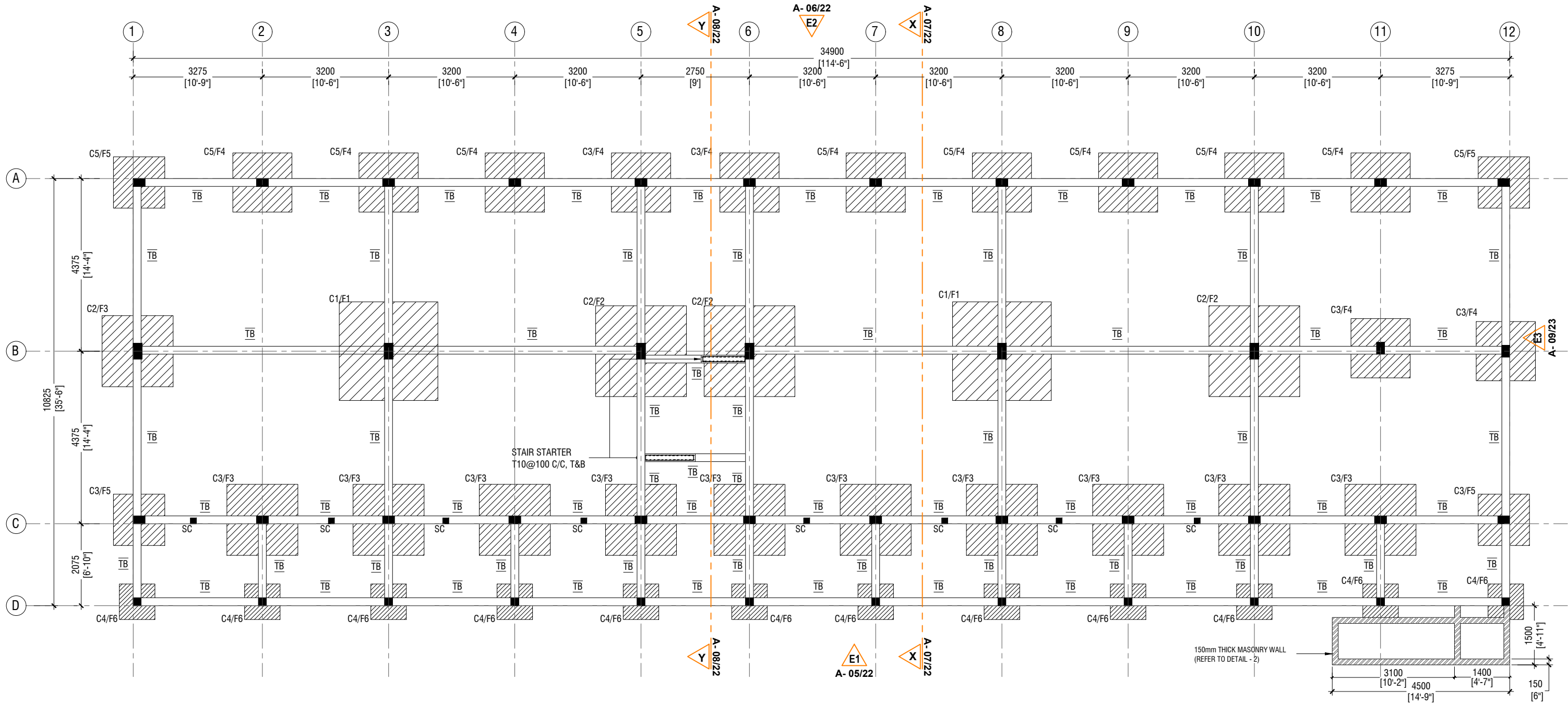


TYPICAL CANTILEVER DETAILS



- NOTE:-
- FOR OPENINGS LESS THAN 200x200. SLAB REBARS TO BE ADJUSTED AROUND OPENING.
 - FOR OPENINGS GREATER THAN 250x250 TO BE APPROVED BY THE ENGINEER.
 - ALL SLAB OPENINGS LOCATION TO BE APPROVED BY THE ENGINEER.
 - EQUIVALENT OPENING AREA SHALL APPLY THE DETAILS SHOWN ABOVE.
 - EQUIVALENT OPENING AREA SHALL INCLUDE RECTANGLE, TRIANGLE AND ANY POLYGON SHAPE.
 - EXCEPT HACKING, NO SLAB CORING ARE ADVISABLE FOR POST-TENSIONED SLAB.

TYPICAL TRIMMER BARS DETAILS FOR OPENING IN SLABS



FOUNDATION PLAN

SCALE 1:100



NOTE:

COLUMN SIZES

C1	: 225 x 400 mm
C2	: 225 x 400 mm
C3	: 200 x 300 mm
C4	: 200 x 200 mm
C5	: 200 x 300 mm
SC	: 150 x 150 mm
COVER	: 40mm

FOUNDATION PAD SIZES

	DIMENSION	REINFORCEMENT
F1	2500 x 2500 x 400	T16@125 C/C B/W (B)
F2	2300 x 2300 x 350	T16@110 C/C B/W (B)
F3	1800 x 1800 x 300	T12@125 C/C B/W (B)
F4	1500 x 1500 x 300	T12@150 C/C B/W (B)
F5	1300 x 1300 x 300	T12@150 C/C B/W (B)
F6	900 x 900 x 300	T12@150 C/C B/W (B)

NOTE:

CONCRETE COVER

COLUMN	: 40mm
SLAB	: 30mm
BEAM	: 35mm
FOOTING	: 50mm
TIE BEAM	: 50mm

LAP LENGTH FOR BARS

25MM	: 1125 mm
20MM	: 900 mm
16MM	: 720 mm
12MM	: 550 mm
10MM	: 450 mm

CONCRETE GRADE = M25

SAFE BEARING CAPACITY = 150KPa

HOOK LENGTH AND OTHER DETAILS ARE PROVIDED IN THE GENERAL NOTES

FOUNDATION DEPTH : 1200mm BELOW GROUND LEVEL

ALL FOOTINGS ARE TO BE LAID ON TOP OF 50mm THICK LEAN CONCRETE
APPLY WATER PROOFING TO SUBSTRUCTURE (BELOW GROUND ELEMENTS)

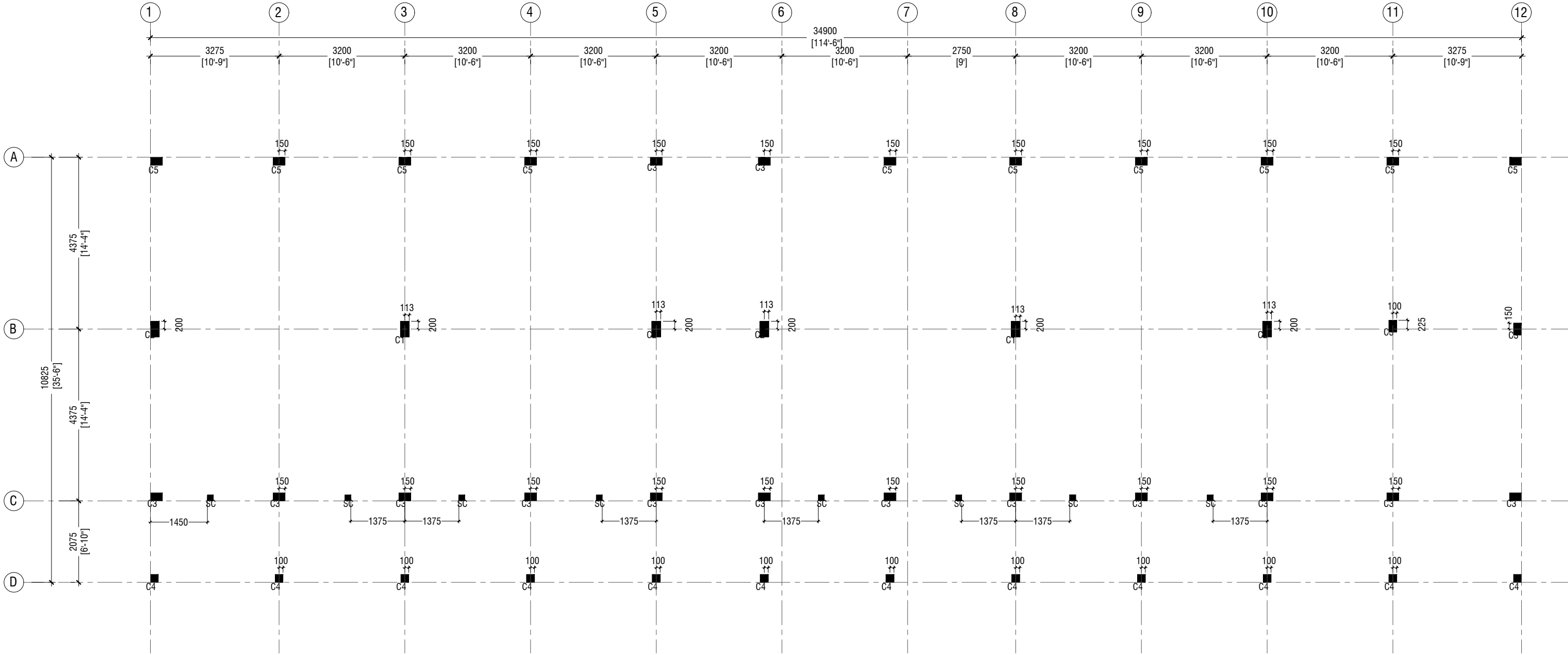
TIE BEAM SIZES

TB	: 200 x 450 mm
COVER	: 50mm

GROUND SLAB : 100mm THK RC SLAB ON FILL
REINFORCED WITH T10@200 C/C BW

-150mm THK. SOLID MASONRY BLOCK WALL

RAMP SLAB : 100mm THK RC SLAB ON COMPACTED FILL
REINFORCED WITH T10@200 C/C BW



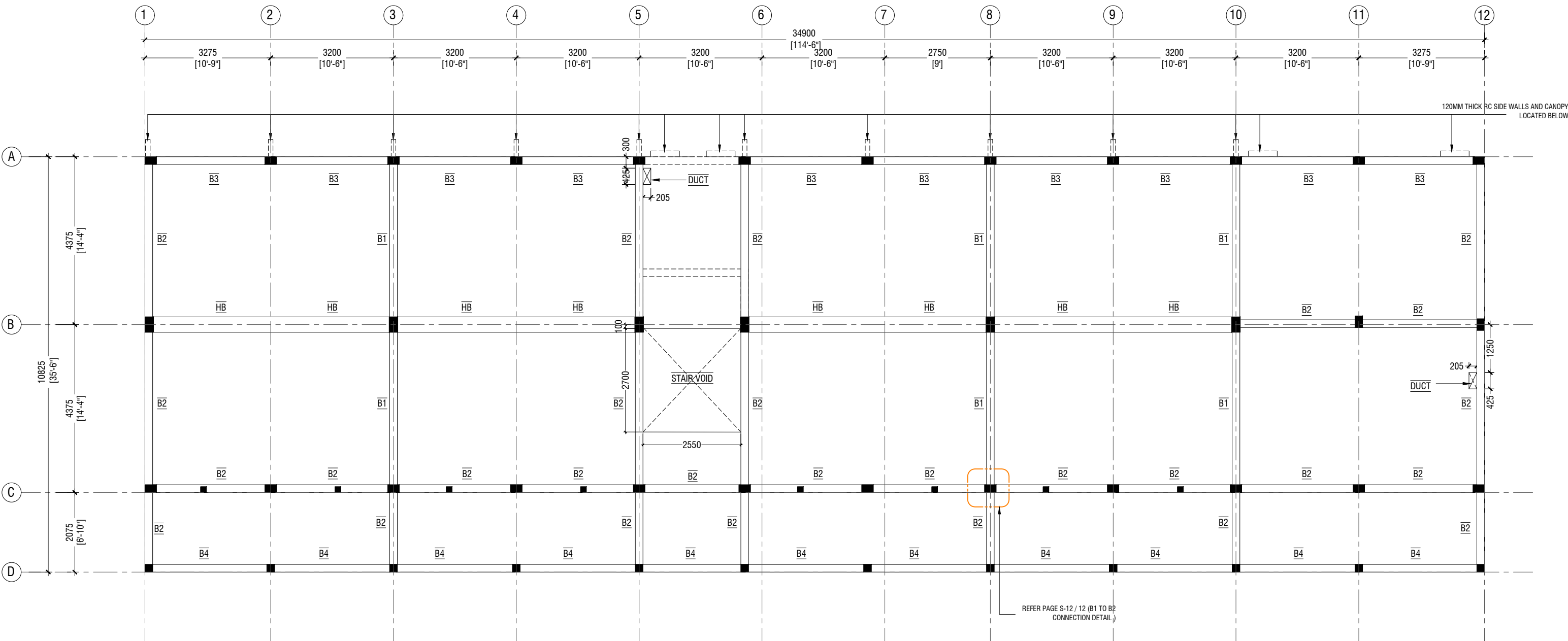
NOTE:

COLUMN SIZES

- C1 : 225 x 400 mm
- C2 : 225 x 400 mm
- C3 : 200 x 300 mm
- C4 : 200 x 200 mm
- C5 : 200 x 300 mm
- SC : 150 x 150 mm
- COVER : 40mm

FIRST- SECOND FLOOR COLUMN LAYOUT





NOTE:

COLUMN SIZES

C1	: 225 x 400 mm
C2	: 225 x 400 mm
C3	: 200 x 300 mm
C4	: 200 x 200 mm
C5	: 200 x 300 mm
SC	: 150 x 150 mm
COVER	: 40mm

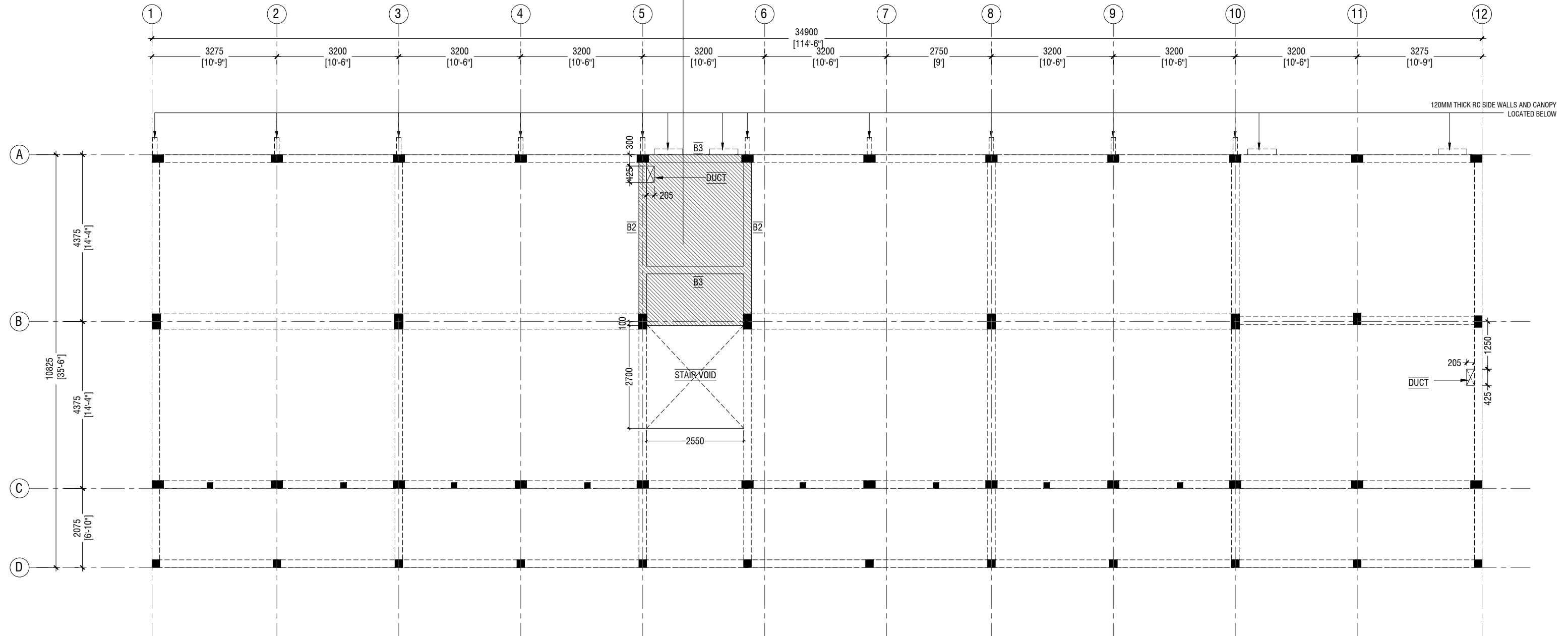
BEAM SIZES

B1	: 200x475 mm
B2	: 200x400 mm
B3	: 200x400 mm
B4	: 200x400 mm
HB	: 400x180 mm
COVER	: 35mm

FIRST, SECOND & TERRACE FLOOR BEAM PLAN

SCALE 1:100





NOTE:

COLUMN SIZES

C1 : 225 x 400 mm
C2 : 225 x 400 mm
C3 : 200 x 300 mm
C4 : 200 x 200 mm
C5 : 200 x 300 mm
SC : 150 x 150 mm
COVER : 40mm

BEAM SIZES

B1 : 200x475 mm
B2 : 200x400 mm
B3 : 200x400 mm
B4 : 200x400 mm
HB : 400x180 mm
COVER : 35mm



SLAB THICKNESS: 150mm

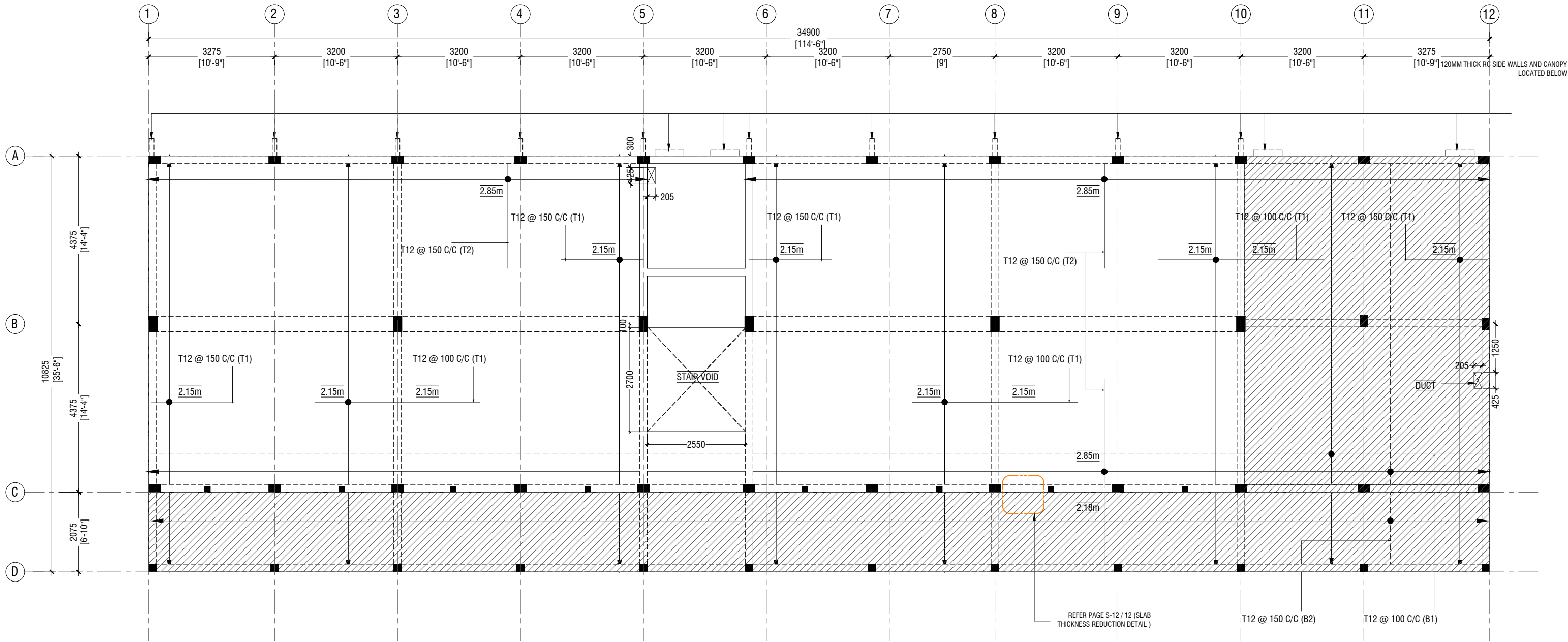
REINFORCEMENT: T10@150C/C B/W (T&B)

ALL REINFORCEMENT TO BE
DISCONTINUOUS OVER THE VOIDS

STORE / HALF LANDING FLOOR BEAM & SLAB REINFORCEMENT PLAN (+1865, +4865)

SCALE 1:100

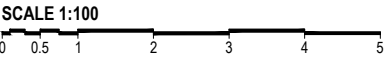




NOTE

SLAB THICKNESS:	180mm
SLAB THICKNESS:	135mm
BOTTOM REINFORCEMENT:	T12@100C/C ALONG SHORT DIRECTION (B1) T12@ 150 C/C ALONG LONGER DIRECTION (B2)
TOP REINFORCEMENT:	T12@150C/C (AS SHOWN, UNLESS STATED)
TOP DISTRIBUTION STEEL:	T12@150C/C (UNLESS STATED)
ALL REINFORCEMENT TO BE DISCONTINUOUS OVER THE VOIDS	

FIRST, SECOND & TERRACE FLOOR SLAB REINFORCEMENT PLAN



	DIMENSION	REINFORCEMENT
F1	2500 x 2500 x 400	T16@125 C/C B/W (B)
F2	2300 x 2300 x 350	T16@110 C/C B/W (B)
F3	1800 x 1800 x 300	T12@125 C/C B/W (B)
F4	1500 x 1500 x 300	T12@150 C/C B/W (B)
F5	1300 x 1300 x 300	T12@150 C/C B/W (B)
F6	900 x 900 x 300	T12@150 C/C B/W (B)

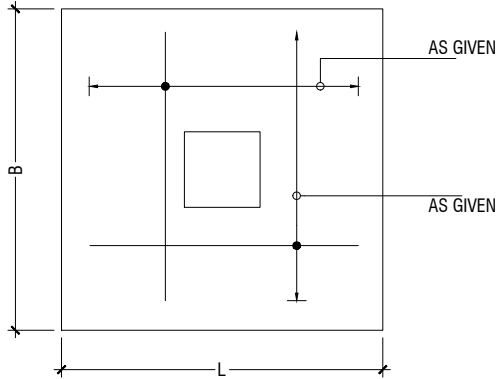
FOUNDATION DEPTH = 1200mm

NOTE:-

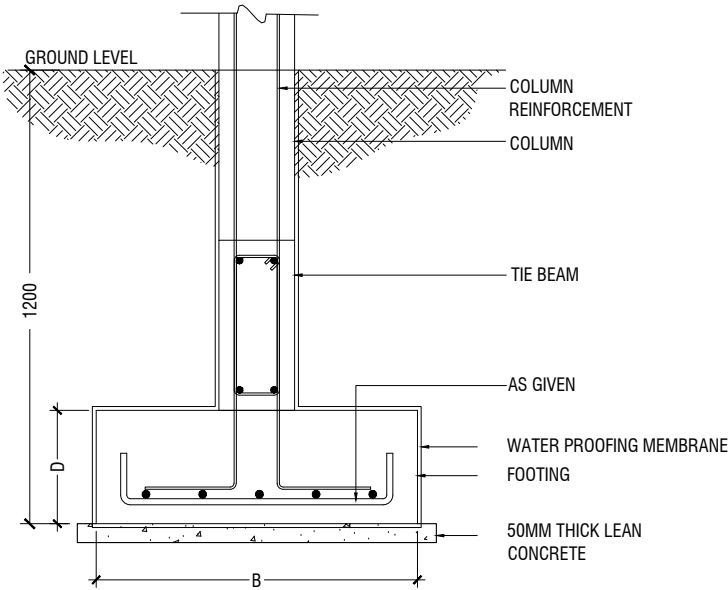
- COVER TO FOUNDATION = 50mm
- COVER TO COLUMNS = 40mm
- COVER TO BEAMS = 35mm
- COVER TO SLAB = 30mm
- LAPS = Ø OF BAR x 45
- BEAMS @END SUPPORT = Ø OF BAR x 12

GRADE OF CONCRETE = M25

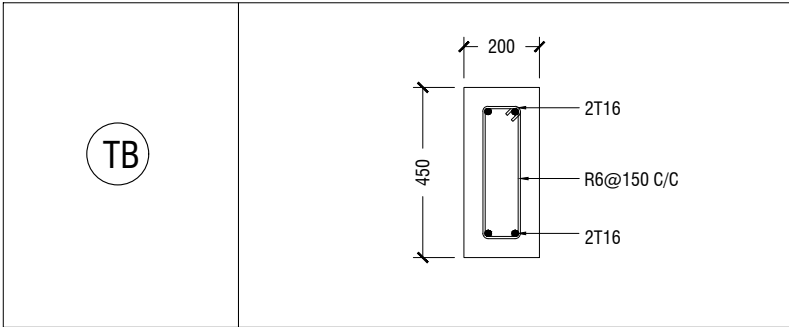
FOUNDATION PADS



PLAN



TYPICAL FOOTING SECTION

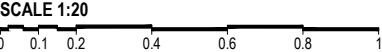


FOUNDATION DETAILS

	GROUND & 1ST FLOOR
C1	
C2	
C3	
C4	
C5	
SC	

COLUMN DETAIL

STRUCTURAL DETAILS - 1



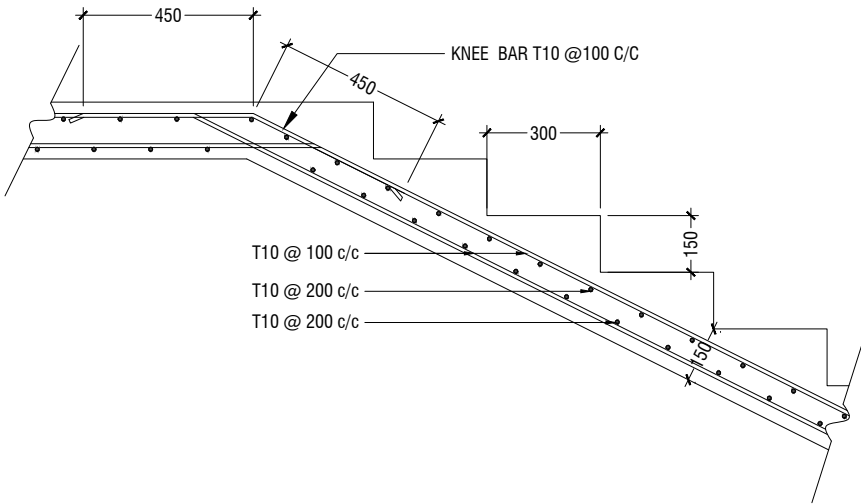
	MIDSPAN	SUPPORT
B1		
B2		
B3		
B4		
HB		

BEAM DETAIL

NOTE:
PROVIDE 25MM SPACER BAR @ 2000 C/C BETWEEN TWO LAYERS
OF BEAM REINFORCEMENT

LT1	
LT2	

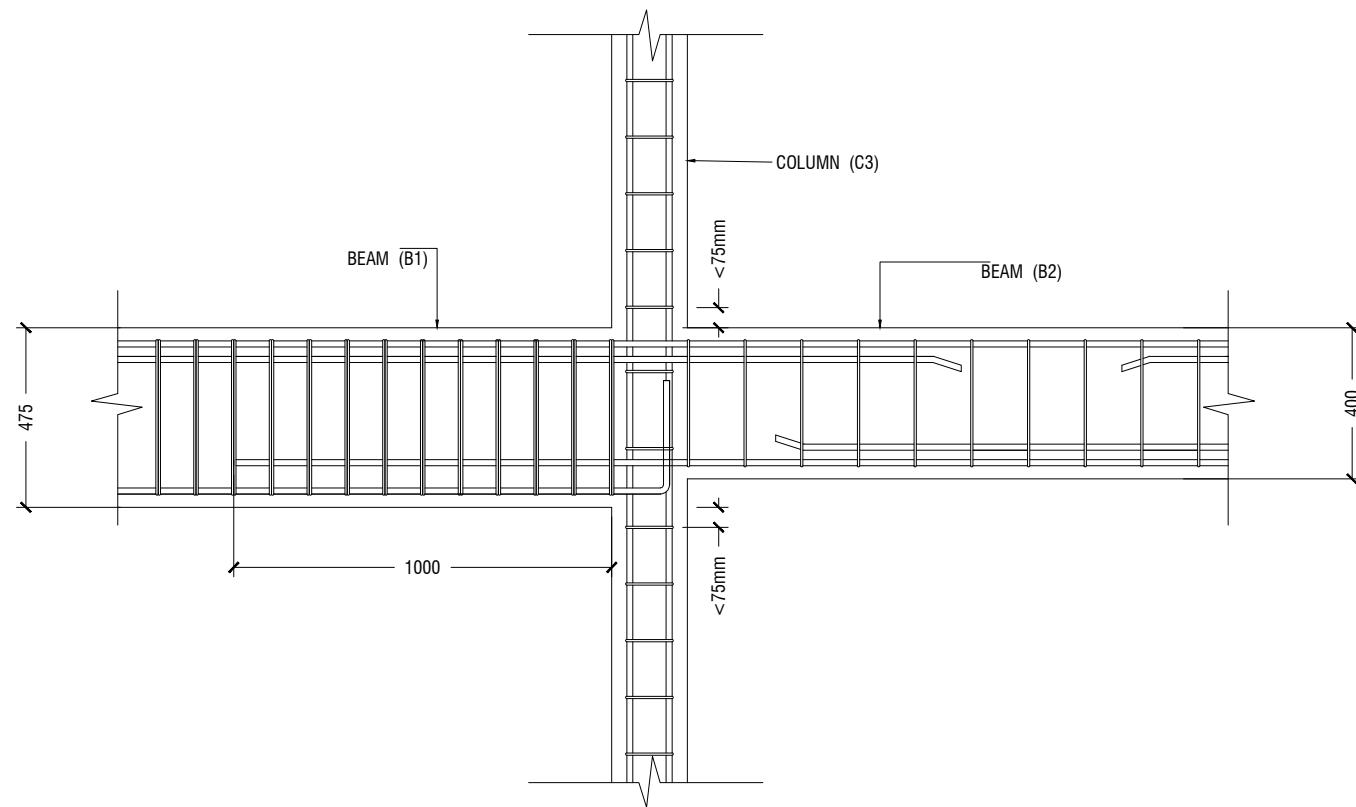
LINTELS OVER ALL DOORS, WINDOWS
(THAT DOES NOT RISE TO ROOF BEAM LEVEL)
LT2 FOR WINDOW (W2) ONLY



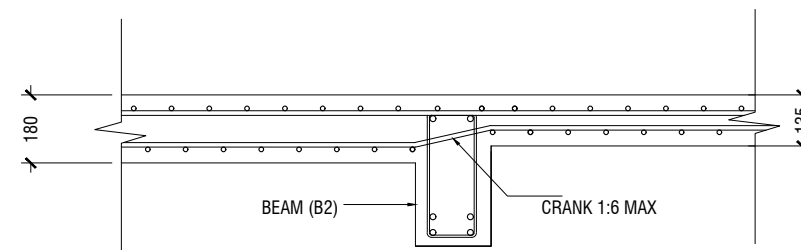
MAIN STAIRCASE REINFORCEMENT DETAIL

STRUCTURAL DETAILS - 2

SCALE 1:20
0 0.1 0.2 0.4 0.6 0.8 1



B1 TO B2 CONNECTION DETAIL



SLAB THICKNESS REDUCTION DETAIL

STRUCTURAL DETAILS - 3

SCALE 1:20

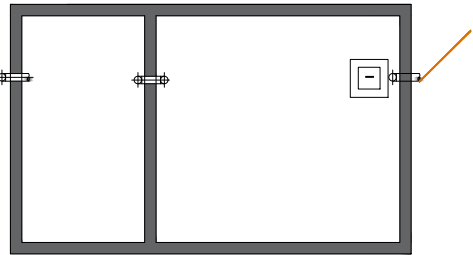
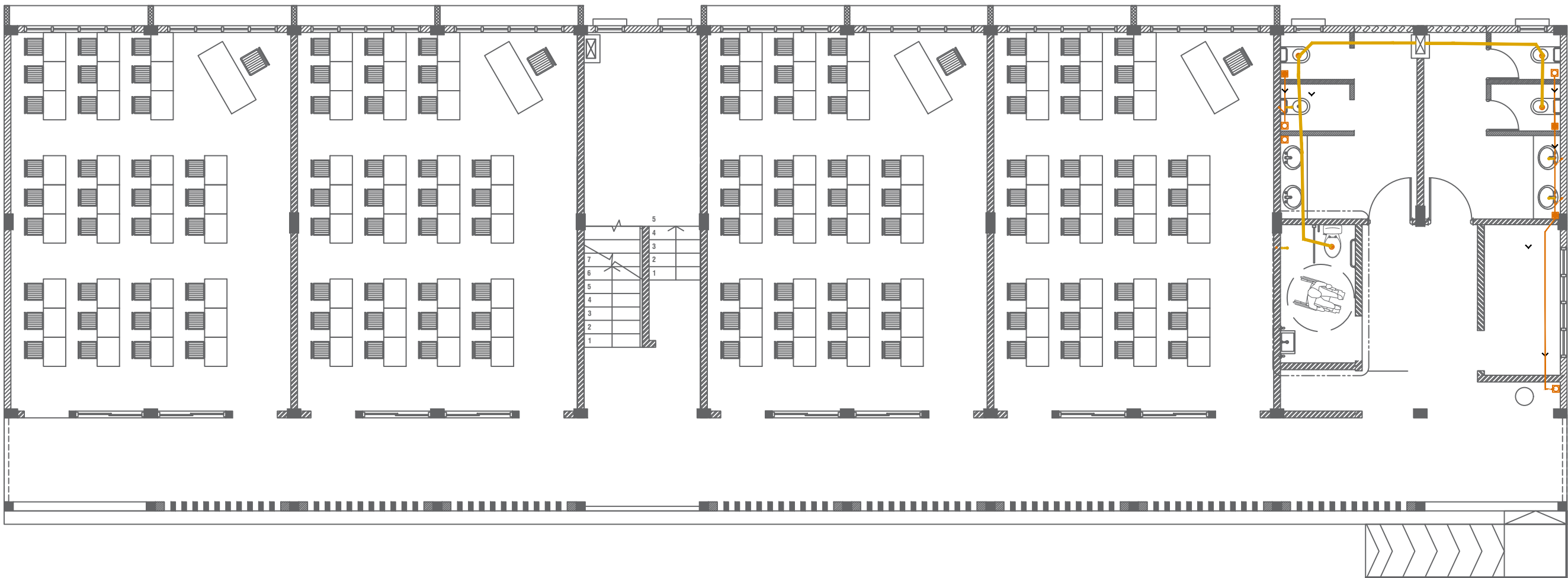


PROPOSED 12 CLASS ROOM
L. GAN
Hamad Bin Khalifa Althani School
(03 Storey)

SERVICES DRAWINGS
Ministry of Education

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DR - 02 /03	FIRST - SECOND FLOOR DRAINAGE LAYOUT	01	12th May 2021	---
DR - 03 /03	ROOF DRAINAGE LAYOUT	01	12th May 2021	---
PL - 01 / 02	GROUND FLOOR PLUMBING LAYOUT	01	12th May 2021	---
PL - 02 / 02	FIRST - SECOND FLOOR PLUMBING LAYOUT	01	12th May 2021	---
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EP - 01 / 02	GROUND FLOOR POWER LAYOUT	01	12th May 2021	---
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FDP - 01 / 02	GROUND FLOOR FDP LAYOUT	01	12th May 2021	---
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DETAIL - 01 / 02	SEPTIC TANK DETAIL	---	---	---
DETAIL - 02 / 02	GROUND WATER WELL DETAIL	---	---	---

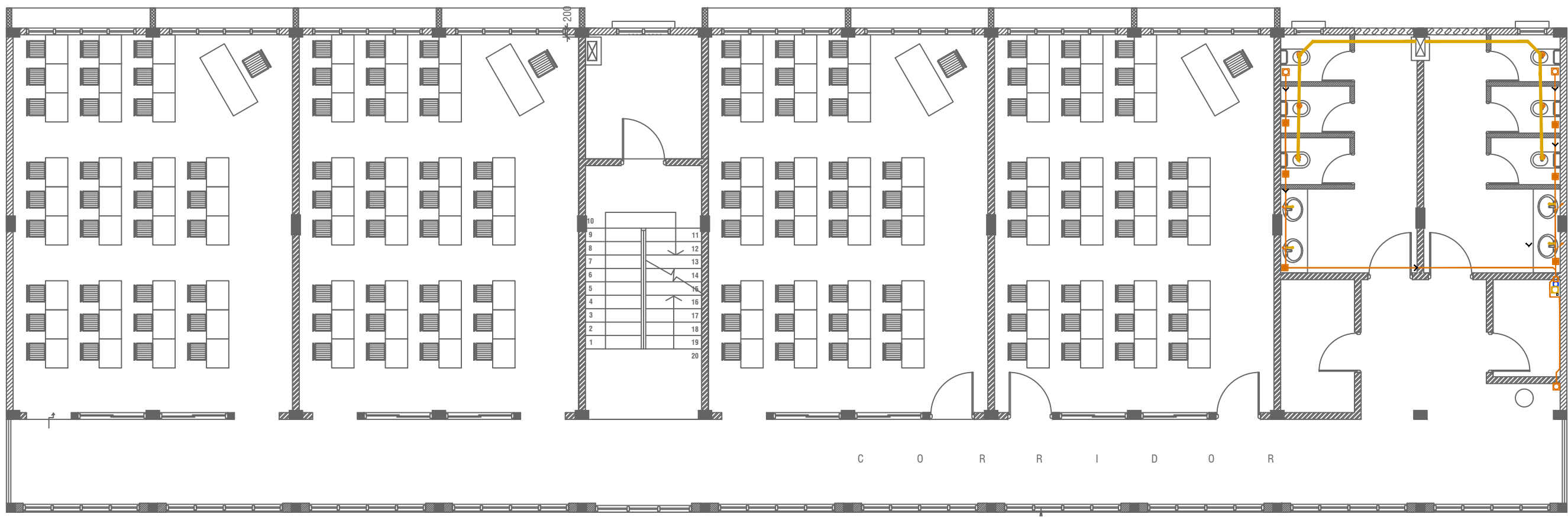


GROUND FLOOR DRAINAGE LAYOUT

SCALE 1:100
0 0.5 1 2 3 4 5

- LEGEND**
- FG ■ FLOOR GULLY
 - FD □ FLOOR DRAIN
 - WM ○ 40 Ø STUB FOR WASHING MACHINE
 - SP — 110 Ø SOIL PIPE
 - SVP ○ 110 Ø SOIL VENT PIPE
 - WP — 82 Ø WASTE PIPE
 - WVP ○ 82 Ø WASTE VENT PIPE
 - WP — 40 Ø WASTE PIPE
 - RWP — 82/50 Ø RAINWATER PIPE
 - RWO ● 82/50 Ø DRAIN OUTLET
 - CD — 25 Ø DRAIN PIPE
 - MHVP — 50 Ø MANHOLE VENT PIPE

NOTE:
- ALL RAINWATER PIPES TO BE AT GROUND LEVEL
DISCHARGED THROUGH A PERFORATED COWL OR TO A SOAK PIT
- ALL SOIL AND WASTE PIPES TO BE AT GROUND
LEVEL, UNDER THE SLAB.

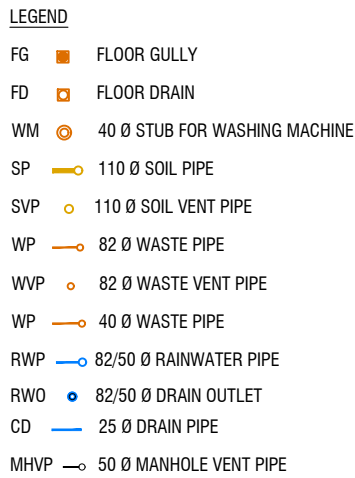


FIRST - SECOND FLOOR DRAINAGE LAYOUT

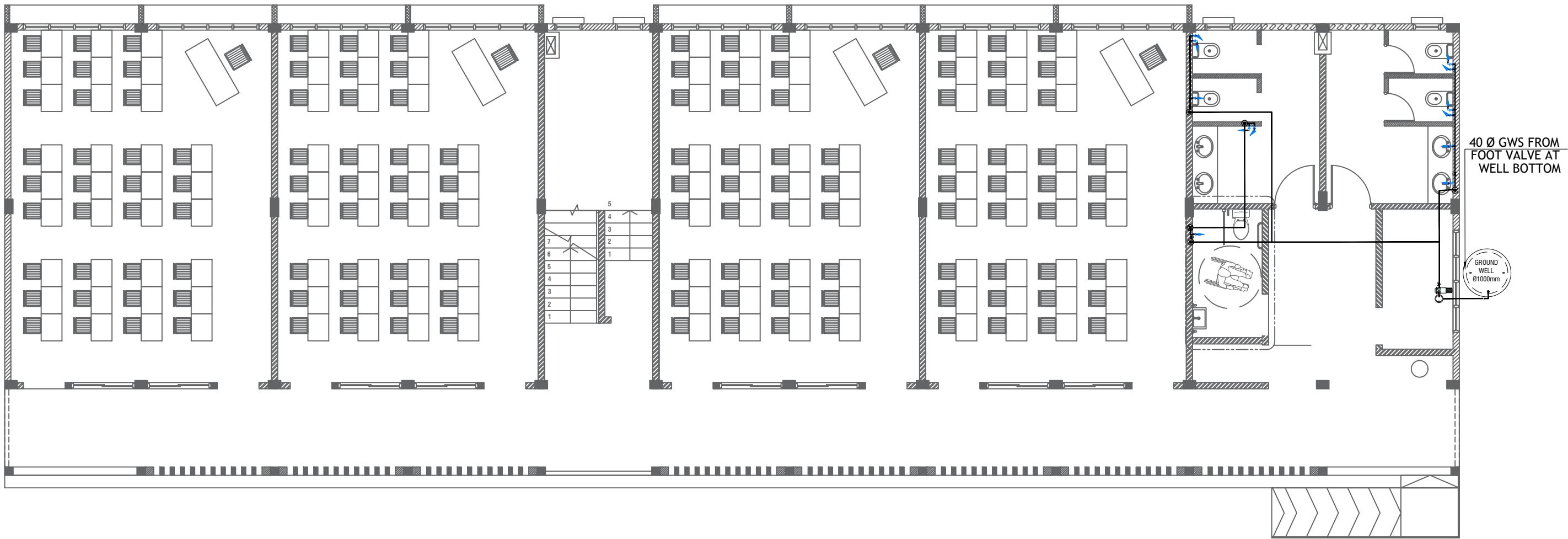
SCALE 1:100

- LEGEND
- FG ■ FLOOR GULLY
 - FD □ FLOOR DRAIN
 - WM ○ 40 Ø STUB FOR WASHING MACHINE
 - SP — 110 Ø SOIL PIPE
 - SVP ○ 110 Ø SOIL VENT PIPE
 - WP — 82 Ø WASTE PIPE
 - WVP ○ 82 Ø WASTE VENT PIPE
 - WP — 40 Ø WASTE PIPE
 - RWP — 82/50 Ø RAINWATER PIPE
 - RWO ● 82/50 Ø DRAIN OUTLET
 - CD — 25 Ø DRAIN PIPE
 - MHVP — 50 Ø MANHOLE VENT PIPE

NOTE:
- ALL SOIL AND WASTE PIPES TO BE UNDER THE SLAB LEVEL.

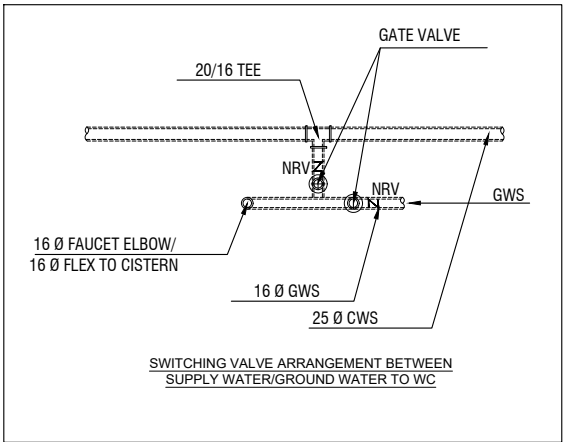


SCALE 1:100



GROUND FLOOR PLUMBING LAYOUT

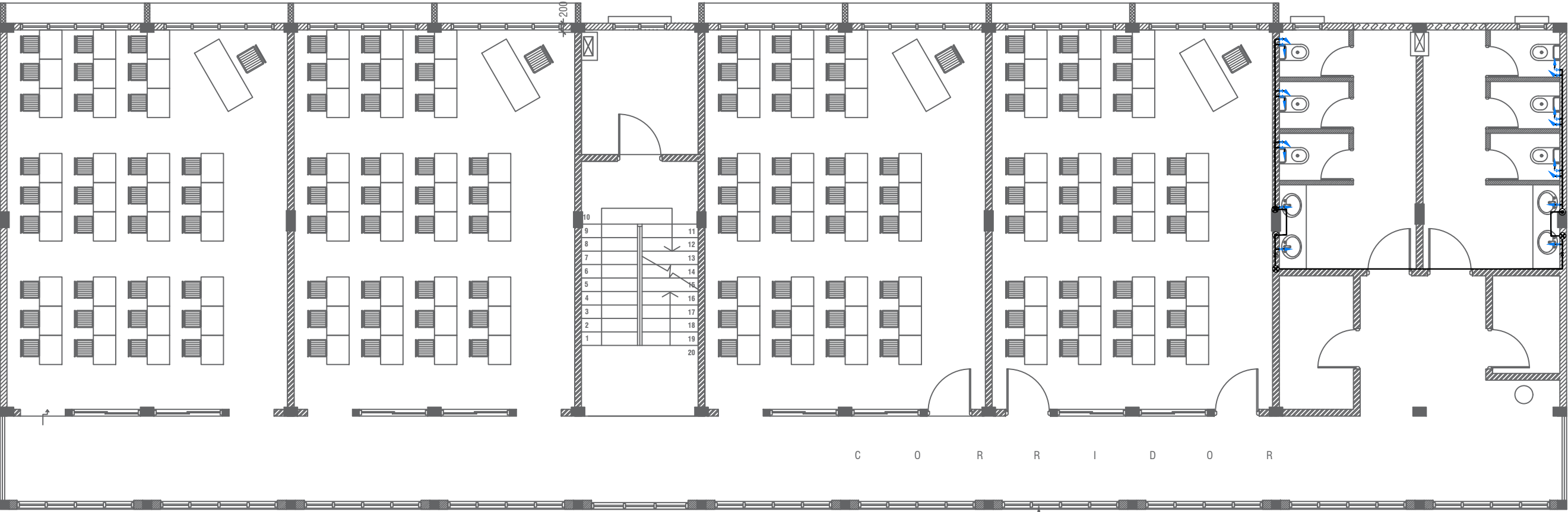
SCALE 1:100



LEGEND

- 16 Ø COLD WATER SUPPLY TO CISTERN
- 16 Ø COLD WATER SUPPLY TO BIDET SHOWER
- 16 Ø COLD WATER SUPPLY TO BASIN FAUCET / SINK
- GV GATE VALVE
- 25 Ø COLD WATER SUPPLY PIPES RUN UNDERGROUND
- 25 Ø COLD WATER SUPPLY PIPES RUN IN WALL / UNDER FALSE CEILING
- RISE IN WALL
- DROP IN WALL
- CWS COLD WATER SUPPLY
- HWS HOT WATER SUPPLY
- GROUND WATER SUPPLY

NOTE:
- THE WELL SHALL BE RELOCATED ACCORDING TO THE SALINITY OF THE GROUND WATER.
- BASED ON WELL LOCATION PUMP CAPACITY TO BE DECIDED

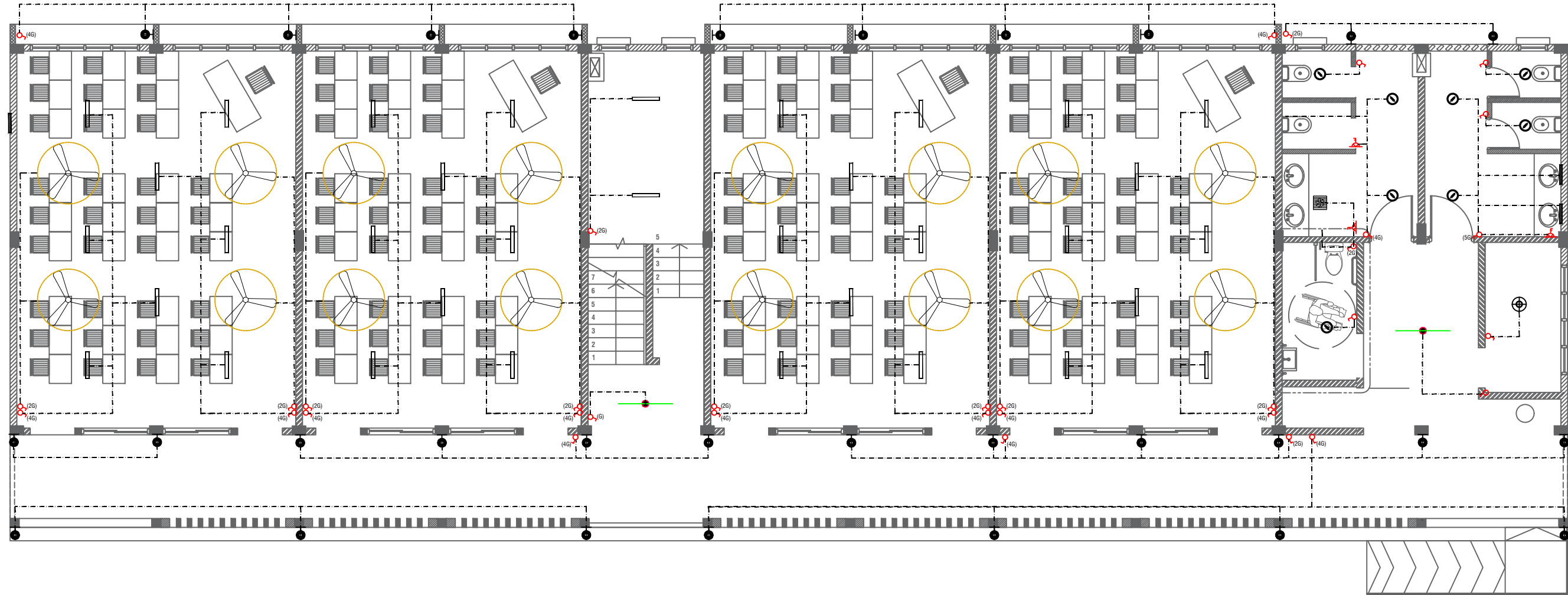


FIRST - SECOND FLOOR PLUMBING LAYOUT

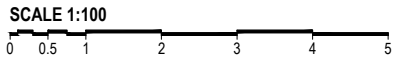
SCALE 1:100



- LEGEND
- 16 Ø COLD WATER SUPPLY TO CISTERN
 - 16 Ø COLD WATER SUPPLY TO BIDET SHOWER
 - 16 Ø COLD WATER SUPPLY TO BASIN FAUCET / SINK
 - GV GATE VALVE
 - 25 Ø COLD WATER SUPPLY PIPES RUN UNDERGROUND
 - 25 Ø COLD WATER SUPPLY PIPES RUN IN WALL / UNDER FALSE CEILING
 - ⊙ RISE IN WALL
 - ⊗ DROP IN WALL
 - CWS COLD WATER SUPPLY
 - HWS HOT WATER SUPPLY
 - GROUND WATER SUPPLY



GROUND FLOOR LIGHTING LAYOUT



LEGEND

- WPD 40W (IP 65) OUT DOOR WALL LIGHT
- ML MIRROR LIGHT (7W LED LIGHT)
- H2 LED RECESSED DOWN LIGHT 12W
- CL LED CEILING LIGHT 18W
- WP LED TUBE LIGHT WITH WEATHER PROOF OPAL CASING
- C2 LED CEILING DOWN LIGHT (18W)
- LIGHT SWITCH
- SWITCHING LINE
- ⚡ FLEX OUTLET
- EXHAUST

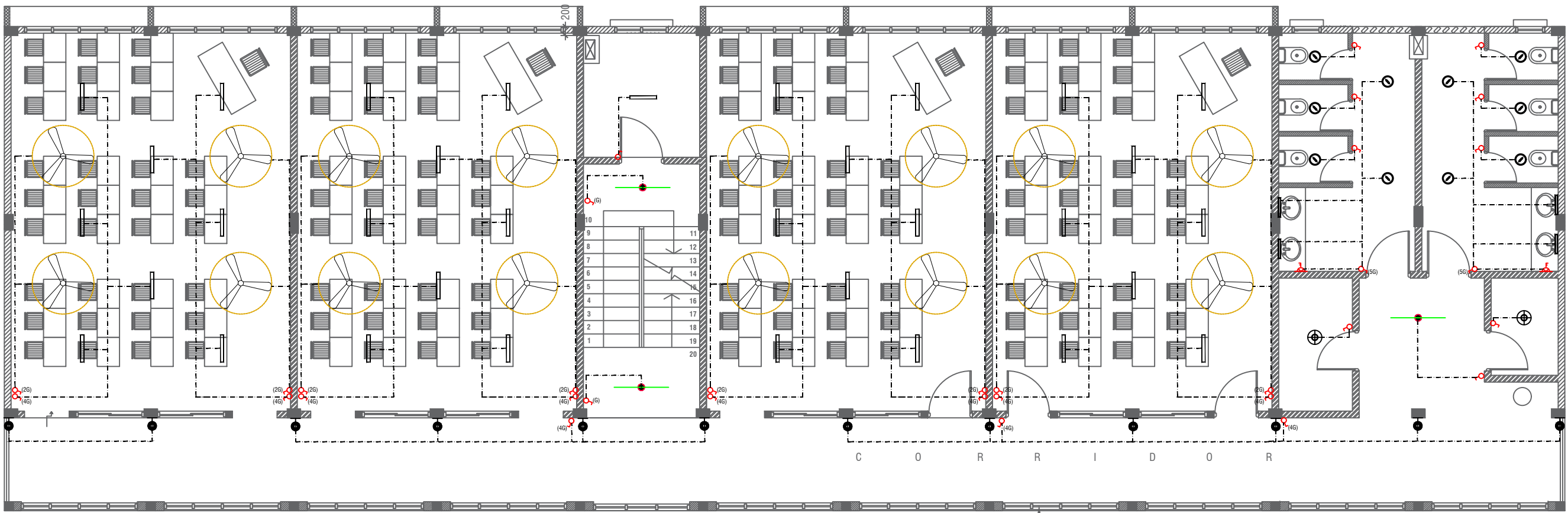
CL2 LED TUBE LIGHT WITH OPAL CASING



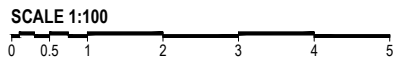
CEILING FAN (52" - 54")

NOTE:

- ALL WIRING TO BE OF STELCO APPROVED STANDARDS
- SWITCH CONTROL = 1200MM FROM FLOOR FIN. LEVEL
- ALL LIGHTING POINTS CONNECTED TO THEIR RESPECTIVE DB
- POLYCARBONATE ENCLOSURE TO ALL SWITCH AND SOCKET WHICH ARE LOCATED AT THE OUTDOORS



FIRST - SECOND FLOOR LIGHTING LAYOUT



LEGEND

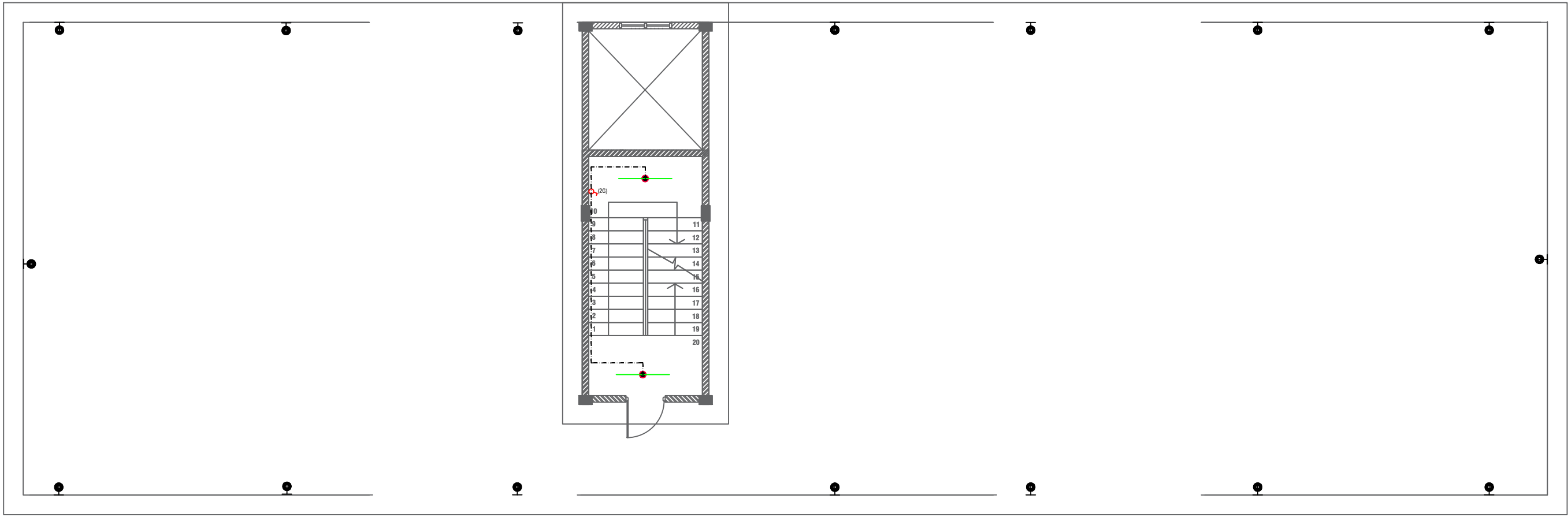
- WPD 40W (IP 65) OUT DOOR WALL LIGHT
- ML MIRROR LIGHT (7W LED LIGHT)
- H2 LED RECESSED DOWN LIGHT 12W
- CL LED CEILING LIGHT 18W
- WP LED TUBE LIGHT WITH WEATHER PROOF OPAL CASING
- C2 LED CEILING DOWN LIGHT (18W)
- LIGHT SWITCH
- SWITCHING LINE
- EXHAUST

CL2 LED TUBE LIGHT WITH OPAL CASING

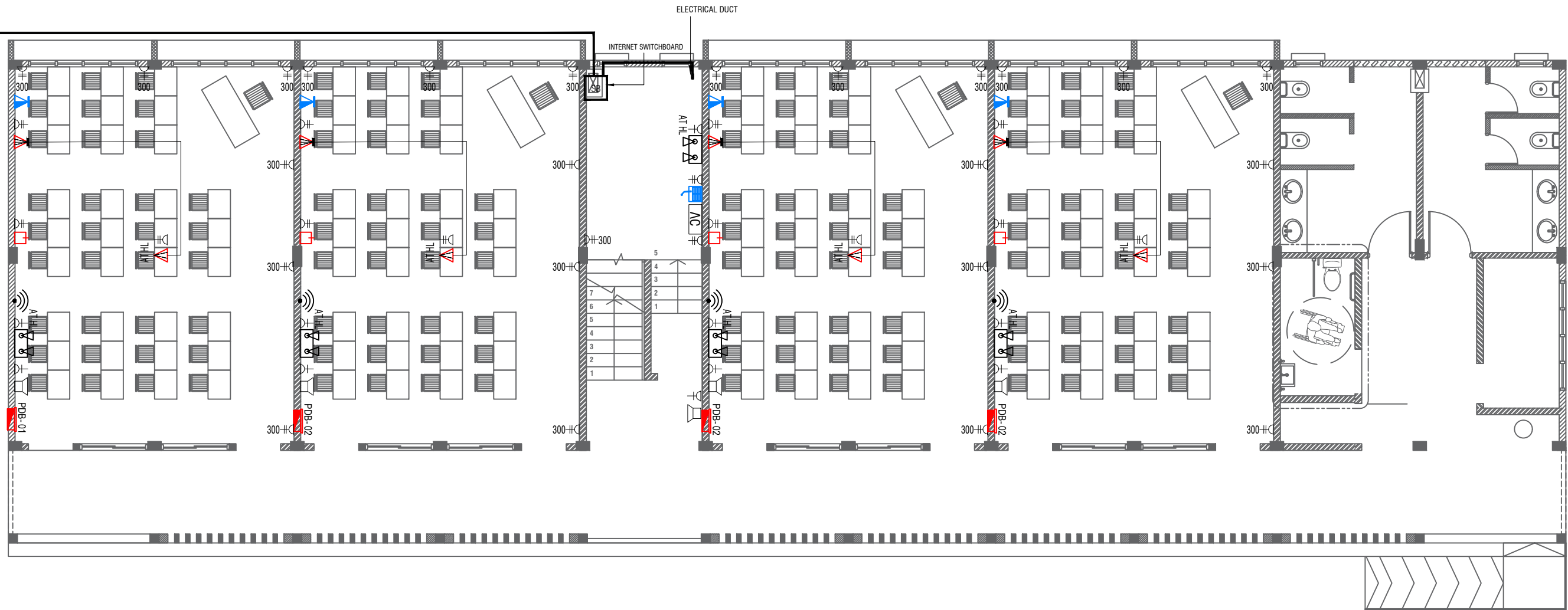


NOTE:

- ALL WIRING TO BE OF STELCO APPROVED STANDARDS
- SWITCH CONTROL = 1200MM FROM FLOOR FIN. LEVEL
- ALL LIGHTING POINTS CONNECTED TO THEIR RESPECTIVE DB
- POLYCARBONATE ENCLOSURE TO ALL SWITCH AND SOCKET WHICH ARE LOCATED AT THE OUTDOORS



PVC DUCT FOR DATA CABLE LEAD IN BELOW GR.SLAB



GROUND FLOOR POWER LAYOUT

SCALE 1:100



NOTE:

1. ALL WIRING TO BE OF APPROVED STANDARDS
2. POWER/IT/COMPUTER SOCKETS = 300MM - 450MM FROM FLOOR FIN. LEVEL
3. SWITCH CONTROL / SOCKET = 1100MM - 1200MM FROM FLOOR FIN. LEVEL
4. KITCHEN SOCKETS / PANTRY SOCKETS = 1150MM - 1250MM FROM FLOOR FIN. LEVEL
5. AC = 2500MM - 2700MM FROM FLOOR FIN. LEVEL

LEGEND

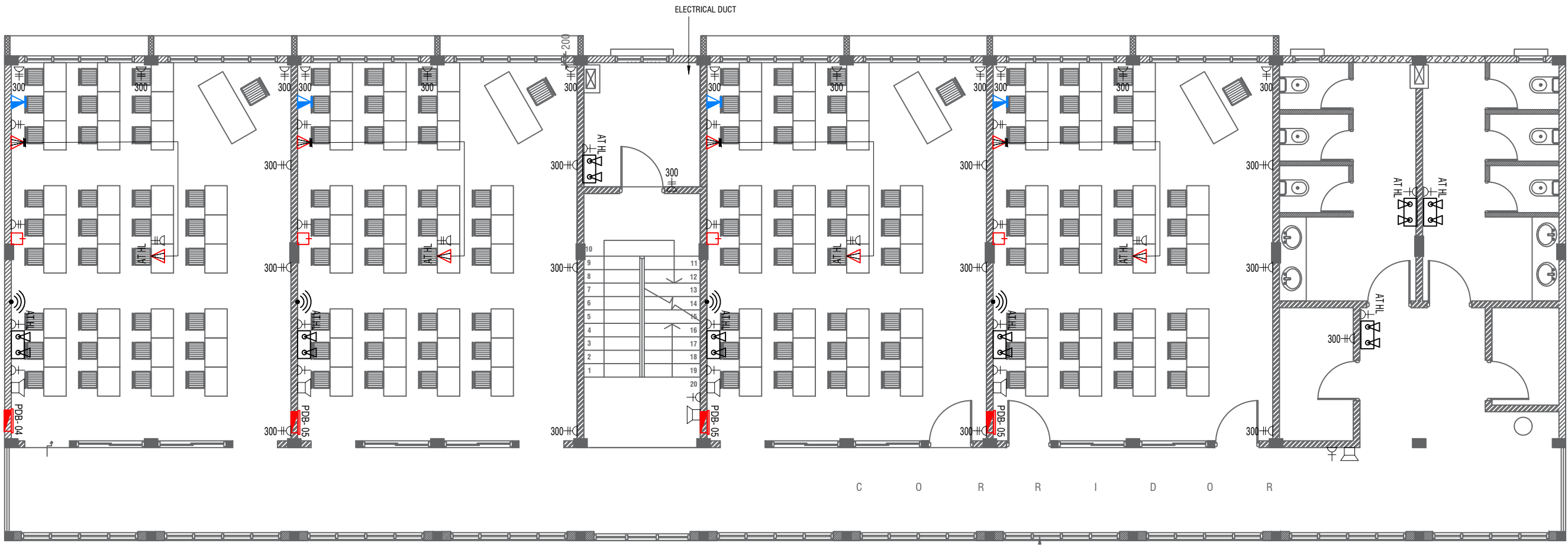
- ▲ TELEPHONE OUTLET (RJ11, CONNECTOR)
- ⚡ 13A POWER OUTLET
- ⚡ 13A TWIN SOCKET OUTLET
- ▲ HDMI,VGA & RAC AV SOCKET
- ▢ DISTRIBUTION BOX
- 🔊 SPEAKERS
- ▲ HDMI,VGA & RAC AV TWIN SOCKET
- 🔌 TWIN COMPUTER NETWORK OUTLET
- DATA POINT
- ▢ TWO GANG / TV SOCKET

- 🔊 PAGING MIC
- VC VOLUME CONTROLLER
- EM 🚨 EMERGENCY LIGHT

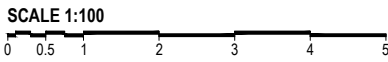
ALL ELECTRICAL COMPONENT TO BE CONNECTED TO THEIR RESPECTIVE DB

SPEAKERS TO BE CONNECTED TO THE MAIN PA SYSTEM OF THE SCHOOL

TO SUPPLY AND INSTALL PANEL BOARD WITH kWh METER, WIRING AND CONNECTION TO MAIN PANEL BOARD FROM MAIN ELECTRICAL NETWORK LOCATION TO BE AT THE MAIN SWITCH BOARD / STORE



FIRST - SECOND FLOOR POWER LAYOUT



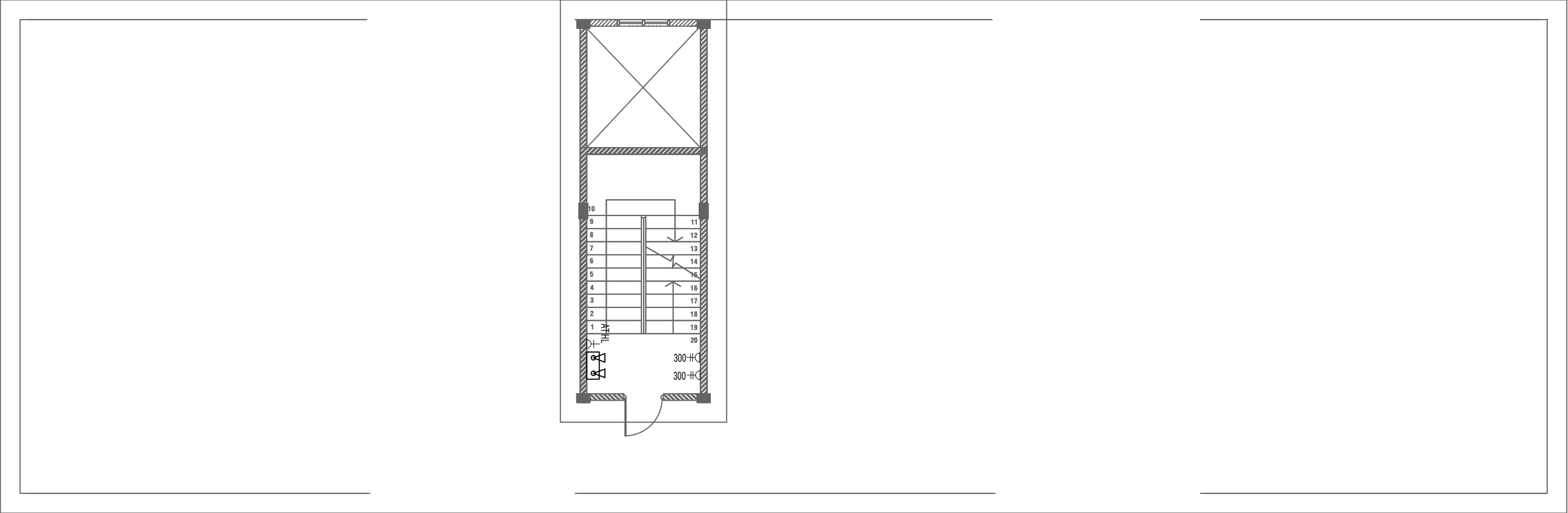
- NOTE:
1. ALL WIRING TO BE OF APPROVED STANDARDS
 2. POWER/IT/COMPUTER SOCKETS = 300MM - 450MM FROM FLOOR FIN. LEVEL
 3. SWITCH CONTROL / SOCKET = 1100MM - 1200MM FROM FLOOR FIN. LEVEL
 4. KITCHEN SOCKETS / PANTRY SOCKETS = 1150MM - 1250MM FROM FLOOR FIN. LEVEL
 5. AC = 2500MM - 2700MM FROM FLOOR FIN. LEVEL

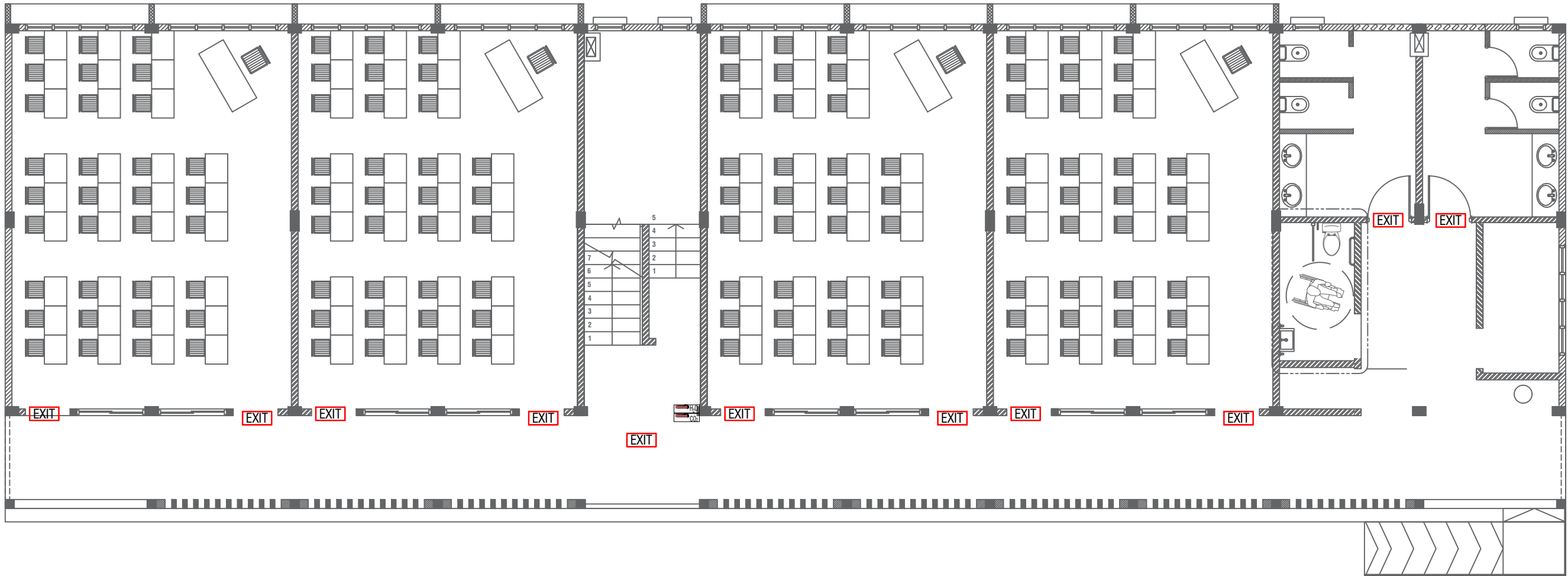
- LEGEND
- TELEPHONE OUTLET (RJ11, CONNECTOR)
 - 13A POWER OUTLET
 - 13A TWIN SOCKET OUTLET
 - HDMI,VGA & RAC AV SOCKET
 - DISTRIBUTION BOX
 - SPEAKERS
 - HDMI,VGA & RAC AV TWIN SOCKET
 - TWIN COMPUTER NETWORK OUTLET
 - DATA POINT
 - TWO GANG / TV SOCKET

- PAGING MIC
- VOLUME CONTROLLER
- EMERGENCY LIGHT

ALL ELECTRICAL COMPONENT TO BE CONNECTED TO THEIR RESPECTIVE DB

SPEAKERS TO BE CONNECTED TO THE MAIN PA SYSTEM OF THE SCHOOL





GROUND FLOOR FDP LAYOUT

SCALE 1:100
0 0.5 1 2 3 4 5

LEGEND

EXIT

EXIT SIGN



CO₂ EXTINGUISHER (LOAD: 2KG) IN
POLYCARBONATE ENCLOSURE(TYP.)



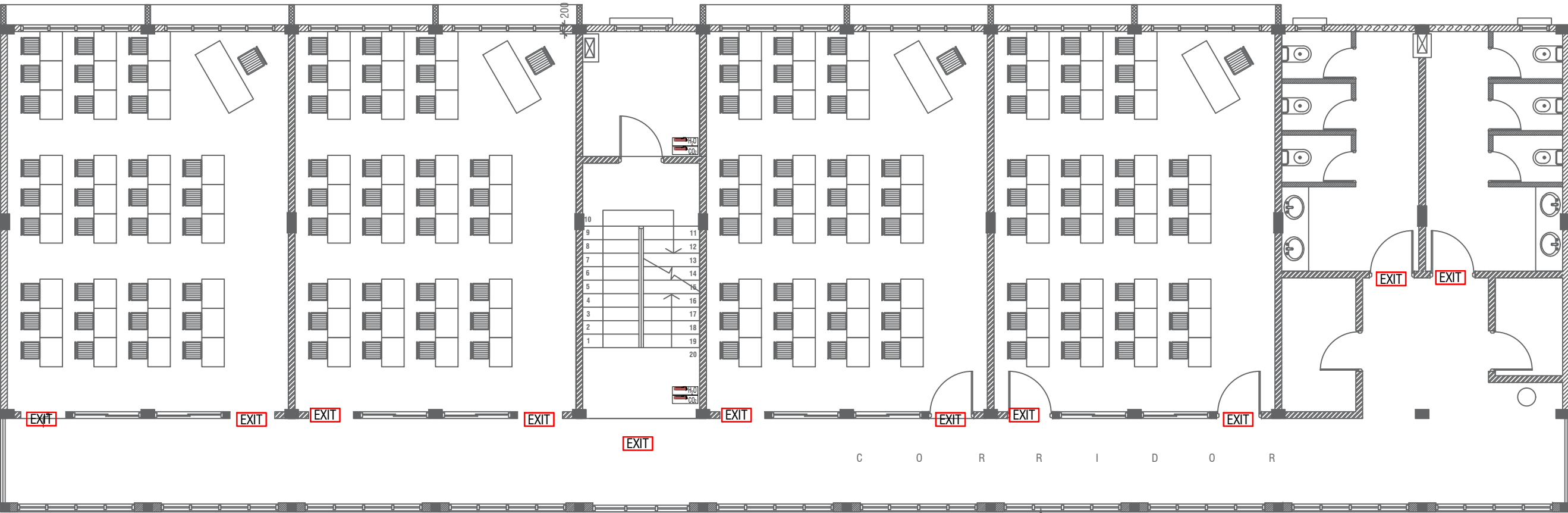
H₂O EXTINGUISHER (LOAD: 9L)
IN POLYCARBONATE ENCLOSURE(TYP.)

ALL FIRE CABLES AND CONDUITS SHOULD
BE FIRE RETARDANT LOW SMOKE (FRLS)
TYPE.

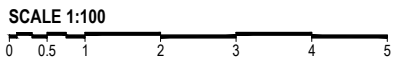
ALL FIRE RATED DOOR SHOULD COME WITH
PACKING (EXPANSION SEAL TRAP)

1.ALL PIPES SHOULD BE GALVANIZED,SCHEDULE 40.
2. ALL PIPE SHALL BE PAINTED IN RED AS PER REGULATION.
3. ALL SUPPORT/BACKET SHALL BE HOT DIPPED GALVANIZED TO 100MM 4.ALL FIRE
EXTINGUISHER INSIDE CABINETS. (CABINET SHOULD BE PROVIDED)

-IF THE INSTALLATION OF CEILING IS CARRIED OUT LOWER THAN BEAM BOTTOM ,SMOKE DETECTORS
SHOULD BE PLACED AS INDICATED ON THE DRAWING.
-ALTERNATIVELY IF THE INSTALLATION OF CEILING IS CARRIED OUT EQUAL TO BEAM BOTTOM OR IF THE
CEILING IS NOT INSTALLED , SMOKE DETECTORS ARE TO BE PLACED IN BETWEEN EACH BEAM



FIRST - SECOND FLOOR FDP LAYOUT



LEGEND

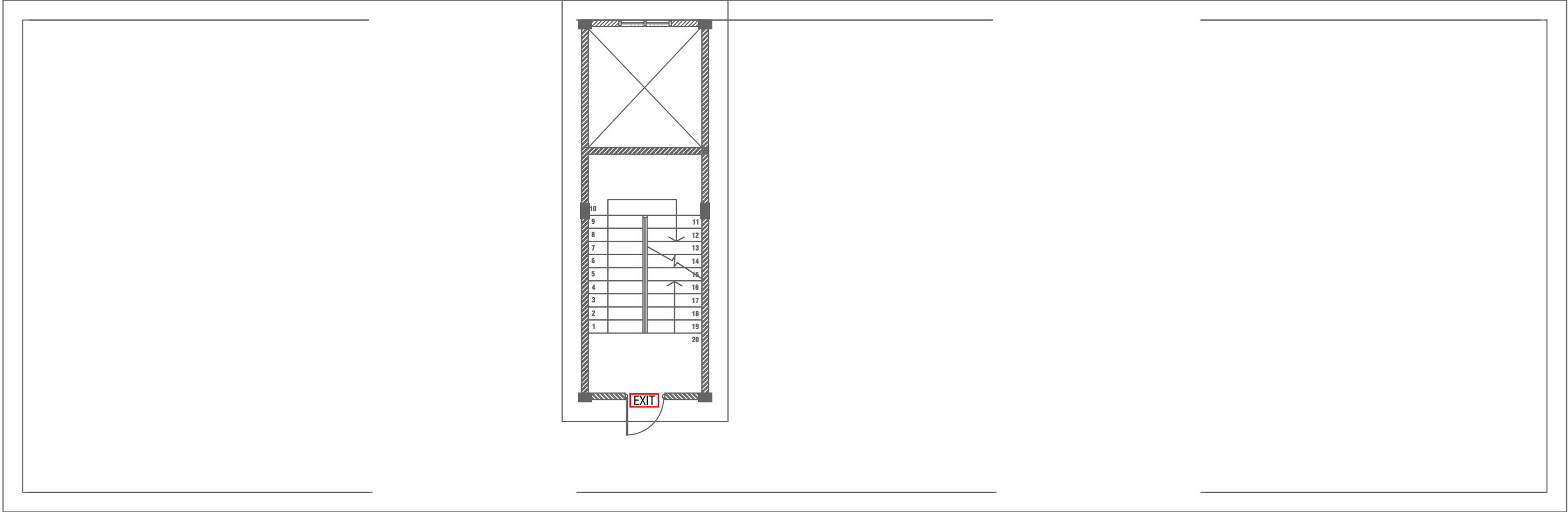
- EXIT SIGN
- CO₂ EXTINGUISHER (LOAD: 2KG) IN POLYCARBONATE ENCLOSURE(TYP.)
- H₂O EXTINGUISHER (LOAD: 9L) IN POLYCARBONATE ENCLOSURE(TYP.)

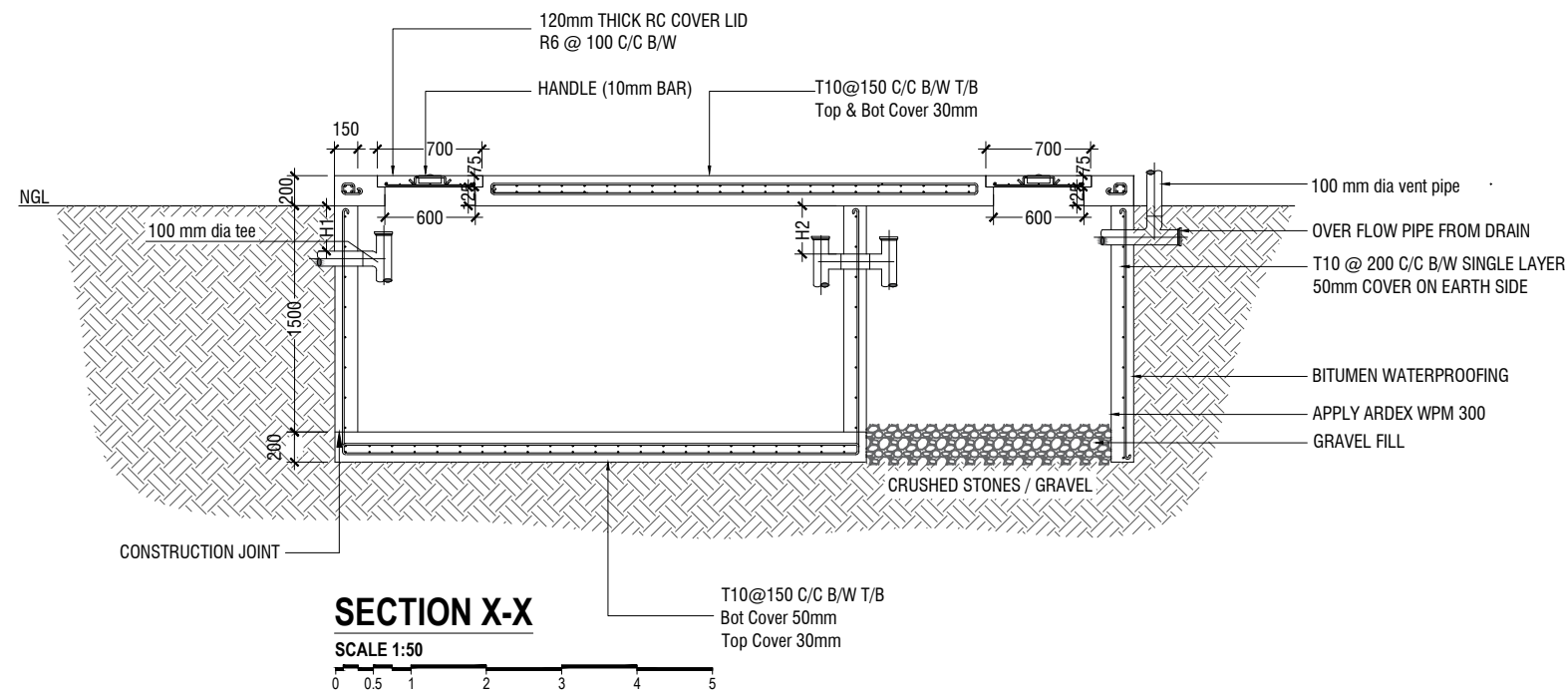
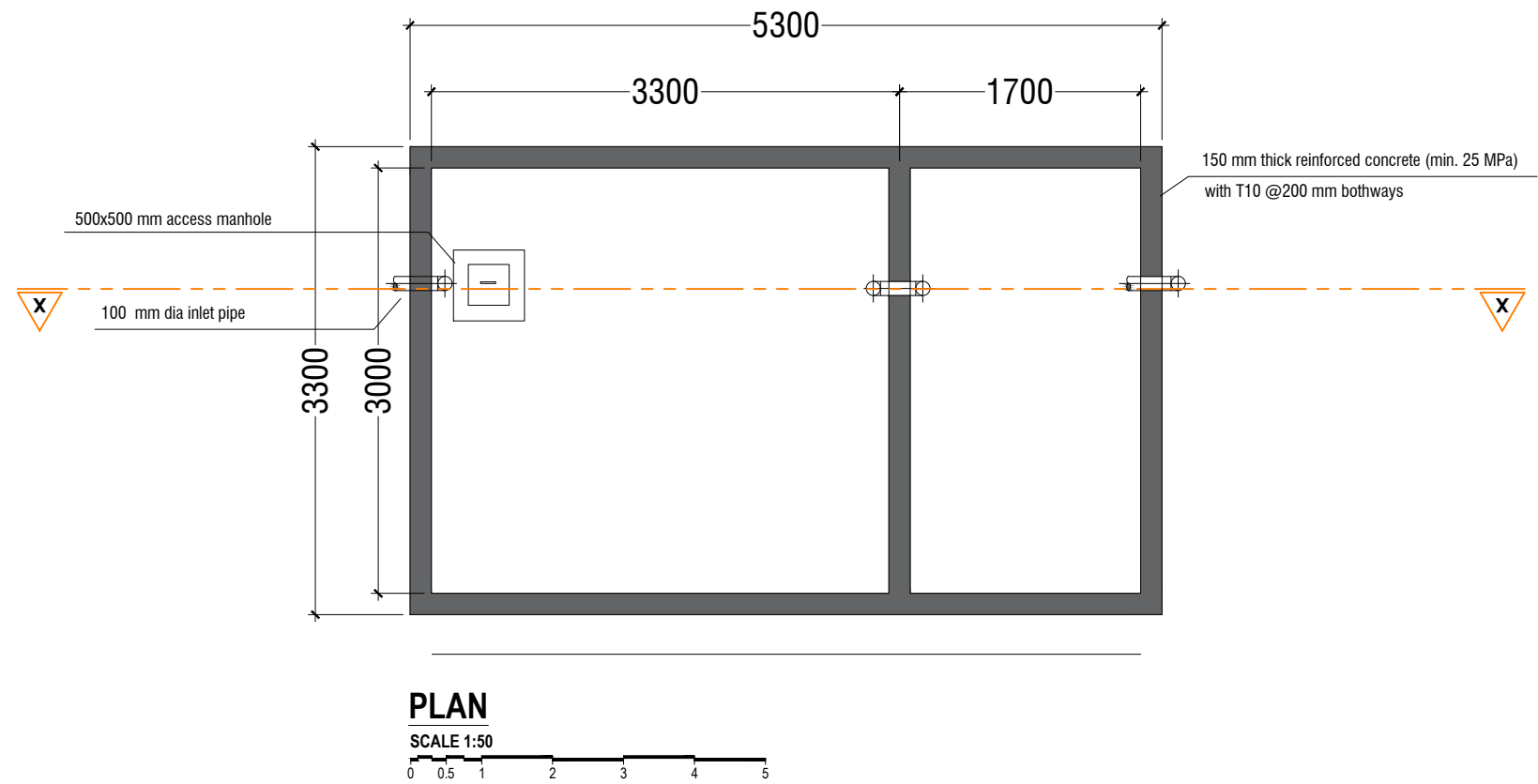
ALL FIRE CABLES AND CONDUITS SHOULD BE FIRE RETARDANT LOW SMOKE (FRLS) TYPE.

ALL FIRE RATED DOOR SHOULD COME WITH PACKING (EXPANSION SEAL TRAP)

- 1.ALL PIPES SHOULD BE GALVANIZED,SCHEDULE 40.
2. ALL PIPE SHALL BE PAINTED IN RED AS PER REGULATION.
3. ALL SUPPORT/BRACKET SHALL BE HOT DIPPED GALVANIZED TO 100MM
- 4.ALL FIRE EXTINGUISHER INSIDE CABINETS. (CABINET SHOULD BE PROVIDED)

-IF THE INSTALLATION OF CEILING IS CARRIED OUT LOWER THAN BEAM BOTTOM ,SMOKE DETECTORS SHOULD BE PLACED AS INDICATED ON THE DRAWING.
-ALTERNATIVELY IF THE INSTALLATION OF CEILING IS CARRIED OUT EQUAL TO BEAM BOTTOM OR IF THE CEILING IS NOT INSTALLED , SMOKE DETECTORS ARE TO BE PLACED IN BETWEEN EACH BEAM





SEPTIC TANK DETAIL

SCALE 1:50

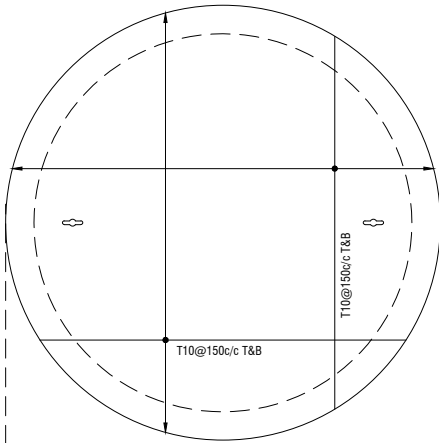
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NOTE:

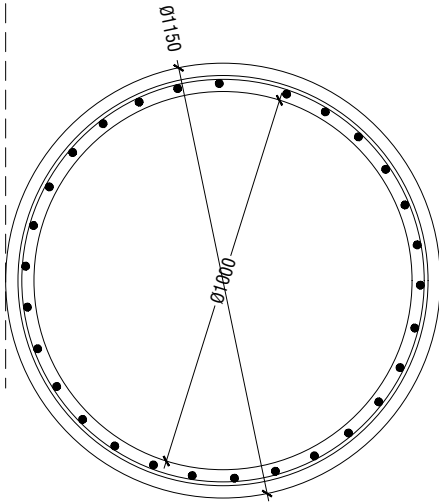
H1 < H2

- TOP AND BOTTOM OF SEPTIC TANK SHOULD BE OF 200mm THICK
- BITUMINOUS WATERPROOFING TO BE APPLIED BELOW GROUND SURFACE
- REINFORCEMENT TO HAVE A COVER OF 50mm FROM EARTH

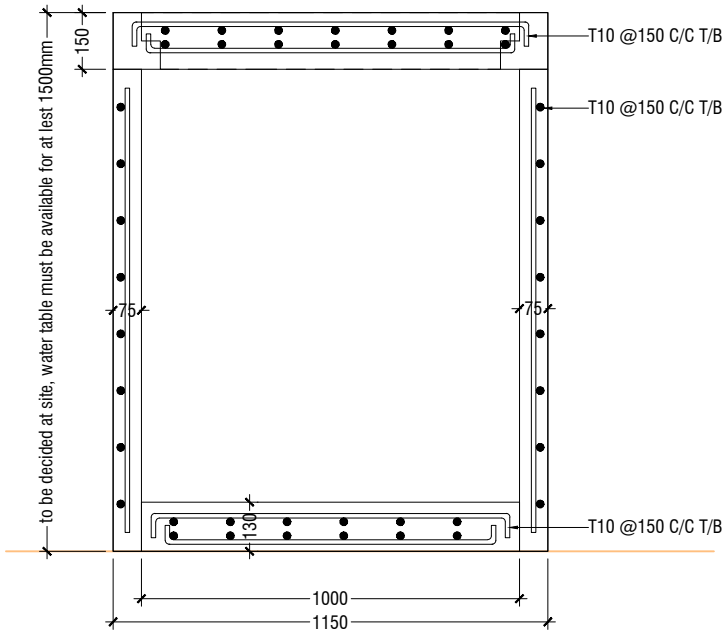
WATER TANK WALL TOP & BOTTOM SLAB



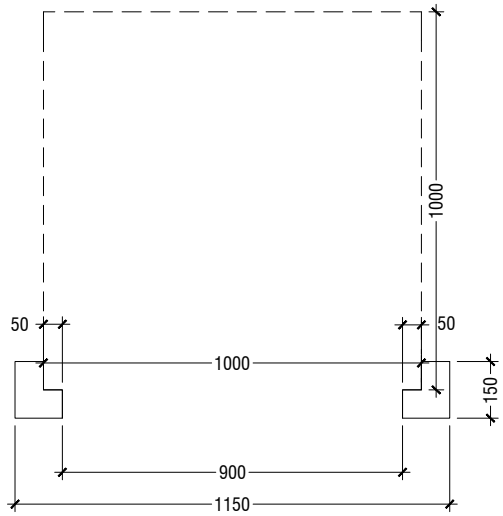
WATER TANK WALL REINF.



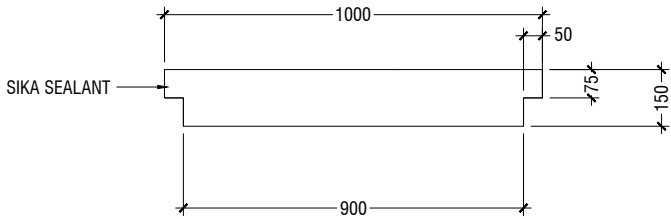
WATER TANK SECTION



ELEVATION

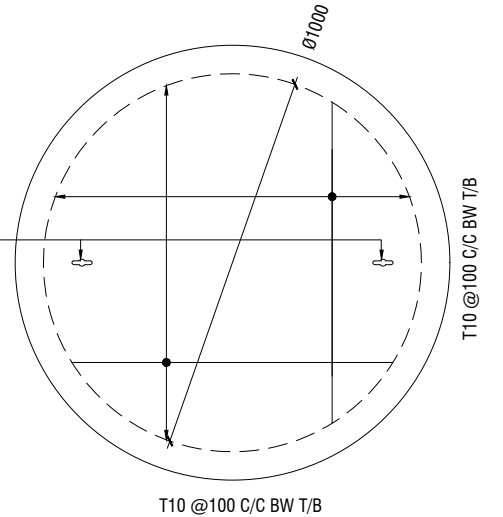


SECTION



KEYHOLES (THE KEYHOLES SHALL BE COVERED FROM A RUBBER SEALER ON TOP OF IT)

PLAN



NOTE:

- ALL CONCRETE WORKS BELOW GROUND AND AT TERRACE LEVEL TO BE TREATED WITH 'SIKA' WATERPROOFING CHEMICAL OR EQUIVALENT
- PROVIDE PROVISION FOR WATER ENTRANCE THROUGH THE BASE

WATER TANK DETAILS

SCALE 1:20



WATER TANK LID DETAILS

SCALE 1:20

