PETRA
Programme for Earthquake and Tsunami Infrastructure Reconstruction Assistance

ARKONIN ENGINEERING MP

UNDP
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TECHNICAL PRESENTATION ITB 003-2020
THE CONSTRUCTION OF INPATIENT BUILDINGS, PHARMACY AND MATERNITY BUILDING IN TWO HOSPITALS IN CENTRAL SULAWESI

Content:

A Supporting Document for Construction

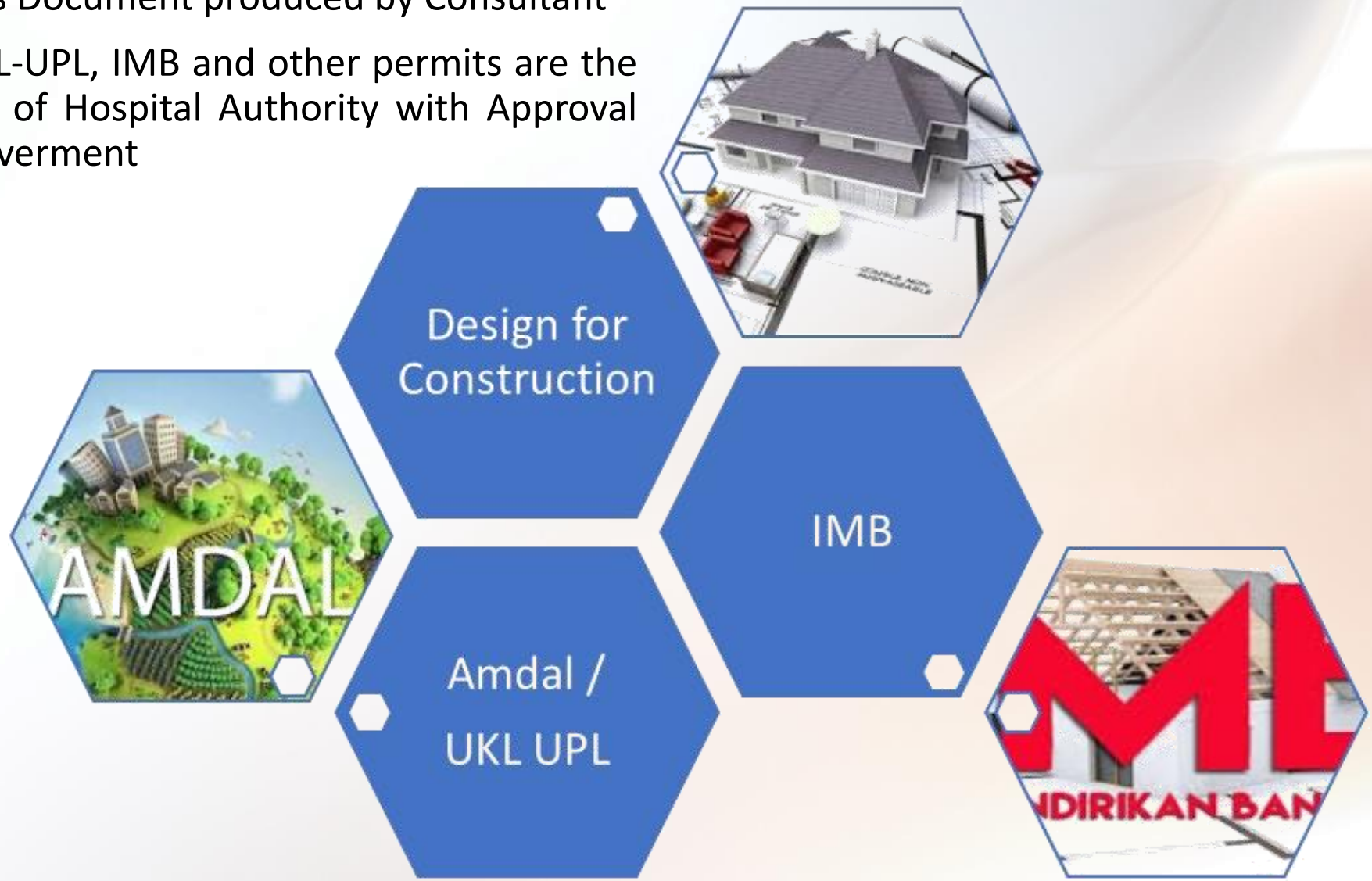
B Project Location

C Site Condition and Summary DED Document

Supporting Document for Construction

A

- ITB Annexes Document produced by Consultant
- AMDAL/UKL-UPL, IMB and other permits are the responsible of Hospital Authority with Approval by Local Goverment



Project Location of Two Hospitals in Central Sulawesi

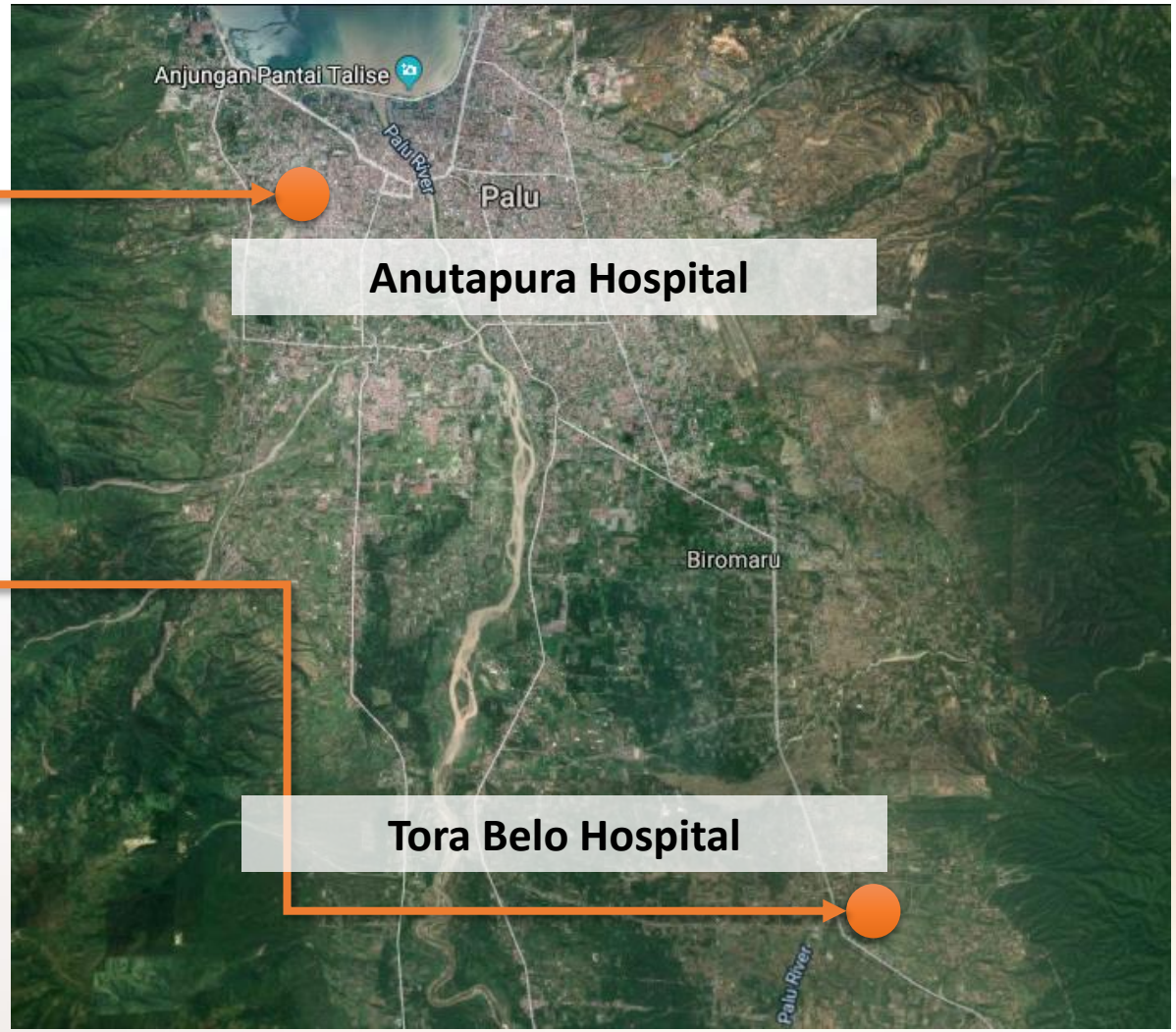
B

Anutapura Hospital in Palu City

Address: Jalan Kangkung No.1, Donggala Kodi, Kota Palu, Central Sulawesi 94111
Coordinates:
0° 53’ 59.770” S 119° 50’ 58.121” E

Tora Belo Hospital in Sigi District

Address: : Jalan Poros Palu – Palolo, Desa Sidera, Sigi Regency, Central Sulawesi 94362
Coordinates:
1° 0’ 28.469” S 119° 55’ 47.356” E



C

SITE CONDITION AND SUMMARY OF DETAIL ENGINEERING DESIGN (DED) DOCUMENT ANUTAPURA & TORA BELO HOSPITALS

Site Condition - Existing Building at Anutapura Hospital

Murai[1] and Pharmacy[2] Building

- Murai inpatient buildings have settlement between 10 to 30 cm from the ground surface (a,b,c)
- Pharmacy buildings also has settlement between 5 to 30 cm and shifts. At the ground floor, it is estimated that there is a cavity / crack between the floor of the building and the ground surface (d)
- Murai and Pharmacy building will be demolition

Preparation Works for Anutapura Hospital

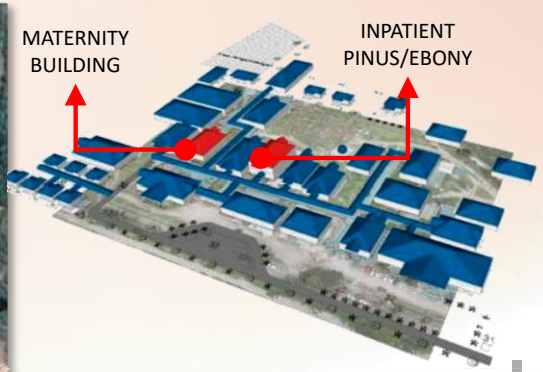
Proposed :

- Temporary road
- Temporary fence
- Barricade
- Project office
- Material quary

Site Condition - Existing Building at Tora Belo Hospital

Pinus/Ebony[1] and Maternity[2] Building

- Pinus/Ebony inpatient buildings have settlement between 5 to 30 cm from the ground surface. The surface of the floor becomes bumpy, in many parts of the wall, the column cracks (a,c).
- Maternity buildings cracks occur in several parts of the wall (b,d).
- Pinus/Ebony and Maternity building will be demolition



Preparation Works for Tora Belo Hospital

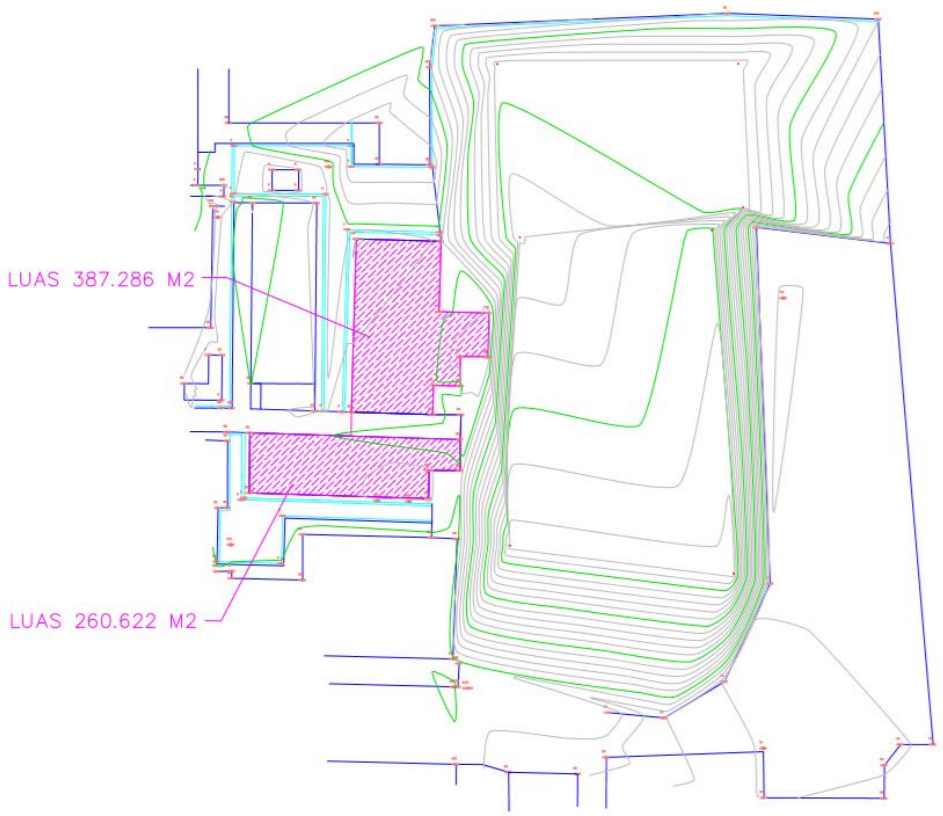
Proposed :

- Temporary road
- Temporary fence
- Barricade
- Project office
- Material quary

SUMMARY OF TOPOGRAPHY AND GEOTHECHNICAL CONDITION ANUTAPURA & TORA BELO HOSPITALS

Topographic **Measurement**

ANUTAPURA HOSPITALS



Land Area 1 (Murai Building) = 387.286 m2

Land Area 2 (Farmasi Building) = 260.622 m2

Topographic Measurement

Land Area 1 (Pinus Building) =
543.312 m2

Land Area 2 (Maternity Building) =
252.757 m2

Geotechnical

Bore-pile Drill Foundation Work Includes:

- The depth of the Pile must reach the height depicted in the drawing. Deviation tolerance is 5 cm
- The slope should not exceed 20mm per meter, which is 1 compared to 50
- The position of the foundation pile must be determined as agreed in the drawing. The shift should not exceed 75mm in each direction
- The pile loading test report should be in static and dynamic test

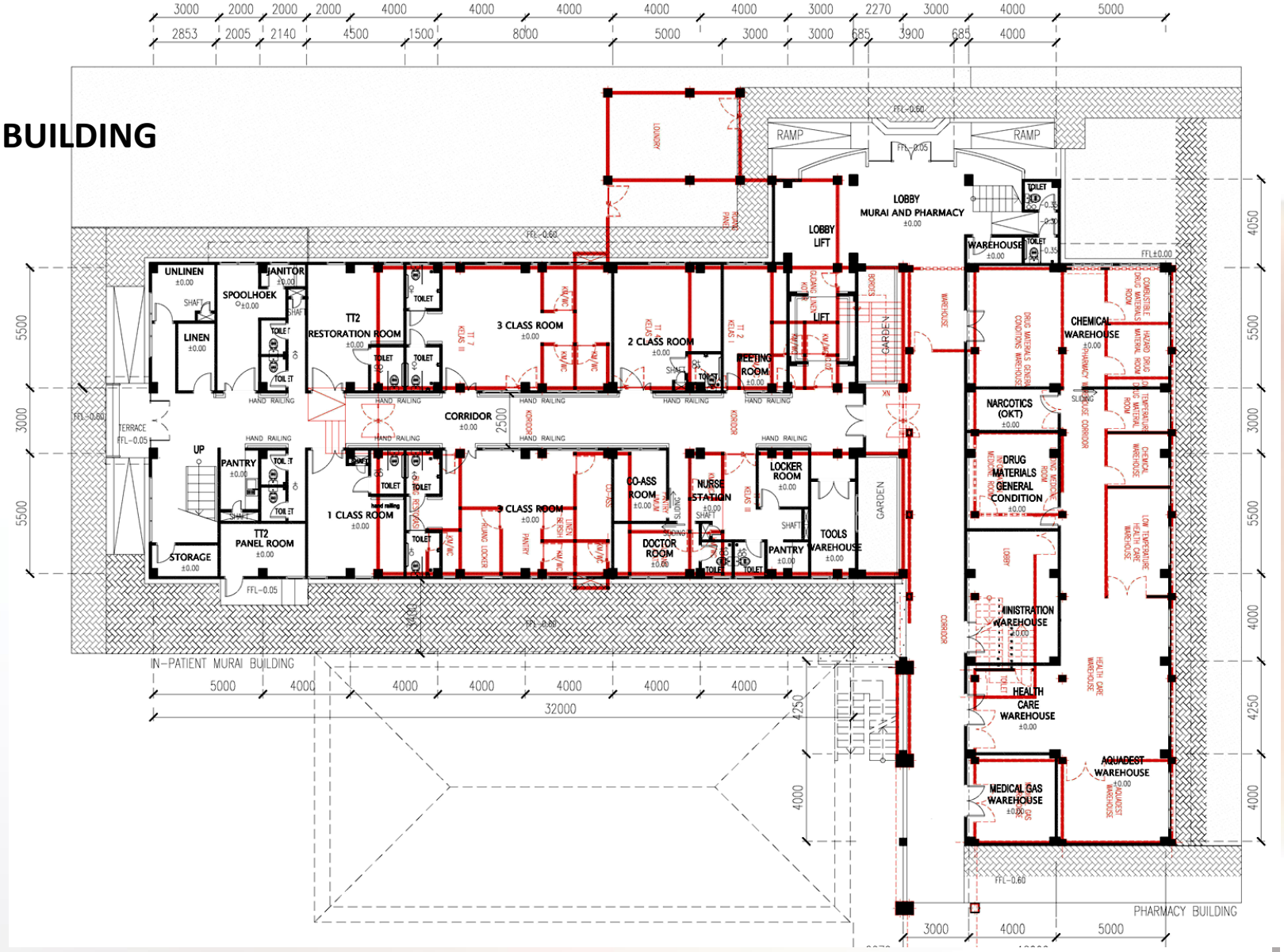
SUMMARY OF DED ARCHITECTURE WORKS ANUTAPURA & TORA BELO HOSPITALS

SUPERIMPOSE

(1) IN-PATIENT MURAI; (2) PHARMACY BUILDING

Key Plan

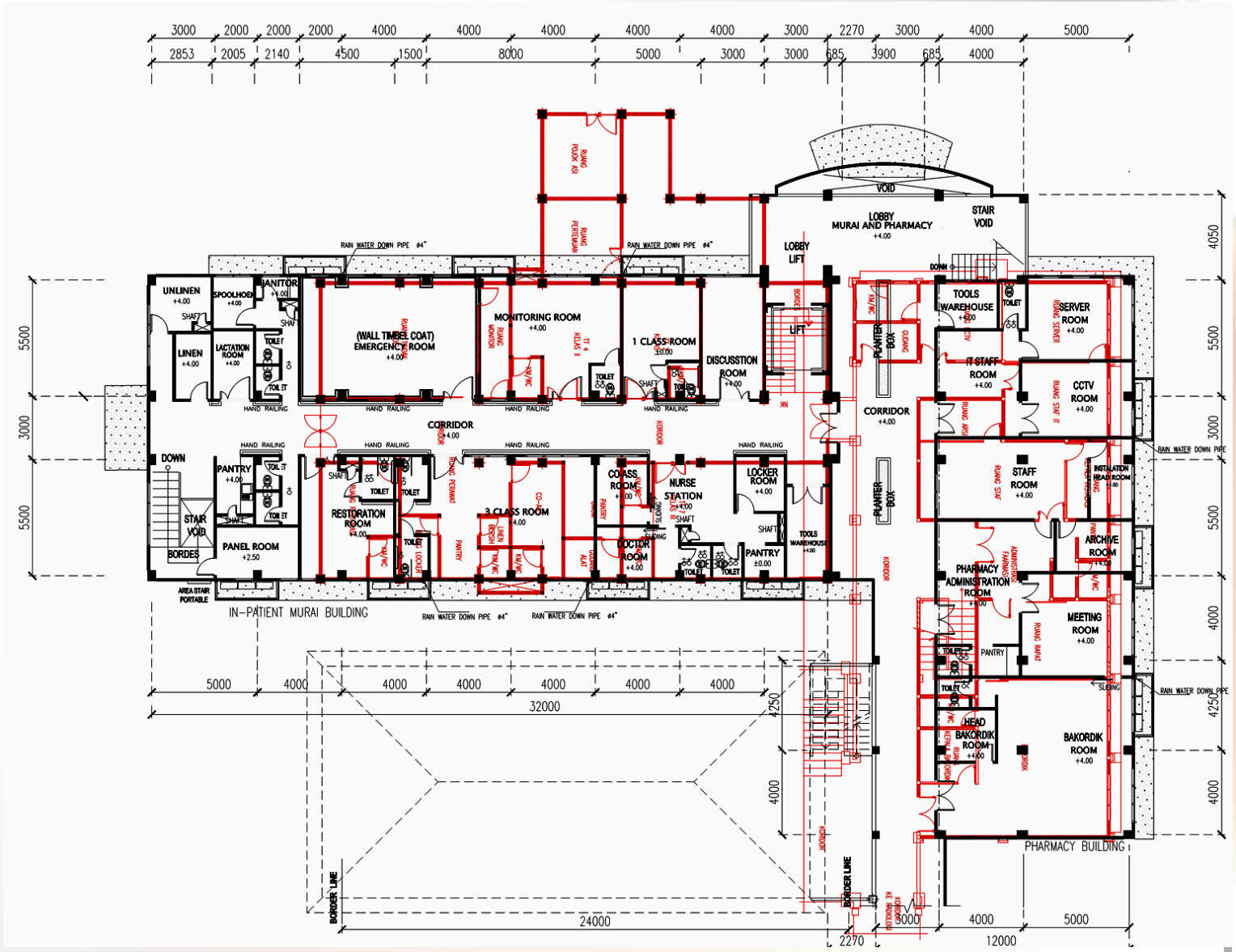
1ST FLOOR PLAN



Anutapura Hospital

SUPERIMPOSE

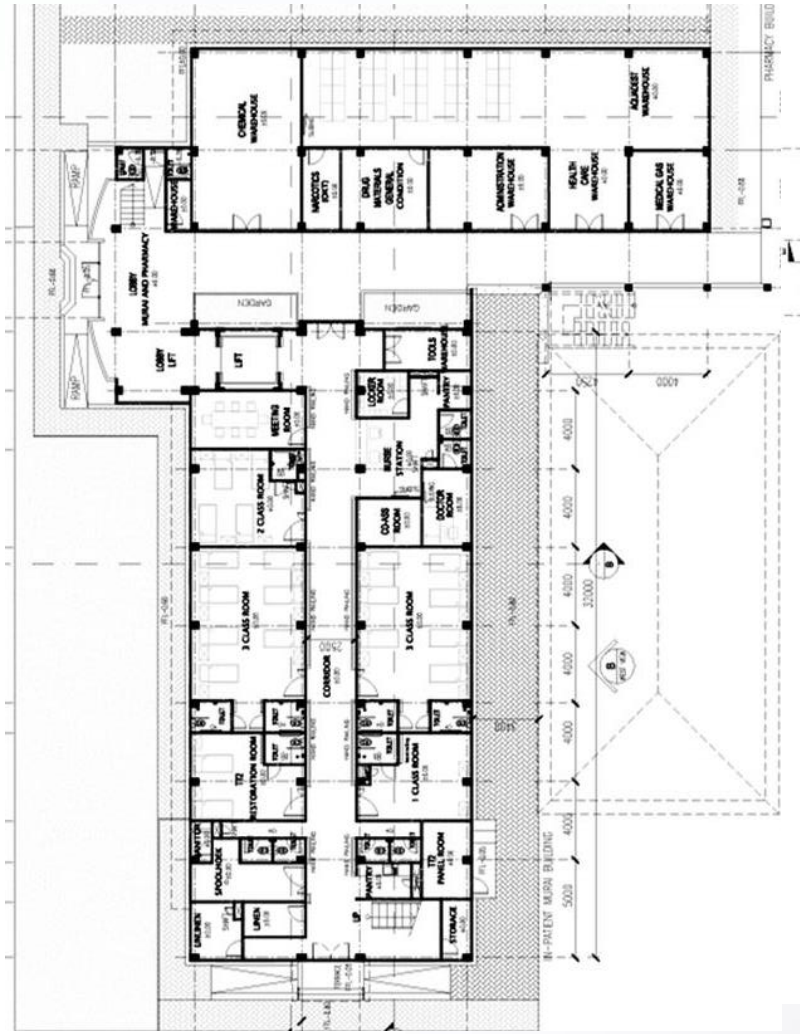
IN-PATIENT MURAI & PHARMACY BUILDING



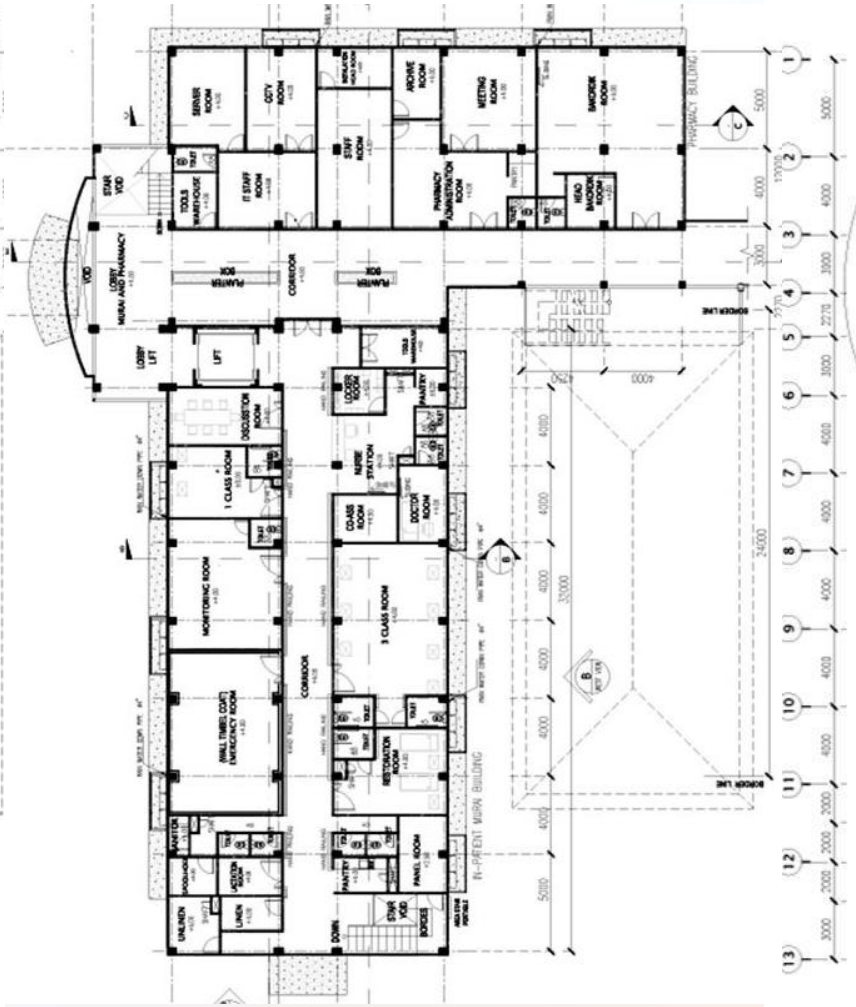
2ND FLOOR PLAN

Anutapura Hospital

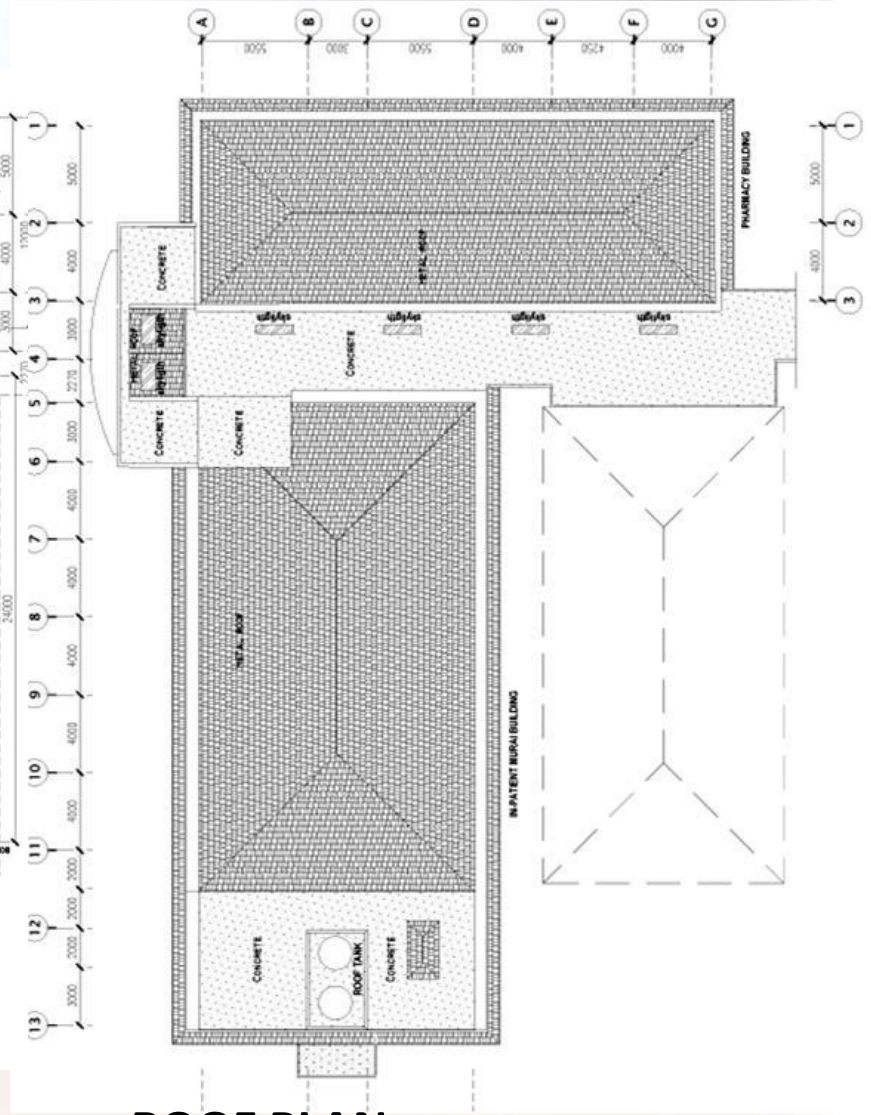
FLOOR PLAN



1ST FLOOR PLAN



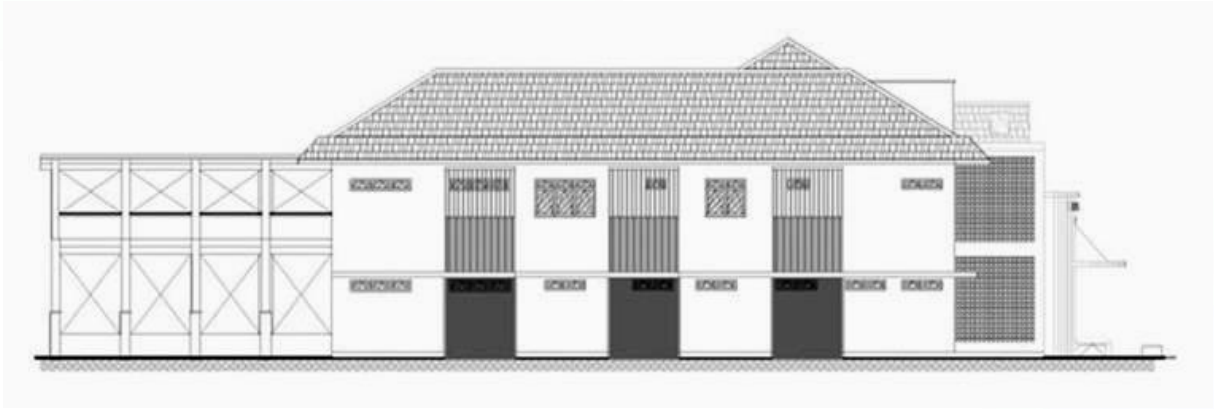
2ND FLOOR PLAN



ROOF PLAN

Anutapura Hospital

FACADE



SOUTH FACADE

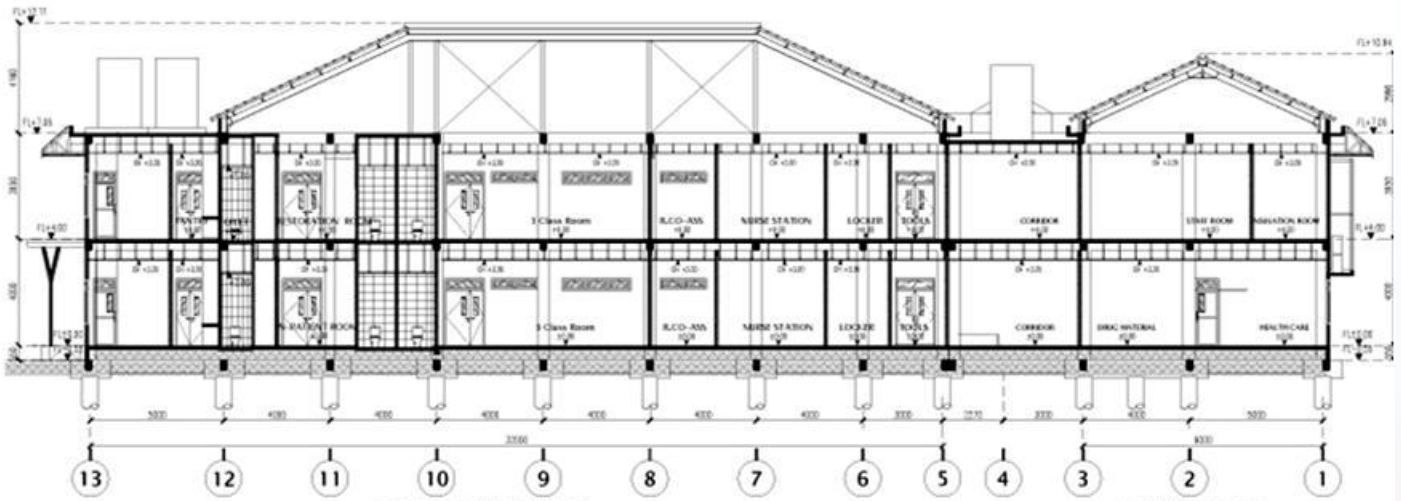
NORTH FACADE

EAST FACADE

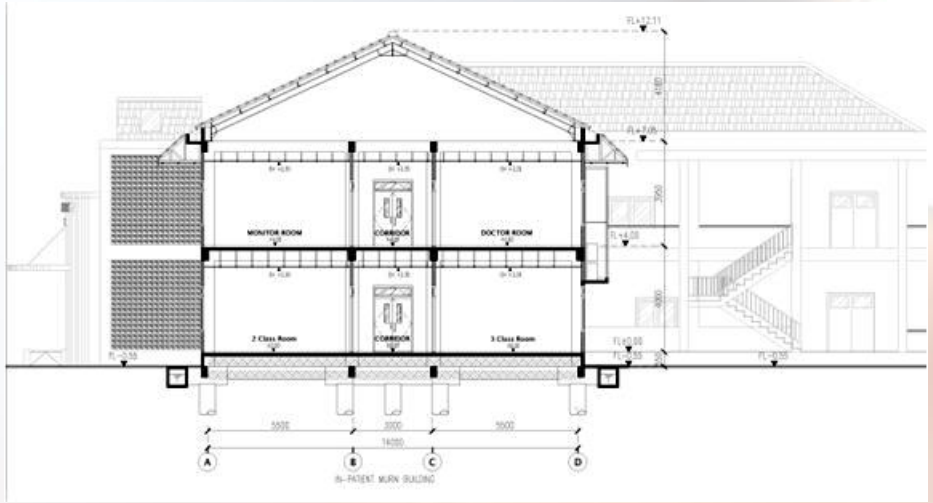
WEST FACADE

Anutapura Hospital

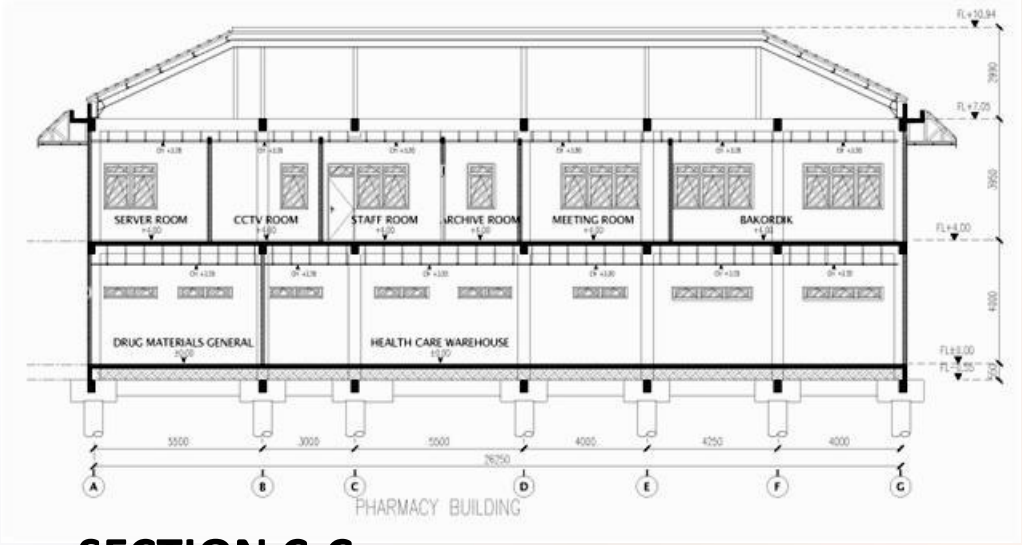
SECTION



SECTION A-A

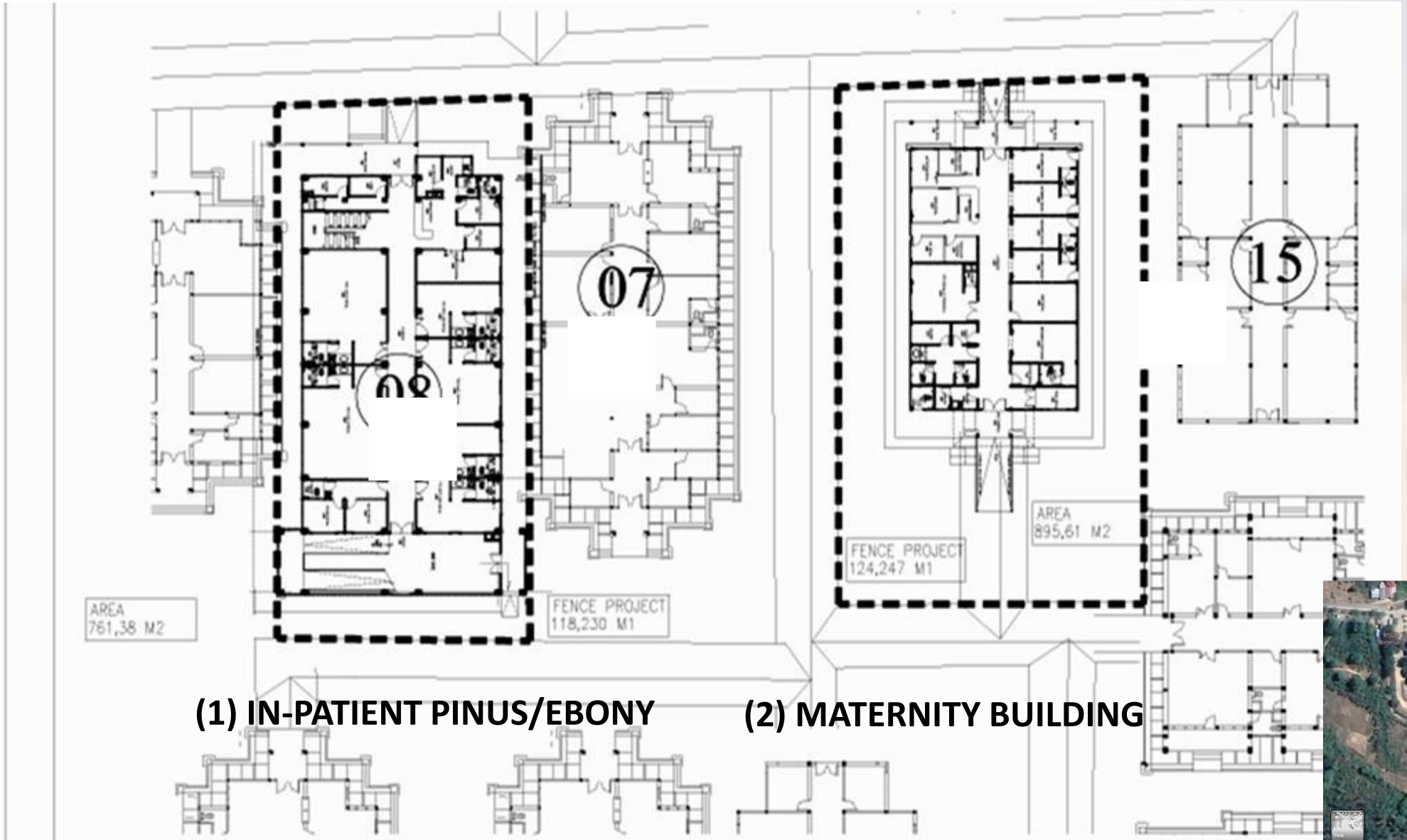


SECTION B-B



SECTION C-C

Tora Belo Hospital



(1) IN-PATIENT PINUS/EBONY

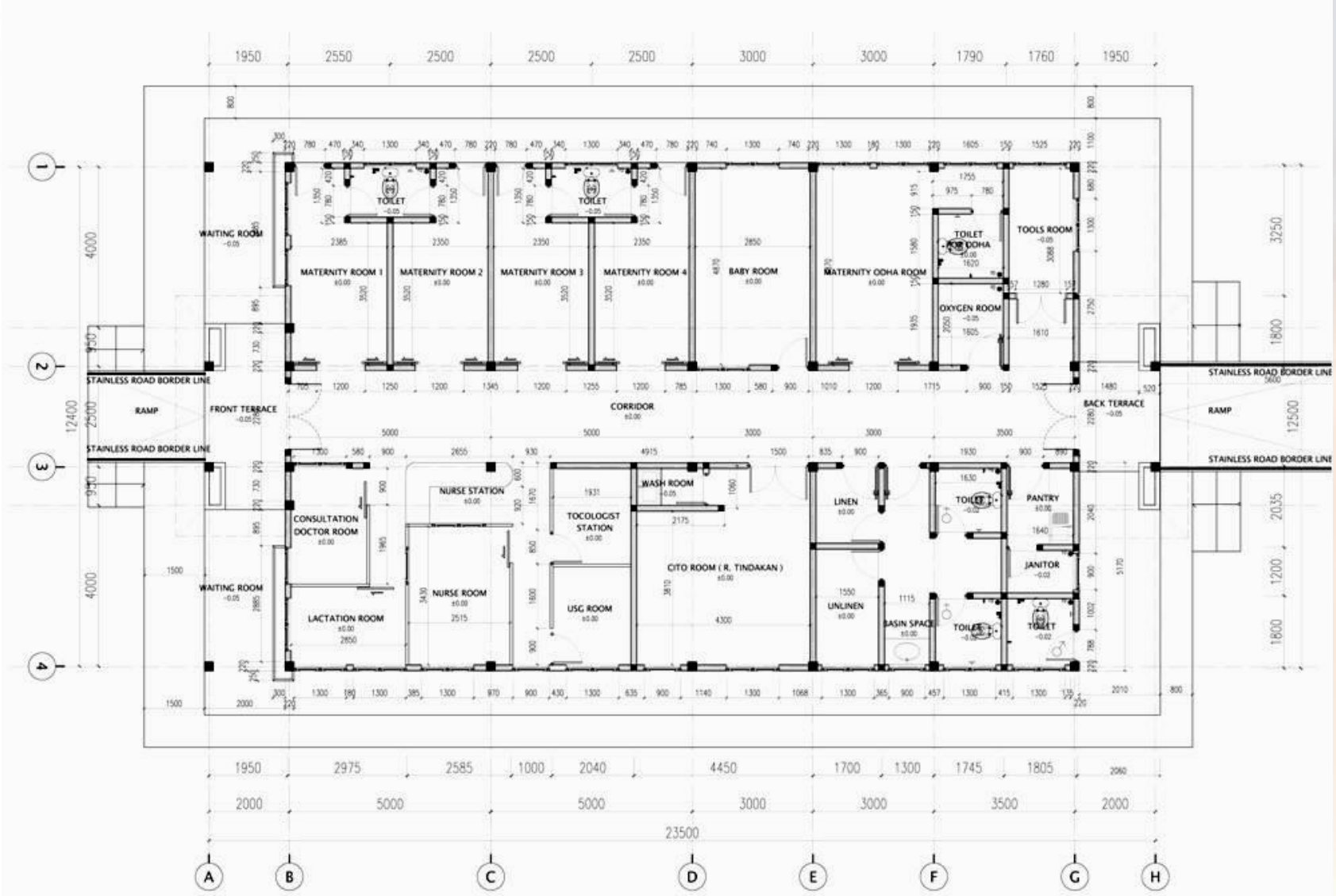
(2) MATERNITY BUILDING

Key Plan

SUPERIMPOSE MATERNITY BUILDING

1ST FLOOR PLAN

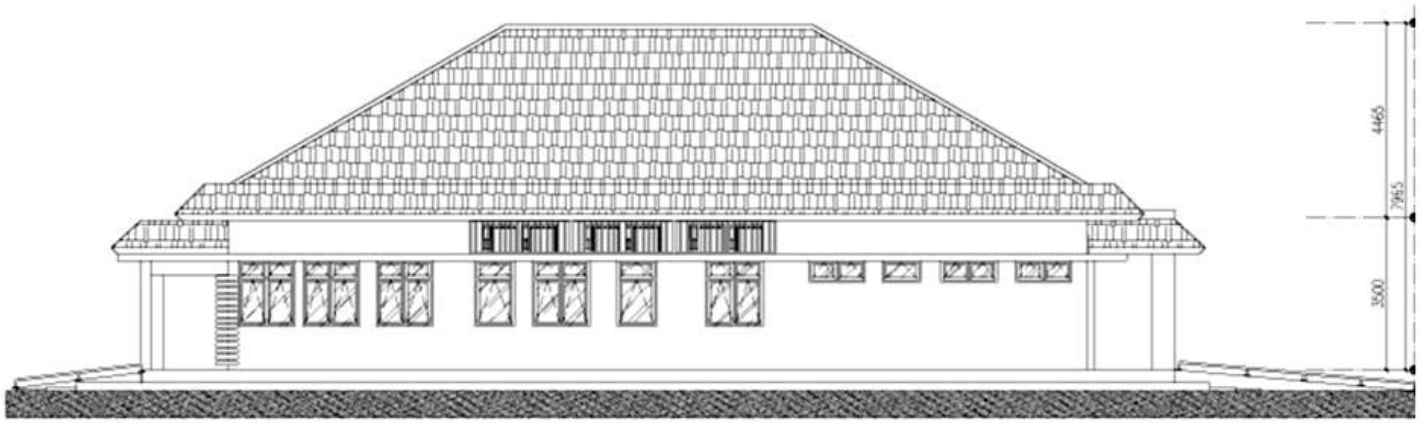
MATERNITY FLOOR PLAN



1ST FLOOR PLAN

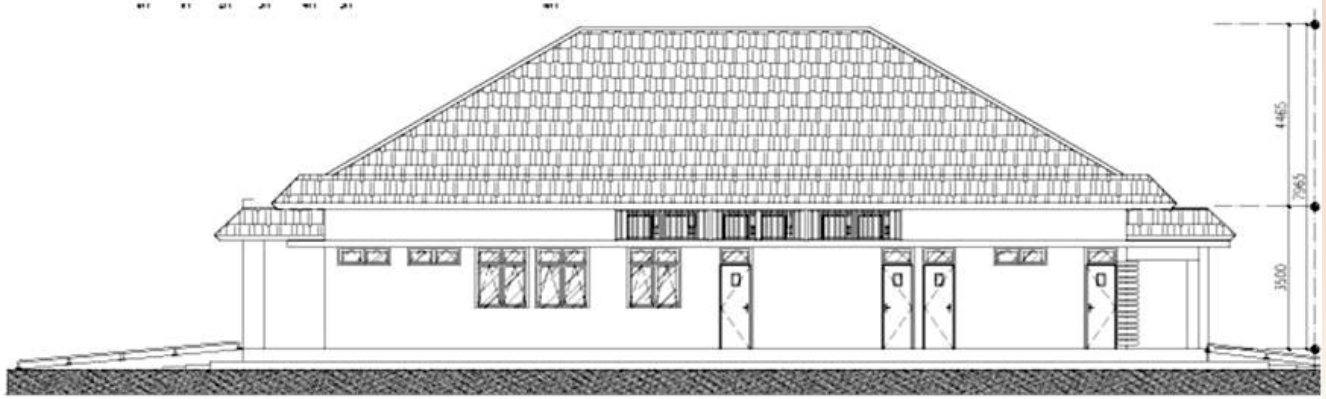
MATERNITY FACADE

SOUTH FACADE



EAST FACADE

NORTH FACADE



WEST FACADE

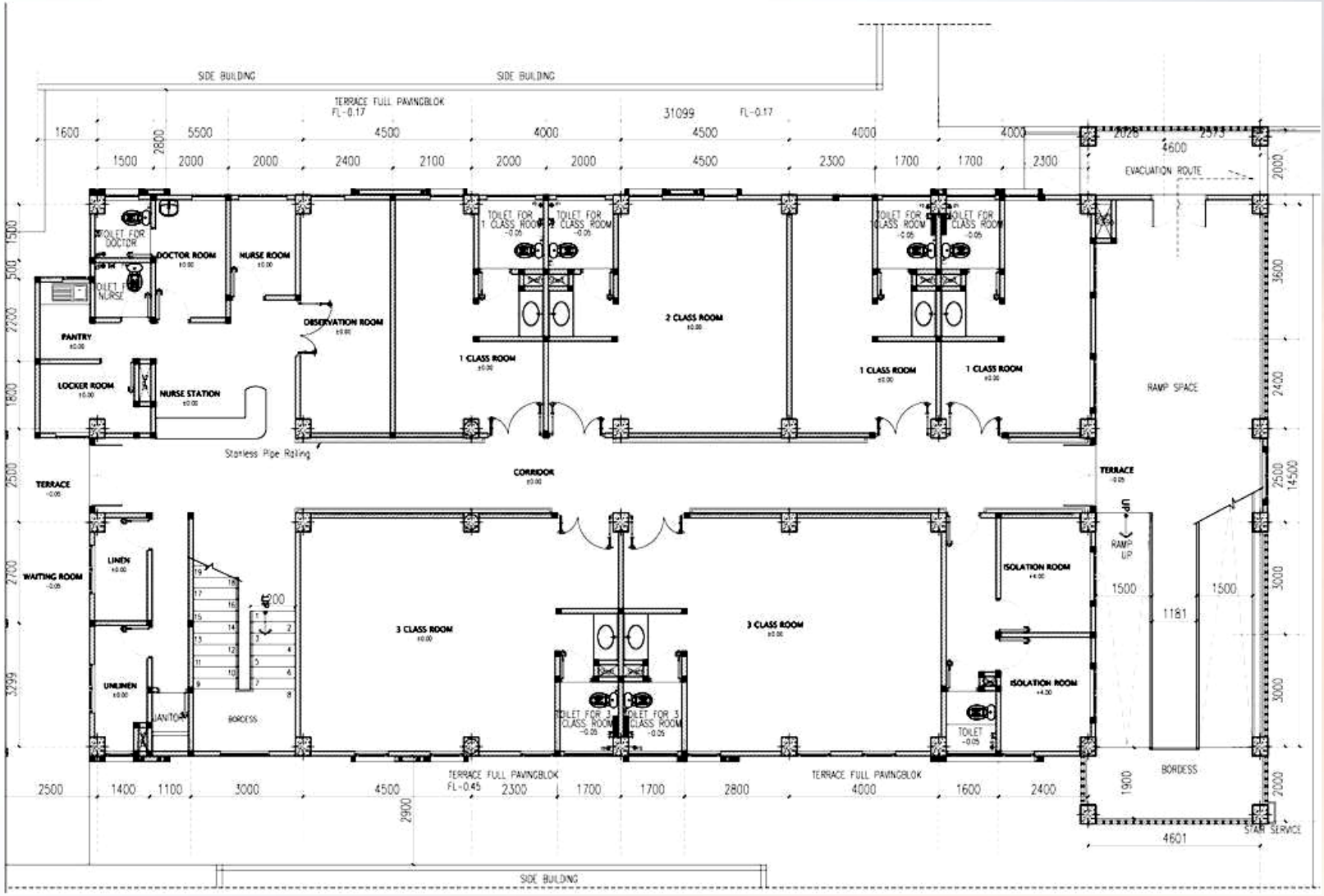
SUPERIMPOSE PINUS/EBONY BUILDING

1ST FLOOR PLAN

SUPERIMPOSE PINUS/EBONY BUILDING

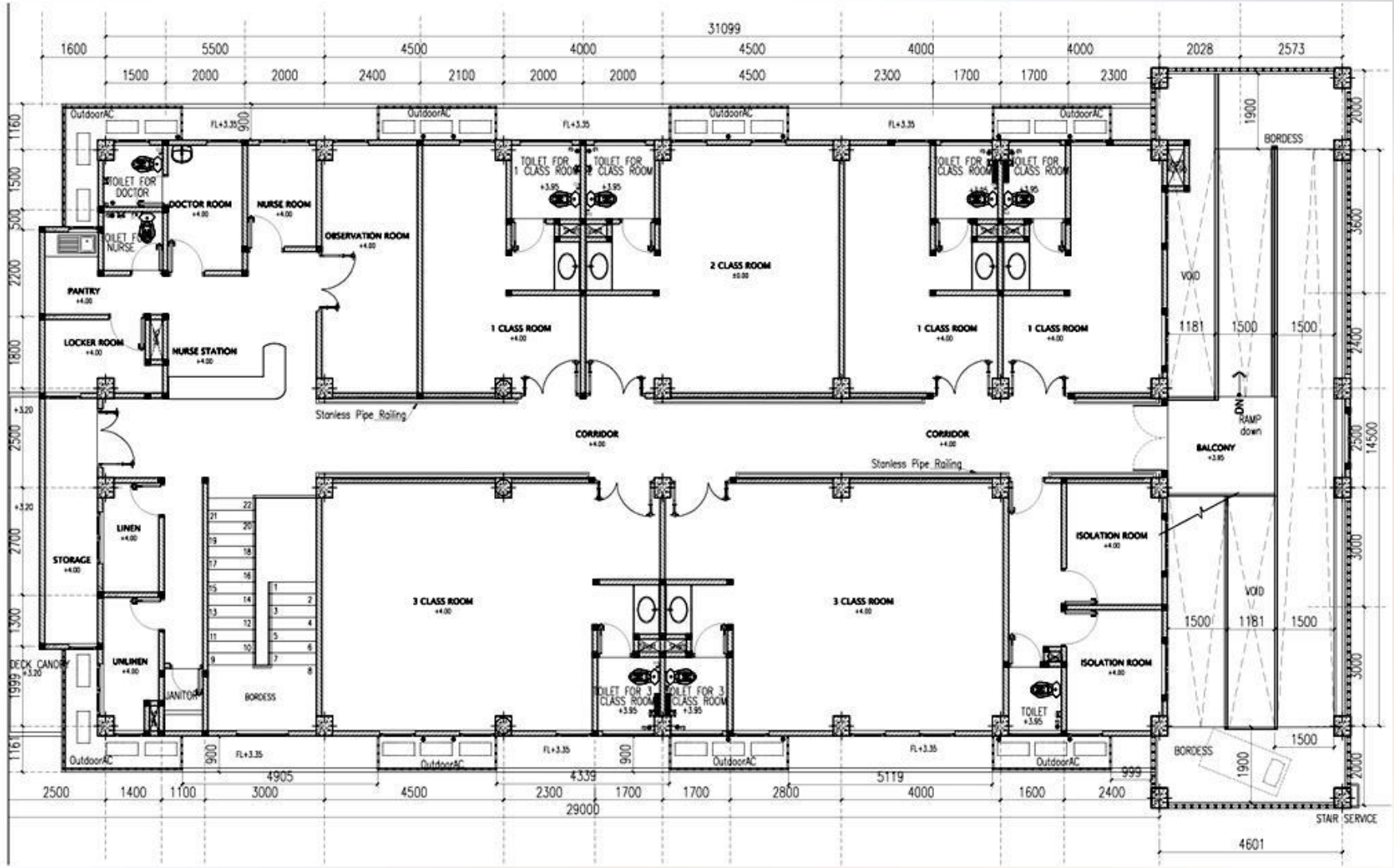
2ND FLOOR PLAN

PINUS/EBONY 1ST FLOOR PLAN



1ST FLOOR PLAN

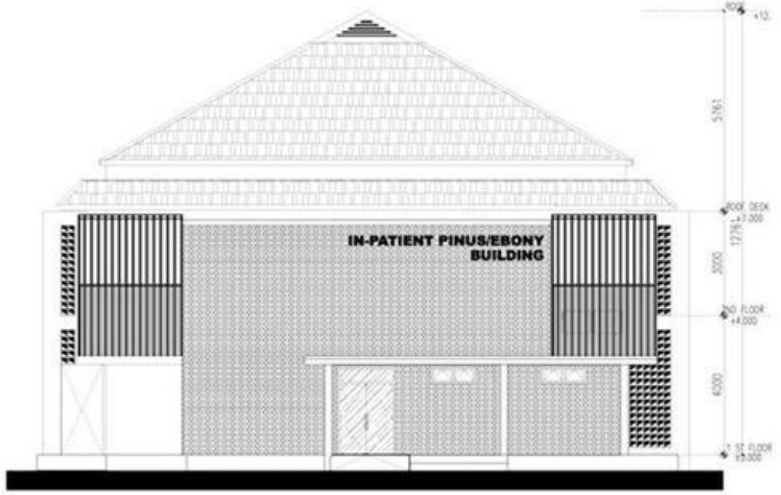
PINUS/EBONY 2ND FLOOR PLAN



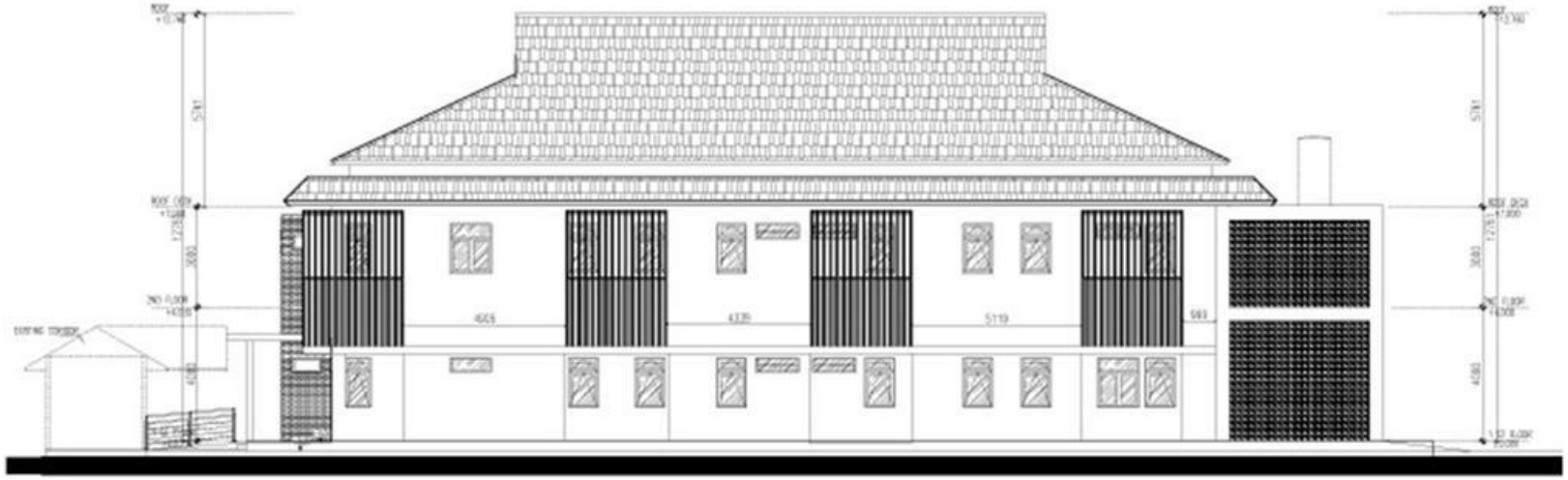
2ND FLOOR PLAN

Tora Belo Hospital

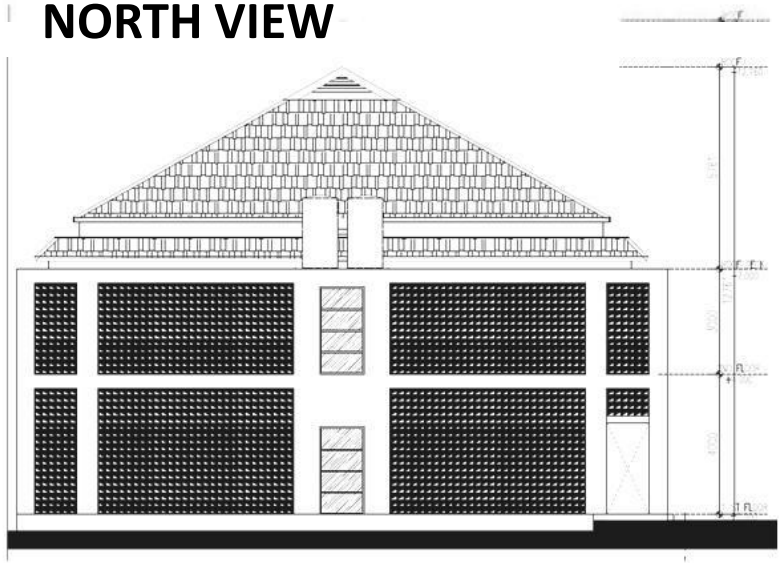
PINUS/EBONY FACADE



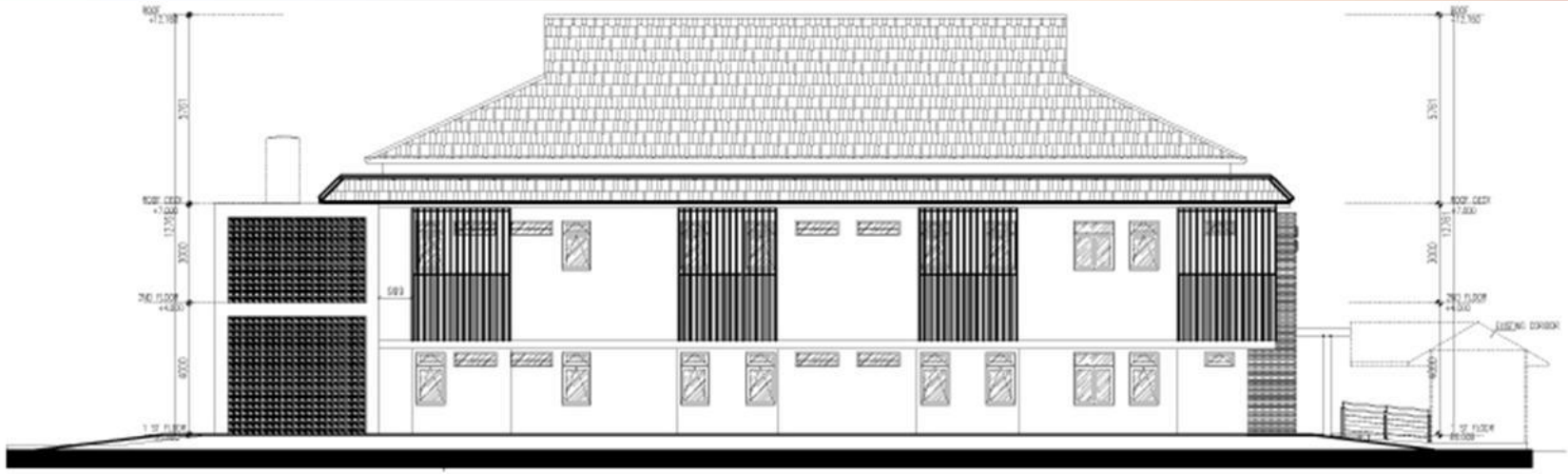
NORTH VIEW



EAST VIEW



SOUTH VIEW



WEST VIEW

DED Architecture Works

LIST OF MATERIAL SPECIFICATION

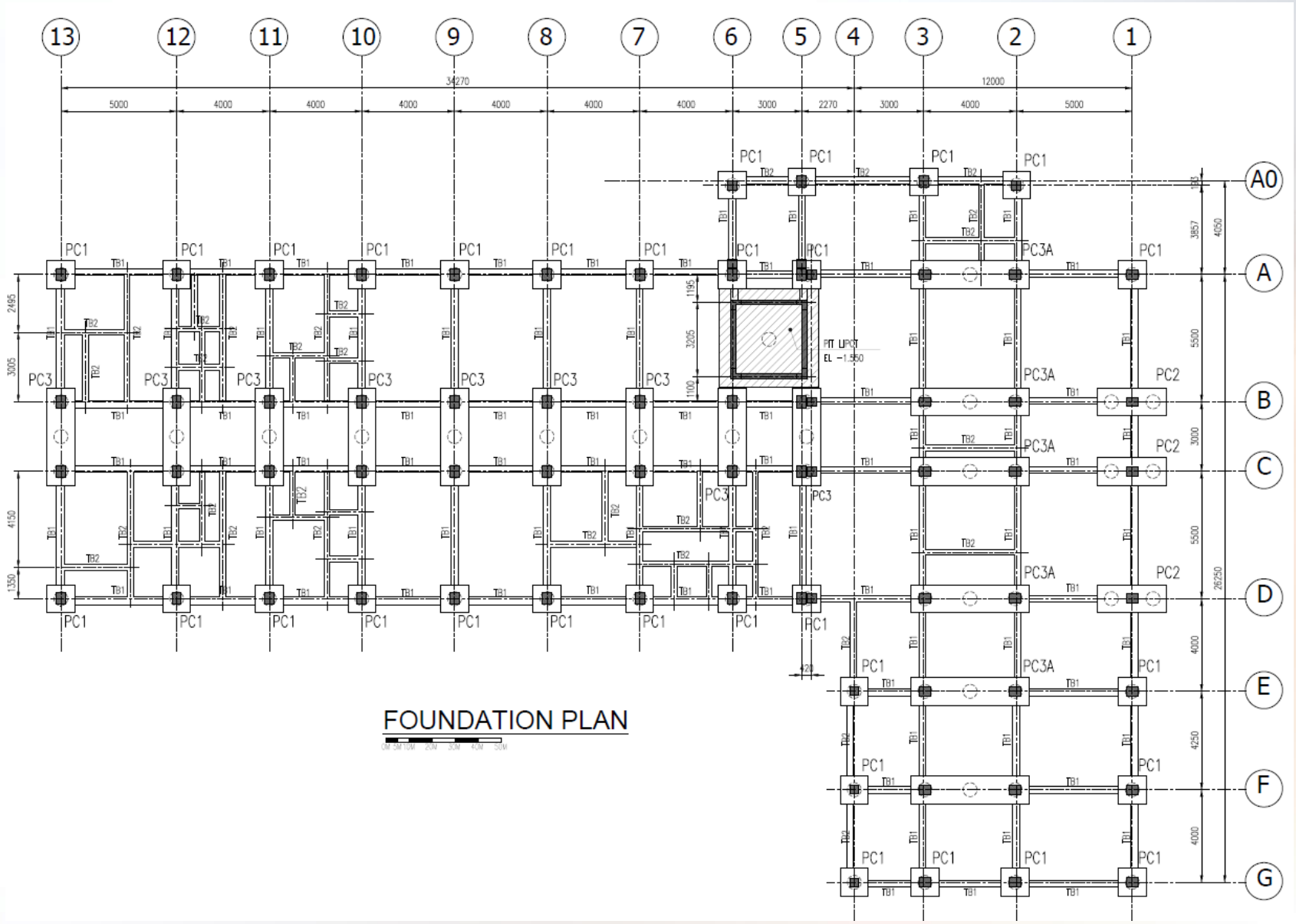
IN-PATIENT MURAI &
PHARMACY BUILDING
ANUTAPURA HOSPITAL

ITEM	NO	MATERIAL	SPECIFICATION	MERK / TYPE EQUIVALENT
General	1.1	Cement Portland	Portland Cement (PCC) SNI 15-2049-2004	Indocement-Holcim / Semen Gresik
	1.2	Dry Mortar	Drymix	Drymix / Mortar Utama
Floor	2.1	Ceramics Lobby / Corridor	Homogenous Tile (HT) 600x600 mm Polish/Unpolish	Roman / Nero / Indogress / Valentino
	2.2	Ceramics Ramp	HT 250x500 mm Rocktile Unpolish	Roman / Nero / Indogress
	2.3	Ceramics Floor Toilet	HT 200x200 mm unpolish	Roman / Platinum
	2.4	Ceramics Wall Toilet	HT 200x400 mm polish	Roman / Platinum
	2.5	Waterproofing Coating	Coating	Mortar Utama / Fosroc / Sika
Wall	3.1	Brick	Local Brick solid 5x10x20 cm	Local brand first grade
	3.2	Lighweight Brick	Thickness 10 cm	Celcon / Power Block
	3.3	Skirting	HT 100x600	Roman / Nero / Indogress
	3.4	Teracota	Dimension (Dim.) 50x200x20 mm	Roman / Nero / Indogress
	3.5	Roster	Dim. 200x200 mm	Local brand first grade
	3.6	Indoor Painting	Eco emulsion ex. Propan/Dulux ICI/Jotun or equivalent	Propan / Dulux ICI / Jotun
	3.7	Outdoor Painting	Eco emulsion-decorshield	Propan / Dulux ICI / Jotun
Door and Window	4.1	Allumunium Window	Aluminium Powder Coating	YKK AP / Allure
	4.2	Glases	Glass European Grey t=6 mm/8 mm	Asahimas / Muliaglass
	4.3	Accessories	Window Alumunium	YKK AP / Allure
		Panil Door	Solid wood frame with multipleks panils finish HPL	Local fabricated
	4.4	Doorcloser/Floorhinges	Steelbased	Dorma
	4.5	Doorhinges/Handle	Stainless Steel Solid	Deckson
Ceiling	5.1	Gypsum Board	Thickness 9 mm	Jayaboard / Elephant
Roof	6.1	Roof Spandeck/Superdeck	SNI Thickness 0,3mm	TB-Deck / Sky-Deck
	6.2	Roof Kap	Steel Light C.75 Reng 0,45	Smart Truss / Taso
	6.3	Roof Zinc	SNI BJLS Color 0,20	Crown Swan / Swan Brand / Gajah Berlian
	6.4	Listplank GRC	Thickness 9 mm, wide 20 cm	GRC Board / Kalsiboard
Sanitary	7.1	Closet	Type CW421 J/SW 420 JP	Toto
	7.2	Jet Spray	Type THX20 NBW	Toto / San-Ei
	7.3	Floor Drain	Type TX 1 BV1N	Toto / San-Ei
	7.4	Lavatory	Type LW641 NCJ	Toto / San-Ei
Railing	8.1	Stainless Steel	Black Steel with Crome	Krakatau Steel (KS)
Pavement	9.1	Cement Pressure	Dim. 20x20x6 cm solid original/red color	Local brand first grade

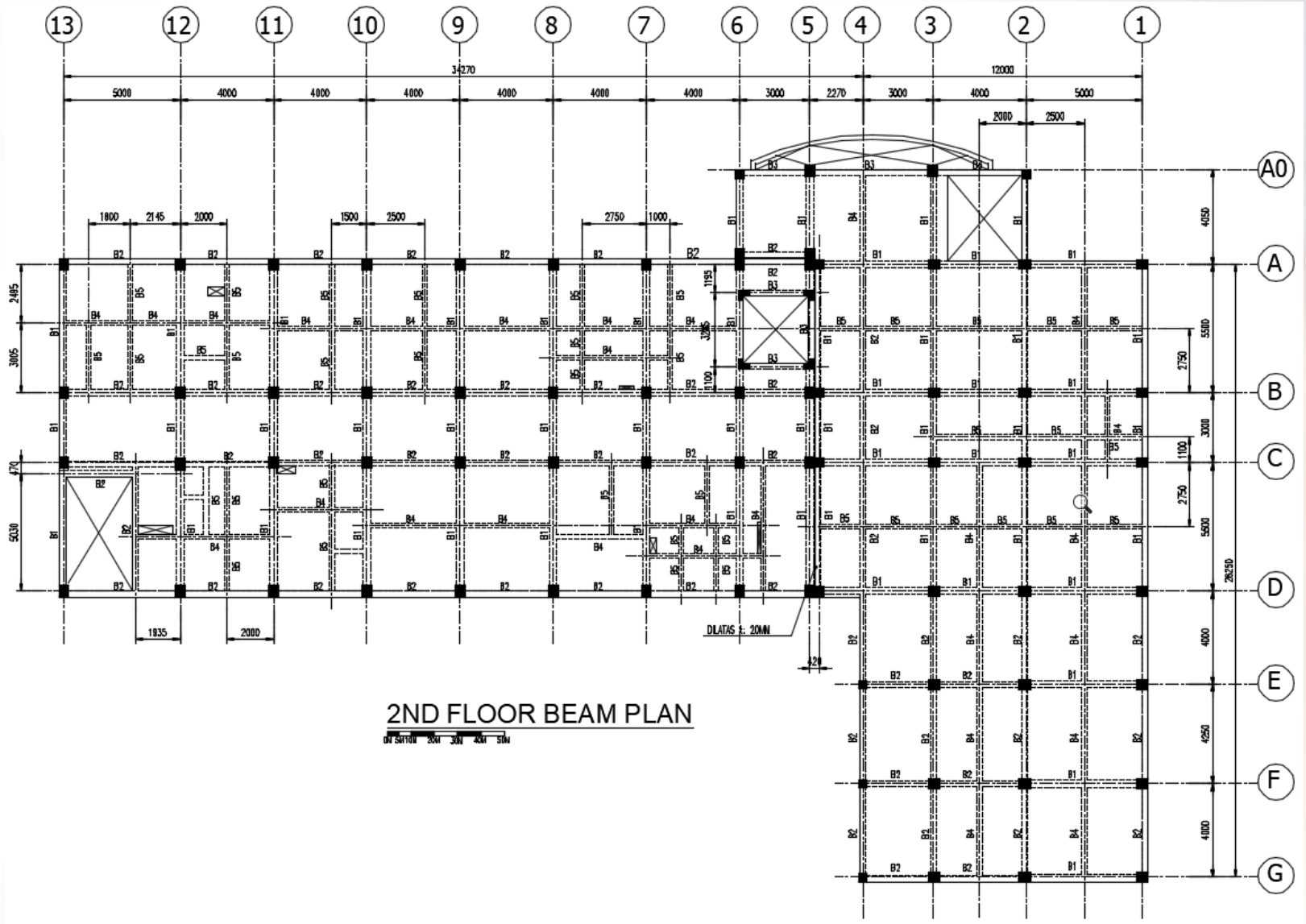
C

SUMMARY OF DED STRUCTURE WORKS ANUTAPURA & TORA BELO HOSPITALS

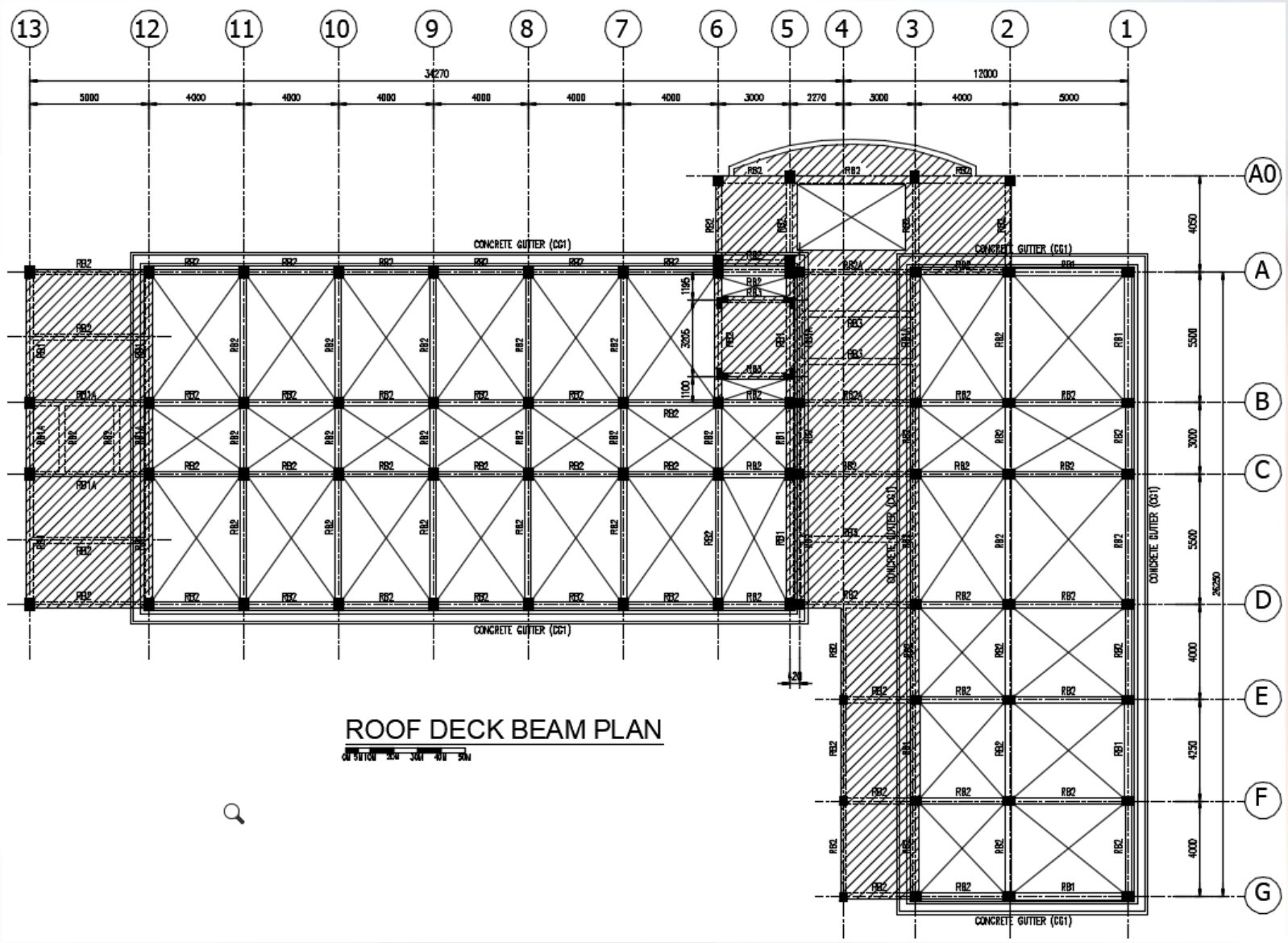
DED Structure Works



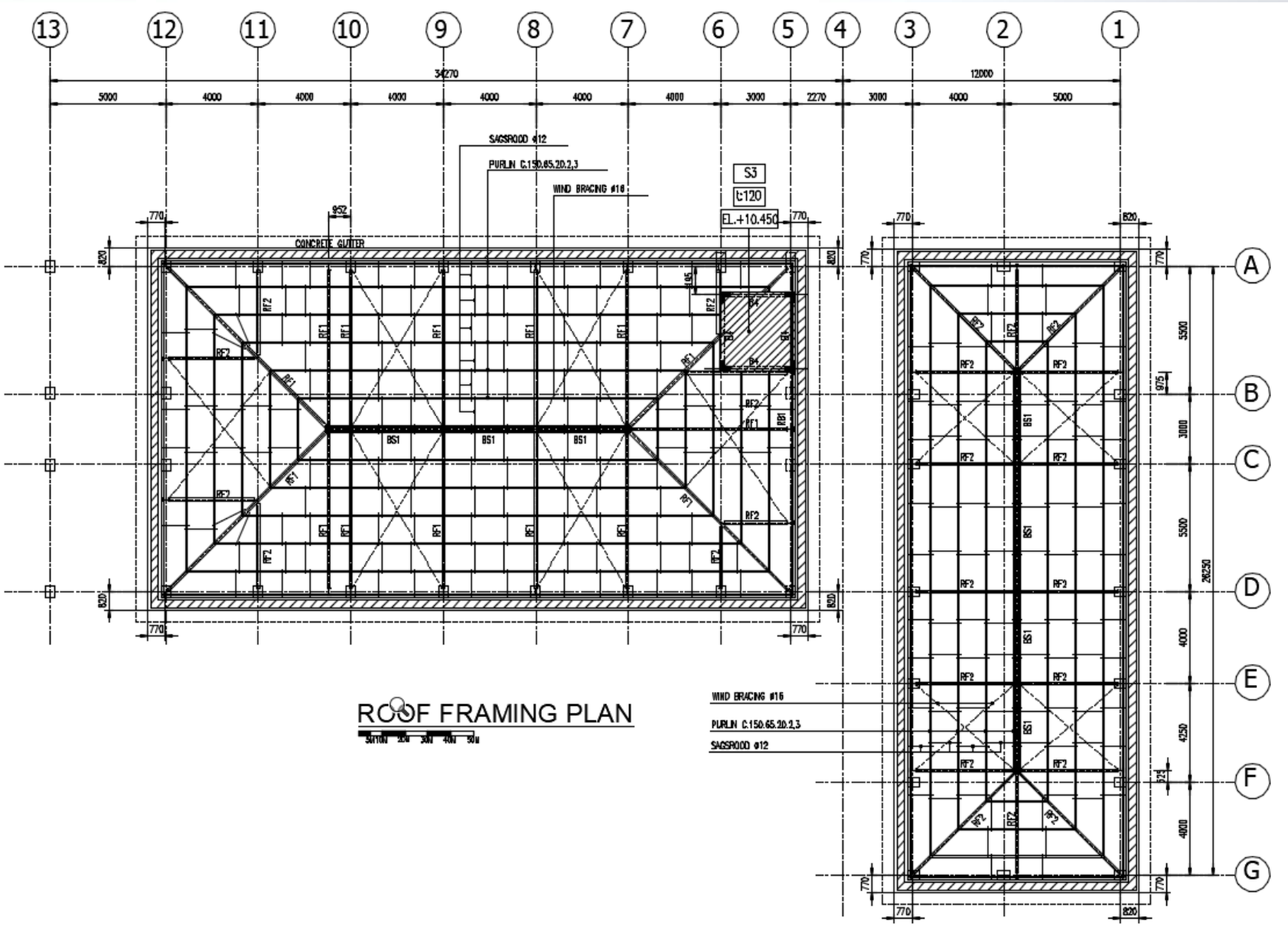
DED Structure Works



DED Structure Works



DED Structure Works



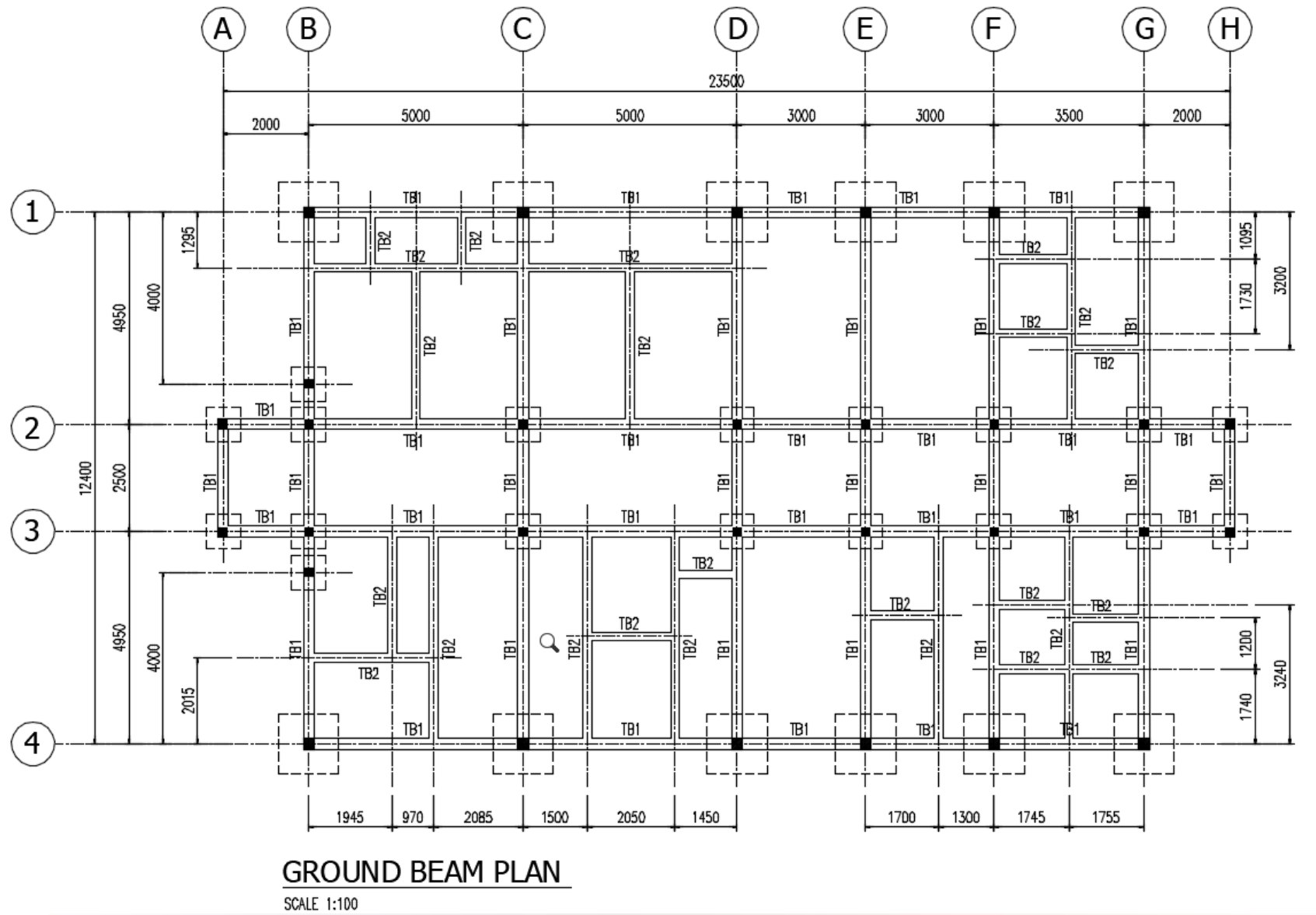
DED Structure Works

Anutapura Hospital

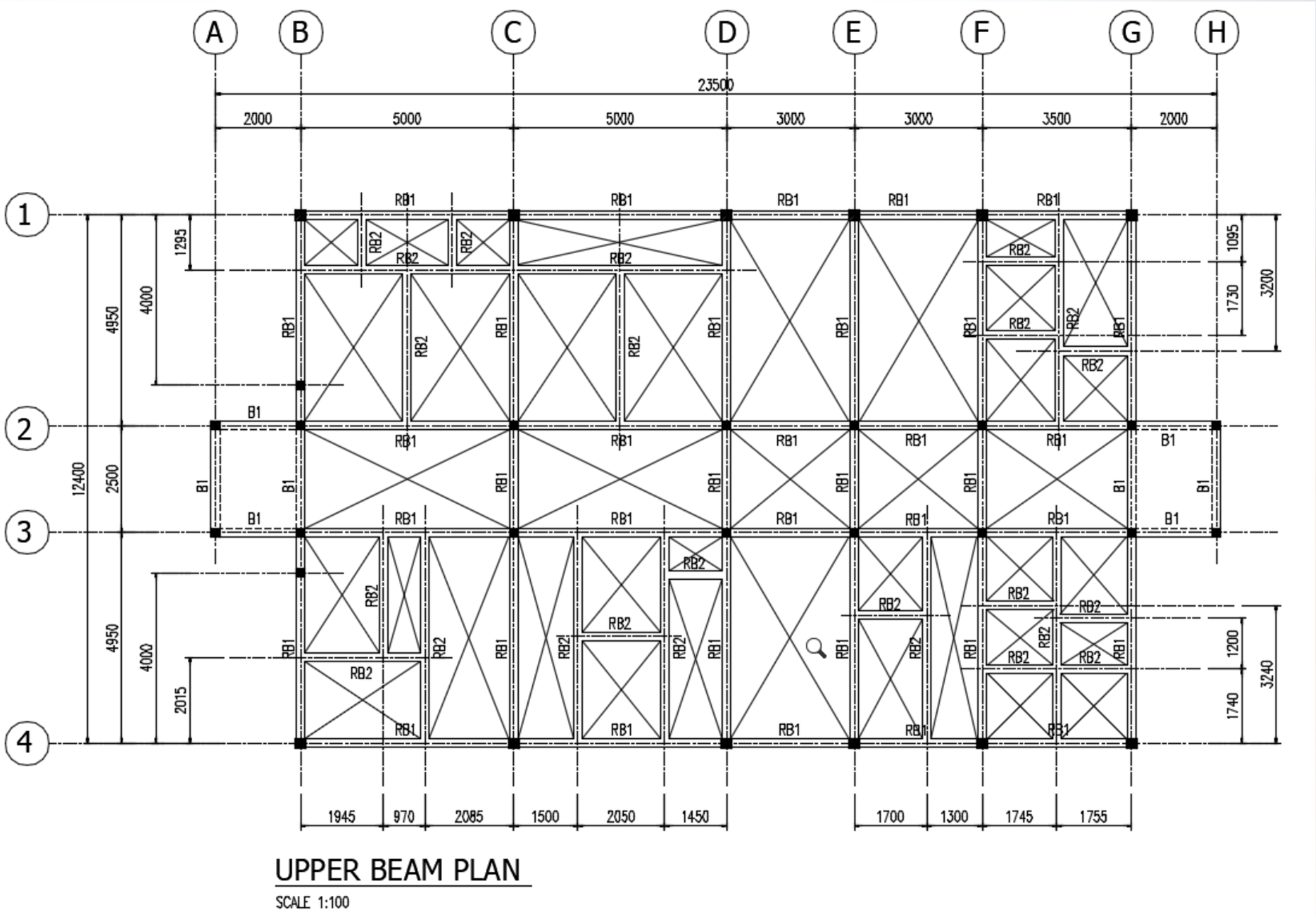
1. Location = RSU. PALU, at Palu City, Central sulawesi.
2. Type Structure = Concrete Structure for Bottom and upper.
3. Type Rafter = Steel Structure Single Rafter
4. Type Foundation = Bore Pile ϕ 500 mm & Pile cap
5. All Concrete Grade = K-300
6. All Steel Grade = ASTM A-36
7. Floor Total = 2 Floor.

NO.	CODE	STRUCTURAL	DIMENSIONS
01	PC1	FOUNDATION	1500X1500MM height
02	PC2	FOUNDATION	1500X3300MM height
03	PC3	FOUNDATION	1500X5100MM height
04	PC3A	FOUNDATION	1500X5400MM height
05	TB1	CONCRETE TIE BEAM	300X500MM
06	TB2	CONCRETE TIE BEAM	300X400MM
07	C1	CONCRETE COLUMN	400x500MM
08	C2	CONCRETE COLUMN	400X400MM
09	C3	CONCRETE COLUMN	300X300MM
10	C4	CONCRETE COLUMN LIFT	200X400MMX2
11	B1	CONCRETE BEAM	250X500MM
12	B2	CONCRETE BEAM	250X400MM
13	B3	CONCRETE BEAM	250X450MM
14	B4	CONCRETE BEAM	200X400MM
16	B5	CONCRETE BEAM	200X300MM
17	CB	CONCRETE BEAM LINTEL	150X300MM
18	RB1/RB1A	CONCRETE RING BEAM	250X400MM
19	RB2	CONCRETE RING BEAM	250X400MM
20	RB3	CONCRETE RING BEAM	250X350MM
21	S1	CONCRETE SLAB	t:100MM
22	S2	CONCRETE SLAB	t:120MM
23	S3	CONCRETE SLAB	t:120MM
24	RF1	STEEL RAFTER	WF.250.125.6.9
25	RF2	STEEL RAFTER	WF.200.100.5,5.8
26	BS1	STEEL RAFTER	WF.200.100.5,5.8

Maternity DED Structure Works



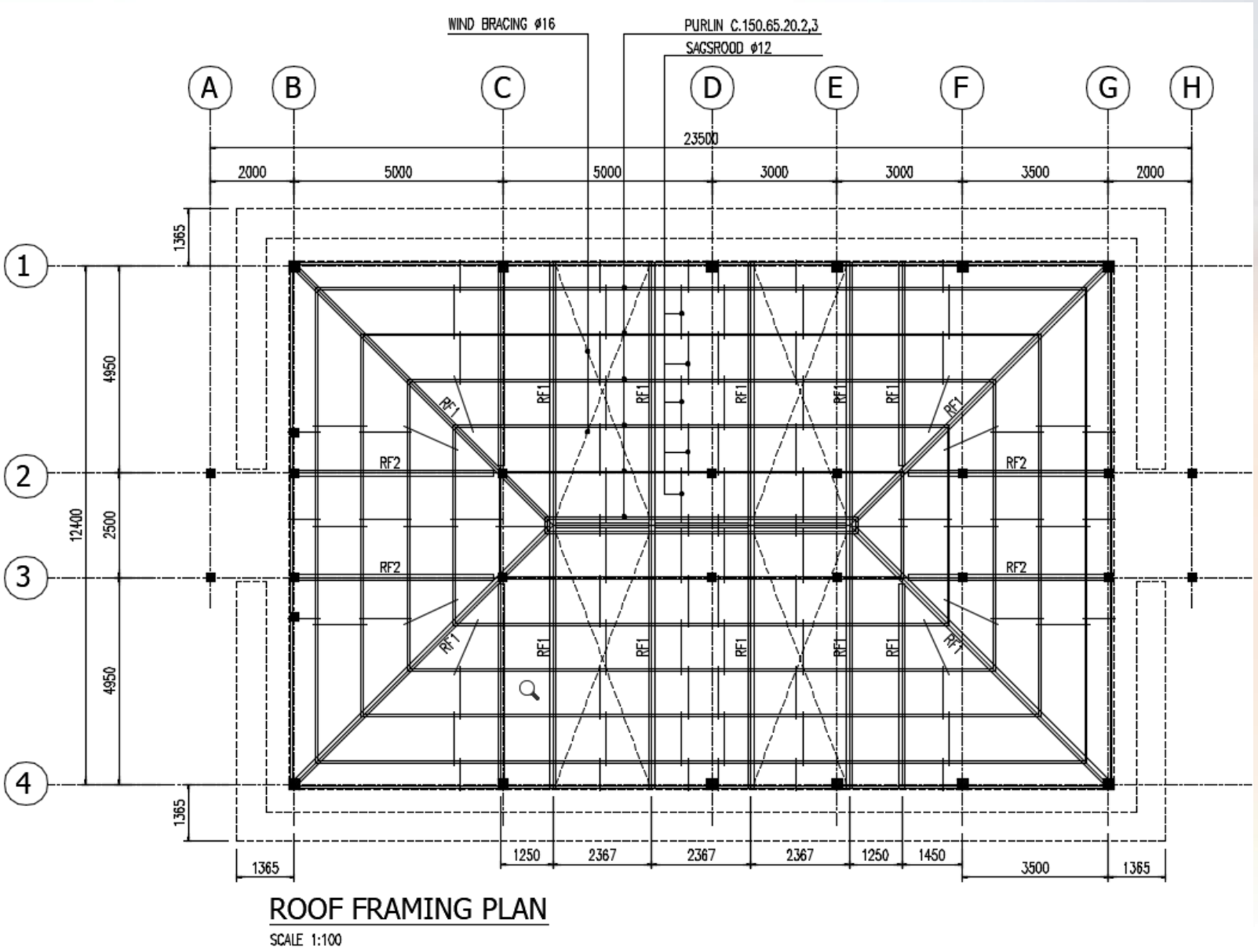
Maternity DED Structure Works



UPPER BEAM PLAN

SCALE 1:100

Maternity DED Structure Works



ROOF FRAMING PLAN

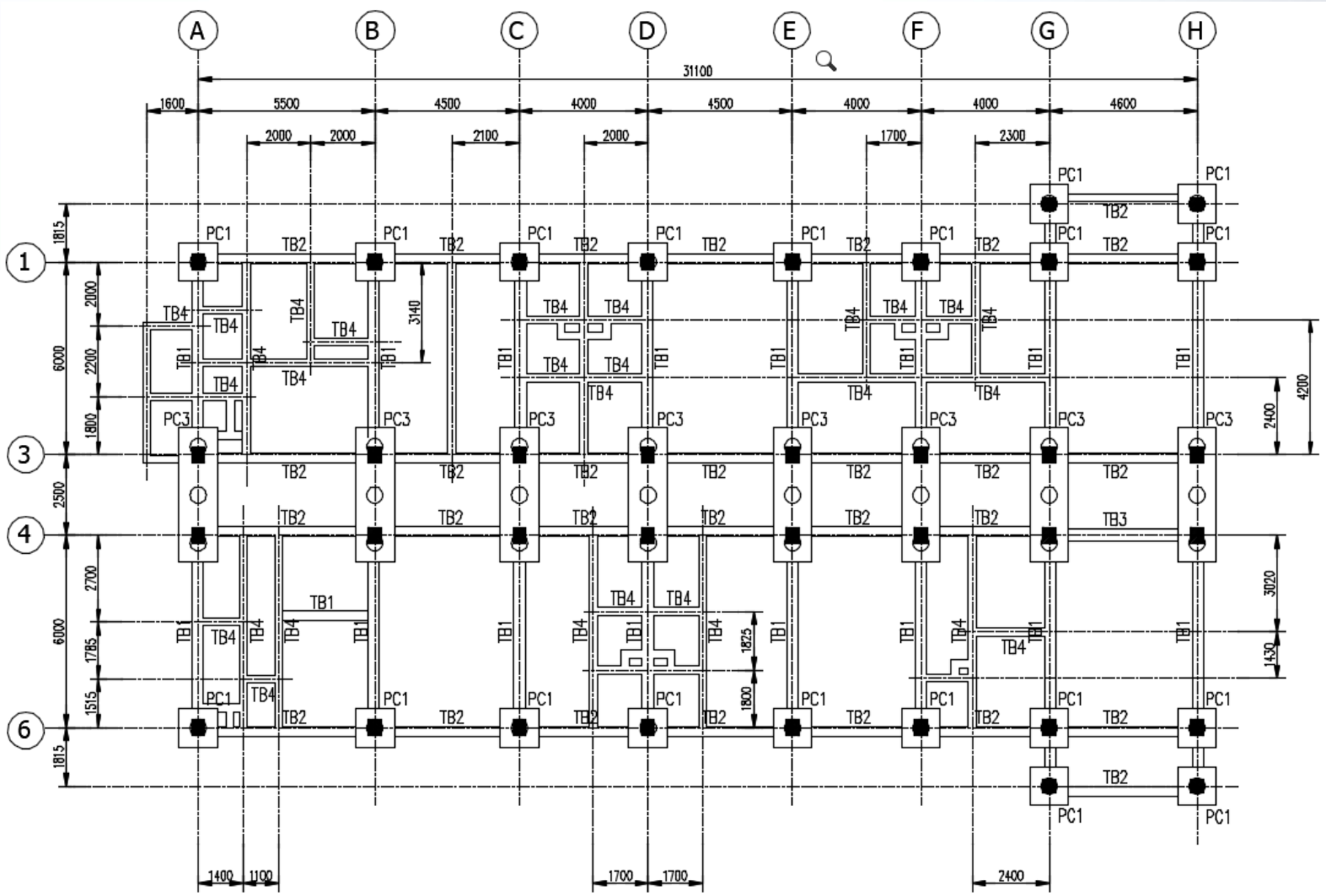
SCALE 1:100

Maternity DED Structure Works

1. Buildong Name = Maternity Building
2. Location = RSU. TORA BELO, at Sigi districts, Central sulawesi.
3. Type Structure = Concrete Structure for Bottom and upper.
4. Type Rafter = Steel Structure truss Rafter
5. Type Foundation = Conrete Foote Plate..
6. All Concrete Grade = K-300
7. All Steel Grade = ASTM A-36
8. Floor Total = 1 Floor.

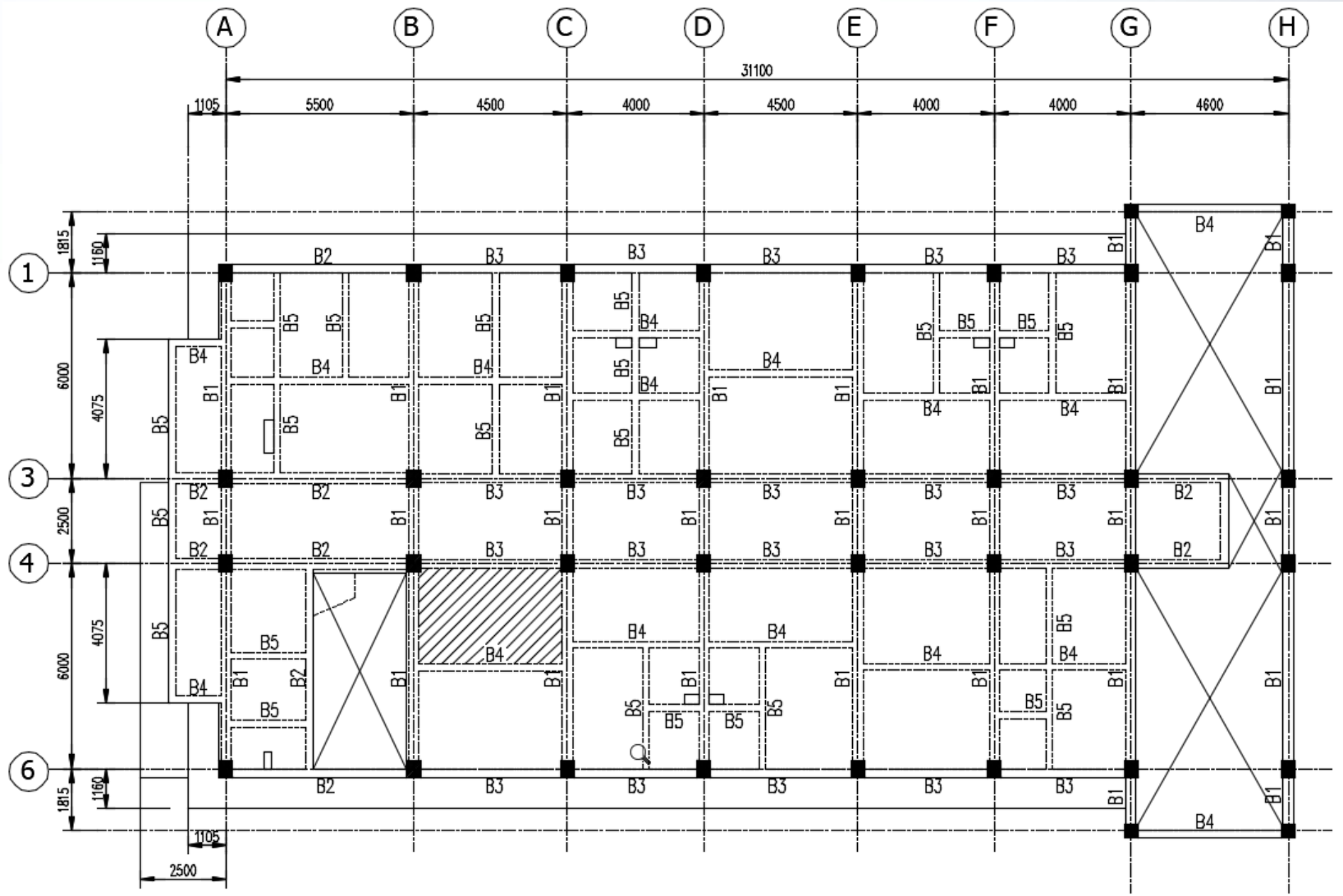
NO.	CODE	STRUCTURAL	DIMENSIONS
01	F1	FOUNDATION	1400X1400X300MM
02	F2	FOUNDATION	1000X1000X300MM
03	TB1	CONCRETE TIE BEAM	250X500MM
04	TB2	CONCRETE TIE BEAM	200X400MM
05	C1	CONCRETE COLUMN	250x250MM
06	C2	CONCRETE COLUMN	200X200MM
07	RB1	CONCRETE RING BEAM	200X400MM
08	RB2	CONCRETE RING BEAM	200X300MM
09	B1	CONCRETE BEAM	200X400MM
10	S1	CONCRETE SLAB	t:100MM
11	S2	CONCRETE SLAB	t:120MM
12	RF1	STEEL TRUSS ANGLE 2XL 60.60.6 / DIAGONAL 2XL50.50.5	
13	RF2	STEEL TRUSS ANGLE 2XL 50.50.5 / DIAGONAL 2XL40.40.4	

Pinus/Ebony DED Structure Works



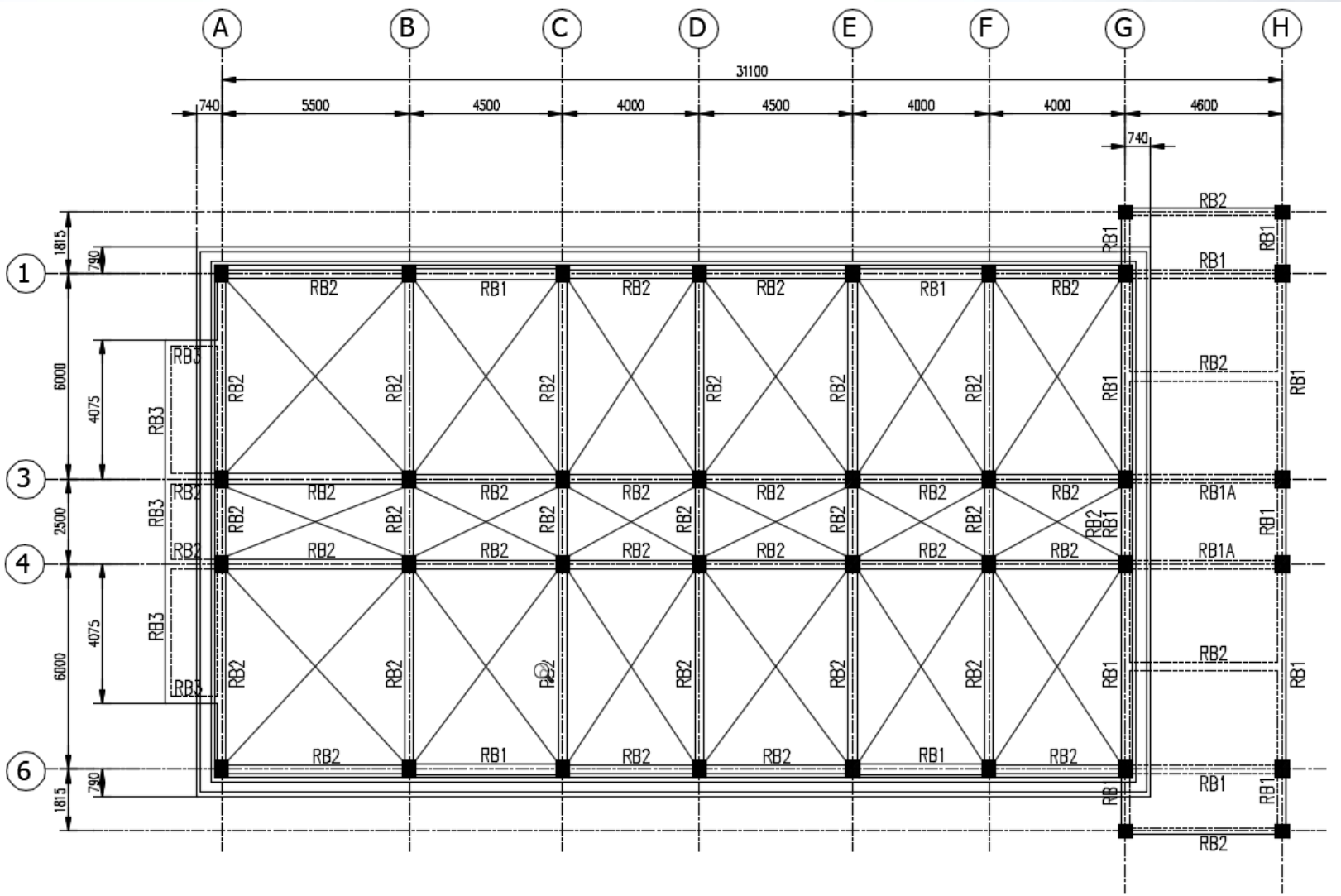
FOUNDATION PLAN
SCALE 1:100

Pinus/Ebony DED Structure Works



2ND FLOOR BEAM PLAN
SCALE 1:100

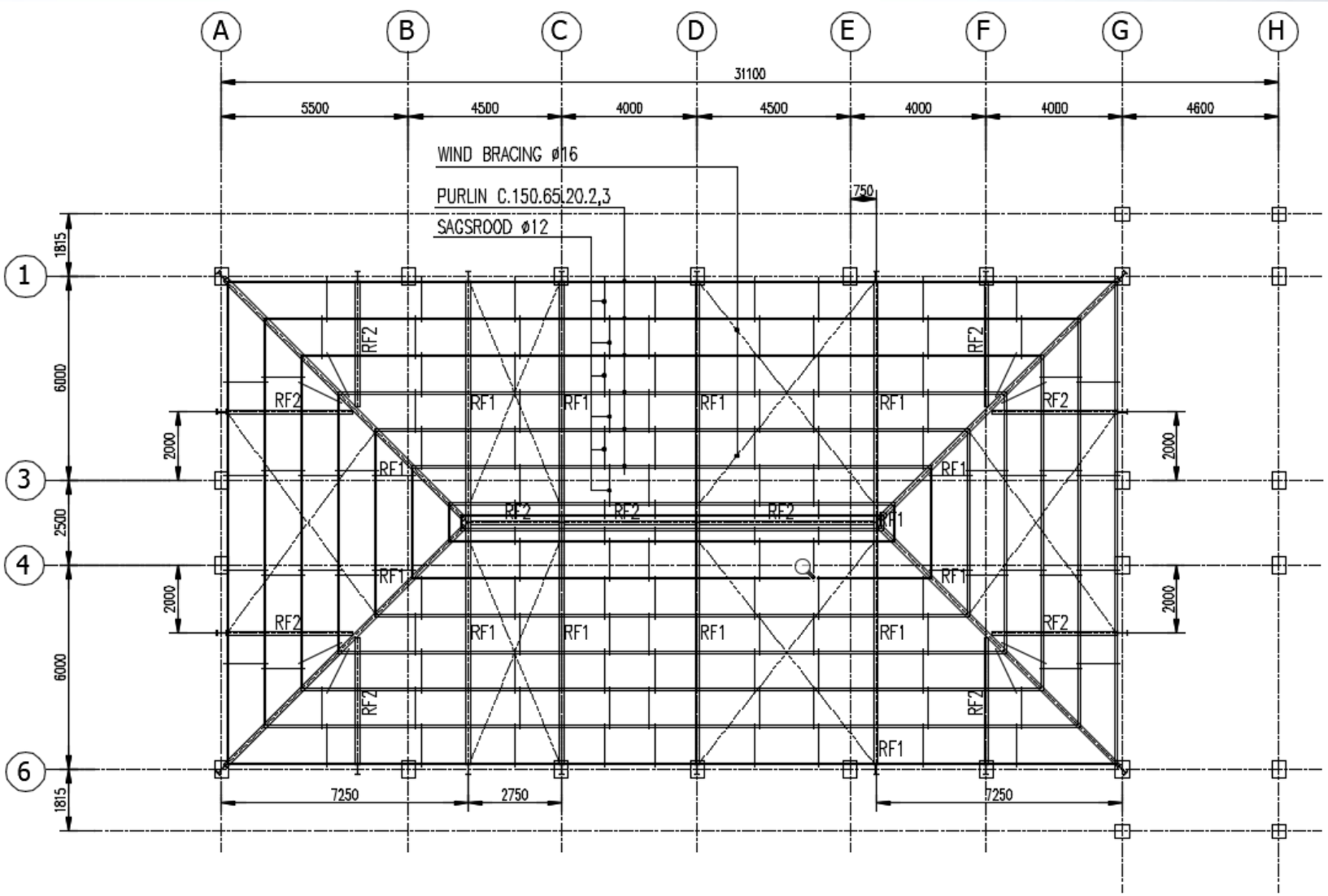
Pinus/Ebony DED Structure Works



ROOF DECK BEAM PLAN

SCALE 1:100

Pinus/Ebony DED Structure Works



ROOF FRAMING PLAN

SCALE 1:100

Pinus/Ebony DED Structure Works

1. Buildong Name = Pinus / Ebony Building
2. Location = RSU. TORA BELO, at Sigi districts, Central sulawesi.
3. Type Structure = Concrete Structure for Bottom and upper.
4. Type Rafter = Steel Structure Single Rafter
5. Type Foundation = Bore Pile ϕ 400 mm & Pile cap.
6. All Concrete Grade = K-300
7. All Steel Grade = ASTM A-36
8. Floor Total = 2 Floor.

NO.	CODE	STRUCTURAL	DIMENSIONS
01	PC1	FOUNDATION	1200X1200X750MM
02	PC3	FOUNDATION	3600X1200X750MM
03	TB1	CONCRETE TIE BEAM	300X500MM
04	TB2	CONCRETE TIE BEAM	250X500MM
05	TB3	CONCRETE TIE BEAM	400X500MM
06	TB4	CONCRETE TIE BEAM	250X400MM
07	C1	CONCRETE COLUMN	400x500MM
08	C2	CONCRETE COLUMN	400x400MM
09	B1	CONCRETE BEAM	250X500MM
10	B2	CONCRETE BEAM	250X500MM
11	B3	CONCRETE BEAM	250X400MM
12	B4	CONCRETE BEAM	200X400MM
13	B5	CONCRETE BEAM	200X300MM
14	RB1	CONCRETE RING BEAM	250X400MM
16	RB2	CONCRETE RING BEAM	250X400MM
17	RB3	CONCRETE RING BEAM	200X300MM
18	S1	CONCRETE SLAB	t:100MM
19	S2	CONCRETE SLAB	t:120MM
20	S3	CONCRETE SLAB	t:120MM

SUMMARY OF DED M&E WORKS ANUTAPURA & TORA BELO HOSPITALS

Mechanical, Electrical and Plumbing Works consist of :

- Building Electrical System
- Lightning Protection System
- Building Communication System
  - Telephone System
  - Sound System
  - Nurse Call System
- Fire Protection System
  - Fire Detection and Alarm System
  - Fire Fighting System
- MATV System
- CCTV System
- Air Conditioning System
- Medical Gas System
- Data Access
- In-building Transportation System
- Sanitation System
  - Clean Water System
  - Waste Water System
  - Sewerage System
  - Rain Water System

Notes :

Some of the Mechanical, Electrical and Plumbing works mentioned above will be connected and become part of the existing system at the Hospital

TECHNICAL SPECIFICATION OUTLINE

No	ITEMS	SPECIFICATION/TYPE	PRODUCT OF
I. ELECTRICAL			
1	Panel	Steel plate 2mm, powder coating 3 layer (0.15mm)	Nobi, Pokasa or equivalent (local)
2	Panel Component	MCCB, MCB etc	Schneider or equivalent
3	Cable, Conductor	NYFGbY, NYY, NYM, NYA, BCC	Supreme, Kabel Metal or equivalent
4	Fixtures		
	a TL RM ML or TBSI	Steel plate 0.4mm, powder coating, mirror & louvre aluminium	Lucolite, Artolite or equivalent
	b TL TKI	Steel plate 0.4mm, powder coating	Lucolite, Artolite or equivalent
	c TL GMS	Heat resistant acrylic	Lucolite, Artolite or equivalent
	d Baret	Heat resistant acrylic	Lucolite, Artolite or equivalent
	e Downlight	Alluminium	Lucolite, Artolite or equivalent
	f Orientasi	Heat resistant acrylic c/w dry cell nickel cad. battery for 2 h (min)	Lucolite, Artolite or equivalent
	g Exit	Heat resistant acrylic c/w dry cell nickel cad. battery for 2 h (min)	Lucolite, Artolite or equivalent
5	Lamps	TL LED and Bulb LED	Philips or equivalent
6	Switches, Power Outlets	Heat resistant plastic, flush mounting	MK, Clipsal or equivalent
7	Lightning Protection	Electrostatis, radius of protection area min. 70 m	EF or equivalent
II. TELEPHONE			
1	Central Telephone System (PABX)	available in the Administration Building	
2	Telephone set	Desk and wall mounted	Panasonic or equivalent
3	Distribution Frame	Steel plate 0.7-1mm, power coating 3 layer	local
4	Cable	ITC and UTC	Supreme, Kabel Metal or equivalent
III. SOUND SYSTEM			
1	Main Equipment	Mixer, equalizer, power amp, speaker etc.	TOA, Panasonic or equivalent
2	Cable	NYMHY	Supreme, Kabel Metal or equivalent

TECHNICAL SPECIFICATION OUTLINE

No	ITEMS	SPECIFICATION/TYPE	PRODUCT OF
IV. NURSE CALL			
1	Main Equipment	Nurse call centre, call station etc. (wired type)	Commax, Boss or equivalent
2	Cable	NYAF, NYA	Supreme, Kabel Metal or equivalent
V. Fire Detection System			
1	Peralatan utama	Control panel, detector, manual station etc	Nittan, Honeywell or equivalent
2	Cable	NYAF, NYA	Supreme, Kabel Metal or equivalent
VI. Fire Fighting System			
1	Hydrant Box	A1	Appron, Guardall or equivalent
2	Fire extinguisher	A2	Yamato, Starvvo or equivalent
3	Pipe	GIP, BSP	Bakrie, PPI or equivalent
VII. MATV			
1	Main Equipment	Receiver, modulator, combiner etc	Panasonic, Nexus or equivalent
2	Cable	Coaxial RG 6	Beklen, Shikoku or equivalent
VIII. CCTV			
1	Main Equipment	Fixed dome camera, DVR etc	Samsung, Panasonic or equivalent
2	Cable	Coaxial RG 59	Beklen, Shikoku or equivalent

TECHNICAL SPECIFICATION OUTLINE

No	ITEMS	SPECIFICATION/TYPE	PRODUCT OF
IX. AC			
1	Aircond unit	Split or cassete	Daikin, Panasonic or equivalent
2	Refrigerant pipe	Cu pipe	NS, HD or equivalent
3	Drain pipe	PVC pipe	Wavin, Rucika or equivalent
4	Cable	NYY	Supreme, Kabel Metal or equivalent
X. Medical Gas			
	Valve	Zone valve, stainless steel, box alluminium	Fres or equivalent
	Gas Outlet	O2, stainless steel	Fres or equivalent
	Pipe	Cu pipe 99%	Mueller, Crane Enfield or equivalent
XI. Data Access			
1	Distribution & Access Switch	Indoor, manageable	D'link, Sisco or equivalent
2	Cable	UTP Cat 6	Belden or equivalent
XII. LIFT			
1	Lift for patient & passenger	Bed Lift, capacity 1600 Kg, 2 entrance	Sigma, Fuji or equivalent

TECHNICAL SPECIFICATION OUTLINE

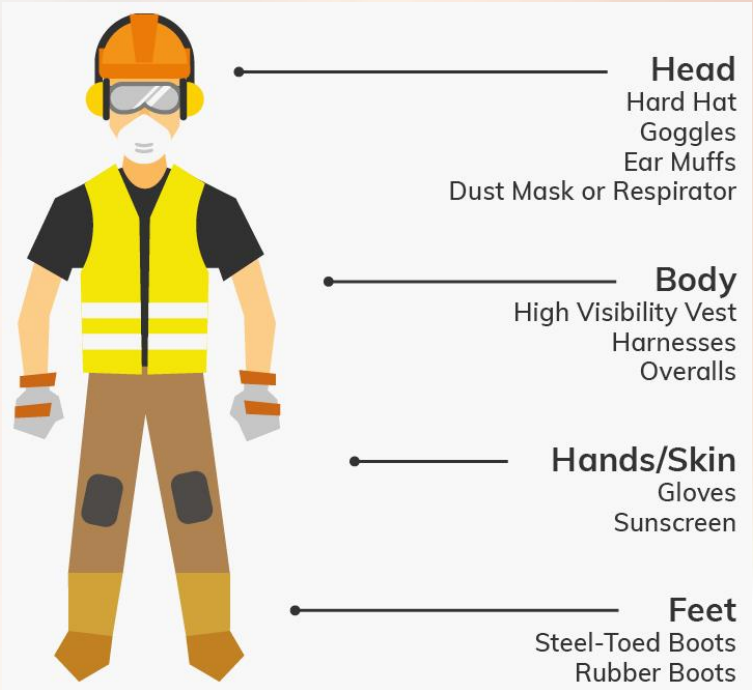
No	ITEMS	SPECIFICATION/TYPE	PRODUCT OF
XIII. Clean Water System			
1	Deep well pumps	Tipe : Submersible	Grundfos or equivalent
		Head : 109 m & 120 m	
		Debit : 2 m3/h	
2	Booster pump	Tipe : Centrifugal	Grundfos or equivalent
		Head : 12-18 m	
		Debit : 120 lpm	
3	Pipe	GIP medium class	Bakrie, PPI or equivalent
		PVC - AW class	Wavin, Rucika or equivalent
4	Roof tank	Fibreglass with thickness 6 mm, capacity as shown in drawing	Piguin, Sigma or equivalent
5	Water level control	Stick electrode	Omron, Hattersley or equivalent
6	Gate valve, check valve	screw, bronze	Kitz,Hattersley or equivalent
XIV. Waste Water/Sewerage/Rain Water System			
1	Pipe	PVC - AW class	Wavin, Rucika or equivalent
2	Clean out	Stainless steel c/w removable strainer	Toto, San-ei or equivalent
3	Floor drain	Stainless steel c/w removable strainer	Toto, San-ei or equivalent
4	Roof drain	Cast iron	Antasan or equivalent

D

SUMMARY OF HEALTH SAFETY & ENVIRONMENT OF ANUTAPURA & TORA BELO HOSPITALS

1. Occupational Health & Safety

- ❑ Implement a culture of health and safety in the construction workplace
- ❑ Incident monitoring and reporting
- ❑ Supervision during construction



2. **Air Quality**
   - Implement effective dust management and dust suppression activities, including provision of shielding barriers.
   - Using respiratory protective for the workers.

3. **Noise & Vibration**
   - Ensure that noise emission and vibration are minimized.
   - Using ear protection equipment or ear muffs
   - Management of work time and ensure equipment & machinery is regularly maintained

4. **Traffic Management**
   - Management of the work time and construction material delivery schedule
   - Sign Traffic Installation

5. **Waste Management**
   - Waste avoidance and 3R implementation

COVID-19 HANDLING SCHEME

1
Forming Covid-19 prevention task force
owner

2
Providing Covid-19 prevention facilities
Contractor

3
Educating everyone to keep away from Covid-19
Contractor

4
Measuring everyone's temperature every morning, afternoon and evening
Contractor

5
Make Covid-19 handling cooperation with local hospitals & health centers
Contractor

6
Temporary suspend the project if there are indications of people exposed to Covid 19
Contractor

7
Doing isolation and spraying disinfectant for office and field infrastructure facilities
Contractor

COVID-19 PREVENTION PROTOCOL MECHANISM IN CONSTRUCTION PROJECT

1. FORMING COVID-19 PREVENTION TASK FORCE — OWNER & CONTRACTOR
2. PROVIDING COVID-19 PREVENTION FACILITIES — CONTRACTOR
3. EDUCATE EVERYONE TO KEEP HIMSELF OF COVID-19 — TASK FORCE & CONTRACTOR
4. MEASURING EVERYBODY'S TEMPERATURE EVERY MORNING, AFTERNOON AND EVENING — CONTRACTOR
5. MAKE A SUSPECT COVID-19 HANDLING COOPERATION WITH THE LOCAL HOSPITAL — CONTRACTOR
6. TEMPORARILY SUSPEND THE PROJECT IF THERE ARE INDICATIONS OF PEOPLE EXPOSED TO COVID-19 — OWNER &/OR CONTRACTOR
7. CONDUCTING ISOLATION AND SPRAYING DISINFECTANT IN OFFICE AND PROJECT FACILITIES — CONTRACTOR


Thank you!