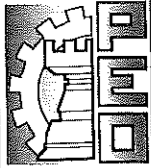




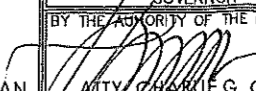


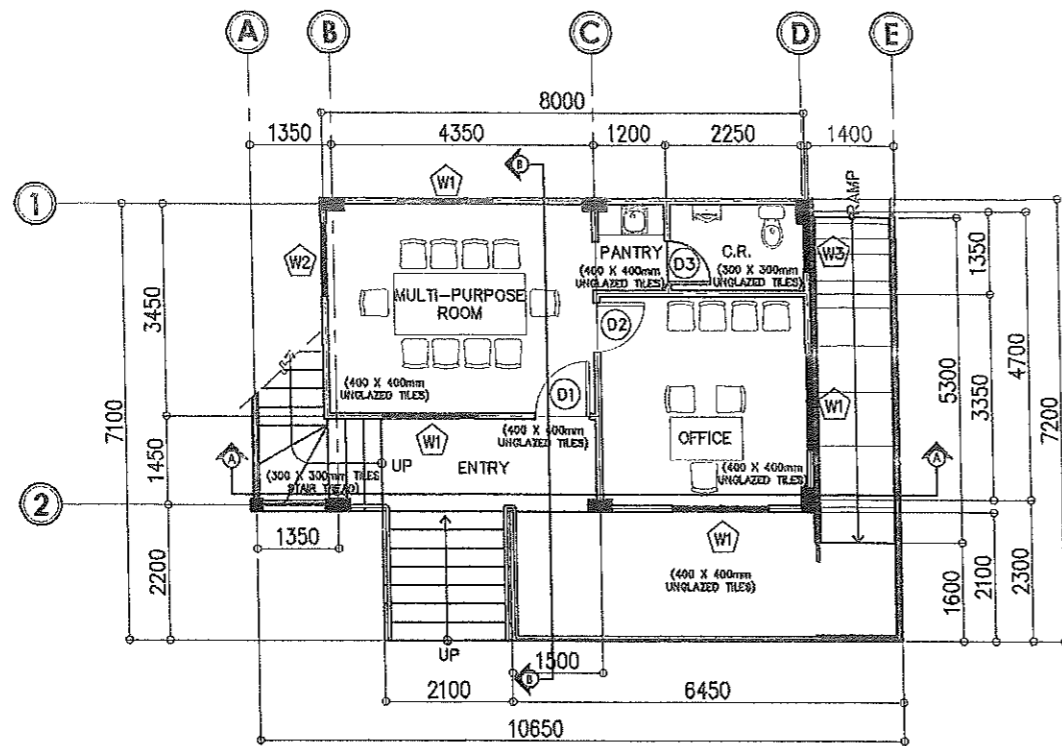


# PERSPECTIVE



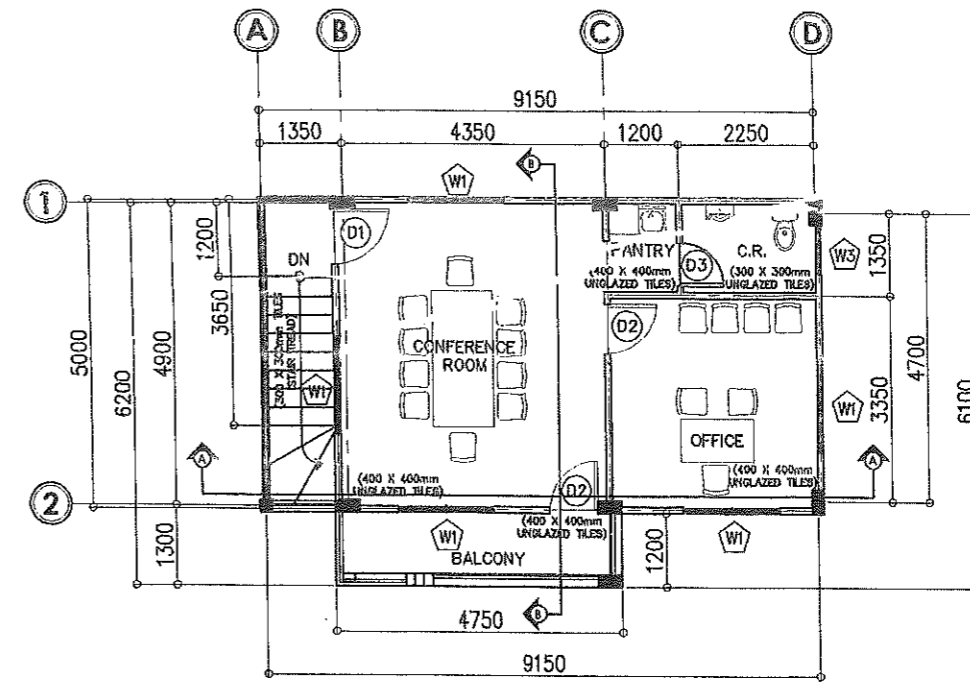
**VICINITY MAP**  
SCALE: NTS.

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	REPUBLIC OF THE PHILIPPINES PROVINCE OF PAMPANGA <b>PROVINCIAL ENGINEER'S OFFICE</b> CAPITOL COMPOUND, CITY OF SAN FERNANDO, (P)	<b>CONSTRUCTION OF TWO (2) - STOREY          MULTI-PURPOSE BUILDING</b> LOCATION: SAPANG KAWAYAN, MASANTOL, PAMPANGA	 ENGR. EDRALIN M. DANAN ENGINEER II	 ENGR. ESMERALDO T. GUAFA ENGINEER IV	 ENGR. WILFREDO A. MANALILI ABST. PROVINCIAL ENGINEER	 ENGR. OLIMPIO M. PANGAN PROVINCIAL ENGINEER	 ATTY. CHARLES G. CHUA PROVINCIAL ADMINISTRATOR	HON. DENNIS G. PINEDA GOVERNOR BY THE AUTHORITY OF THE GOVERNOR:	AS SHOWN ARCHITECTURAL



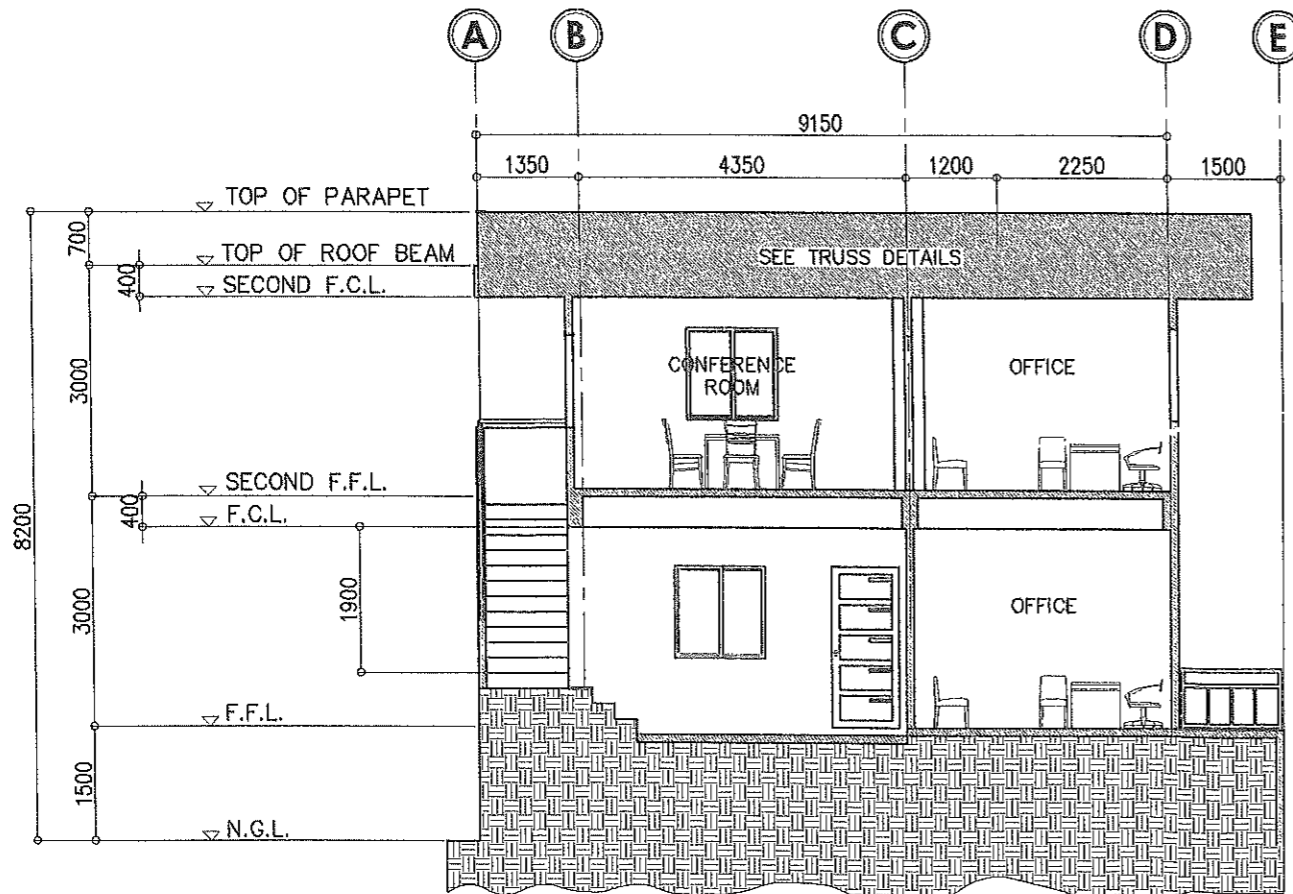
**GROUND FLOOR PLAN**

SCALE: 1:125 MTS.



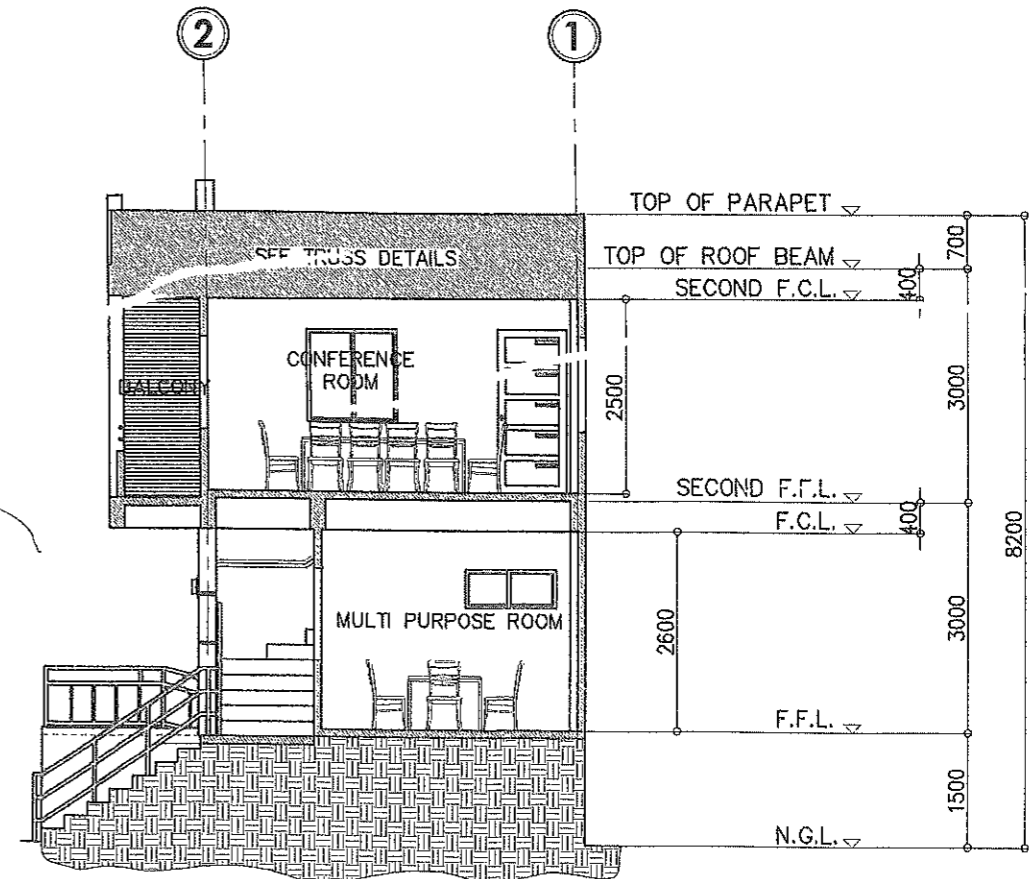
**SECOND FLOOR PLAN**

SCALE: 1:125 MTS.



**SECTION THRU "A-A"**

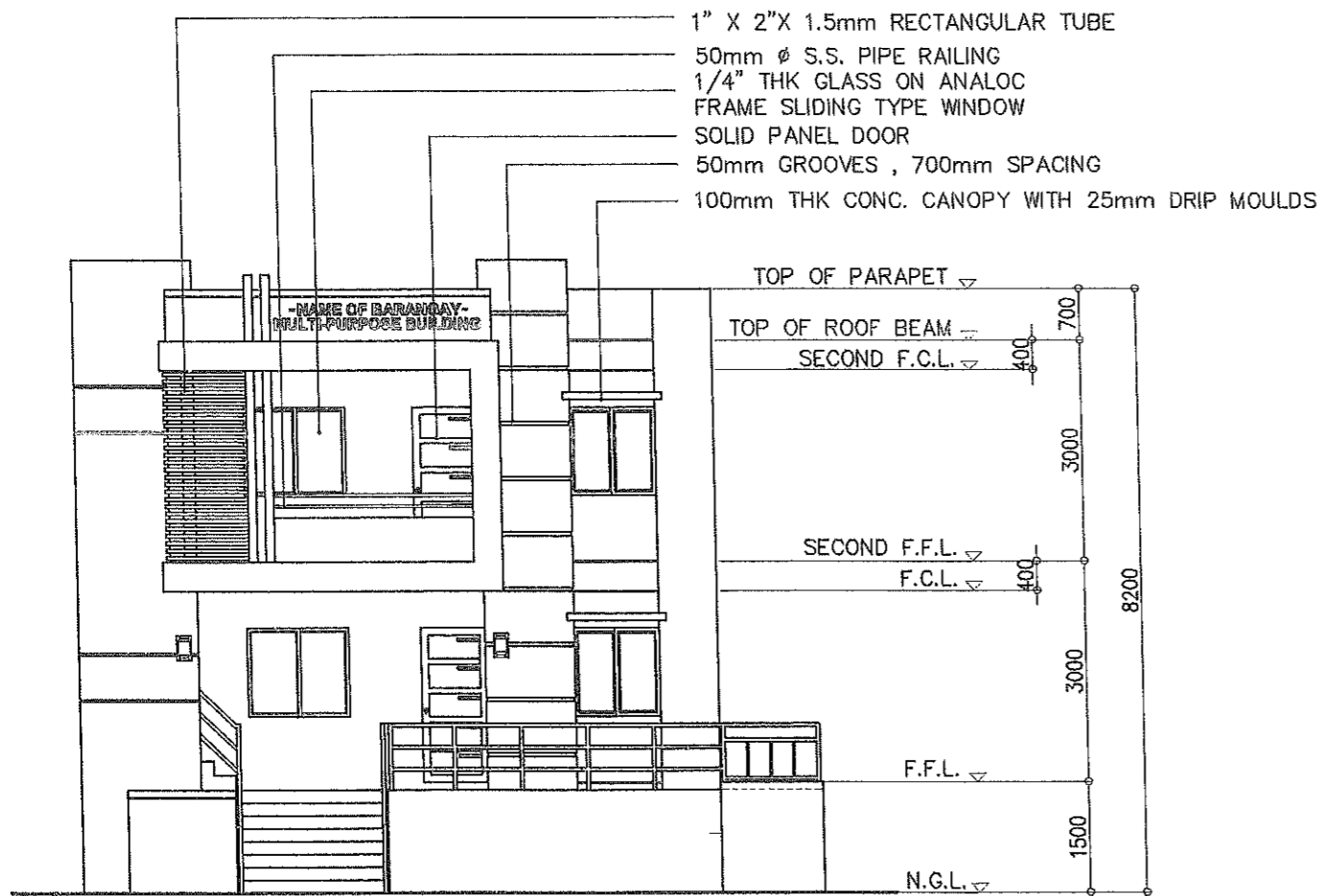
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**SECTION THRU "B-B"**

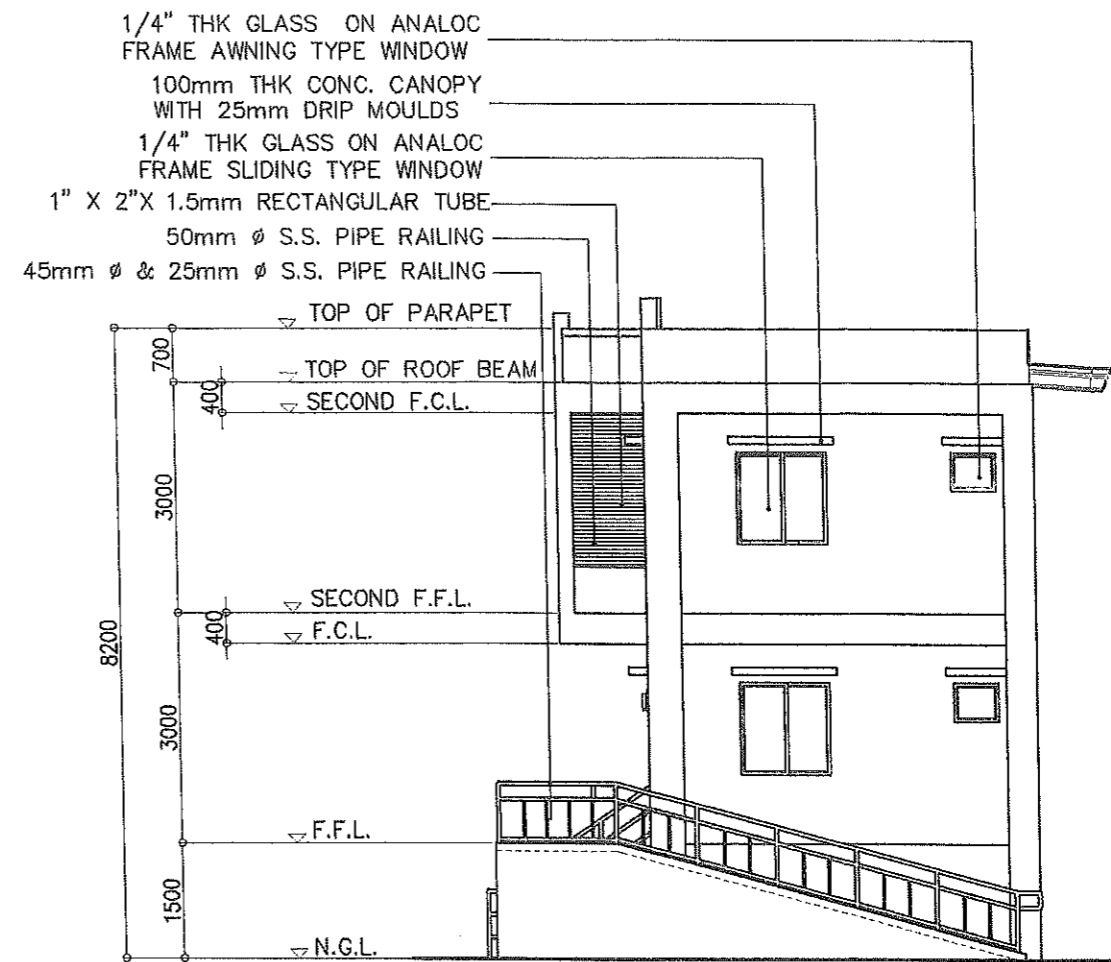
SCALE: 1:100 MTS.

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		LOCATION: SAPANG KAWAYAN, MASANTOL, PAMPANGA						ARCHITECTURAL	2 / 13



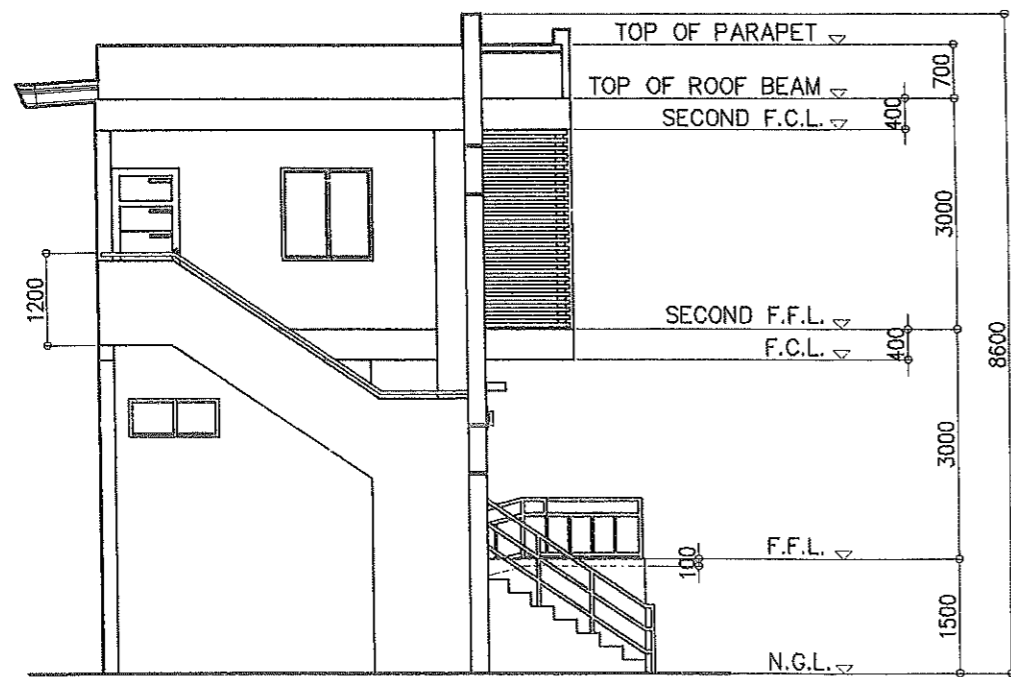
**FRONT ELEVATION**

SCALE: 1:100 MTS.



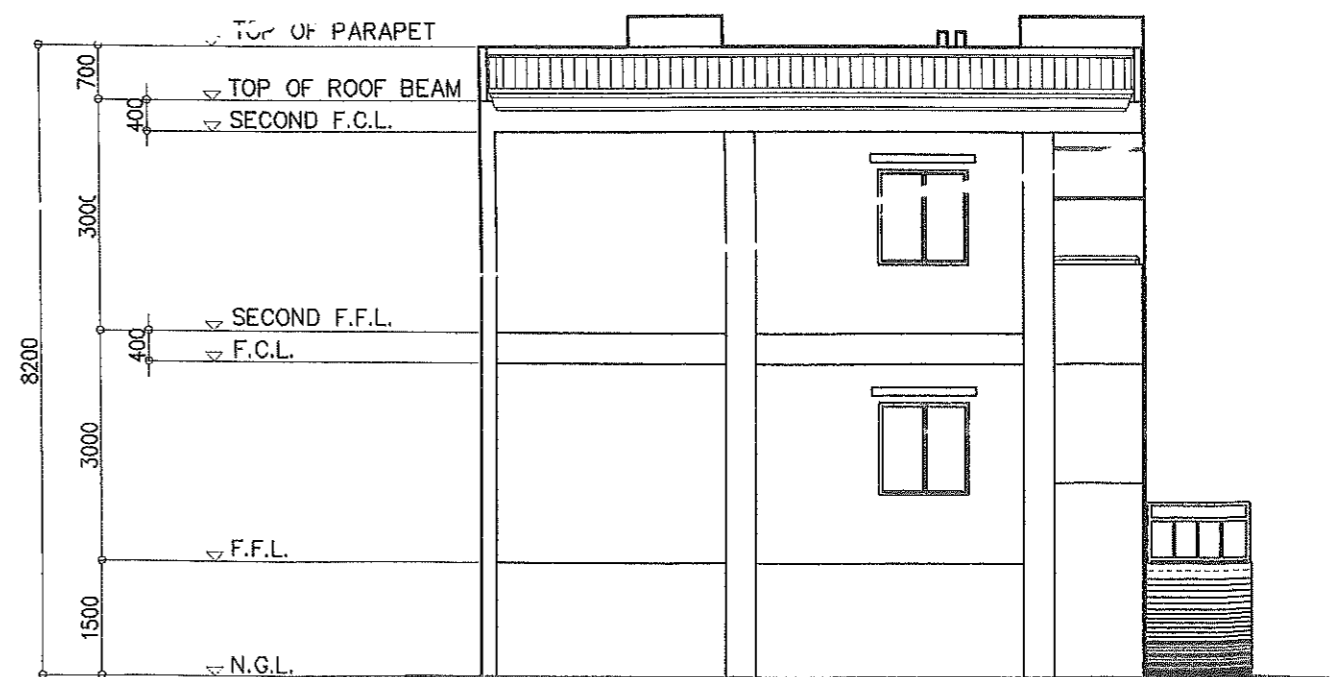
**RIGHT SIDE ELEVATION**

SCALE: 1:100 MTS.



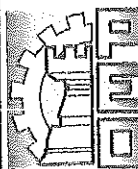
**LEFT SIDE ELEVATION**

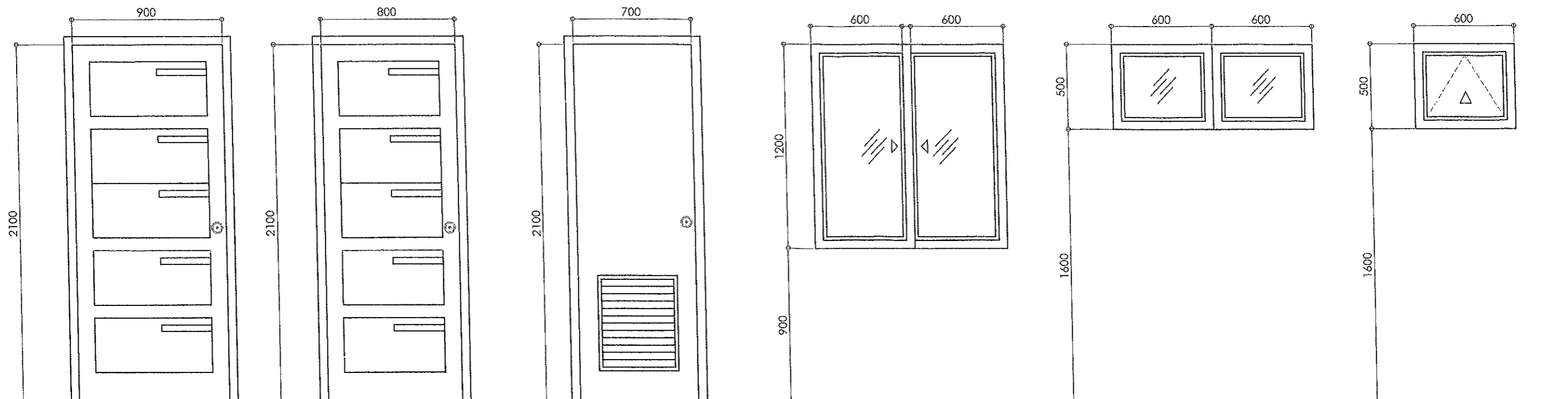
SCALE: 1:100 MTS.



**REAR ELEVATION**

SCALE: 1:100 MTS.

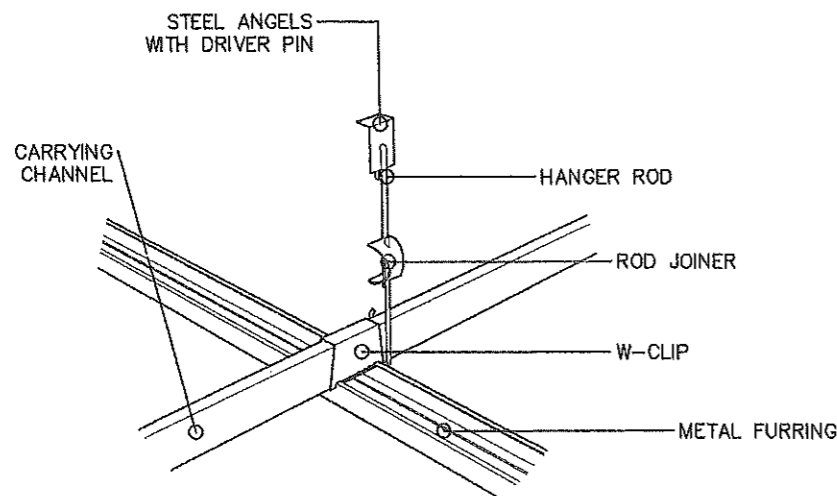
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- D1** SOLID PANEL DOOR W/ G.I. JAMB COMPLETE W/ HARDWARE & ACCESSORIES (2 = SETS)
- D2** SOLID PANEL DOOR W/ G.I. JAMB COMPLETE W/ HARDWARE & ACCESSORIES (3 = SETS)
- D3** FLUSH DOOR WITH LOUVERS AND G.I. JAMB COMPLETE W/ HARDWARE & ACCESSORIES (2 = SETS)
- W1** 1/2" THK GLASS PANELS ON ANALOC FRAME SLIDING WINDOWS WITH SCREEN (9 = SETS)
- W2** 1/2" THK GLASS PANELS ON ANALOC FRAME SLIDING WINDOW W/ SCREEN (1 = SET)
- W3** 1/2" THK GLASS PANELS ON ANALOC FRAME AWNING WINDOWS (2 = SETS)

### SCHEDULE OF DOORS AND WINDOWS

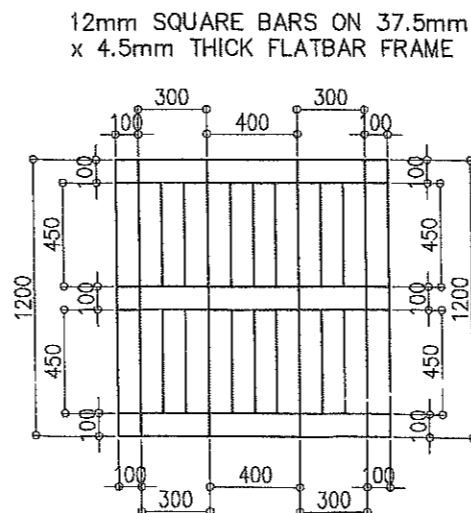
SCALE: 1:25 MTS.



NOTE:  
 \* USE 4.50mm THK. FICEM BOARD ON METAL FURRING (400mm X 600mm FRAME) FOR INTERIOR CEILING  
 \* USE 0.40mm THK. SPANDREL FOR EXTERIOR CEILING

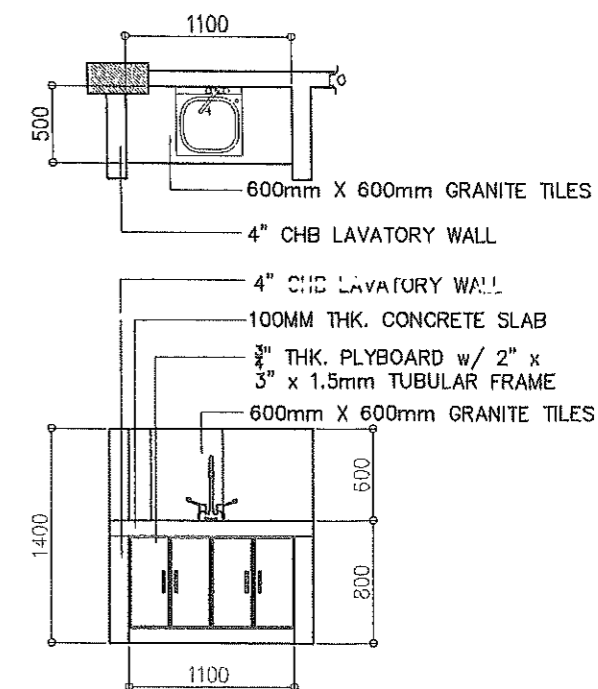
### DETAIL OF METAL FURRING

SCALE: N.T.S.



### TYPICAL WINDOW GRILLES DETAILS

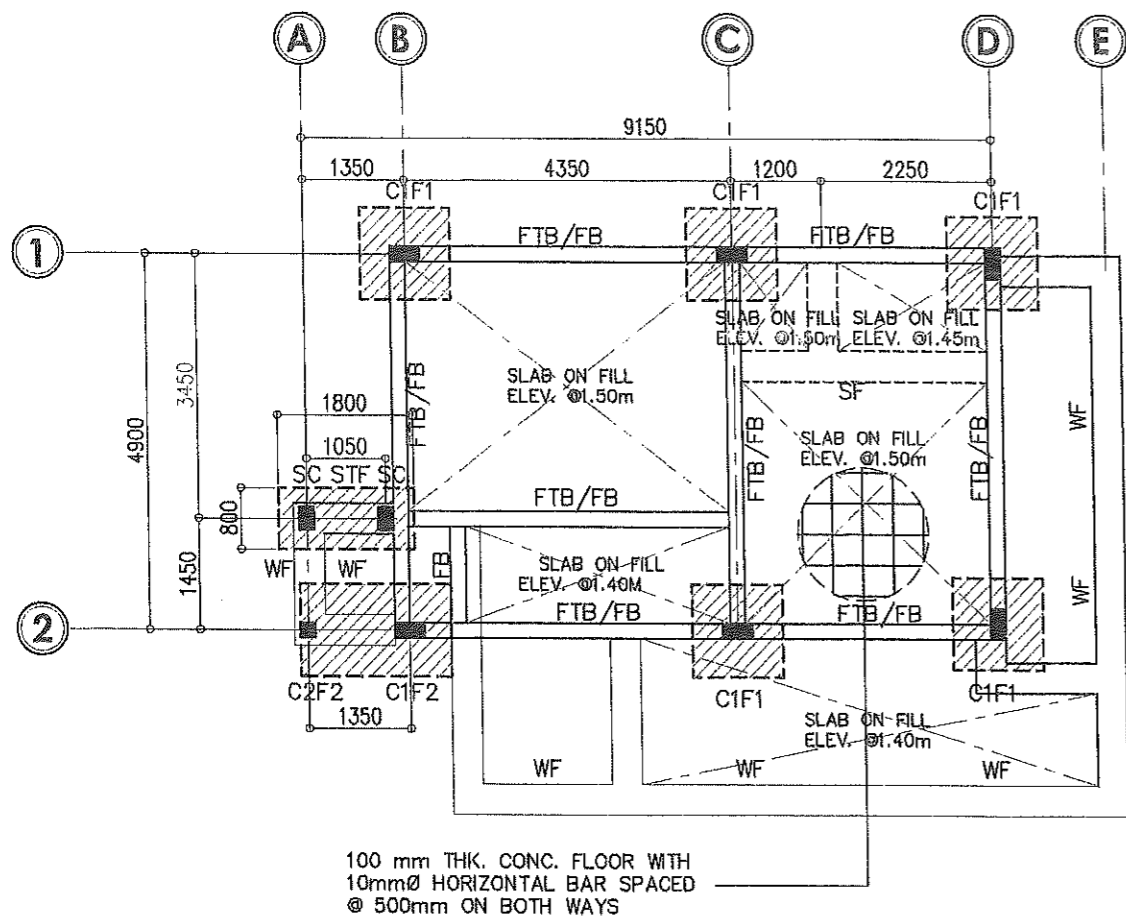
SCALE: 1:30 MTS.



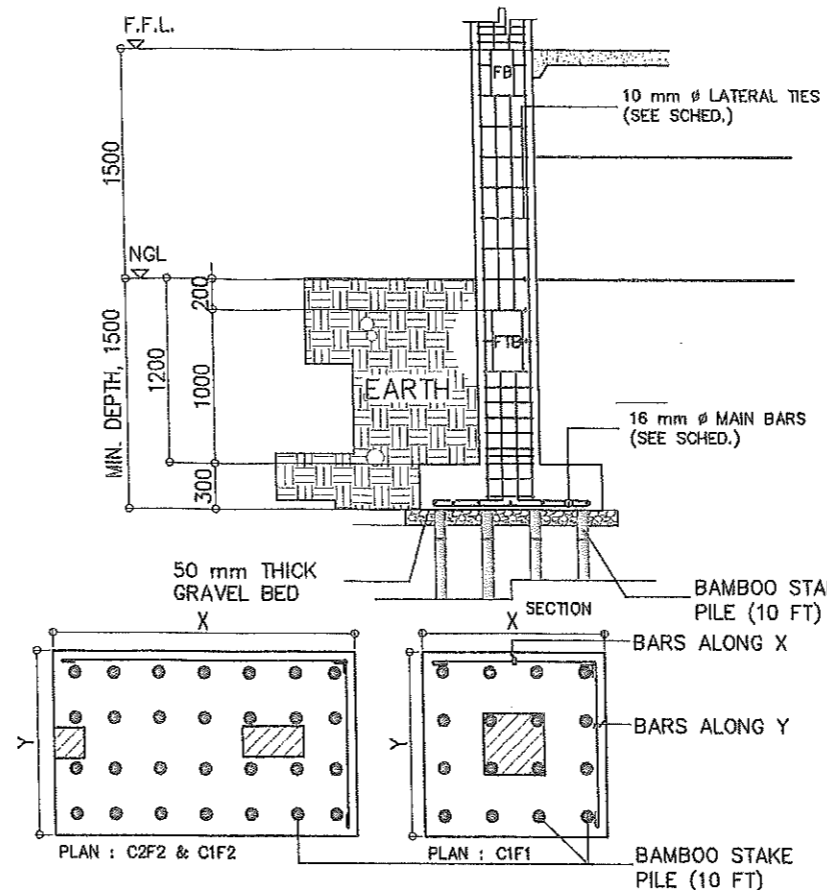
### DETAIL OF LAVATORY COUNTER

SCALE: 1:50 MTS.

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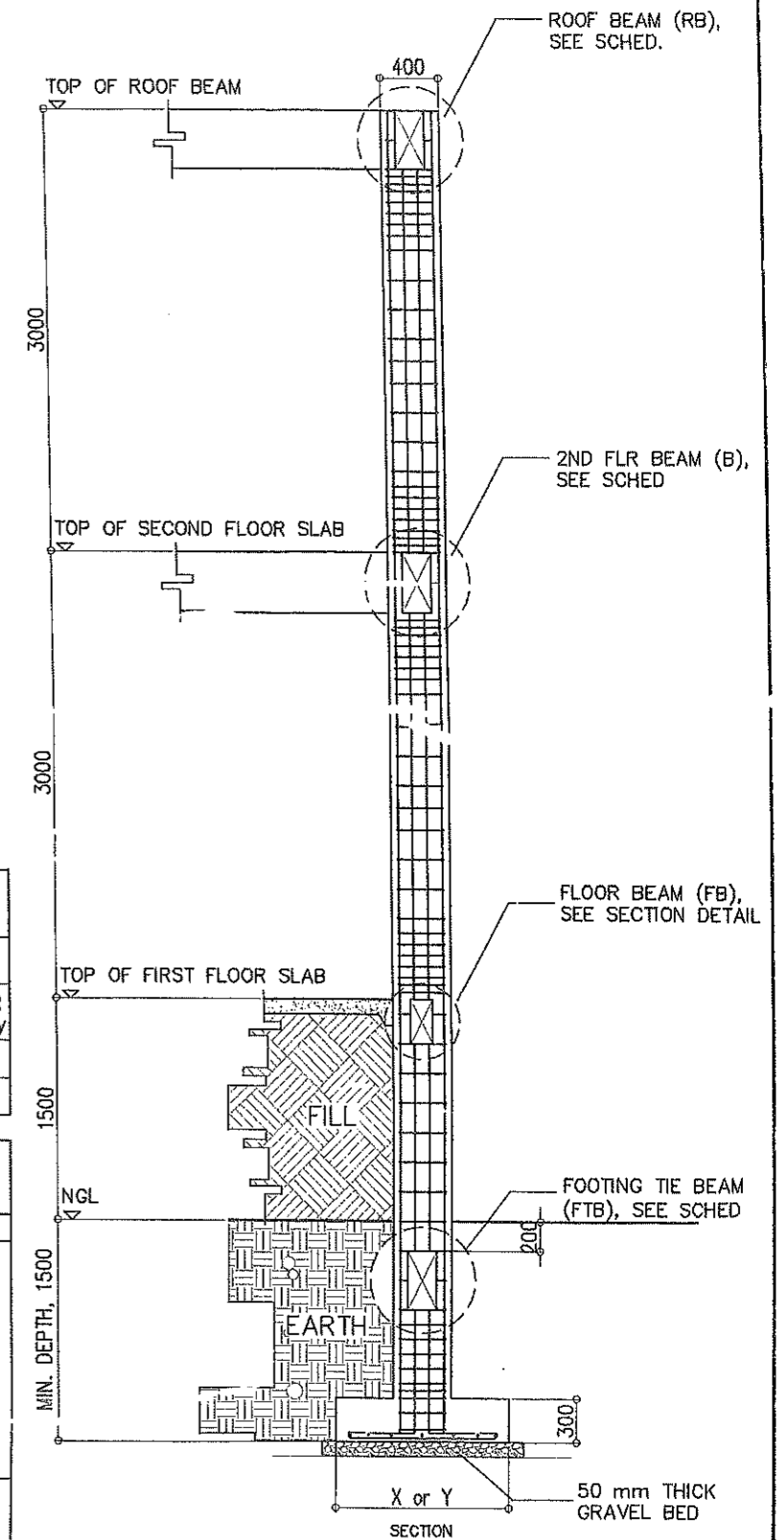
**FOUNDATION PLAN**  
SCALE: 1:100 MTS.



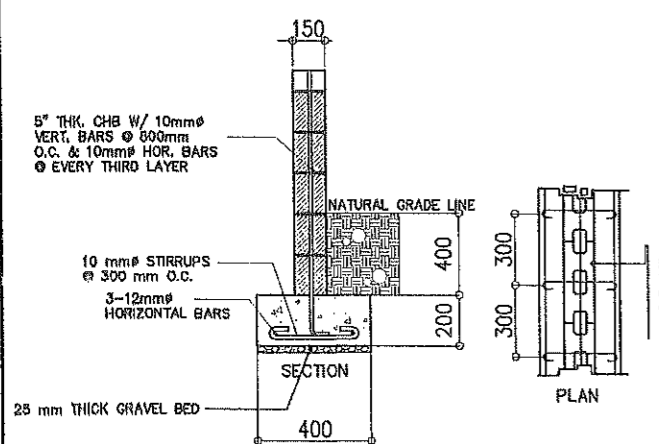
**COLUMN FOOTING DETAILS**  
SCALE: 1:50 MTS.

FOOTING mark	DIMENSION (mm)			DEPTH	REINFORCEMENT (GR.40)		
	x	y	z		BAR $\phi$ (mm)	NUMBER ALONG x	NUMBER ALONG y
F1	1200	1200	300	1500	16	7	7
F2	2000	1200	300	1500	16	12	7

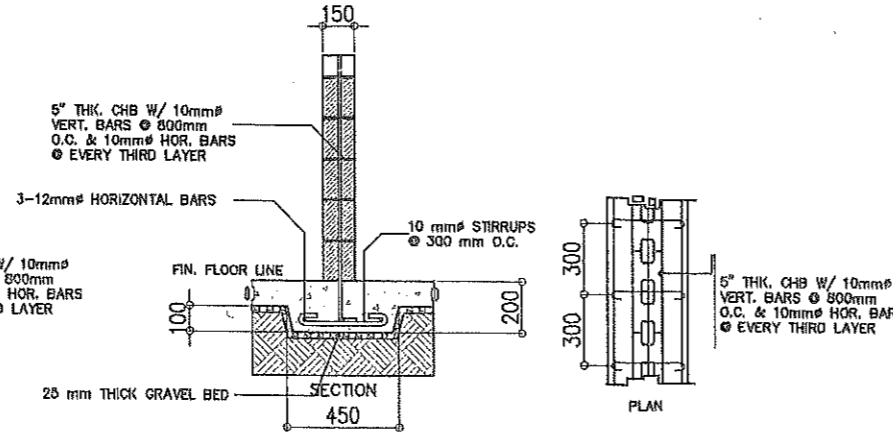
SECTION	C1 = 6 UNITS		C2 = 1 UNIT	
	200	400	200	400
SECOND FLOOR BEAM TO ROOF BEAM	<p>MAIN BARS : 4-16 mm <math>\phi</math>, 4-12 mm <math>\phi</math> TIE BARS : 10 mm <math>\phi</math> 3 <math>\phi</math> 50 mm, 4 <math>\phi</math> 100 mm, &amp; REST <math>\phi</math> 200 mm</p>	<p>MAIN BARS : 4-16 mm <math>\phi</math> TIE BARS : 10 mm <math>\phi</math> 3 <math>\phi</math> 50 mm, 4 <math>\phi</math> 100 mm, &amp; REST <math>\phi</math> 200 mm</p>	<p>MAIN BARS : 4-16 mm <math>\phi</math>, 4-12 mm <math>\phi</math> TIE BARS : 10 mm <math>\phi</math> 3 <math>\phi</math> 50 mm, 4 <math>\phi</math> 100 mm, &amp; REST <math>\phi</math> 200 mm</p>	<p>MAIN BARS : 4-16 mm <math>\phi</math> TIE BARS : 10 mm <math>\phi</math> 3 <math>\phi</math> 50 mm, 4 <math>\phi</math> 100 mm, &amp; REST <math>\phi</math> 200 mm</p>
FOUNDATION TO SECOND FLOOR BEAM	<p>MAIN BARS : 4-16 mm <math>\phi</math>, 4-12 mm <math>\phi</math> TIE BARS : 10 mm <math>\phi</math> 3 <math>\phi</math> 50 mm, 4 <math>\phi</math> 100 mm, &amp; REST <math>\phi</math> 200 mm</p>	<p>MAIN BARS : 4-16 mm <math>\phi</math> TIE BARS : 10 mm <math>\phi</math> 3 <math>\phi</math> 50 mm, 4 <math>\phi</math> 100 mm, &amp; REST <math>\phi</math> 200 mm</p>	<p>MAIN BARS : 4-16 mm <math>\phi</math>, 4-12 mm <math>\phi</math> TIE BARS : 10 mm <math>\phi</math> 3 <math>\phi</math> 50 mm, 4 <math>\phi</math> 100 mm, &amp; REST <math>\phi</math> 200 mm</p>	<p>MAIN BARS : 4-16 mm <math>\phi</math> TIE BARS : 10 mm <math>\phi</math> 3 <math>\phi</math> 50 mm, 4 <math>\phi</math> 100 mm, &amp; REST <math>\phi</math> 200 mm</p>



**FULL BAY SECTION**  
SCALE: 1:50 MTS.

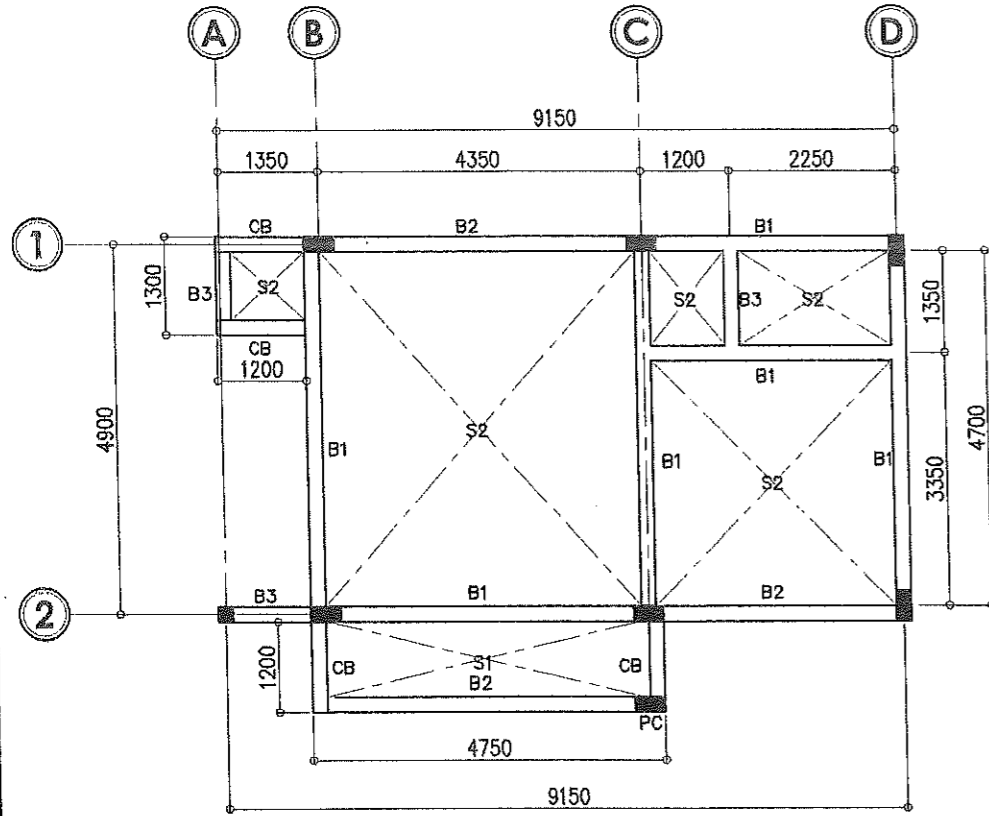


**WALL FOOTING DETAIL (WF)**  
SCALE: 1:30 MTS.



**SLAB FOOTING DETAIL (SF)**  
SCALE: 1:30 MTS.

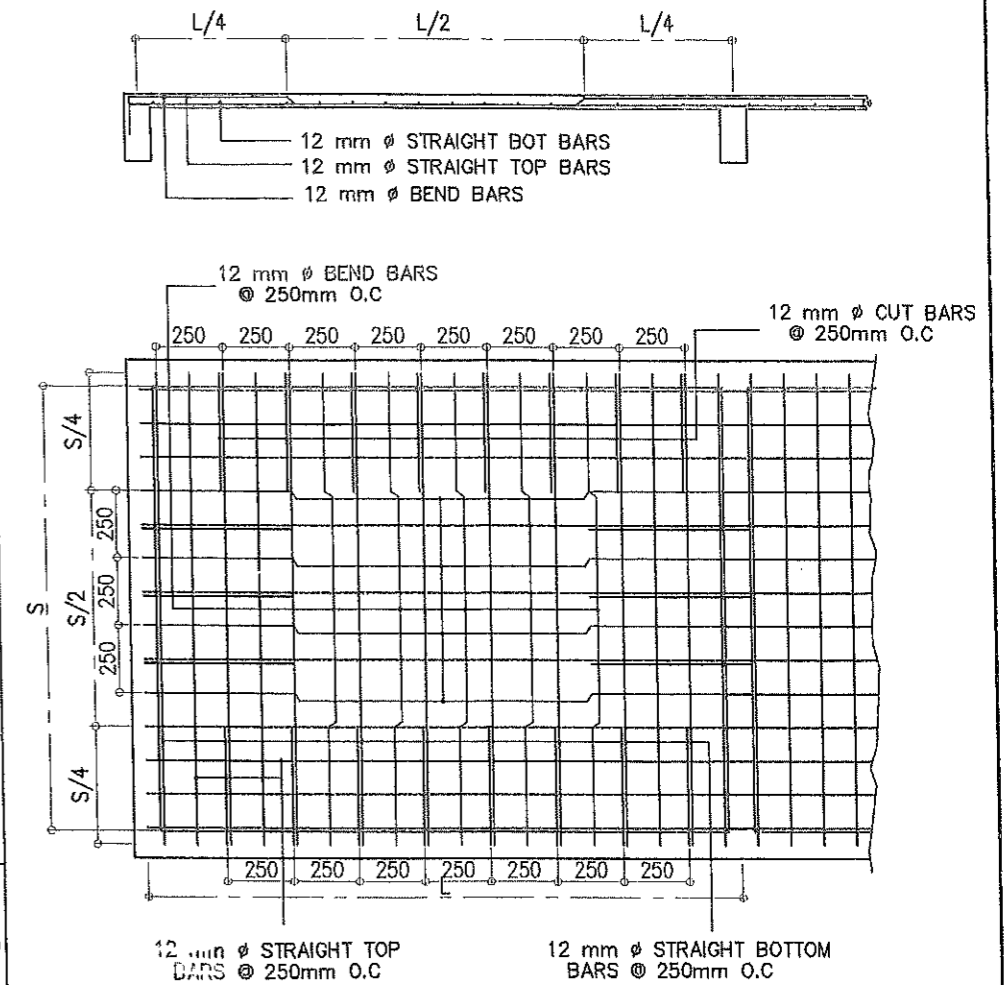
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	LOCATION: SAPANG KAWAYAN, MASANTOL, PAMPANGA								STRUCTURAL	5 / 13



**SECOND FLOOR FRAMING PLAN**

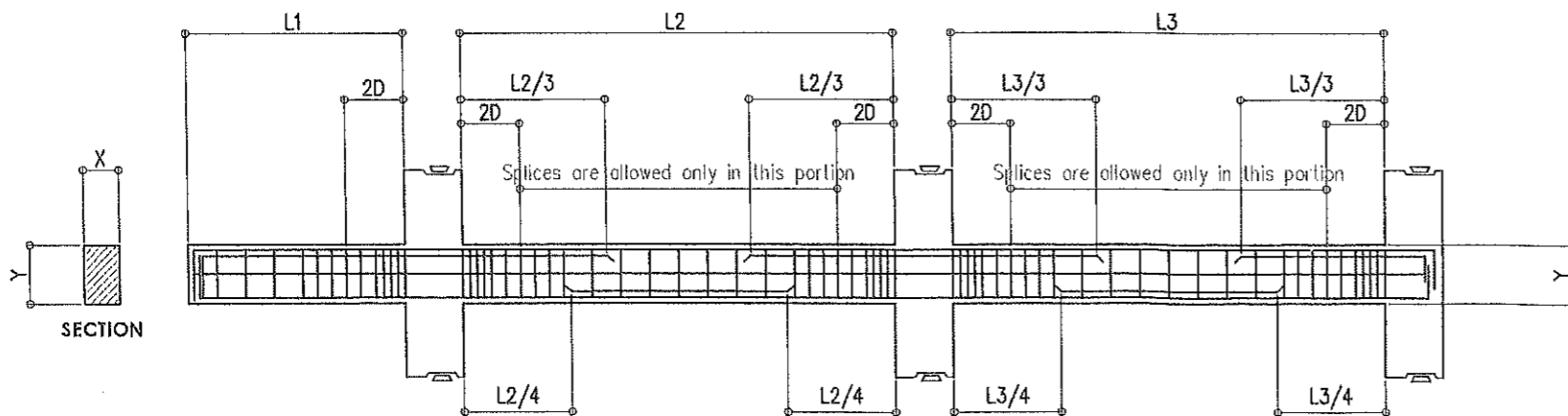
SCALE: 1:100 MTS.

BEAM MARK		SIZE		MAIN REINFORCEMENTS (GR.40)						STIRRUPS	
				LEFT SUPPORT		MIDSPAN		RIGHT SUPPORT			
				TOP BAR	BOT. BAR	SECTION	TOP BAR	BOT. BAR	SECTION		TOP BAR
CB	200	400	3-16mm Ø 2-16mm Ø	SECTION	3-16mm Ø 2-16mm Ø	SECTION					3 @ 50 mm 5 @ 100 mm & REST @ 200 mm
B-1	200	400	3-16mm Ø 2-16mm Ø	SECTION	2-16mm Ø 2-16mm Ø	SECTION	3-16mm Ø 2-16mm Ø	SECTION			3 @ 50 mm 5 @ 100 mm & REST @ 200 mm
B-2	200	400	2-16mm Ø 2-16mm Ø	SECTION	2-16mm Ø 2-16mm Ø	SECTION	2-16mm Ø 2-16mm Ø	SECTION			3 @ 50 mm 5 @ 100 mm & REST @ 200 mm
B-3	150	300	2-16mm Ø 2-16mm Ø	SECTION	2-16mm Ø 2-16mm Ø	SECTION	2-16mm Ø 2-16mm Ø	SECTION			3 @ 50 mm 5 @ 100 mm & REST @ 200 mm
FTB	200	400	2-16mm Ø 2-16mm Ø	SECTION	2-16mm Ø 2-16mm Ø	SECTION	2-16mm Ø 2-16mm Ø	SECTION			3 @ 50 mm 5 @ 100 mm & REST @ 200 mm
FB	150	300	2-12mm Ø 2-12mm Ø	SECTION	2-12mm Ø 2-12mm Ø	SECTION	2-12mm Ø 2-12mm Ø	SECTION			3 @ 50 mm 5 @ 100 mm & REST @ 200 mm
RB	200	400	2-12mm Ø 2-12mm Ø	SECTION	2-12mm Ø 2-12mm Ø	SECTION	2-12mm Ø 2-12mm Ø	SECTION			3 @ 50 mm 5 @ 100 mm & REST @ 200 mm



**TYPICAL SLAB DETAIL**

SCALE: NTS.

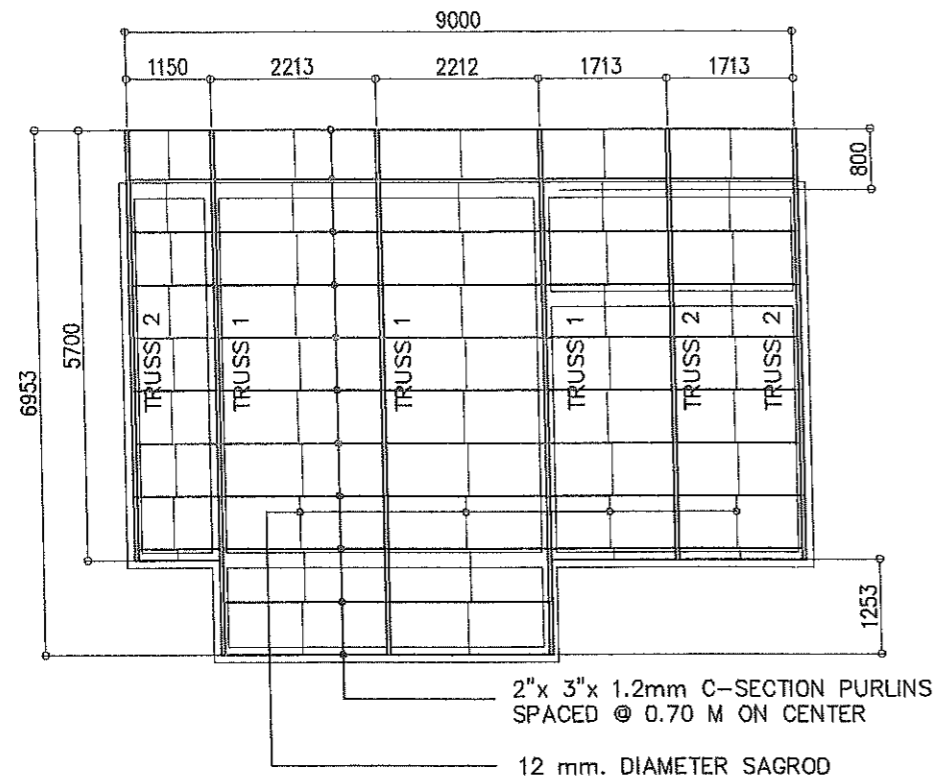


**TYPICAL BEAM SECTION**

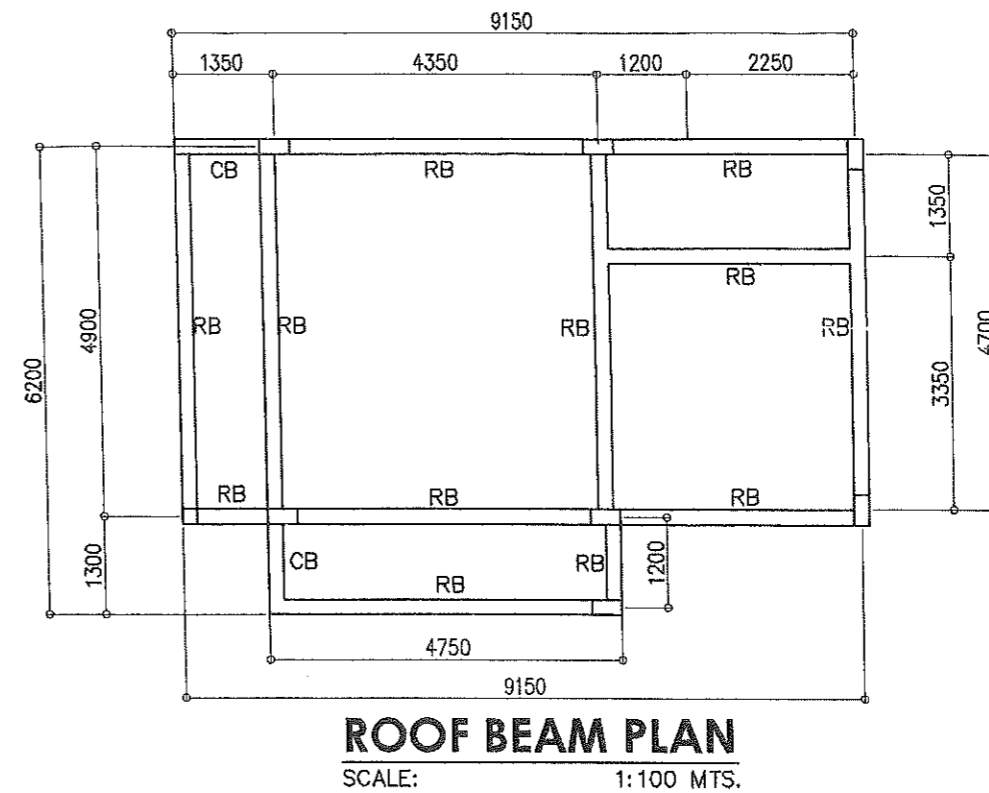
SCALE: NTS.

FLOOR LEVEL	SLAB MARK	THICKNESS In mm	REBAR SPACING												REMARKS		
			ALONG SHORT DIRECTION						ALONG LONG DIRECTION								
			REBAR SIZE	LEFT SUPPORT	MIDSPAN	RIGHT SUPPORT	REBAR SIZE	LEFT SUPPORT	MIDSPAN	RIGHT SUPPORT							
SECOND LEVEL	S2	125	12 Ø	250	250	-	250	250	250	12 Ø	250	250	-	250	250	250	2-WAY
	S1	125	12 Ø	250	250	-	250	250	250	12 Ø	250	250	-	250	250	250	1-WAY

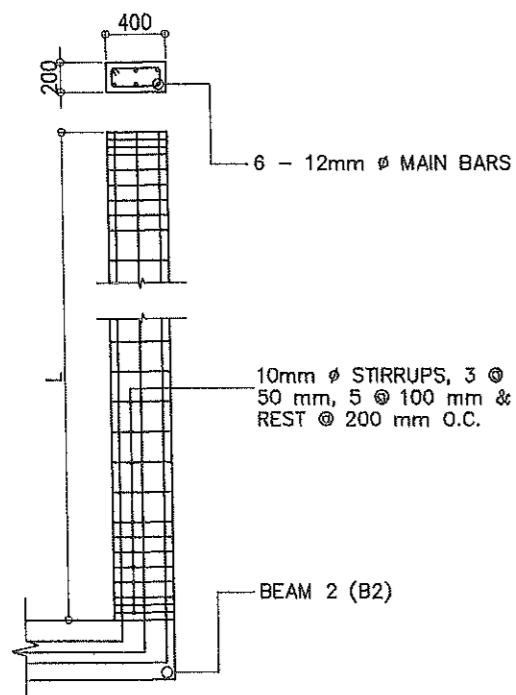
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	LOCATION: SAPANG KAWAYAN, MASANTOL, PAMPANGA							STRUCTURAL	6 / 13



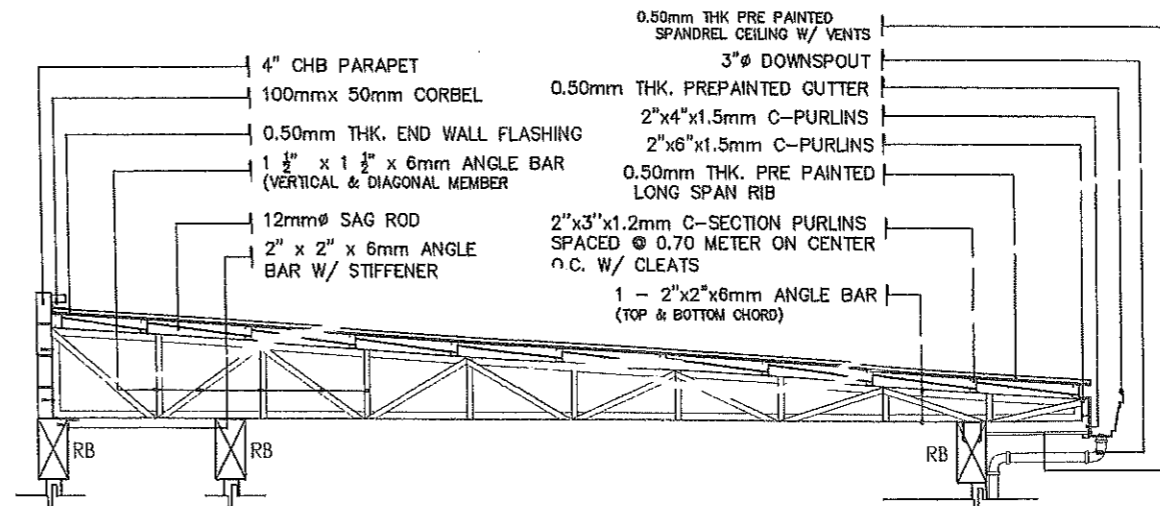
**ROOF FRAMING PLAN**  
SCALE: 1:100 MTS.



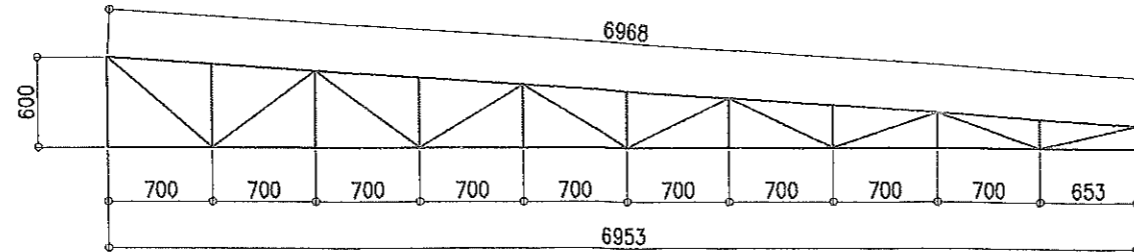
**ROOF BEAM PLAN**  
SCALE: 1:100 MTS.



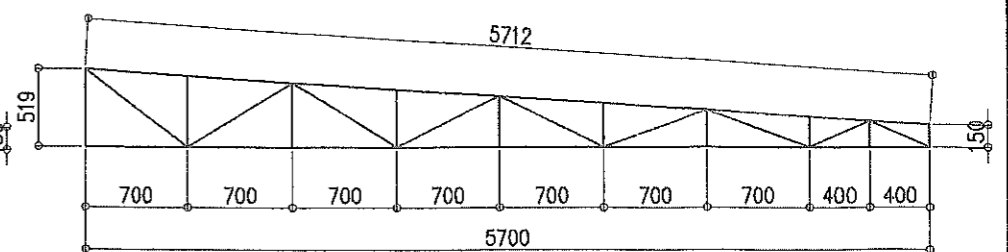
**DET. OF PLANTED COLUMN (PC)**  
SCALE: 1:50 MTS.



**TYPICAL TRUSS DETAIL**  
SCALE: 1:50 MTS.



TRUSS 1 (3 SETS)



TRUSS 2 (3 SETS)

**TRUSS DIAGRAM**  
SCALE: 1:50 MTS.

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# GENERAL NOTES & STANDARDS

## 1. DESIGN STRESS

- A. CONCRETE :  
 COMPRESSIVE STRENGTH @ 28 DAYS = 3,000 PSI / 20.7 MPa
- B. REINFORCING BARS :  
 a. 12 mm  $\phi$  & GREATER = GR. 40 / 275 MPa  
 b. 10 mm  $\phi$  & BELOW = GR. 33 / 230 MPa
- C. STRUCTURAL STEEL, ASTM-A36:  
 FOR TRUSSES, BRACINGS, ETC. = GR. 36 / 248 MPa
- D. PURLINS  
 COLD FORMED LIGHT GAGE SHAPES = GR. 36 / 248 MPa
- E. MASONRY UNIT (CHB)  
 NON-LOAD BEARING CHB WALLS = GR. 05 / 3.45 MPa
- G. STRUCTURAL BOLTS, ASTM-A307  
 a. FT = GR. 14 / 96.60 MPa  
 b. FV = GR. 10 / 69.00 MPa

## 2. MATERIALS

### A. CONCRETE :

1. CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS :
- |                                |       |
|--------------------------------|-------|
| a. FOOTINGS, FOOTING-TIE BEAMS | 75 mm |
| b. BEAMS & COLUMNS             | 40 mm |
| c. SUSPENDED SLAB              | 20 mm |
2. BEFORE CONCRETE IS POURED, CHECK WITH ALL TRADES TO ENSURE PROPER PLACEMENT OF ALL OPENINGS, SLEEVES, CURBS, CONDUITS, ETC. RELATING TO THE WORK.

### B. REINFORCING BARS

- ALL REINFORCING BARS SHALL BE CLEAN OF RUST, GREASE OR OTHER MATERIALS THAT WILL IMPAIR BOND.
- ALL REINFORCING BARS SHALL BE ACCURATELY & SECURELY PLACED BEFORE POURING CONCRETE OR APPLYING MORTAR OR GROUT
- LAPPED SPLICES SHALL BE STAGGERED WHERE POSSIBLE.
- UNLESS OTHERWISE INDICATED, SPLICING OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH ACI-318M, EXCEPT THE MINIMUM LAP SPICE SHALL BE 40 BAR DIAMETER BUT NOT LESS THAN 600 mm.
- UNLESS SHOWN OTHERWISE ON PLANS, SPLICES SHALL BE FOLLOWS :
  - INTERMEDIATE BEAMS : TOP BARS SHALL BE SPLICED MID-SPAN & BOTTOM BARS AT THE SUPPORT.
  - BEAMS FRAMING TO COLUMNS : TOP BARS SHALL BE SPLICED AT MID-SPAN & BOTTOM BARS SHALL NOT BE SPLICED W/IN THE COLUMN W/IN A DISTANCE OF TWICE THE MEMBER DEPTH FROM THE FACE OF THE COLUMN. THE SPLICED LENGTH SHALL NOT BE LESS THAN 1.4 TIMES THE DEVELOPMENT LENGTH ( $L_d$ ) BUT NOT LESS THAN 600 mm.
  - COLUMNS : LAP SPLICES SHALL BE MADE WITHIN THE CENTER HALF OF HEIGHT AND THE SPLICE SHALL NOT BE LESS THAN 30 BAR DIAMETER. WELDING OR THE USED OF APPROVED MECHANICAL DEVICES MAY BE PERMITTED PROVIDED NOT MORE THAN ALTERNATE BARS ARE WELDED OR SPLICED AT ANY LEVEL AND THE MINIMUM VERTICAL DISTANCE BETWEEN TWO ADJACENT BAR SPLICES SHALL BE 600 mm.
  - CHB WALLS : VERTICAL BARS SHALL BE SPLICED AT THE TOP OF THE WALL FOOTINGS OR FOOTING-TIE BEAMS AND AT THE BOTTOM OF REINFORCED CONCRETE LINTEL BEAMS OR BEAMS.
- UNLESS OTHERWISE INDICATED, ALL BEAMS TERMINATING AT A COLUMN SHALL HAVE TOP AND BOTTOM BARS EXTENDING TO THE FAR FACE OF THE COLUMN, TERMINATING IN A STANDARD 90° HOOK LENGTH OF ANCHORAGE AND SHALL NOT BE LESS THAN 600 mm.
- SHOP DRAWING FOR REINFORCEMENT SHALL BE SUBMITTED FOR APPROVAL OF THE ENGINEER PRIOR TO FABRICATION & INSTALLATION.

### C. STRUCTURAL STEEL

- ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 AND SHALL HAVE A MINIMUM YIELD STRESS,  $F_y = 248 \text{ MPa}$  (36,000 psi).
- ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC SPECIFICATIONS AND CODE OF STANDARD PRACTICE AS AMMENDED TO DATE.
- ALL BOLTS SHALL CONFORM TO ASTM A-307 UNLESS OTHERWISE INDICATED.
- SHOP AND FIELD WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 AND PERFORMED BY QUALIFIED WELDERS.
- UNLESS OTHERWISE INDICATED, WELDING ELECTRODES SHALL BE E60.
- NO STEEL SHALL BE FABRICATED OR ERECTED UNTIL SHOP DRAWINGS HAVE BEEN APPROVED BY THE STRUCTURAL ENGINEER.
- ANCHOR BOLTS CONFORM WITH ASTM A-307

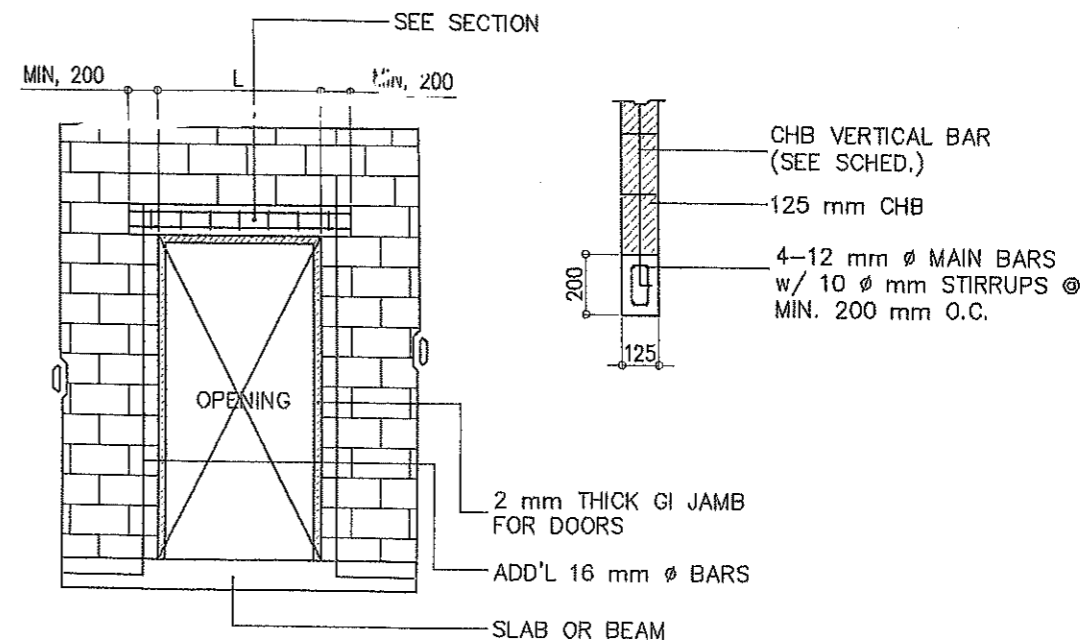
### D. CONCRETE HOLLOW BLOCKS (CHB)

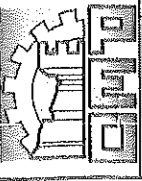



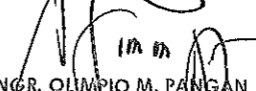
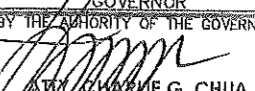
- UNLESS OTHERWISE INDICATED, CHB USED IN THIS WORK SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH,  $F'_m = 3.45 \text{ MPa}$  (500 psi).
- ALL CHB CELLS SHALL BE FILLED SOLIDLY WITH GROUT
- SCHEDULE OF HOLLOW BLOCK REINFORCEMENT
 

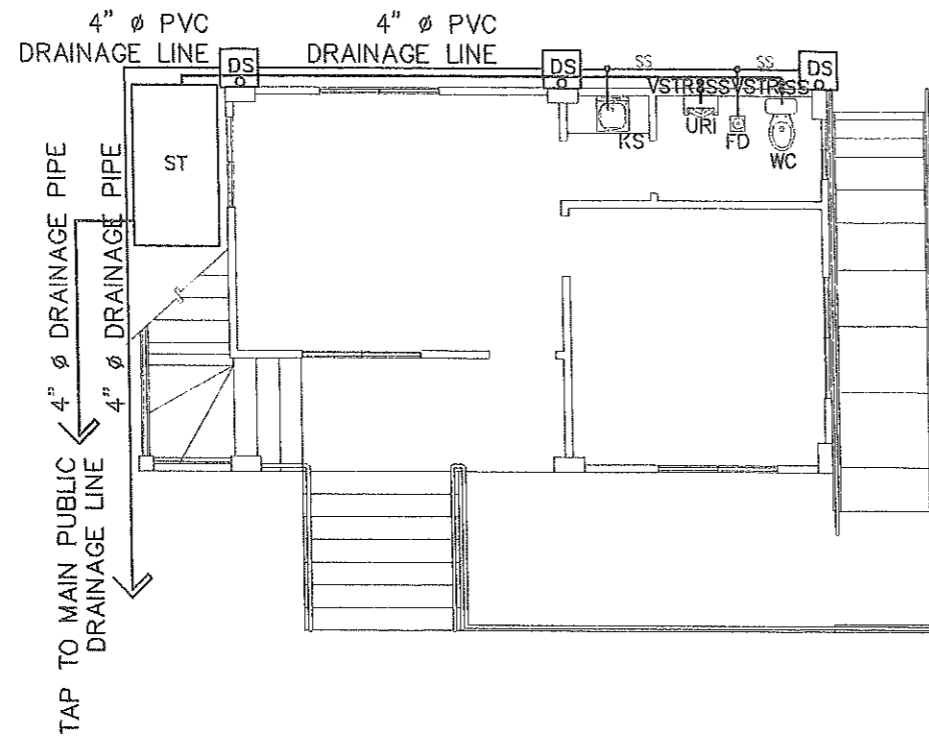
BLOCK THICKNESS	VERTICAL	HORIZONTAL
100 mm	800 mm	600 mm
125 mm	800 mm	600 mm
- SEE BELOW FOR DOOR & WINDOW OPENING DETAIL.

### E. CONSTRUCTION JOINTS

- CONSTRUCTION JOINT NOT INDICATED ON THE PLANS SHALL BE MADE SO AS TO LEAST IMPAIR THE STRENGTH OF THE STRUCTURE AND SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER EXCEPT SLAB ON GRADE.
- UNLESS SHOWN OTHERWISE, SLAB ON GRADE SHALL HAVE CONTROL JOINTS SPACED AT 2000 mm MAXIMUM, CENTER TO CENTER.
- BEAMS CONSTRUCTION JOINT SHALL BE LOCATED WITHIN THE MIDDLE THIRD OF THE SPAN. IT SHALL BE PROVIDED WITH 3 EXTRA STIRRUPS @ 75mm O.C. ON EACH SIDE OF THE JOINT.

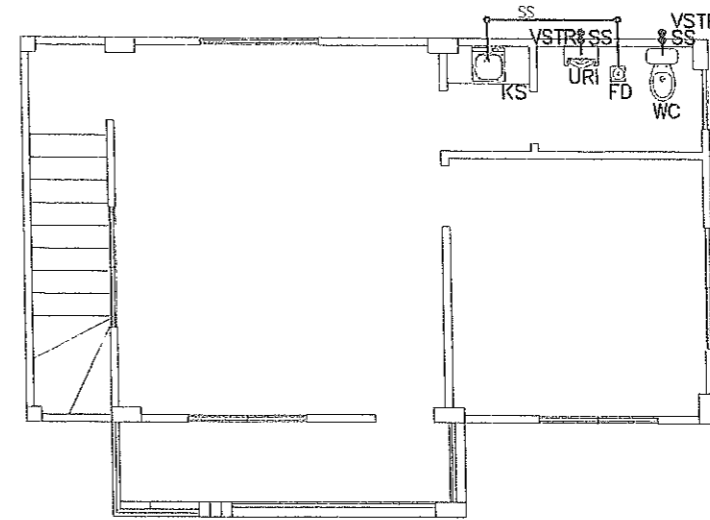


 FROM THE OFFICE OF: REPUBLIC OF THE PHILIPPINES PROVINCE OF PAMPANGA <b>PROVINCIAL ENGINEER'S OFFICE</b> CAPITOL COMPOUND, CITY OF SAN FERNANDO, (P)	PROJECT TITLE: <b>CONSTRUCTION OF TWO (2) - STOREY                  MULTI-PURPOSE BUILDING</b> LOCATION: SAPANG KAWAYAN, MASANTOL, PAMPANGA	PREPARED BY:  ENGR. EDRALIN M. DANAN ENGINEER II	CHECKED BY:  ENGR. ESMERALDO T. GULAPA ENGINEER IV	VERIFIED & SUBMITTED BY:  ENGR. WILFREDO A. MANALILI ASST. PROVINCIAL ENGINEER	RECOMMENDING APPROVAL:  ENGR. OLIMPICO M. PANGAN PROVINCIAL ENGINEER	APPROVED BY: HON. DENNIS G. PINEDA GOVERNOR BY THE AUTHORITY OF THE GOVERNOR  ATTY. CHARLENE G. CHUA PROVINCIAL ADMINISTRATOR	SHEET CONTENTS: AS SHOWN STRUCTURAL	SHEET NO.: S - 5 9 / 13
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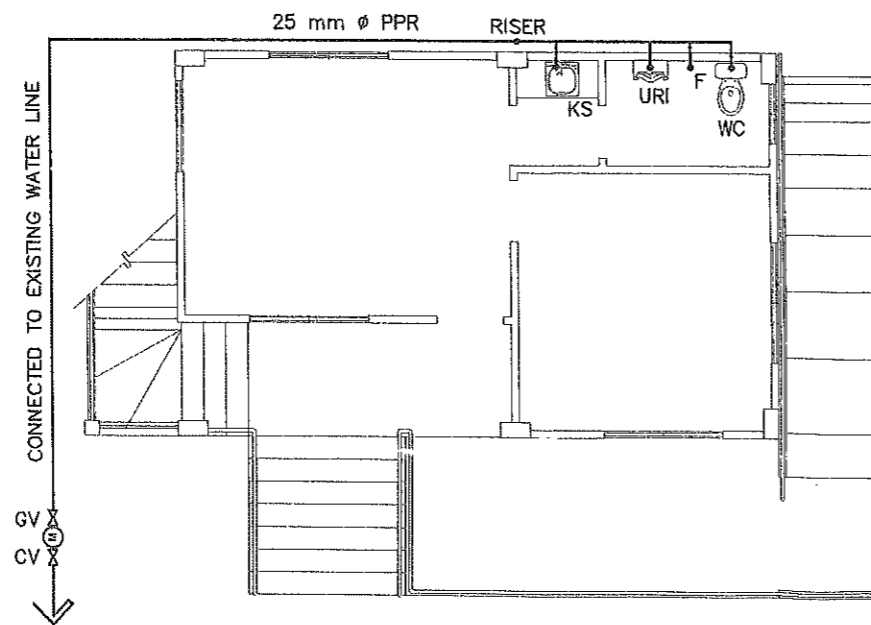
**GROUND FLOOR SEWER LINE LAY-OUT**

SCALE: 1:100 MTS.



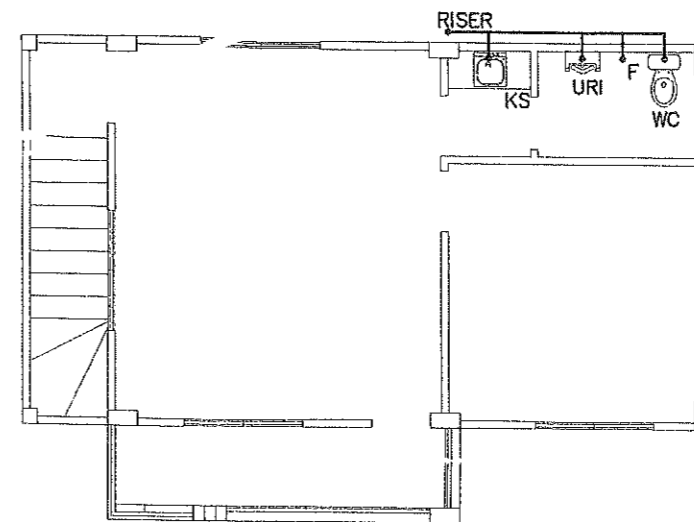
**SECOND FLOOR SEWER LINE LAY-OUT**

SCALE: 1:100 MTS.



**GROUND FLOOR WATER LINE LAY-OUT**

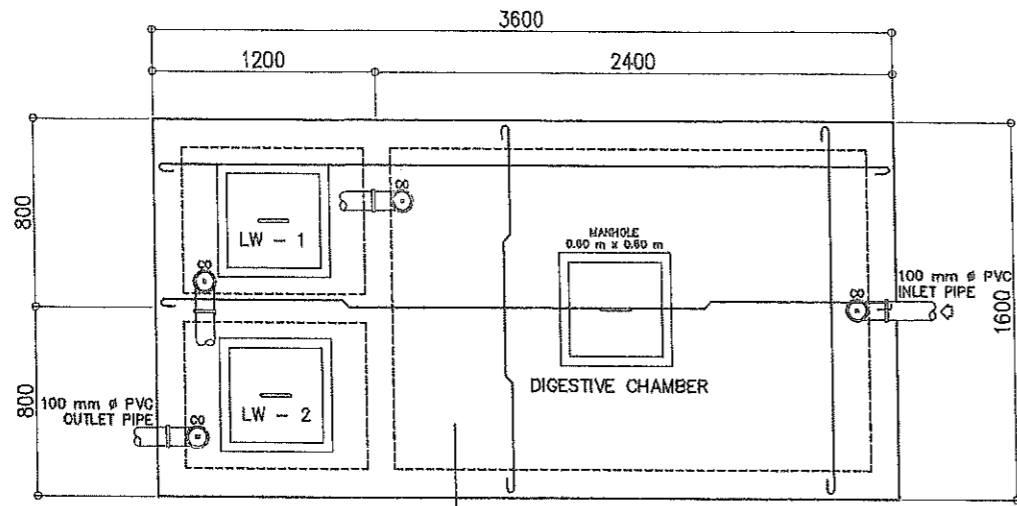
SCALE: 1:100 MTS.



**SECOND FLOOR WATER LINE LAY-OUT**

SCALE: 1:100 MTS.

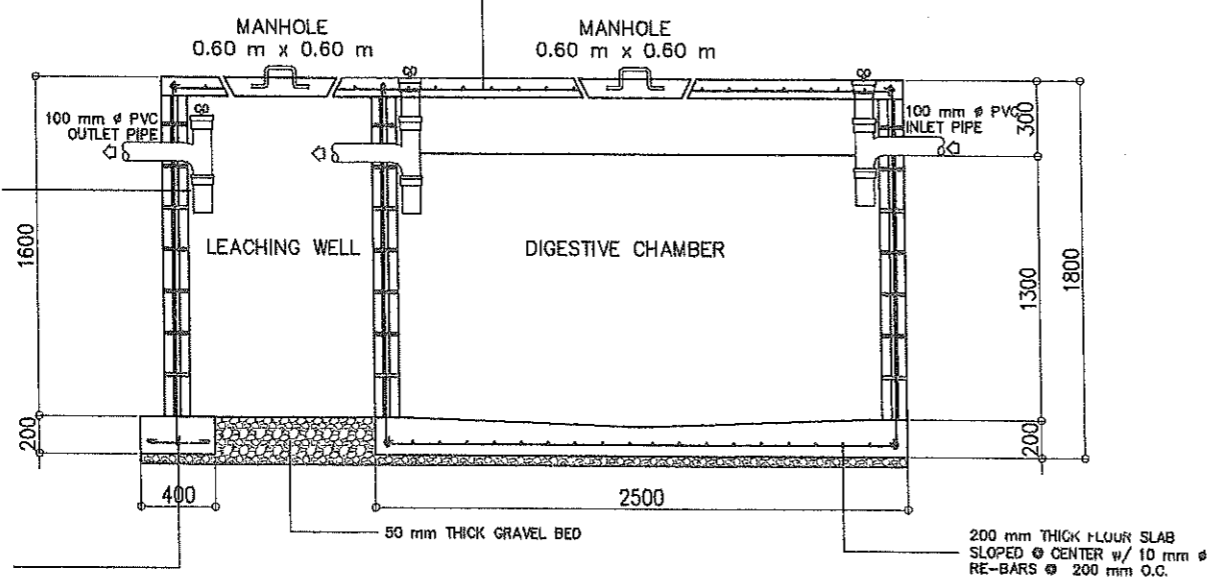
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100 mm THICK CONG. SLAB 10 mm  $\phi$  REBARS @ 200 mm BOTHWAYS, BENDED @ MIDSPAN

100 mm THICK CONG. SLAB 10 mm  $\phi$  REBARS @ 200 mm BOTHWAYS, BENDED @ MIDSPAN

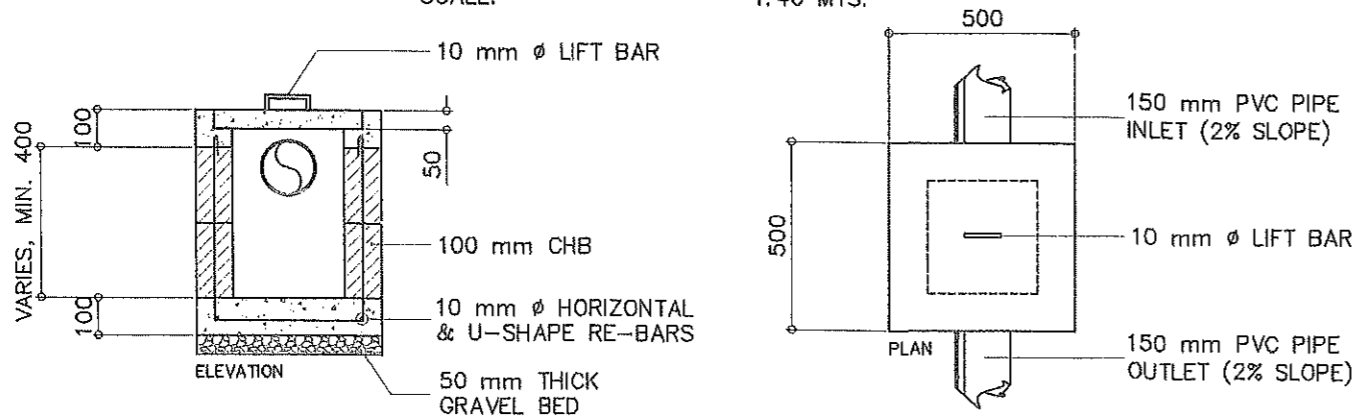
125 mm CHB WALL w/ 10 mm  $\phi$  HORIZONTAL & VERTICAL RE-BARS SPACED @ 600 mm PLASTERED ON 1-SIDE



400 mm x 200 mm WALL FOOTING w/ 3 - 10 mm  $\phi$  MAIN BARS & 10 mm  $\phi$  STIRRUPS @ 300 mm O.C

**DET. OF SEPTIC VAULT**

SCALE: 1:40 MTS.



**DET. OF CATCH BASINS**

SCALE: 1:20 MTS.

**GENERAL NOTES:**

1. ALL PLUMBING WORKS INCLUDED HEREIN SHALL BE EXECUTED IN ACCORDANCE TO THE PROVISIONS OF THE PHILIPPINE PLUMBING CODE, NATIONAL BUILDING CODE & ALL APPLICABLE RULES AND REGULATIONS
2. COORDINATE THE DRAWING PLANS, SPECIFICATIONS & OTHER RELATED MATERIALS TO THE SUPERVISING ENGINEER/ARCHITECT FOR ANY DISCREPANCIES FOUND PRIOR TO THE EXECUTION OF WORK.
3. ALL PIPES, FIXTURES AND OTHER UTILITIES SHALL CONFORM TO THE ACTUAL LOCATION, DEPTH, INVERT ELEVATIONS. ANY CHANGES TO BE MADE SHALL BE COORDINATED WITH THE SUPERVISING ENGINEER/ARCHITECT FOR THE NECESSARY ADJUSTMENT TO ENSURE PROPER EXECUTION OF WORK
4. SEWER/DRAIN/WASTE PIPING REQUIREMENT :
 

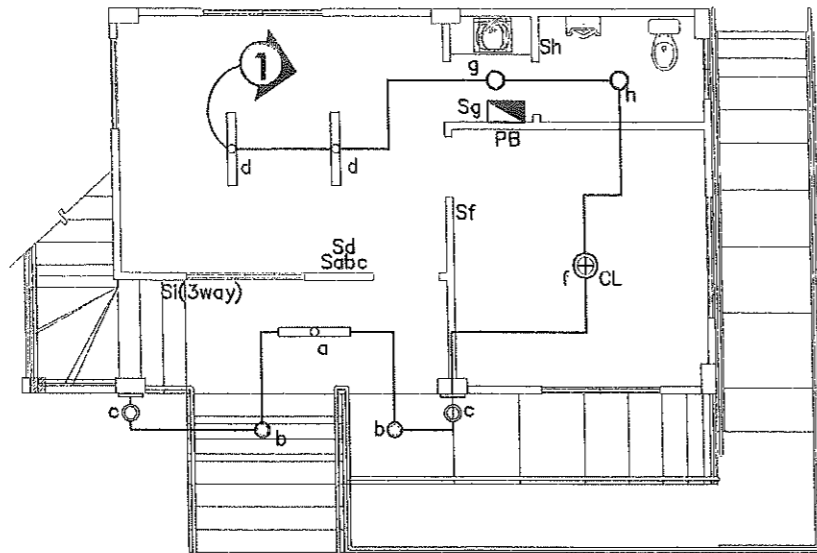
MAIN DRAINAGE	-	100 mm $\phi$ PVC PIPE
DOWNSPOUTS	-	75 mm $\phi$ PVC PIPE
MAIN SOIL STACK	-	100 mm $\phi$ PVC PIPE
SOIL BRANCH	-	100 mm $\phi$ PVC PIPE
BRANCH VENT	-	75 mm $\phi$ PVC PIPE
P-TRAP, FD & UR	-	50 mm $\phi$ P-TRAP
WASTE PIPE, WC	-	100 mm $\phi$ PVC PIPE
WASTE PIPE, LAV, FD & KS	-	50 mm $\phi$ PVC PIPE
5. WATER LINE PIPING REQUIREMENT:
 

MAIN WATER LINE/RISER	-	32 mm $\phi$ PPR PIPE
BRANCH WATER LINE	-	20 mm $\phi$ PPR PIPE
6. GRADES OF HORIZONTAL PIPINGS :  
RUN ALL HORIZONTAL PIPINGS IN PERFECT ALIGNMENT & AT A FORM GRADE NOT LESS THAN TWO PERCENT (2%)
7. CHANGE DIRECTION :  
ALL CHANGE IN DIRECTION SHALL BE MADE BY APPROPRIATE USE OF FORTY FIVE DEGREES (45°) WYES, LONG SWEEP QUARTER BEND, SIXTY-EIGHT OR SIXTEENTH BEND WHEN THE CHANGE OF FLOW IS FROM HORIZONTAL TO VERTICAL A SINGLE  $\frac{1}{2}$  BEND COMBINATION MAY BE USED ON VERTICAL STACKS AND SHORT QUARTER BENDS MAYBE USED ON WASTE LINE, TEE AND CROSSSES MAYBE USED IN BENT PIPES
8. PIPE CLEAN-OUTS :  
CLEAN-OUTS ARE REQUIRED UNDER THE FOLLOWING CONDITIONS :
  - a) EVERY CHANGE OF HORIZONTAL DIRECTION EXCEEDING 22-1/2°
  - b) 1.50 m INSIDE THE PROPERTY LINE BEFORE THE BUILDING DRAINAGE CONNECTION.
  - c) EVERY 15.0 m IN HORIZONTAL RUN OF PIPES
  - d) AT THE END OF HORIZONTAL PIPES
9. THE DIGESTION CHAMBER OF SEPTIC VAULT MUST BE WATERPROOFED.
10. NOT LESS THAN 0.30 m OF AIR SPACE MUST BE LEFT BETWEEN THE TOP OF THE SEWAGE AND THE UNDER PART OF THE VAULT ROOF SLAB.
11. ALL PLUMBING WORKS SHALL BE UNDER THE DIRECT SUPERVISION OF A LICENSED MASTER PLUMBER AND LICENSE PLUMBING CONTRACTOR.

**LEGEND & SYMBOLS**

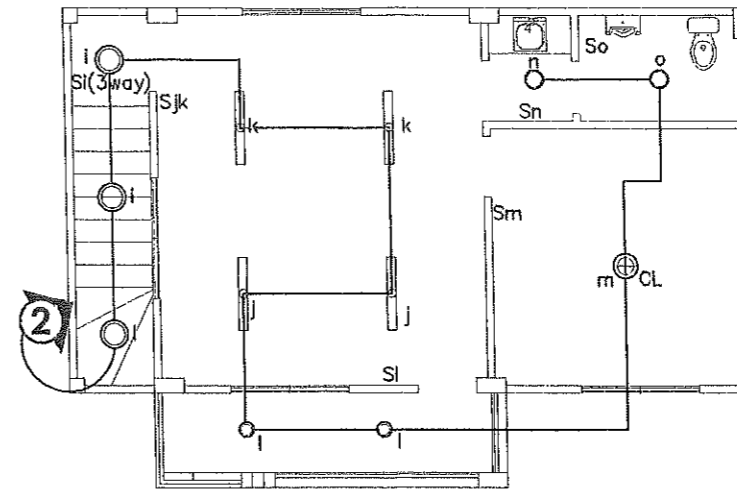
SHO - SHOWER	WC - WATER CLOSET
FAU - FAUCET	FD - FLOOR DRAIN
URI - URINAL	SD - SINK DRAIN
DS - DOWNSPOUT	RD - ROOD DRAIN
CO - CLEAN-OUT	LAV - LAVATORY WITH PEDESTAL

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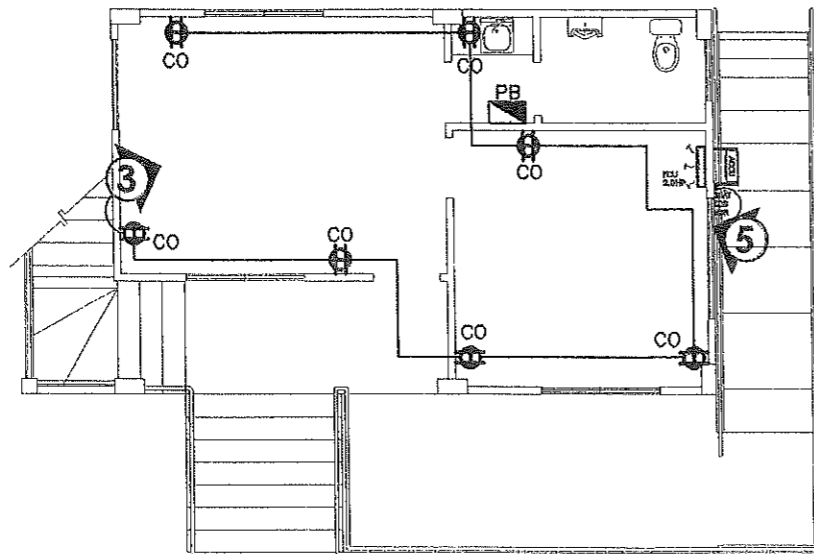
**GROUND FLOOR LIGHTING LAY-OUT**

SCALE: 1:100 MTS.



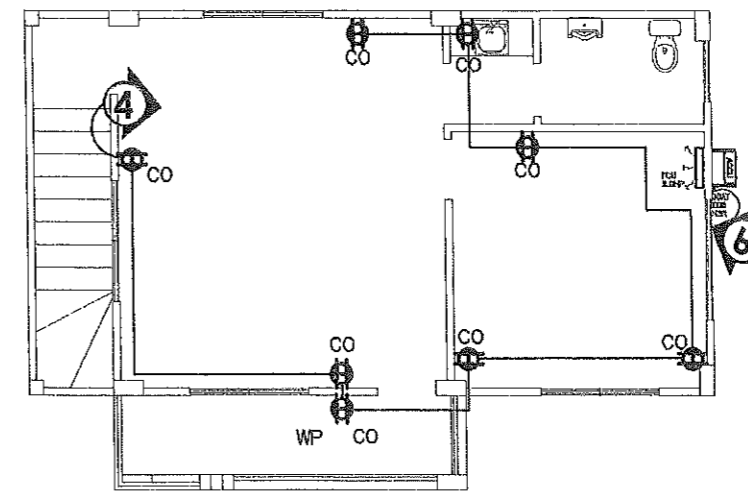
**SECOND FLOOR LIGHTING LAY-OUT**

SCALE: 1:100 MTS.



**GROUND FLOOR POWER LINE LAY-OUT**

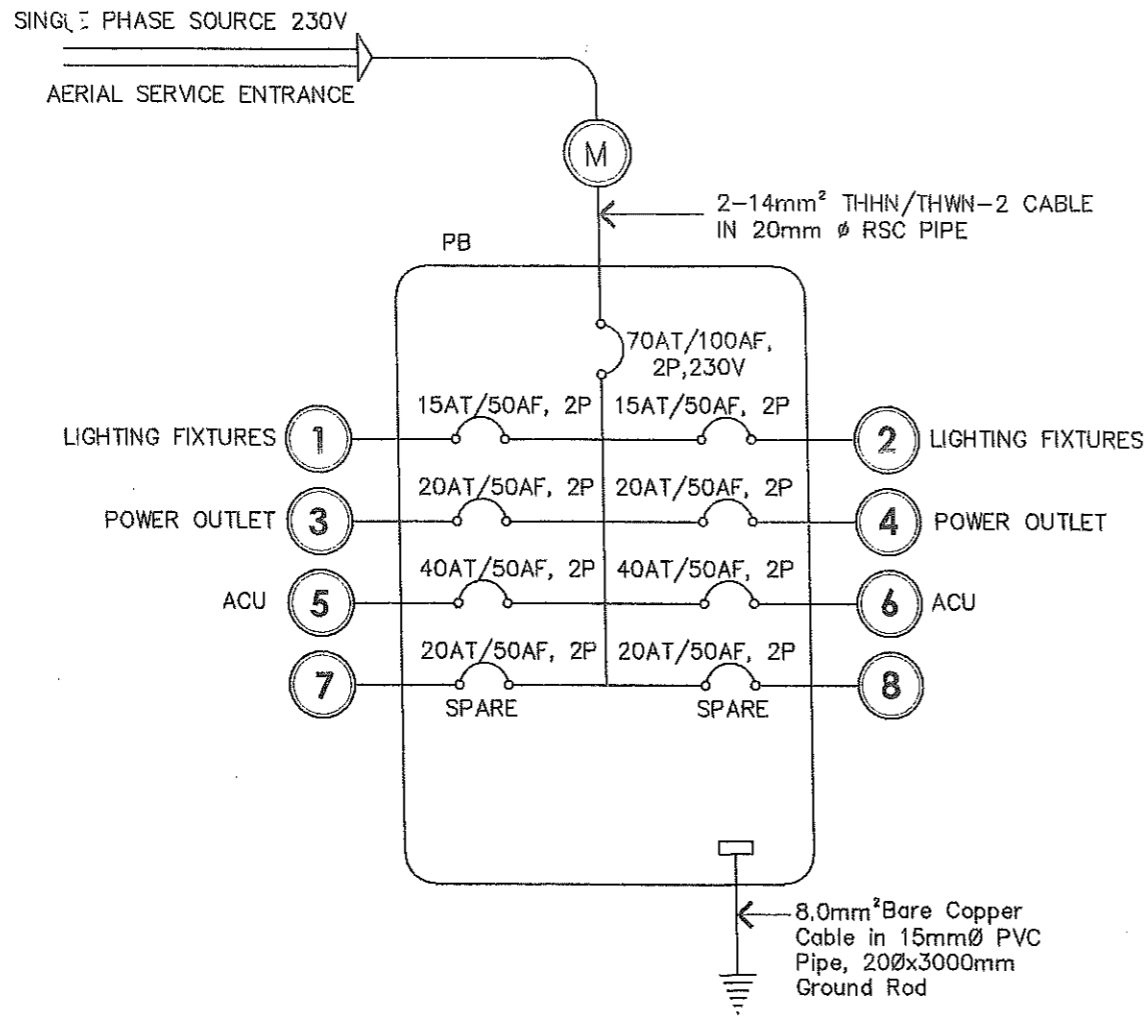
SCALE: 1:100 MTS.



**SECOND FLOOR POWER LINE LAY-OUT**

SCALE: 1:100 MTS.

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								ELECTRICAL	12 / 13



**RISER DIAGRAM**  
SCALE: NTS.

PANEL NAME: PB		9.2m x 6.2m 2-STORY MULTI-PURPOSE BLDG. LOAD CALCULATION (LIGHTING & POWER)									
FEED FROM : POWER SERVICE PROVIDER											
SYSTEM : 230V, 1Ø, 60HZ											
ENCLOSURE : NEMA 1, WALL MOUNTED, BOLT-ON											
CKT. NO.	DESCRIPTION	CONNECTED LOAD			OVER CURRENT PROTECTION				SIZE OF WIRE AND PVC CONDUITS		
		V	VA	A	AT	AF	P	KAIC			
1	3-1 x 40W T8 FLUORESCENT LAMP, 1-1 x 24W CEILING LAMP, 4-1 x 9 W DOWNLIGHT, 2-1 x 9 W WALL LAMP	230	198	0.86	15	50	2	10	2-3.5mm² THHN/THWN-2 LINE + 2.0mm² THHN/THWN-2 GROUND IN 20 mm DIA. PVC CONDUIT or 15mm dia. EMT Conduit		
2	3-1 x 12 W DOWNLIGHT, 4-1 x 40W T8 FLUORESCENT LAMP, 4-1 x 9 W DOWNLIGHT, 2-1 x 24W CEILING LAMP	230	256	1.11	15	50	2	10	2-3.5mm² THHN/THWN-2 LINE + 2.0mm² THHN/THWN-2 GROUND IN 20 mm DIA. PVC CONDUIT or 15mm dia. EMT Conduit		
3	7-1 x 180 W CONVENIENCE OUTLET	230	1260	5.48	20	50	2	10	2-3.5mm² THHN/THWN-2 LINE + 2.0mm² THHN/THWN-2 GROUND IN 20 mm DIA. PVC CONDUIT or 15mm dia. EMT Conduit		
4	8-1 x 180 W CONVENIENCE OUTLET	230	1440	6.26	20	50	2	10	2-3.5mm² THHN/THWN-2 LINE + 2.0mm² THHN/THWN-2 GROUND IN 20 mm DIA. PVC CONDUIT or 15mm dia. EMT Conduit		
5	2HP SPLIT TYPE ACU	230	2760	12.00	40	50	2	10	2-5.5mm² THHN/THWN-2 LINE + 3.5mm² THHN/THWN-2 GROUND IN 20 mm DIA. PVC CONDUIT or 15mm dia. EMT Conduit		
6	2HP SPLIT TYPE ACU	230	2760	12.00	40	50	2	10	2-5.5mm² THHN/THWN-2 LINE + 3.5mm² THHN/THWN-2 GROUND IN 20 mm DIA. PVC CONDUIT or 15mm dia. EMT Conduit		
7	SPARE	230	1000	4.35	20	50	2	10	20mmØ PVC CONDUIT STUB-OUT		
8	SPARE	230	1000	4.35	20	50	2	10	20mmØ PVC CONDUIT STUB-OUT		
TOTAL CONNECTED LOAD :		10574	46.41								
FEEDER LINE COMPUTATION:		MAIN CIRCUIT BREAKER COMPUTATION:		USE :							
I = ( 46.409 + (12*0.25) ) 100% DF		I = ( 46.409 + (12*1.5) ) 100% DF		70AT/100AF, 2P, 22KAIC,							
I = 49.41 Amps		I = 64.41 Amps		2 - 14mm² THHN/THWN-2 LINE + 8.0mm² THHN/THWN-2 GROUND IN 25 mmØ PVC CONDUIT and IN 20mmØ RSC CONDUIT							

**GENERAL NOTES:**

- ALL ELECTRICAL WORKS SHALL COMPLY IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. THE APPLICABLE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE (PEC), THE RULES AND REGULATIONS OF THE LOCAL ENFORCING AUTHORITY AND THE REQUIREMENTS OF THE LOCAL POWER COMPANY. THE ELECTRICAL WORKS SHALL BE UNDER IMMEDIATE SUPERVISION OF A DULY REGISTERED ELECTRICAL ENGINEER.
- THE ELECTRICAL SERVICE POWER IS 1-PHASE, 2-WIRE, 230V AC, 60Hz.
- WIRING METHOD SHALL BE AS FOLLOWS;
  - FEEDERS AND RISERS - INTERMEDIATE METALLIC CONDUIT
  - LIGHTING POWER RECEPTACLE - POLYVINYL CHLORIDE CONDUIT BRANCH CKT. & AUXILIARY, SCH. 40.
- ALL WIRES SHALL BE COPPER AND THERMOPLASTIC INSULATED TYPE "THW" UNLESS OTHERWISE INDICATED IN THE PLAN. THE MINIMUM SIZE OF WIRE FOR POWER AND LIGHTING CIRCUIT HOMERUN SHALL BE 3.5mm² AND INSULATED FOR 600 VOLTS. SMALLEST RACEWAY SHALL BE 15mmØ TRADE/NORMAL SIZE.
- ALL OUTLET BOXES SHALL BE GALVANIZED GAGE NO. 16 DEEP TYPE WITH FACTORY KNOCKOUTS.
- ALL MATERIALS TO BE USED SHALL BE BRAND NEW AND APPROVED TYPE FOR THE PARTICULAR LOCATION AND PURPOSE OF USAGE.
- GROUNDING SYSTEM SHALL BE PROVIDED TO ALL LIGHTING AND POWER CIRCUIT AS PER PHILIPPINE ELECTRICAL CODE REQUIREMENT.
- MOUNTING HEIGHT OF WIRING DEVICES SHALL BE AS FOLLOWS;
 

a. LIGHTING SWITCH	- 1.20 m ABOVE FINISHED FLOOR
b. CONVENIENCE OUTLET	- 0.30 m ABOVE FINISHED FLOOR
c. WALL FAN OUTLET	- 1.80 m ABOVE FINISHED FLOOR
d. PANEL BOARD	- 1.80 m ABOVE FINISHED FLOOR

**LEGEND & SYMBOLS:**

- 24WATTS, 230V CEILING LAMPS
- 40WATTS, 230V T8 FLUORESCENT LIGHTING FIXTURES
- LED DOWN LIGHT
- LED WALL LIGHT
- MAIN PANEL BOARD
- ARIAL SERVICE ENTRANCE
- HOME RUN
- ONE GANG SWITCH
- TWO GANG SWITCH
- THREE GANG SWITCH
- THREE WAY SWITCH
- KILOWATT METER
- DUPLEX CONVENIENCE OUTLET
- SINGLE WALLFAN OUTLET

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	LOCATION:							ELECTRICAL	13 / 13
	SAPANG KAWAYAN, MASANTOL, PAMPANGA								