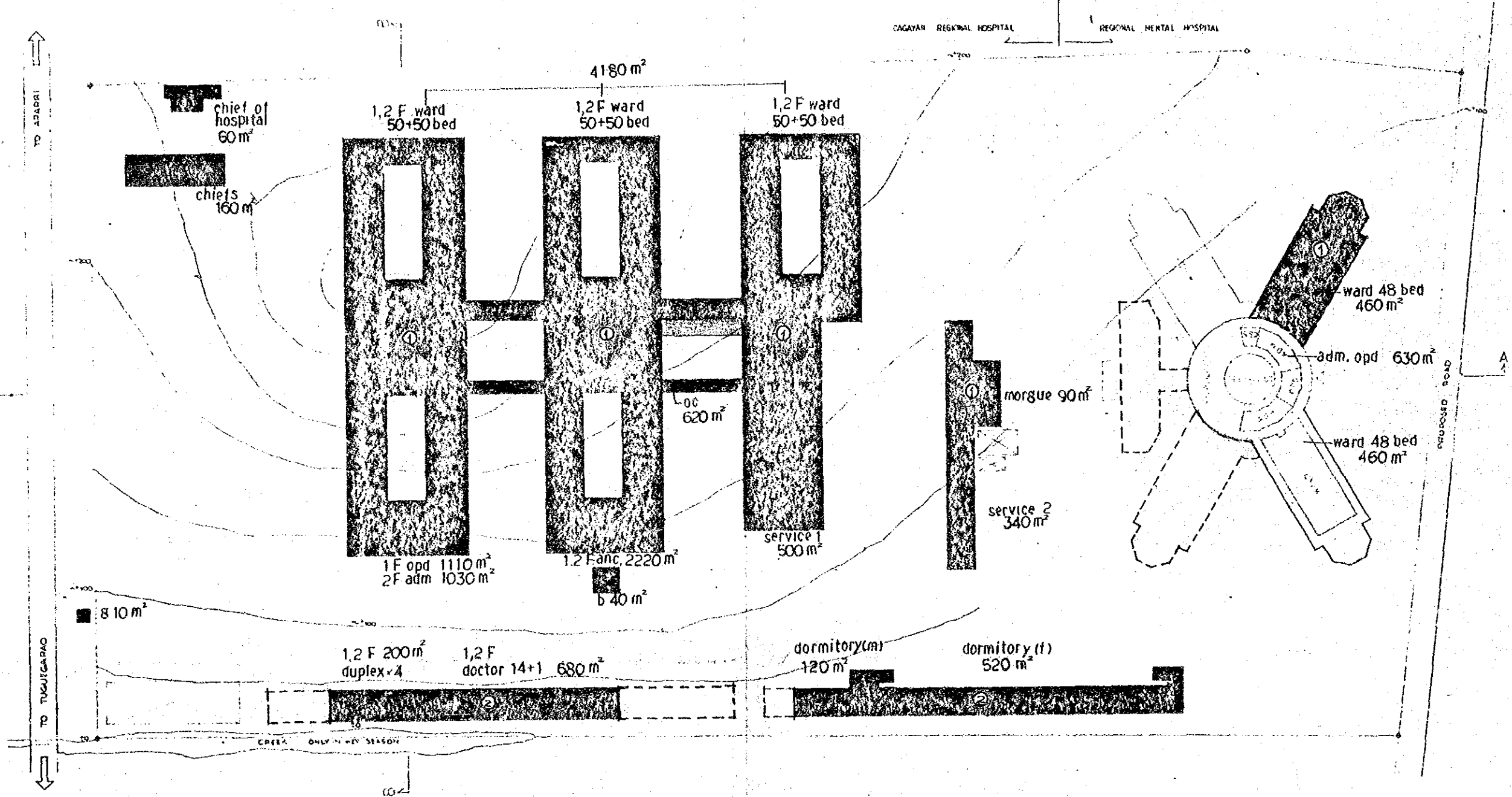
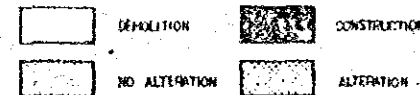


CAGAYAN REGIONAL HOSPITAL      REGIONAL MENTAL HOSPITAL

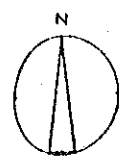


PROCESS	CONTENT			NOTES
	DEMOLITION	ALTERATION	CONSTRUCTION	
①			●	
②			●	



PLAN II    II-1. CAGAYAN REGIONAL HOSPITAL  
 II-2. REGIONAL MENTAL HOSPITAL

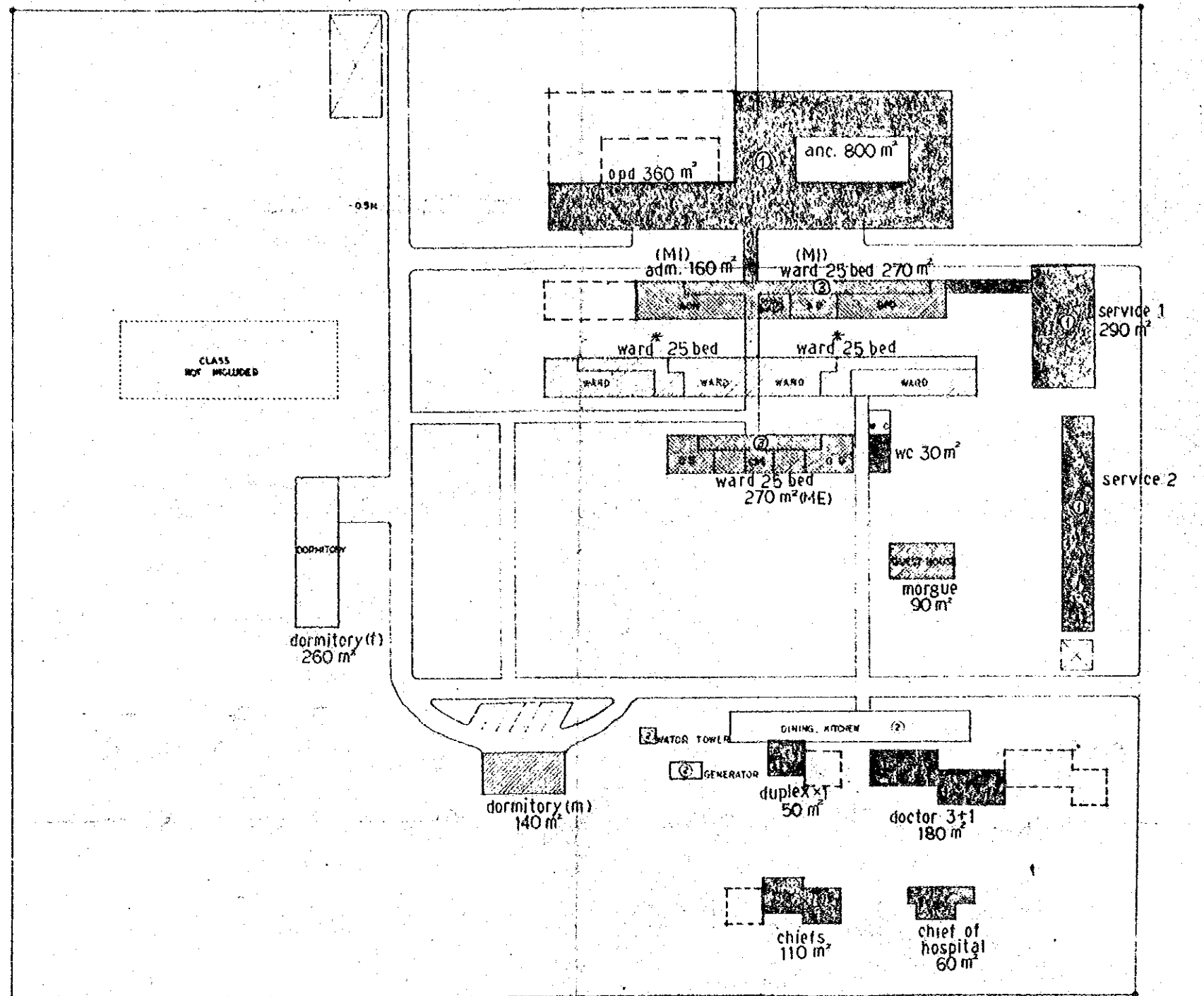
PLAN



← TO DAGUPAN

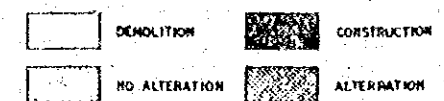
NATIONAL ROAD

TO LUBUAGAN →



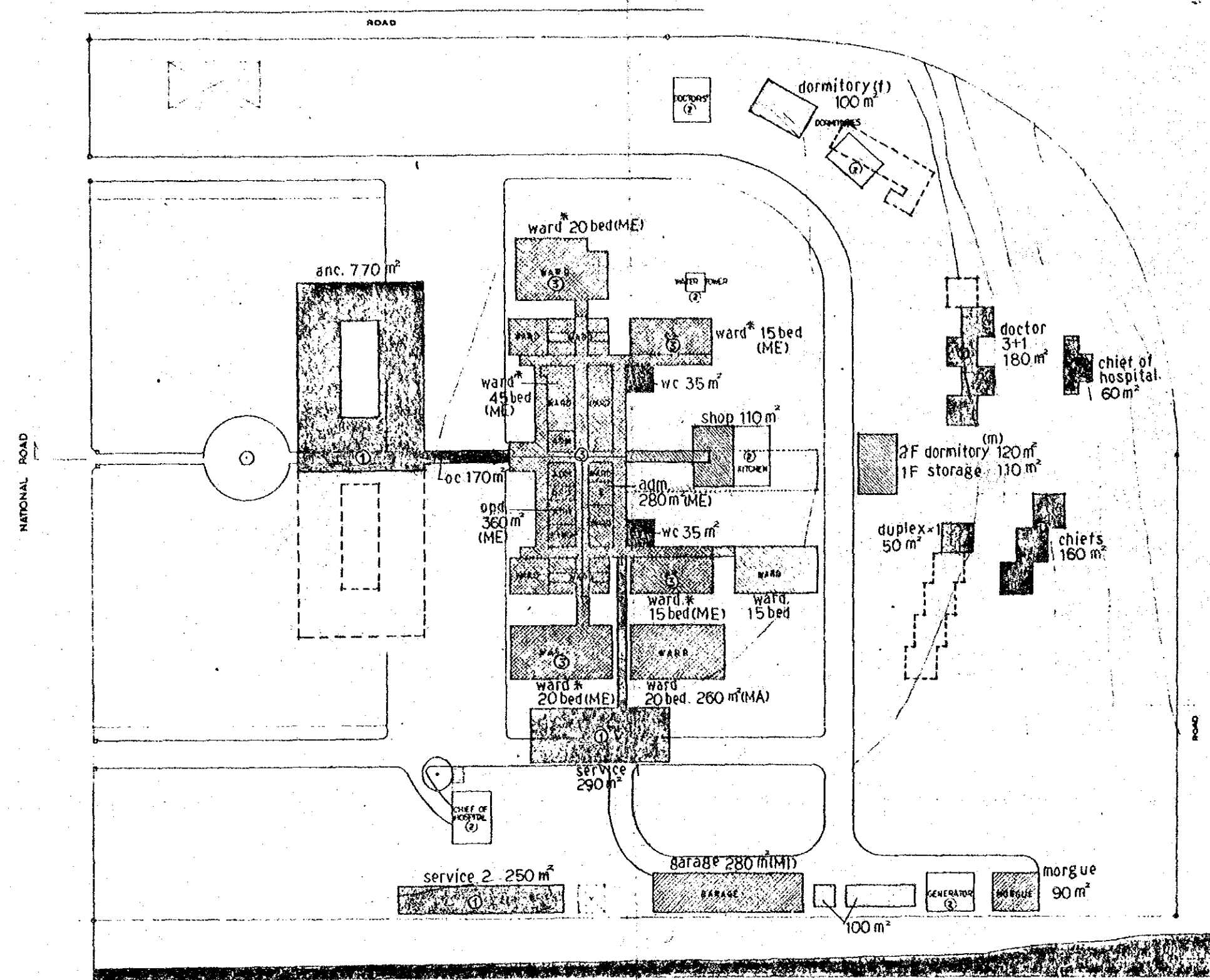
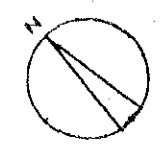
\* Total 580 m<sup>2</sup>

PROCESS	CONTENTS		NOTES
	DEMOLITION	ALTERATION	
1			
2	●		
3		●	
4			
5			



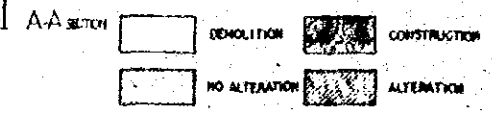
PLAN II II-3. KALINGA APAYAO PROVINCIAL HOSPITAL

PLAN



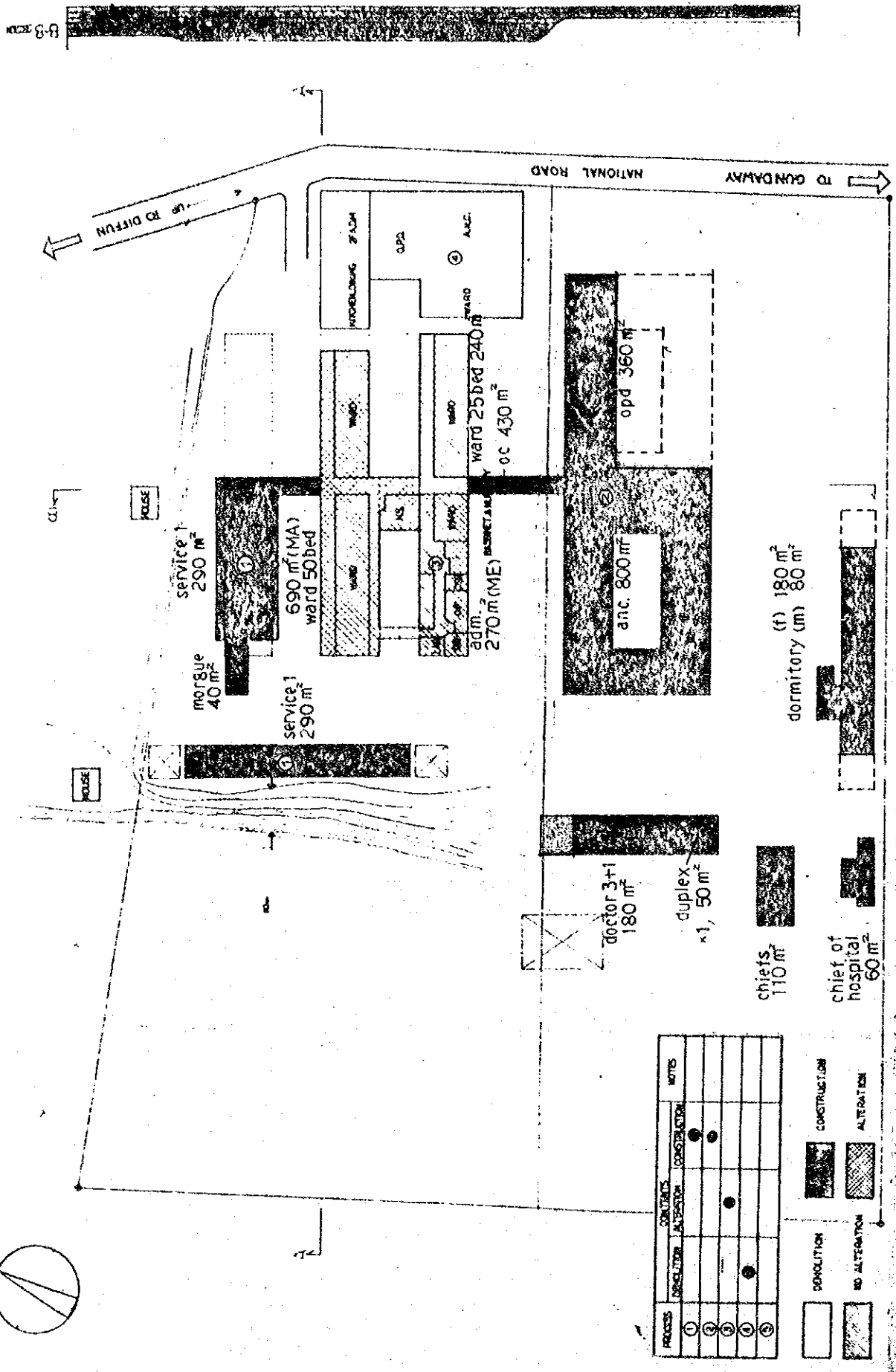
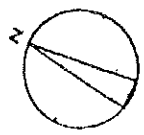
\* Total 1570 m<sup>2</sup>

PROCESS	CONTENTS		NOTES
	DEMOLITION	CONSTRUCTION	
(1)			
(2)	●		
(3)		●	



PLAN II II-5. ISABELA PROVINCIAL HOSPITAL

PLAN

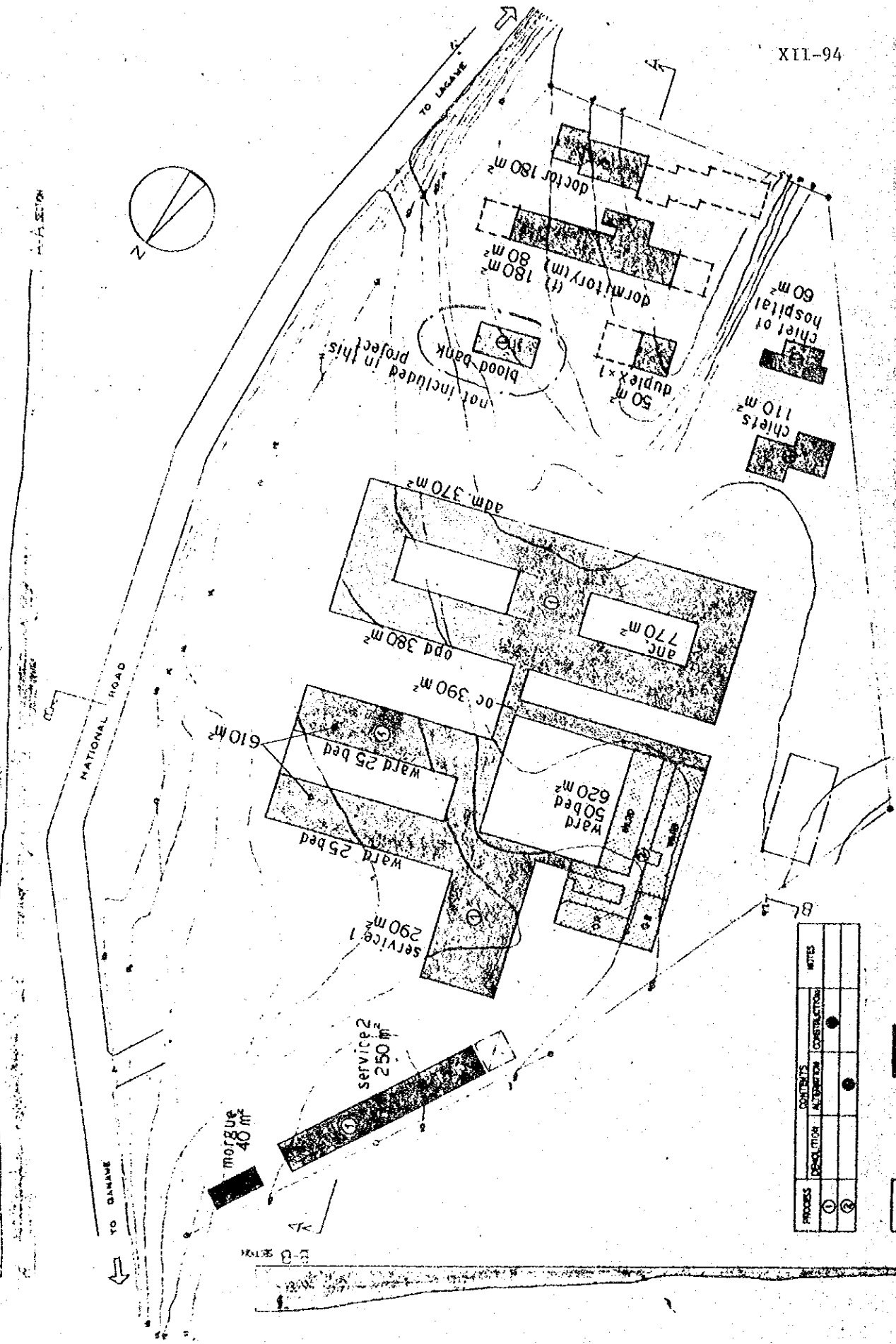


PROCESS	CONTRACTS		NOTES
	DESIGN	CONSTRUCTION	
1		●	
2		●	
3		●	
4		●	
5		●	

PROCESS	CONTRACTS		NOTES
	DESIGN	CONSTRUCTION	
1		●	
2		●	
3		●	
4		●	
5		●	

PROCESS	CONTRACTS	NOTES
1	CONSTRUCTION	
2	ALTERNATION	
3	NO ALTERNATION	
4	DEMOLITION	
5	NO ALTERNATION	

mortgise 40 m²  
 service 1 290 m²  
 690 m² (MA) ward 50 bed  
 270 m² (ME) ad m.  
 anc. 800 m²  
 opd 360 m²  
 ward 25 bed 240 m²  
 OC 430 m²  
 ward  
 WARDING ZFACH  
 OPA  
 A.C.  
 dormitory (m) 80 m²  
 chiefs 110 m²  
 chief of hospital 60 m²  
 duplex x1, 50 m²  
 doctor 3+1 180 m²



PROCESS	CONTRACTS		NOTES
	DESIGN	CONSTRUCTION	
1		●	
2		●	

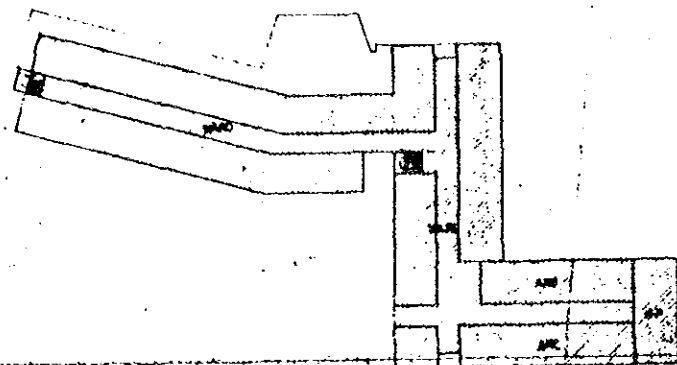
PROCESS	CONTRACTS	NOTES
1	CONSTRUCTION	
2	ALTERNATION	
3	NO ALTERNATION	
4	DEMOLITION	
5	NO ALTERNATION	

\*THE WHITE LINES IN THIS PICTURE SHOWS BEFORE THIS PROJECT

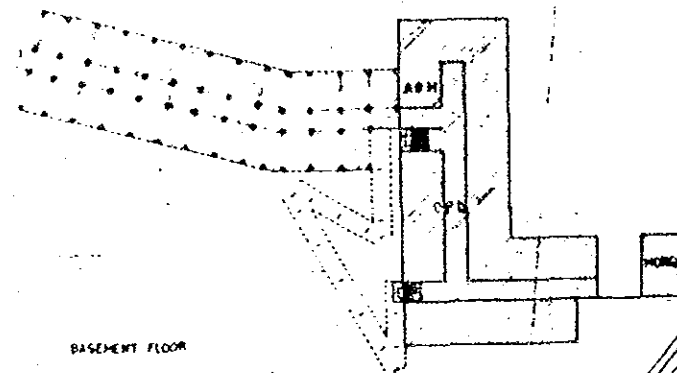
PLAN II II-7. IFUGAO PROVINCIAL HOSPITAL

NATIONAL HIGHWAY

← TO MANILA

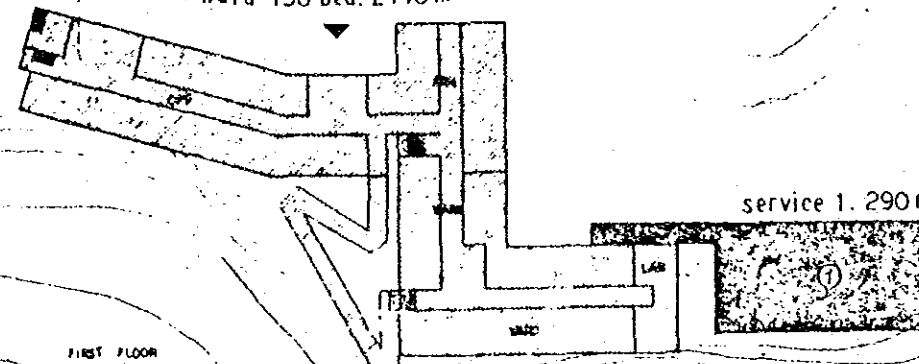


BASEMENT FLOOR



FIRST FLOOR

In main building  
anc. 960 m<sup>2</sup>  
opd. 840 m<sup>2</sup>  
adm. 420 m<sup>2</sup>  
service 2 180 m<sup>2</sup>  
morgue 60 m<sup>2</sup>  
ward 150 bed. 2140 m<sup>2</sup>



FIRST FLOOR

service 1. 290 m<sup>2</sup>

8.10 m<sup>2</sup>

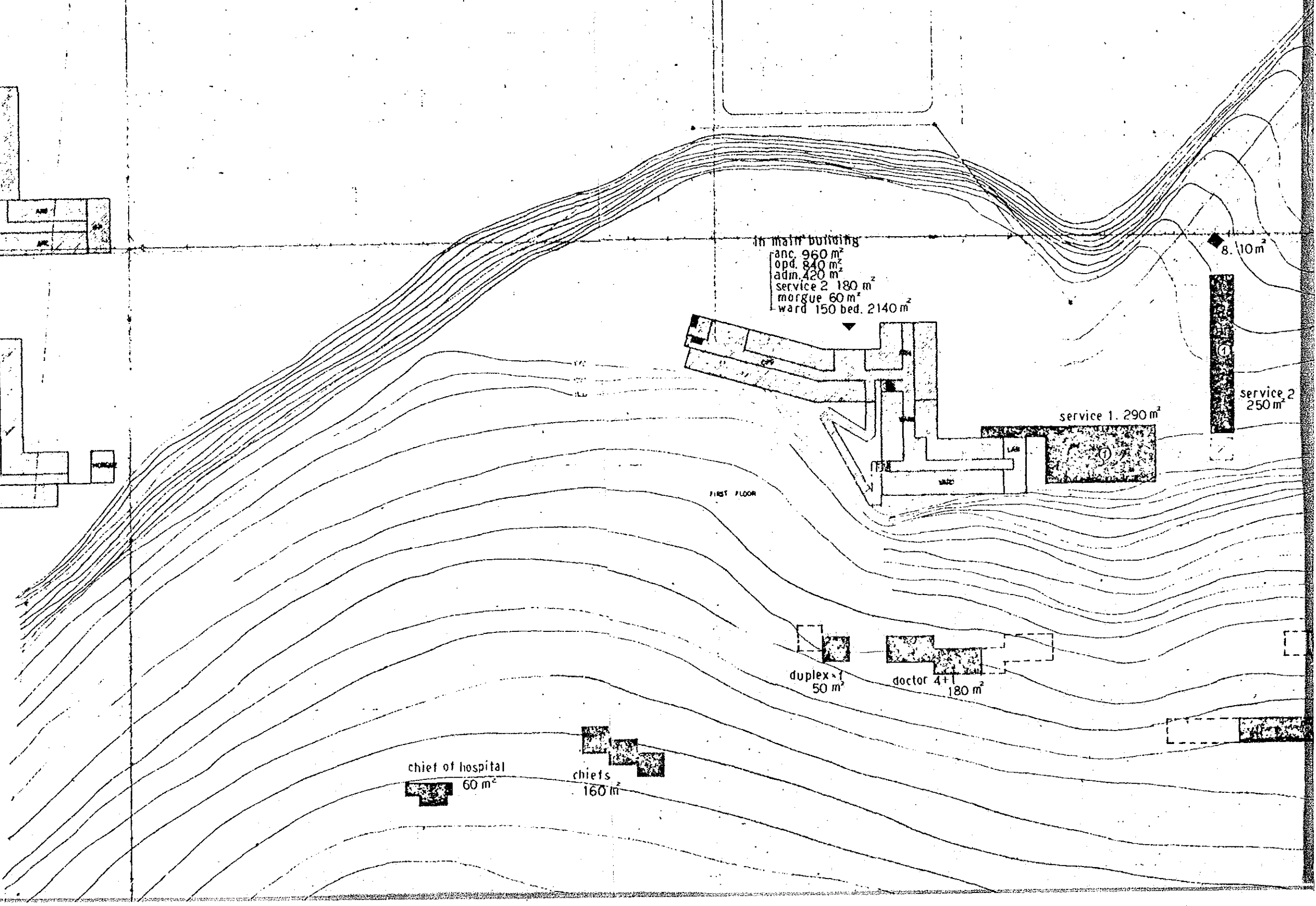
service 2  
250 m<sup>2</sup>

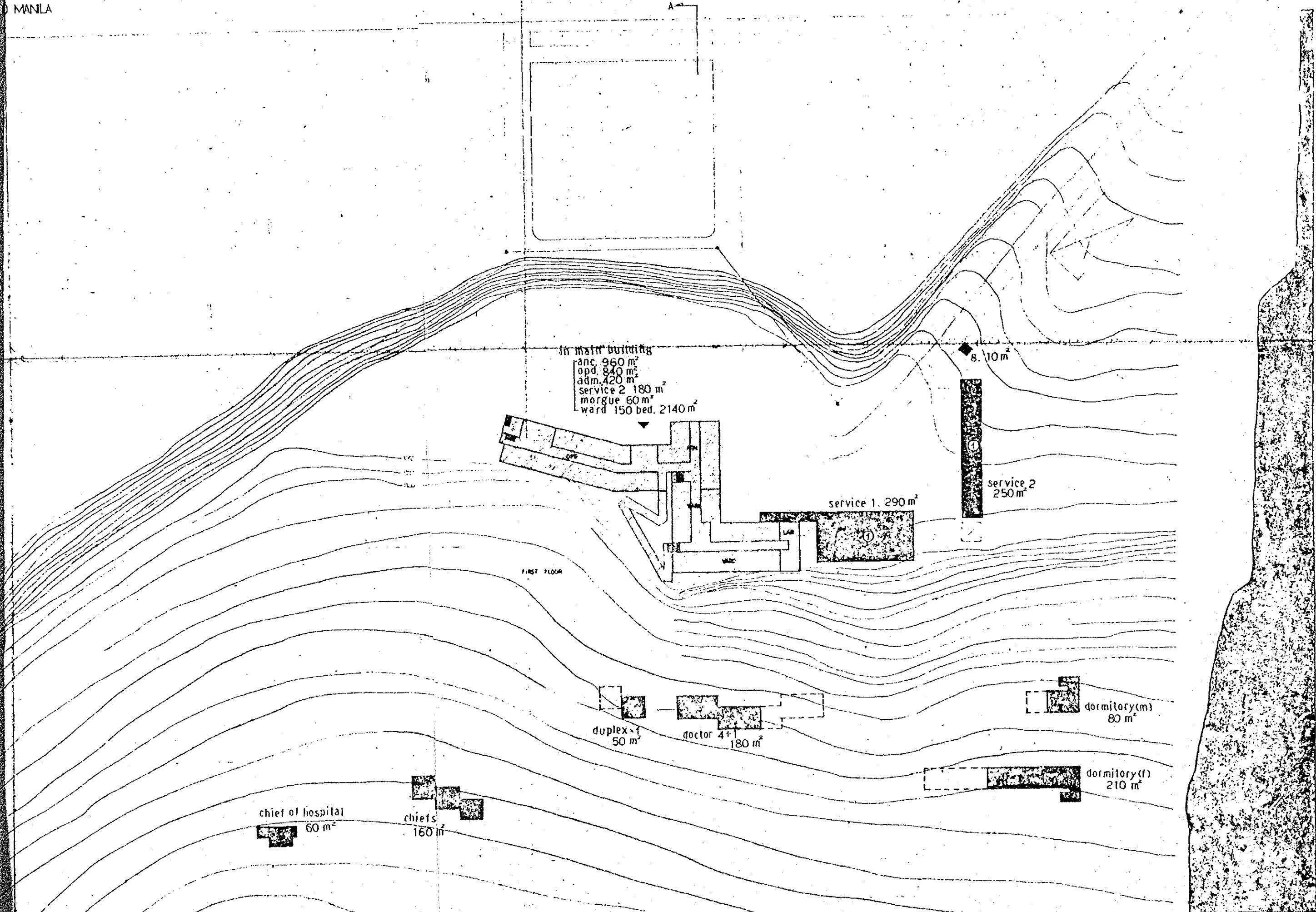
duplex 1  
50 m<sup>2</sup>

doctor 4+  
180 m<sup>2</sup>

chief of hospital  
60 m<sup>2</sup>

chiefs  
160 m<sup>2</sup>





In main building  
 anc. 960 m<sup>2</sup>  
 opd. 840 m<sup>2</sup>  
 adm. 420 m<sup>2</sup>  
 service 2 180 m<sup>2</sup>  
 morgue 60 m<sup>2</sup>  
 ward 150 bed. 2140 m<sup>2</sup>

FIRST FLOOR

service 1. 290 m<sup>2</sup>

service 2 250 m<sup>2</sup>

8. 10 m<sup>2</sup>

duplex 50 m<sup>2</sup>

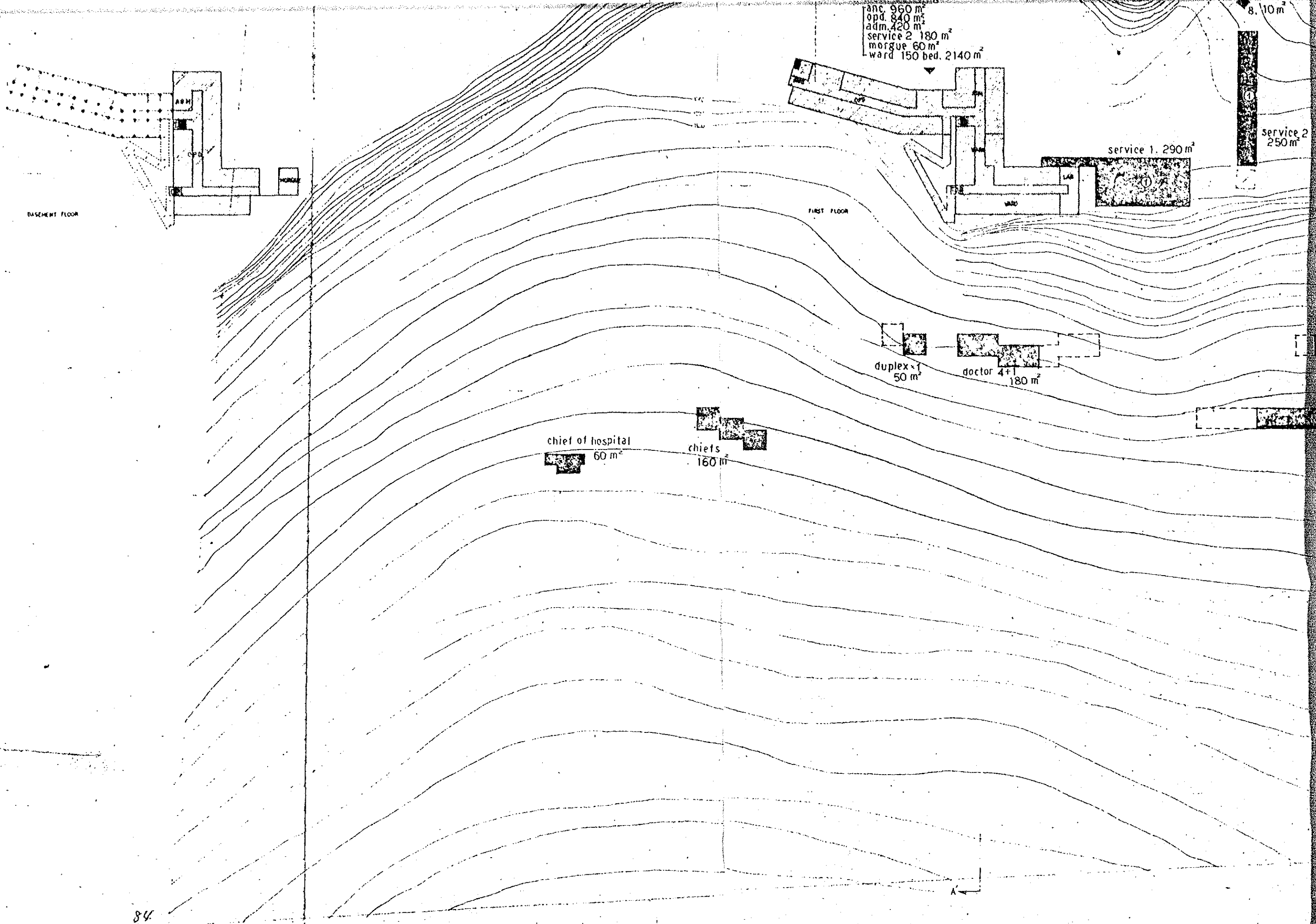
doctor 4+1 180 m<sup>2</sup>

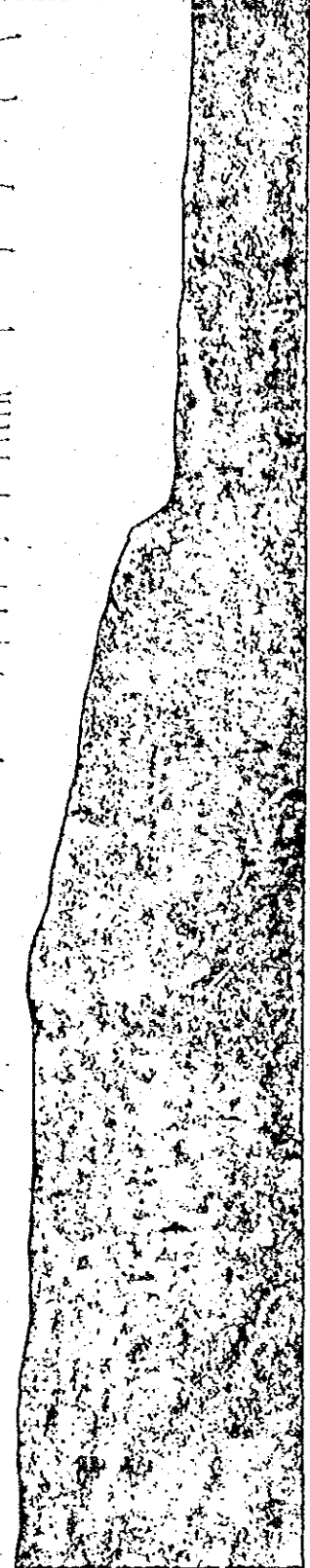
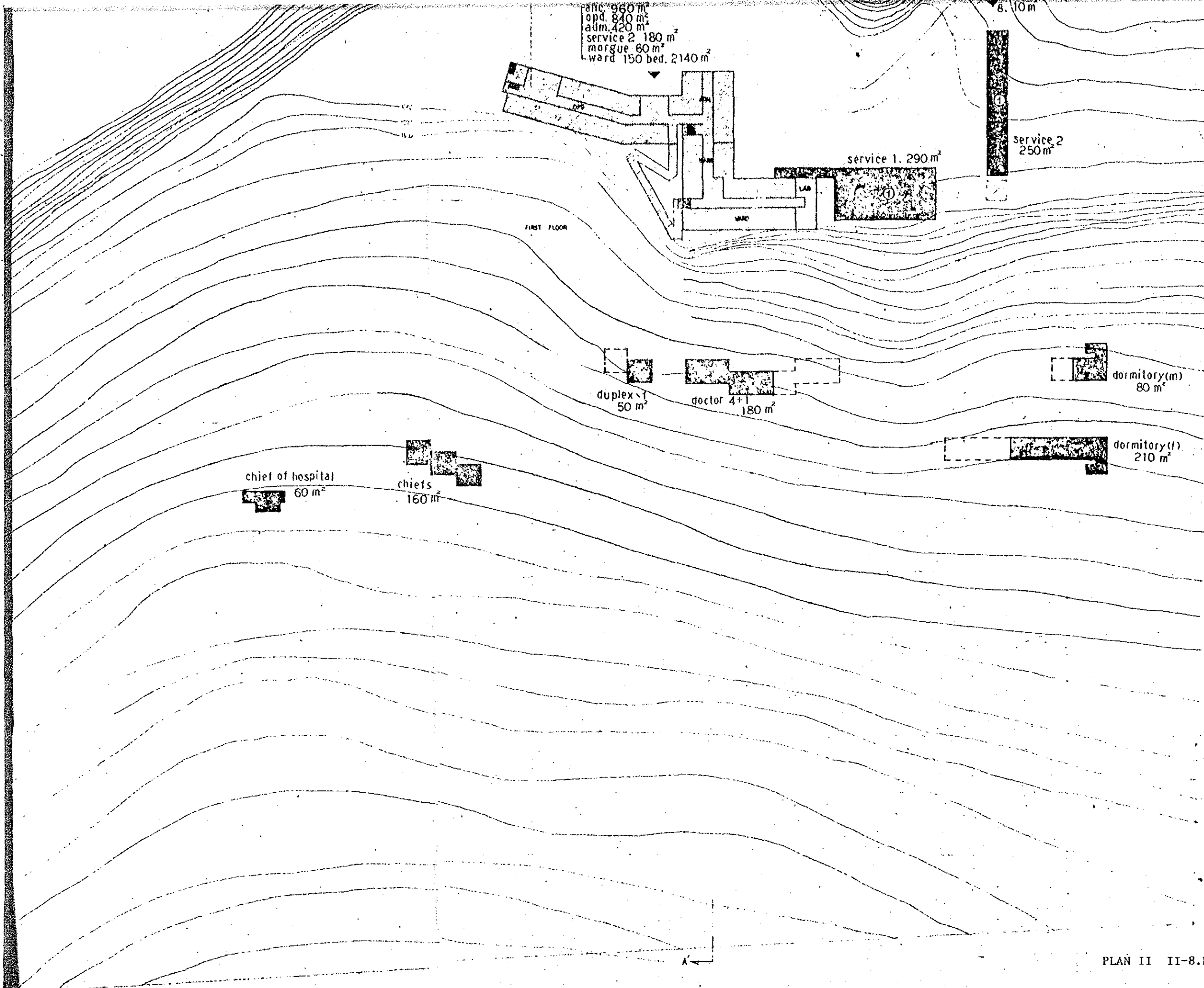
dormitory (m) 80 m<sup>2</sup>

dormitory (f) 210 m<sup>2</sup>

chief of hospital 60 m<sup>2</sup>

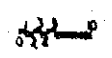
chiefs 160 m<sup>2</sup>





PROCESS	CONTENTS		NOTES
	REVISION	DATE	

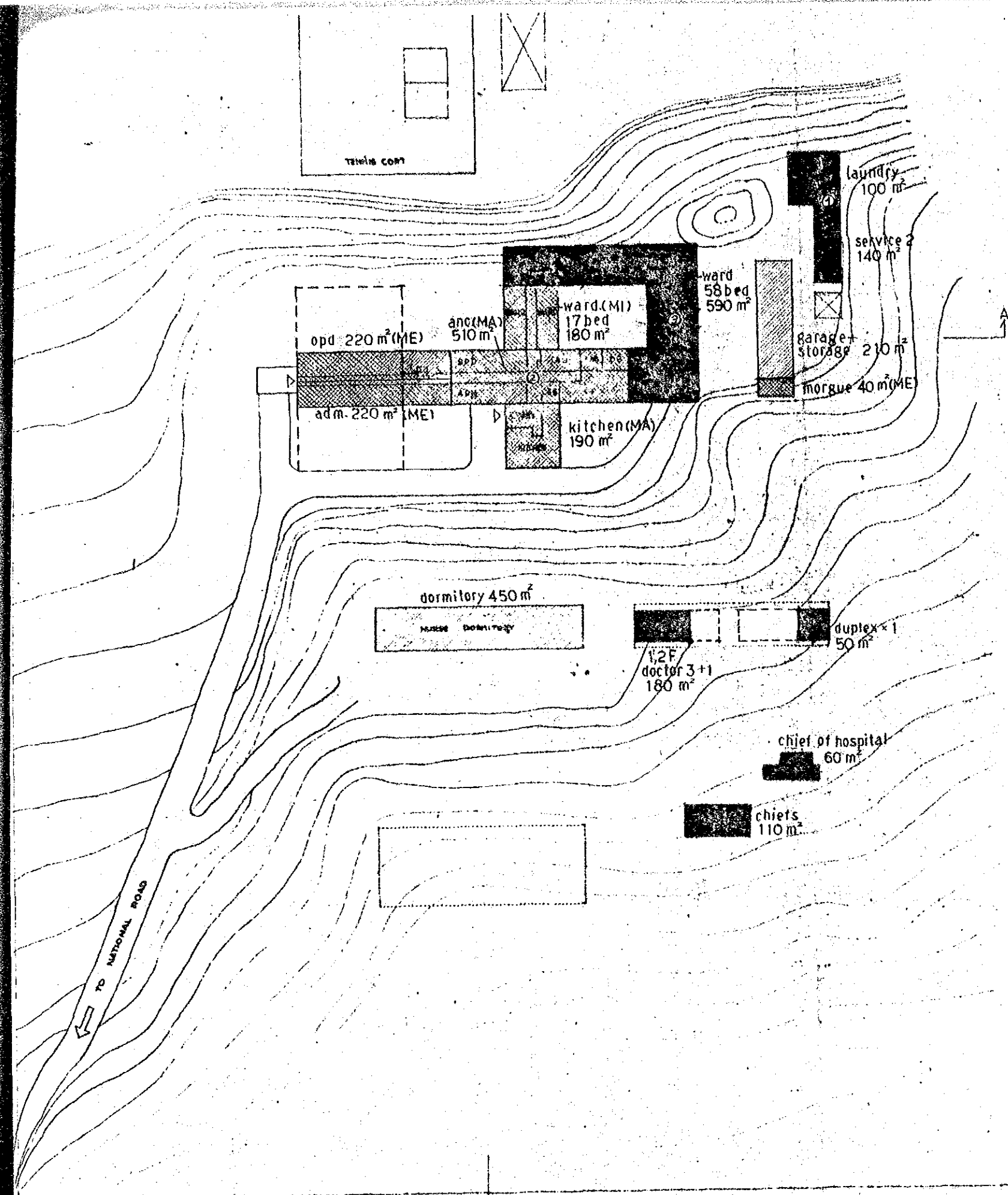
MODIFICATION  
 NO ALTERATION  
 CONSTRUCTION  
 ALTERATION



PLAN II II-8. MAJ. F. MARCOS MEMORIAL HOSPITAL

PLAN





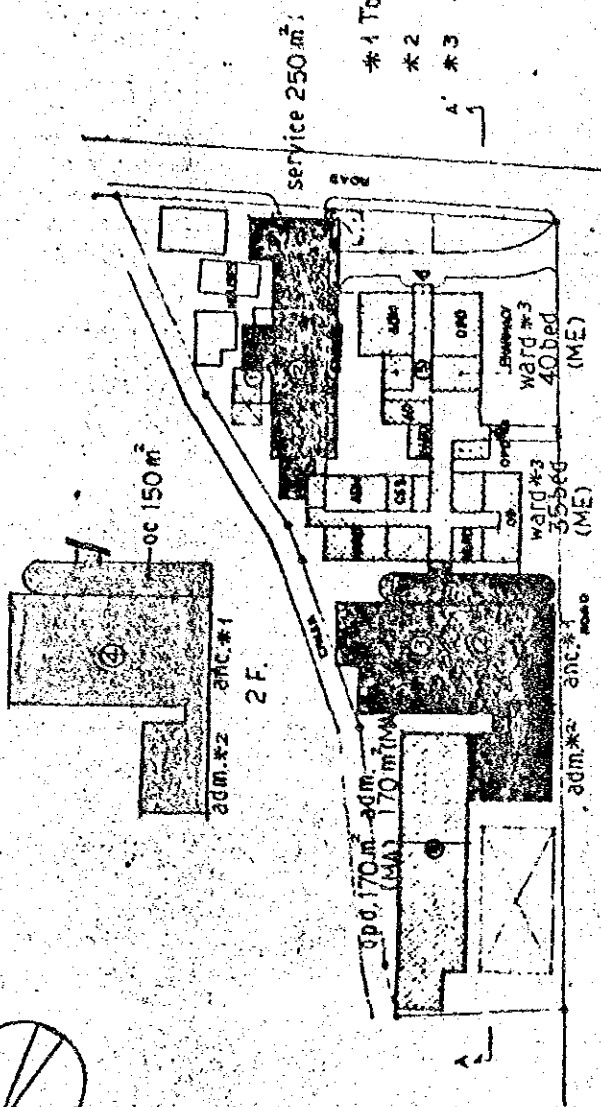
PROCESS	COUNTS			NOTES
	DEMOLITION	ALTERATION	CONSTRUCTION	
①			●	
②		●		
③			●	
④				



PLAN II II-9. NUEVA VIZCAYA PROVINCIAL HOSPITAL

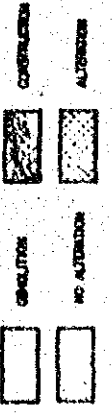
A-A SECTION

PLAN



\*1 Total 530 m<sup>2</sup>  
 \*2 " 260 m<sup>2</sup>  
 \*3 " 650 m<sup>2</sup>

FLOOR	CONSTRUCTION		NOTES
	CONSTRUCTION	ALTERATION	
①	●		
②	●		
③	●	●	
④		●	
⑤		●	



PLAN II II-10. BATAINES PROVINCIAL HOSPITAL

PLAN

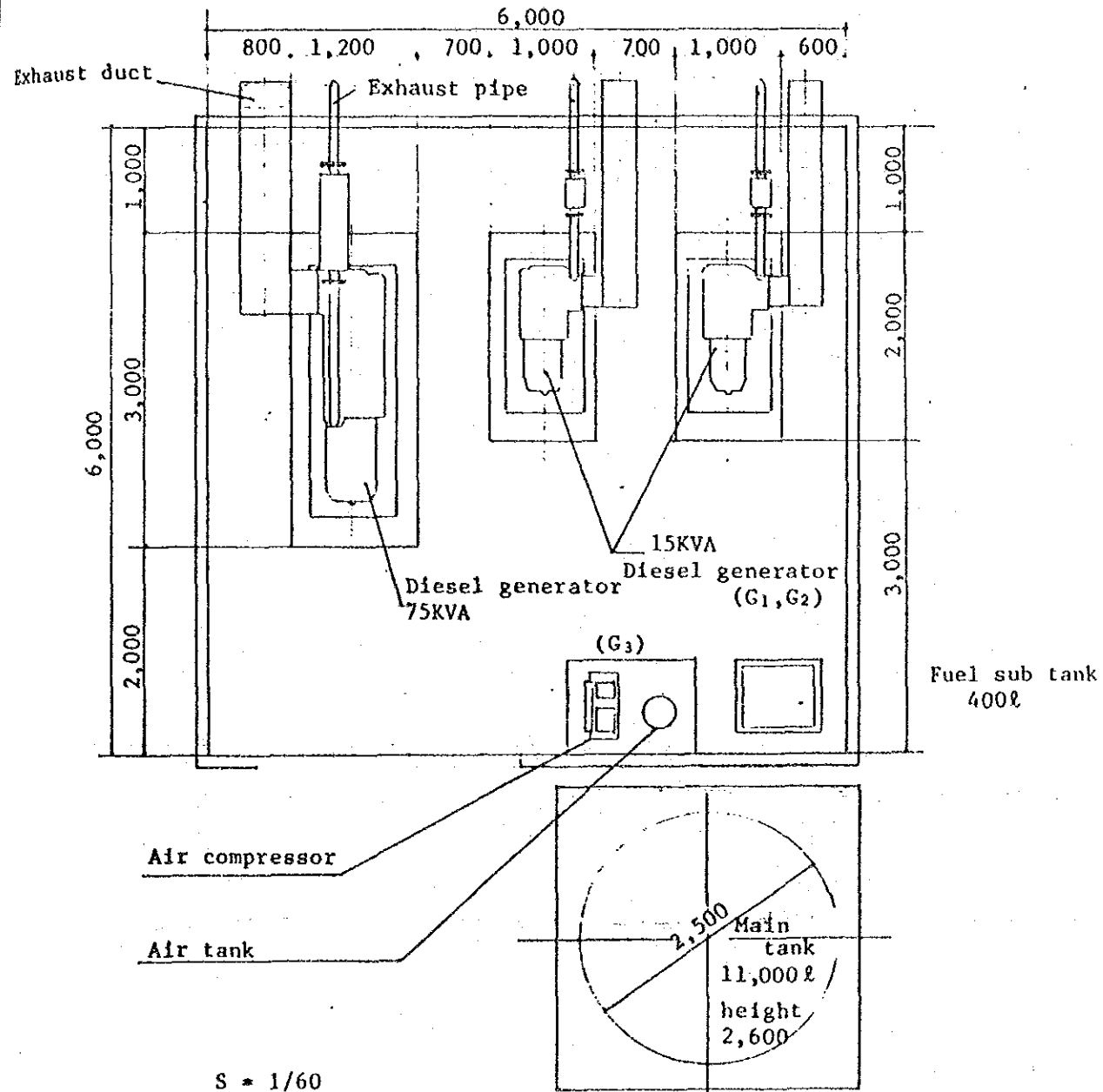
APPENDIX DETAILED DRAWINGS  
OF  
STANDARD HOSPITAL  
(MECHANICAL)

CONTENTS

APPENDIX	DETAILED DRAWINGS OF STANDARD HOSPITAL (MECHANICAL)	
1.	GENERATOR .....	XII-99
2.	WATER SUPPLY .....	XII-111
3.	WASTE WATER TREATMENT .....	XII-116
4.	AIR CONDITIONING .....	XII-124
5.	KITCHEN .....	XII-130
6.	LAUNDRY .....	XII-138
7.	MEDICAL GAS, LPG .....	XII-142
8.	INCINERATOR .....	XII-145

DIESEL ENGINE PLANE PLAN  
75KVA x 1 Set, 15KVA x 2 Sets

TYPE 1-1

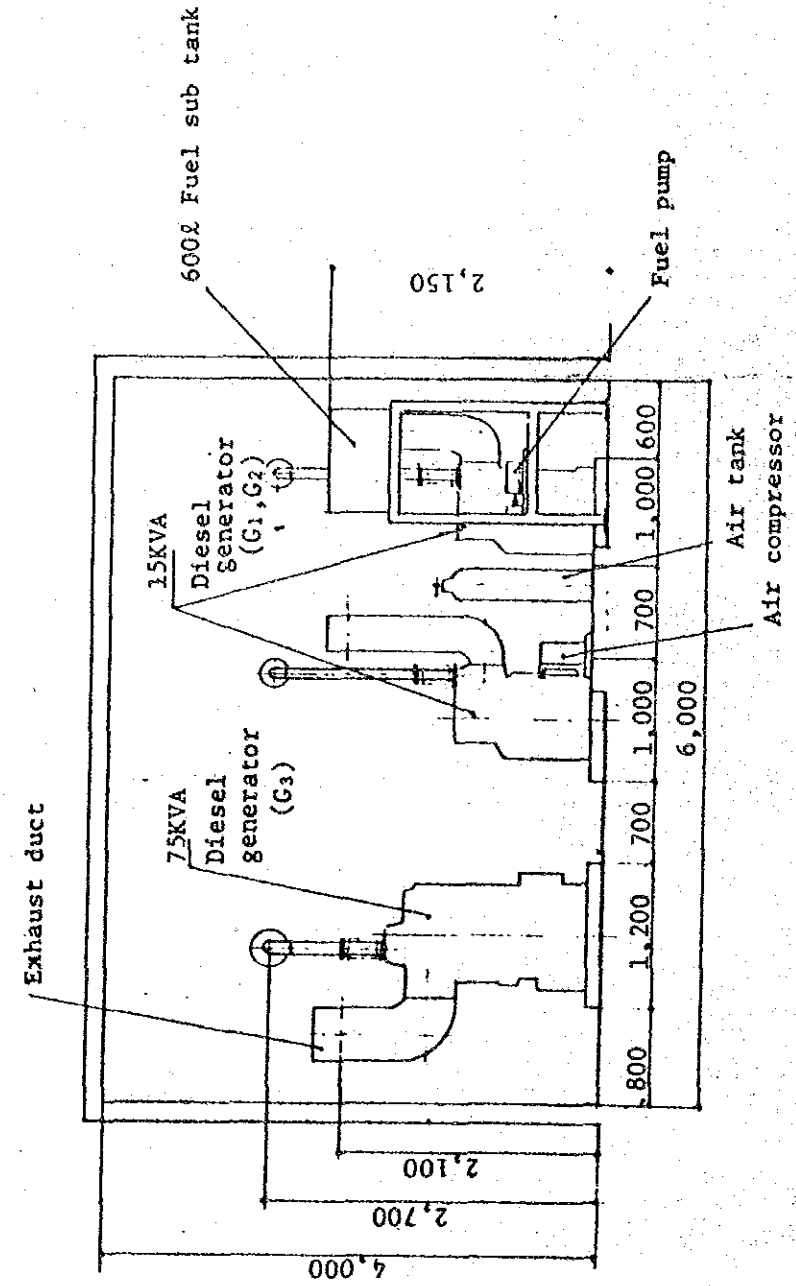


S = 1/60

1. GENERATOR

DIESEL ENGINE SECTION  
75KVA-1 Set, 15KVA-2 Sets

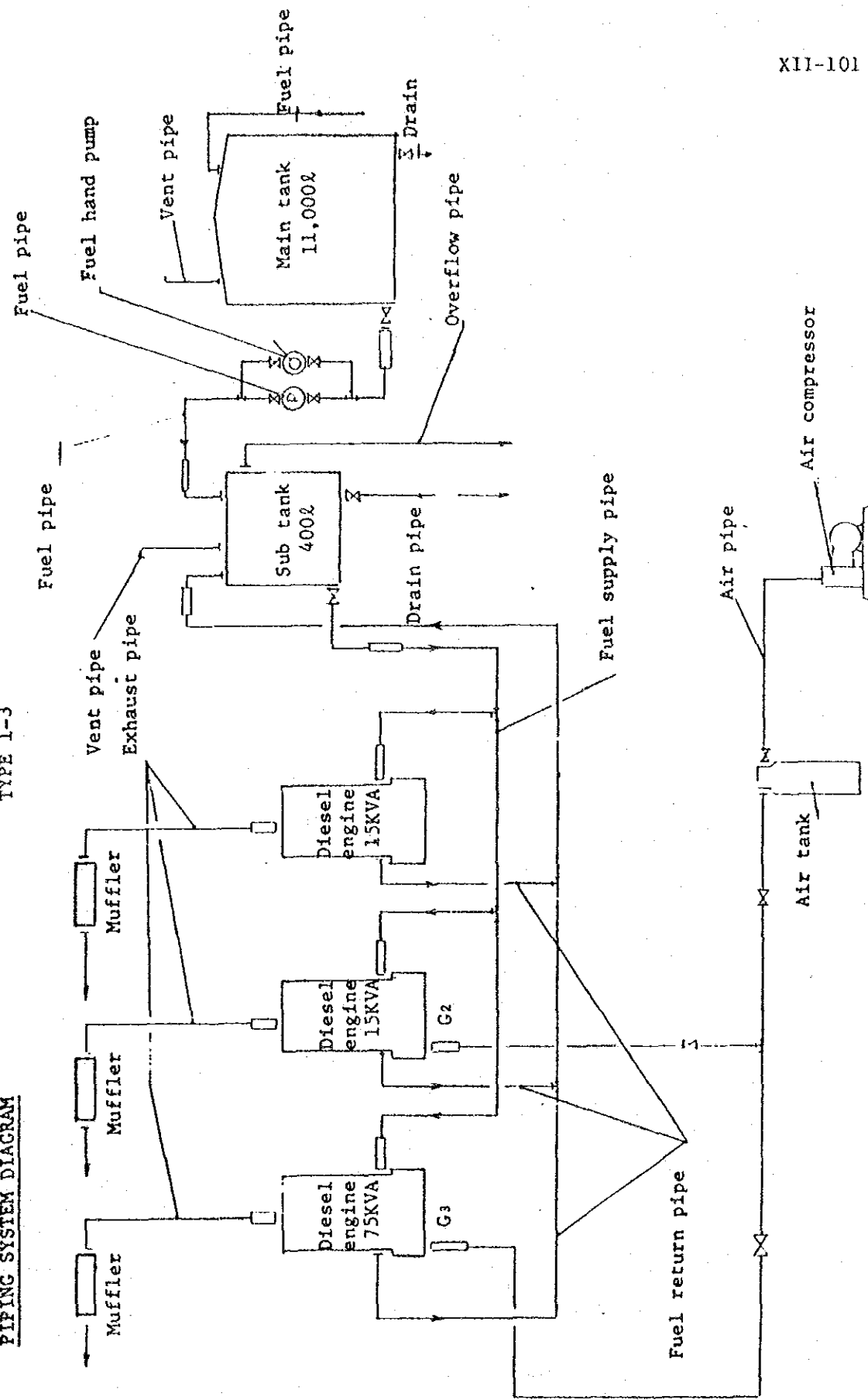
TYPE 1-2



S = 1/60

DIESEL ENGINE GENERATOR  
PIPING SYSTEM DIAGRAM

TYPE 1-3



XII-101

XII-102

Generator Type-1: fuel consumption and tank capacity.

Fuel consumption

G<sub>1</sub> fuel consumption

$$\frac{22.5\text{PS} \times 0.165}{0.83} \times 24\text{hr} \doteq 105 \text{ \textasciitilde/day} \dots\dots\dots a$$

G<sub>2</sub> fuel consumption

$$\frac{22.5\text{PS} \times 0.165}{0.83} \times 3\text{hr} \doteq 13 \text{ \textasciitilde/day} \dots\dots\dots b$$

G<sub>3</sub> fuel consumption

$$\frac{103\text{PS} \times 0.165}{0.83} \times 12\text{hr} \doteq 169 \text{ \textasciitilde/day} \dots\dots\dots c$$

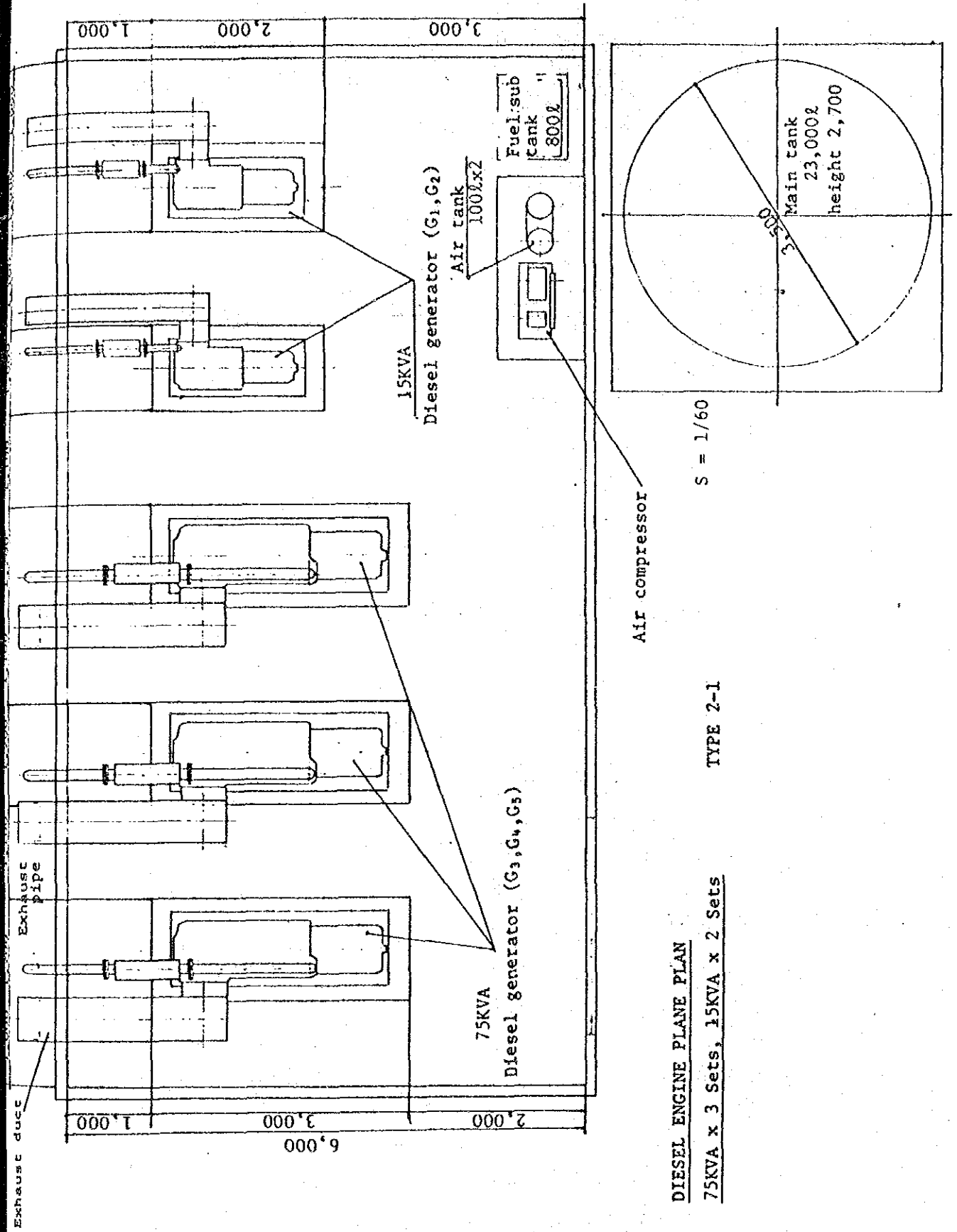
o Service tank capacity

$$a + b + c = 287 \text{ \textasciitilde/day}$$

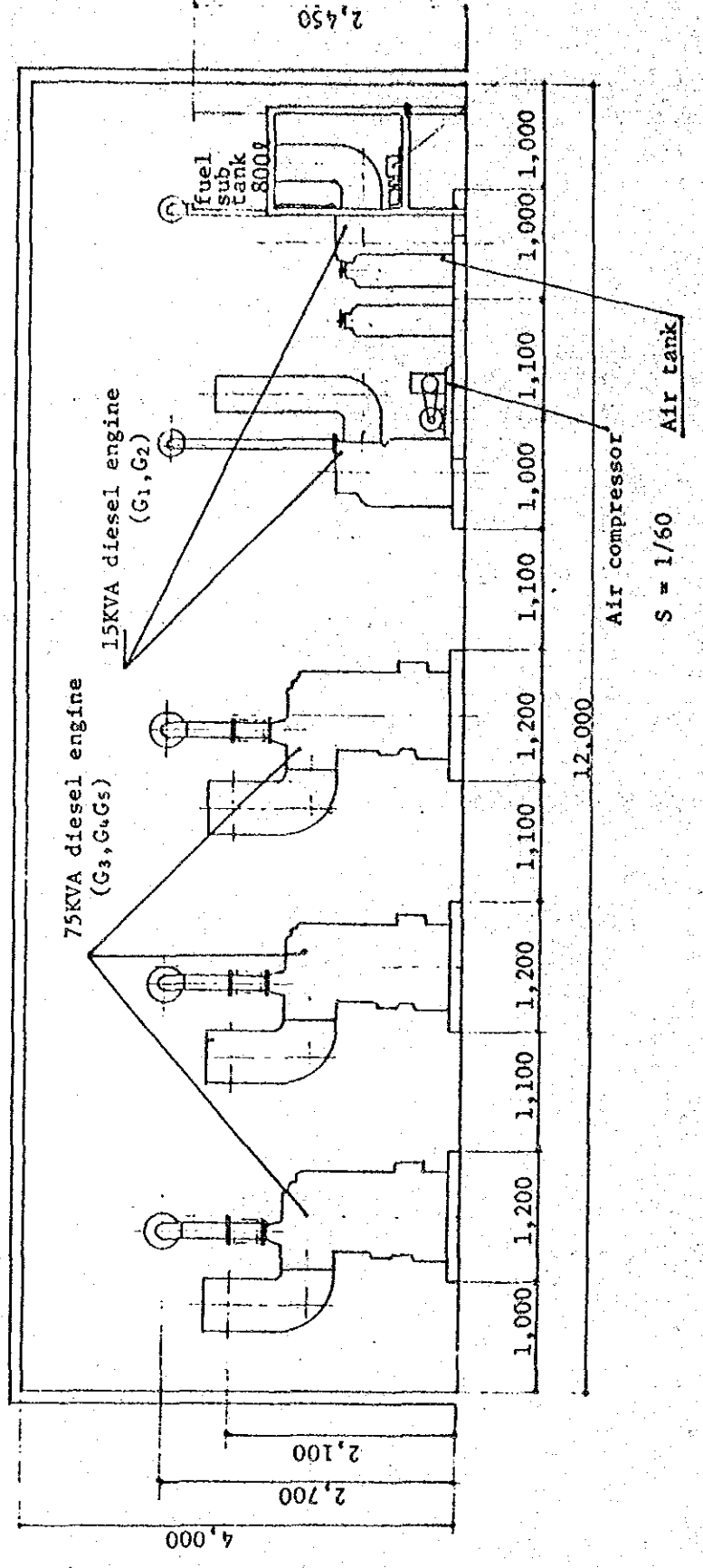
$$400 \text{ \textasciitilde/day}$$

o Main fuel tank capacity

$$287 \times 37 \text{ day} = 10,619\text{\textasciitilde} \text{ and over } 11,000\text{\textasciitilde}$$

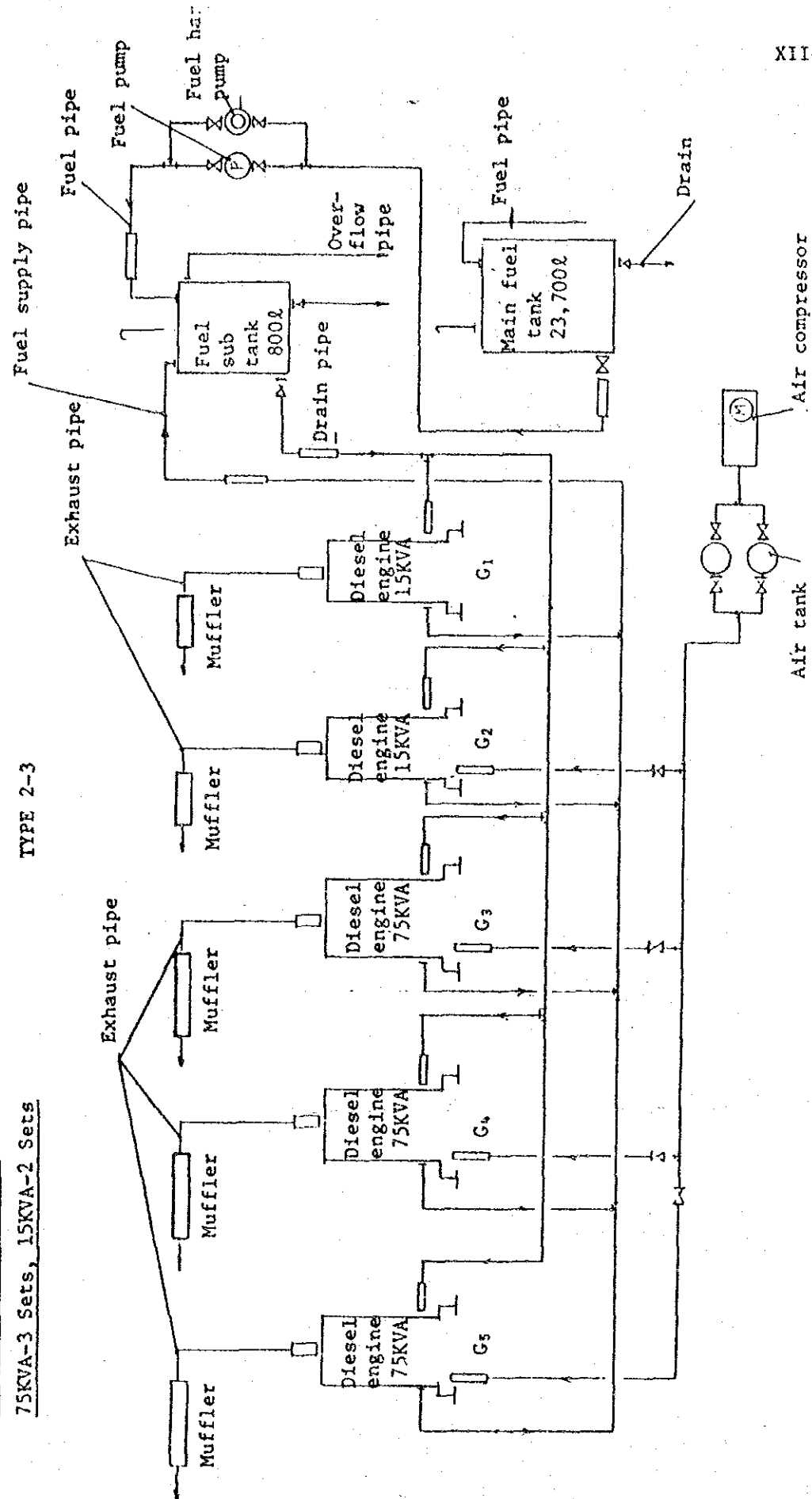


**DIESEL ENGINE SECTION PLAN**  
 75KVA-3 Sets, 15KVA-2 Sets  
 TYPE 2-2



**DIESEL ENGINE GENERATOR  
PIPING SYSTEM DIAGRAM  
75KVA-3 Sets, 15KVA-2 Sets**

TYPE 2-3



XII-105

XII-106

Generator Type-2: fuel consumption and tank capacity.

Fuel consumption

G<sub>1</sub> fuel consumption

$$\frac{22.5\text{PS} \times 0.165}{0.83} \times 24\text{hr} \doteq 107 \text{ l/day} \dots\dots a$$

G<sub>2</sub> fuel consumption

$$\frac{22.5\text{PS} \times 0.165}{0.83} \times 3\text{hr} \doteq 13 \text{ l/day} \dots\dots b$$

G<sub>3</sub> fuel consumption

$$\frac{103\text{PS} \times 0.165}{0.83} \times 12\text{hr} \doteq 246 \text{ l/day} \dots\dots c$$

G<sub>4</sub> fuel consumption

$$\frac{103\text{PS} \times 0.165}{0.83} \times 12\text{hr} \doteq 246 \text{ l/day} \dots\dots d$$

o Service tank capacity

$$a + b + c + d = 612 \text{ l/day}$$

$$800 \text{ l/day}$$

o Main fuel tank capacity

$$612 \times 37 = 22,644\text{l}$$

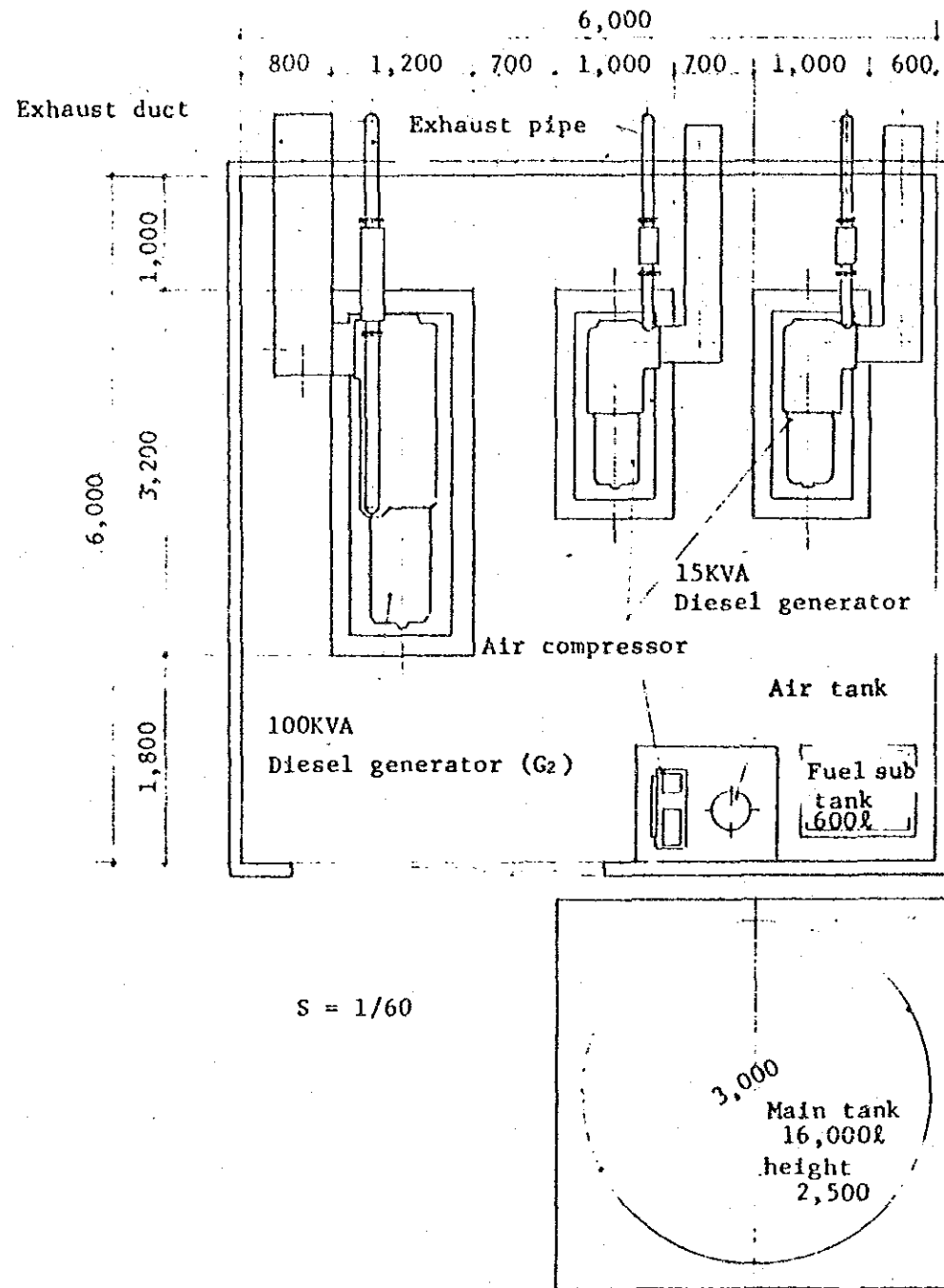
$$23,000\text{l}$$



DIESEL ENGINE PLANE PLAN

100KVA-1 Set, 15KVA-2 Sets

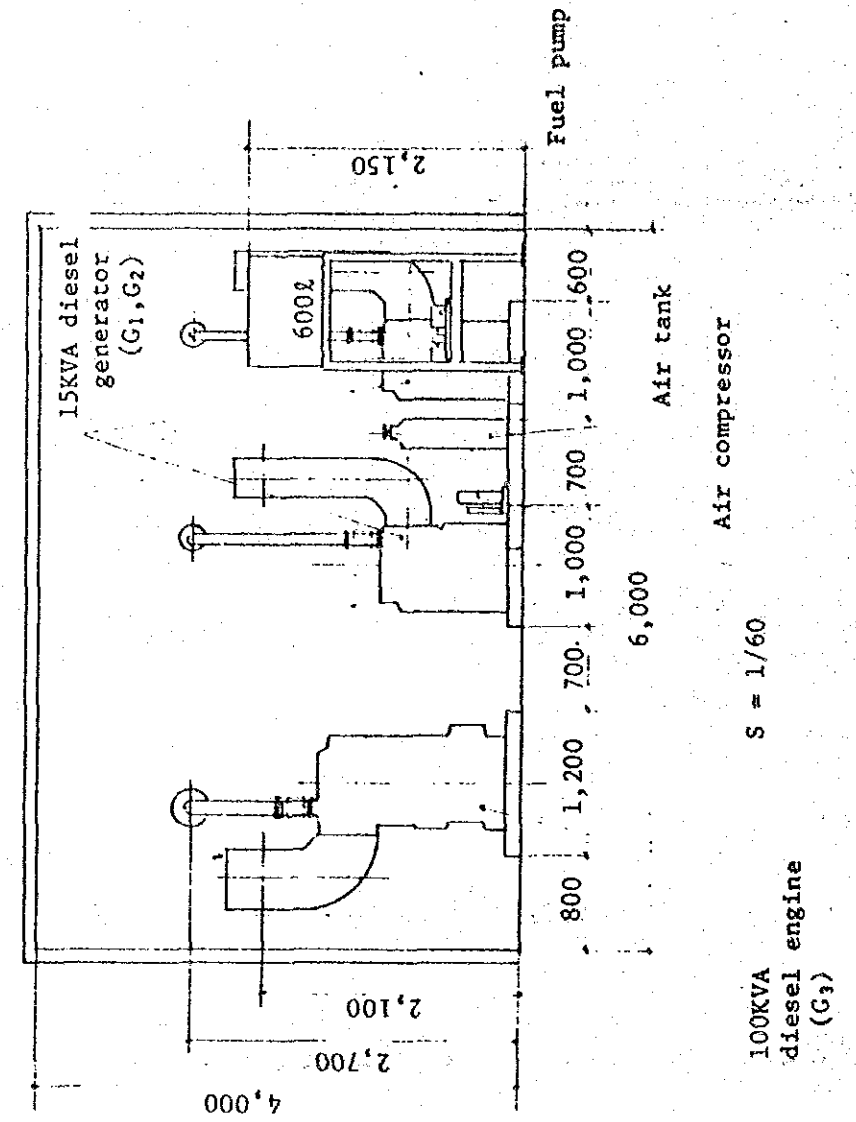
TYPE 3-1



DIESEL ENGINE SECTION PLAN

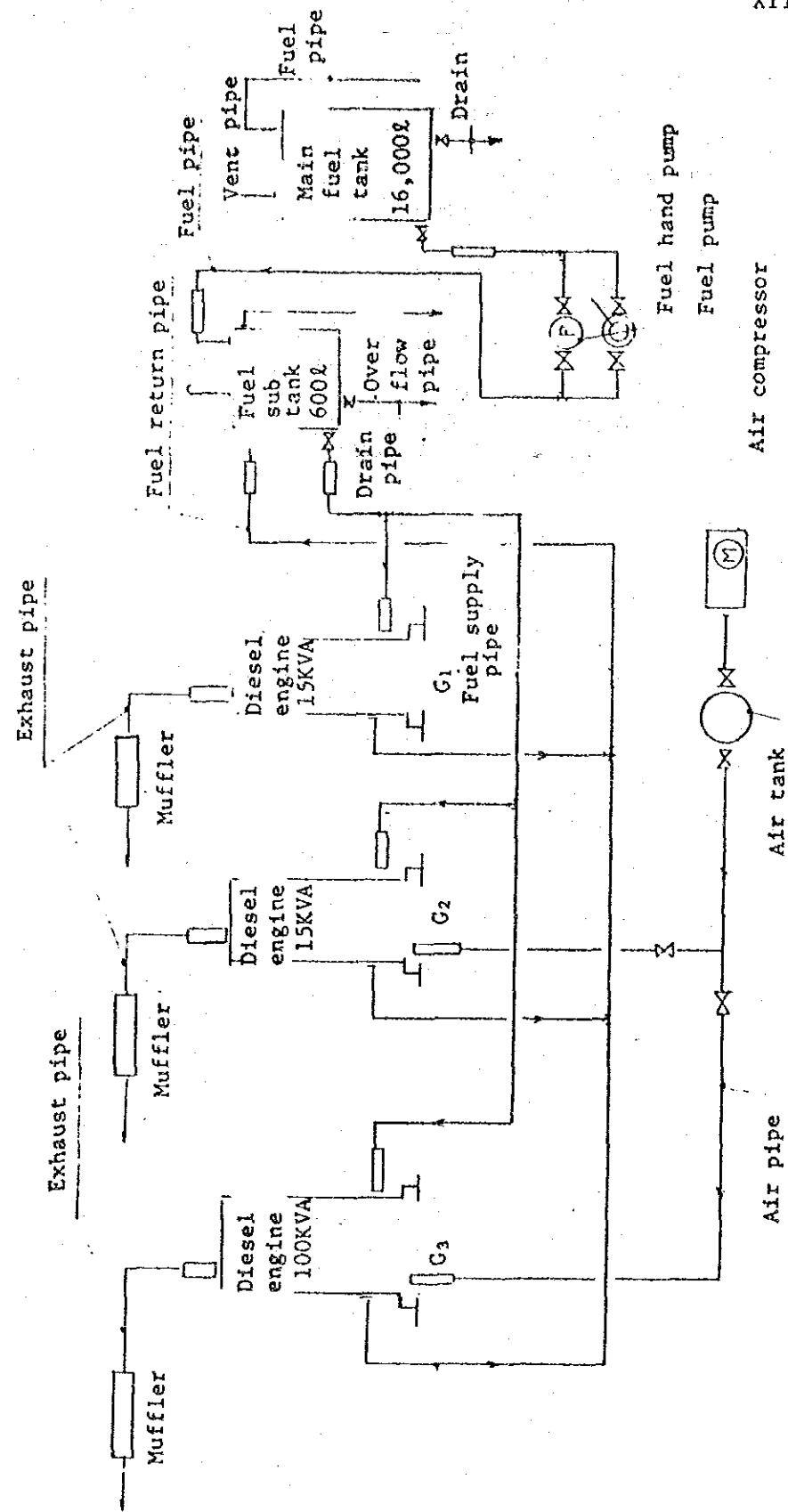
100KVA-1 Set, 15KVA-2 Sets

TYPE 3-2



DIESEL ENGINE GENERATOR  
PIPING SYSTEM DIAGRAM

TYPE 3-3



XII-109

XII-110

Generator Type-3: fuel consumption and tank capacity.

Fuel consumption

G<sub>1</sub> fuel consumption

$$\frac{22.5\text{PS} \times 0.165}{0.83} \times 24\text{hr} \doteq 107 \text{ \textasciitilde/day} \dots\dots a$$

G<sub>2</sub> fuel consumption

$$\frac{22.5\text{PS} \times 0.165}{0.83} \times 3\text{hr} \doteq 13 \text{ \textasciitilde/day} \dots\dots b$$

G<sub>3</sub> fuel consumption

$$\frac{125\text{PS} \times 0.165}{0.83} \times 12 \text{ hr} \doteq 298 \text{ \textasciitilde/day} \dots\dots c$$

o Service tank capacity

$$a + b + c = 418 \text{ \textasciitilde/day}$$

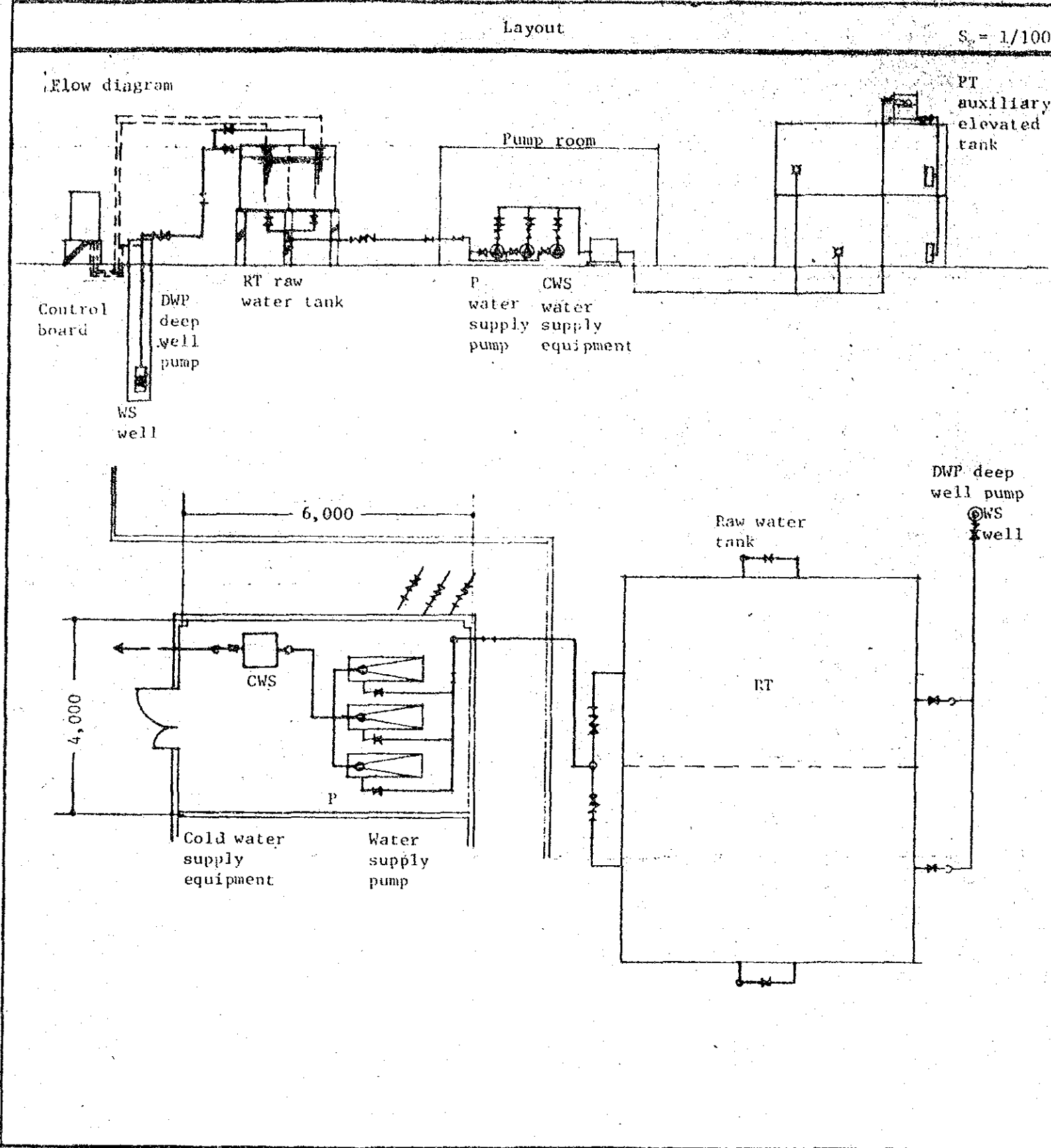
$$600 \text{ \textasciitilde/day}$$

o Main fuel tank capacity

$$418 \times 37 \text{ day} = 15,466 \text{ \textasciitilde}$$

$$16,000 \text{ \textasciitilde}$$

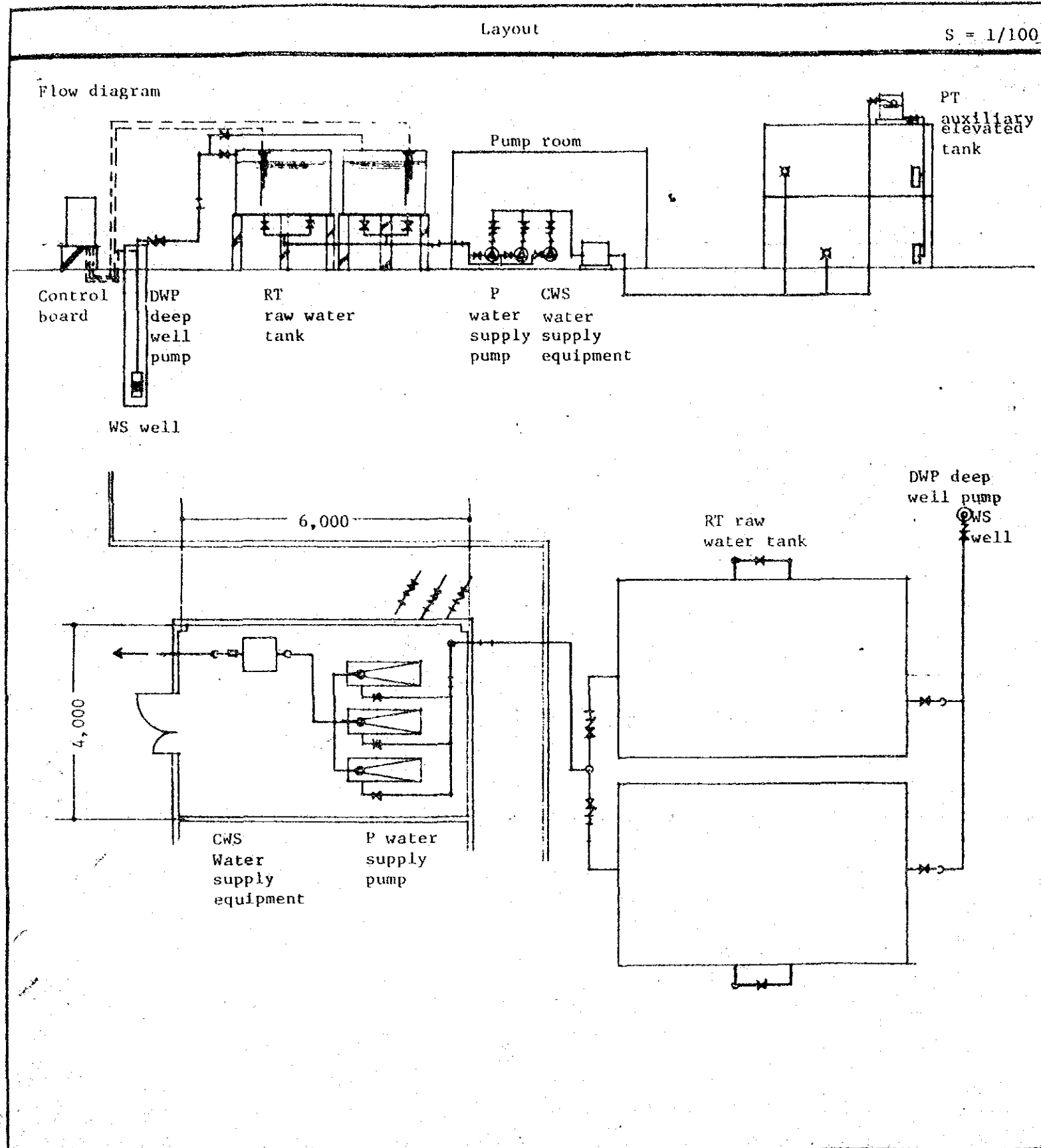
Model plan equipment details	Water supply facilities	Model plan code	W-100
------------------------------	-------------------------	-----------------	-------



Equipment list

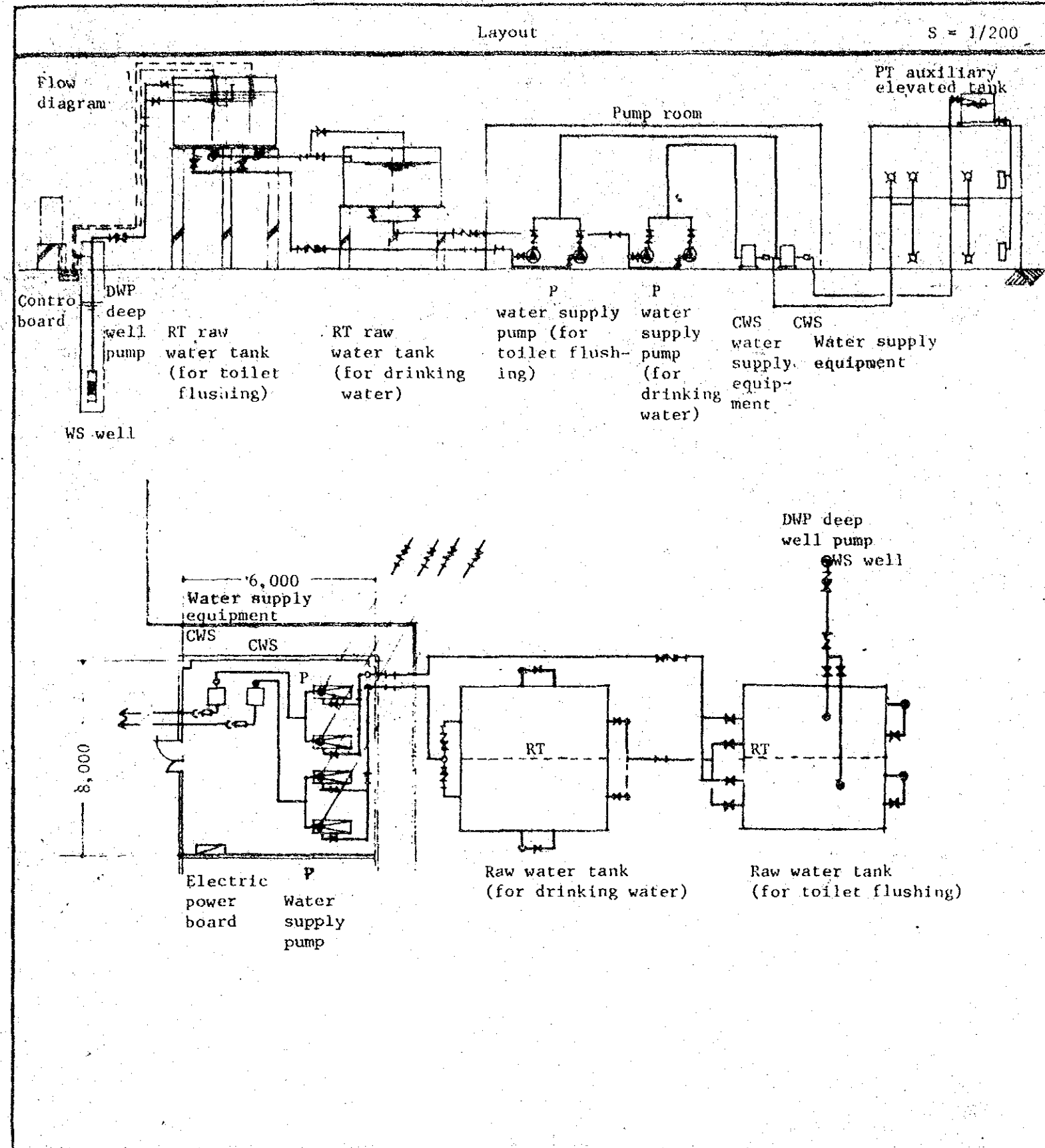
Name	Specification	Q'ty	Remarks
Well (WS)	15φ × 200ℓ/min × 45m	1	Concrete filling to 5m depth, and bentonite filling for additional 5 m.
Deep well pump (DWP)	200ℓ/min × 30m × 3.7kW	1	
Raw water tank (RT)	4.0 × 4.0 × 2.5H; single layer FRP with center division plate; 1000H pedestal	1	
Auxiliary elevated tank (PT)	1.0 × 1.0 × 1.5H; single layer FRP; 300H pedestal	1	
Water supply pumps (P)	100ℓ/min × 30m × 2.2kW	1	
	200 " × 30m × 3.7kW	2	
Water supply equipment (CWS)		1	

Model plan equipment details	Water supply facilities	Model plan code	W-200
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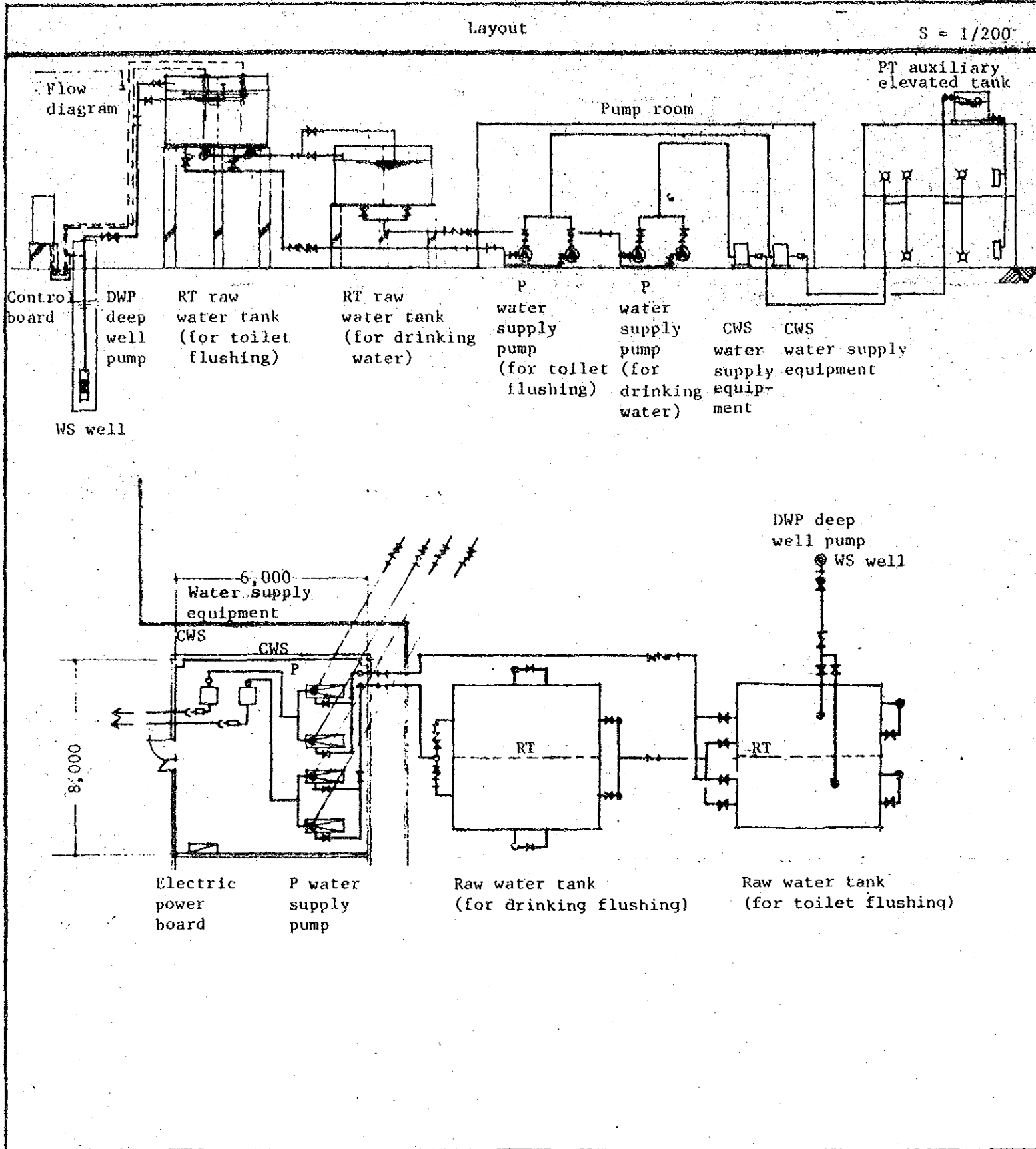
Equipment list			
Name	Specification	Q'ty	Remarks
Well (WS)	150φ×200ℓ/min×45m	1	Concrete filling to 5m depth, and bentonite filling for additional 5m.
Deep well pump (DWP)	200ℓ/min×30m×3.7kW	1	
Raw water tanks (RT)	4.0×4.0×2.5H; single layer FRP with center division plate; 1000H pedestal	2	
Auxiliary elevated tanks (PT)	1.0×1.0×1.5H; single layer FRP; 300H pedestal	2	
Water supply pumps (P)	100ℓ/min×30m×2.2kW	1	
	200 " ×30"×3.7 "	2	
Water supply equipment (CWS)		1	

Model plan equipment details	Water supply facilities	Model plan code	W-300
------------------------------	-------------------------	-----------------	-------



Equipment list			
Name	Specification	Q'ty	Remarks
Well (WS)	200φ×400ℓ/min×45m	1	Concrete filling to 5m depth; and bentonite filling for additional 5m.
Deep well pump (DWP)	400ℓ/min×30m×7.5kW	1	
Raw water tank (RT)	5.0×6.0×2.5H; single-layer FRP with center division plate; 4000H pedestal	1	
Raw water tank (RT)	5.0×6.0×2.5H; single-layer FRP with center division plate; 1000H pedestal	1	
Auxiliary elevated tank (PT)	1.0×1.0×1.5H; single layer FRP; 300H pedestal	3	
Water supply pump (P)	200ℓ/min×30m×3.7kW	2	
Water supply equipment (CWS)		1	
Water supply pump (P)	200ℓ/min×30m×3.7kW	2	
Water supply equipment (CWS)		1	

Model plan equipment details	Water supply facilities	Model plan code	W-450
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Equipment list			
Name	Specification	Q'ty	Remarks
Well (WS)	200φ×400ℓ/min×45m	1	Concrete filling to 5m depth, and bentonite filling for additional 5m.
Deep well pump (DWP)	400ℓ/min×30m×7.5kW	1	
Raw water tank (RT)	5.0×6.0×2.5H; single layer FRP with center division plate; 4000H pedestal	1	
Raw water tank (RT)	5.0×6.0×2.5H; single layer FRP with center division plate; 1000H pedestal	1	
Auxiliary elevated tank (PT)	1.0×1.0×1.5H; single layer FRP; 300H pedestal	5	
Water supply pump (P)	200ℓ/min×30m×3.7kW	2	
Water supply equipment (CWS)		1	
Water supply pump (P)	200ℓ/min×30m×3.7kW	2	
Water supply pump (CWS)		1	


Specification	Number of beds 100 , 200	300 , 450
Mode of operation	Change in volume of water used will be sensed in form of flow and pressure and pumps are turned on or off accordingly.	
Pumps	Phase 1 $100 \text{ l/min.} \times 30^m \times 2.2^{kw} + 200 \text{ l/min.} \times 30^m \times 3.7^{kw}$ Phase 2 " + " + $200 \text{ l/min.} \times 30^m \times 3.7^{kw}$	$200 \text{ l/min.} \times 30^m \times 3.7^{kw} \times 2$ " + $200 \text{ l/min.} \times 30^m \times 3.7^{kw} \times 2$
Control method	Phase 1 Automatic alternating parallel operation of 100 l/min. & 200 l/min. maximum is 300 l/min. Phase 2 Automatic alternating parallel operation of "100 l/min. ; 200 l/min." shown above plus 200 l/min. Maximum is 500 l/min.	Automatic alternating parallel operation of 2 units of 200 l/min. Maximum is 400 l/min. Automatic alternating parallel operation for 2 systems using two sets of "2 units of 200 l/min." shown above. Maximum is $400 \text{ l/min.} \times 2$
Flow-sheet	<p>Phase 1</p> <p>Phase 2</p>	<p>Phase 1</p> <p>Phase 2</p>

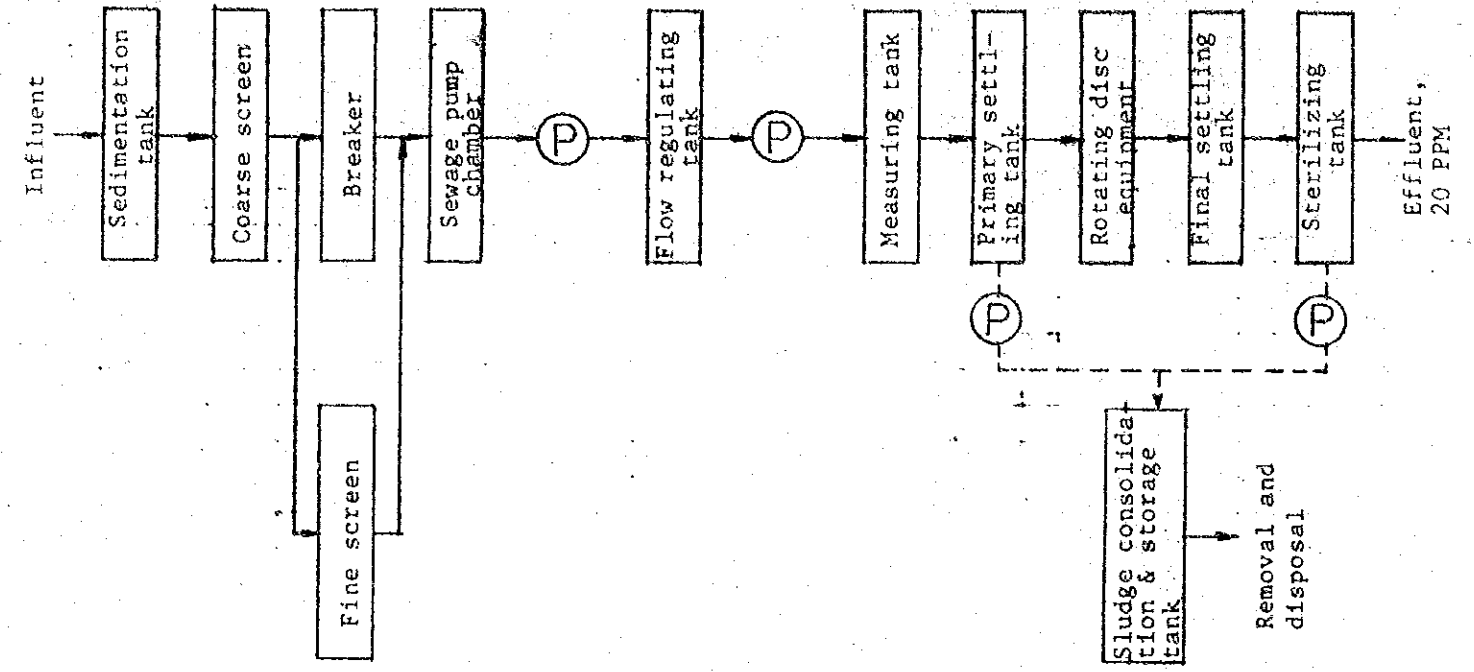
////// Indicates piping to be removed after switching.

Model plan equipment details	Sewage treatment facilities (Plan I)	Model plan code	S-100
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Layout

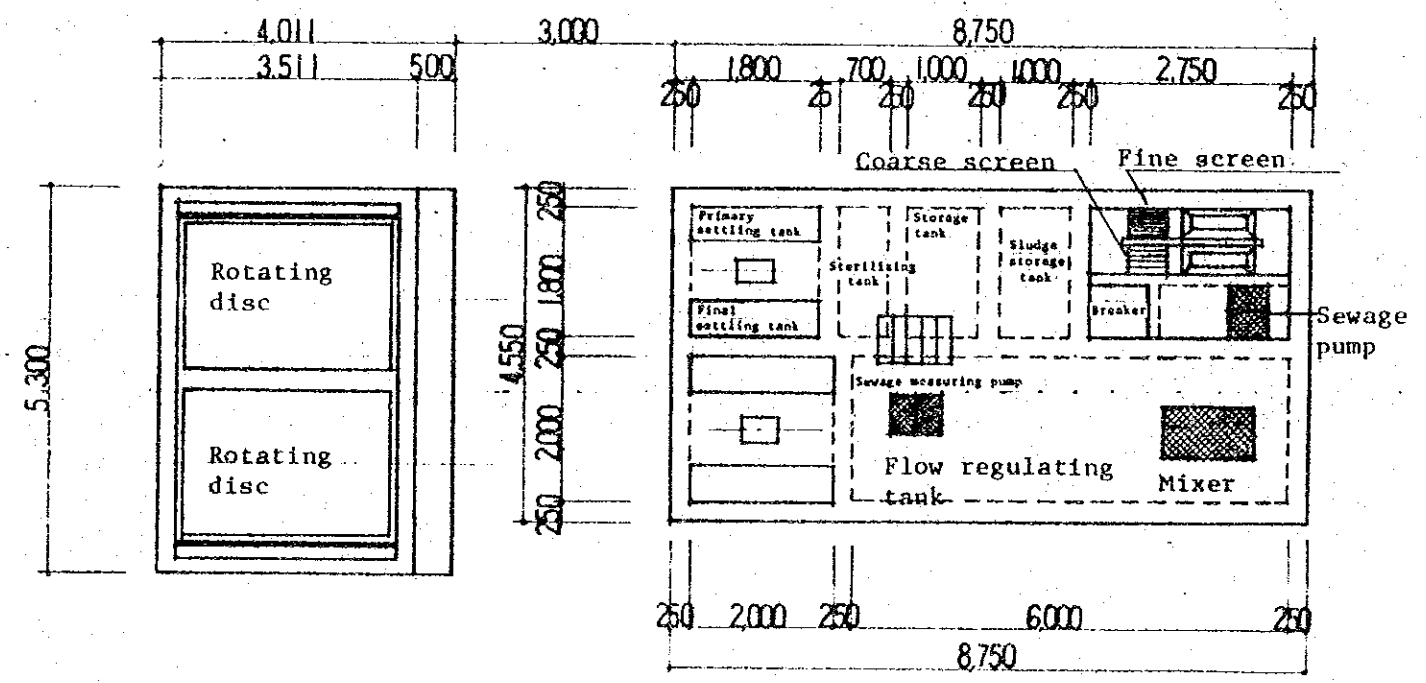
Equipment list

1 Flowsheet



Name	Specification	Q'ty	Remarks
Primary settling plus rotating disc method	60 m <sup>3</sup> /day	1	

2 Plan





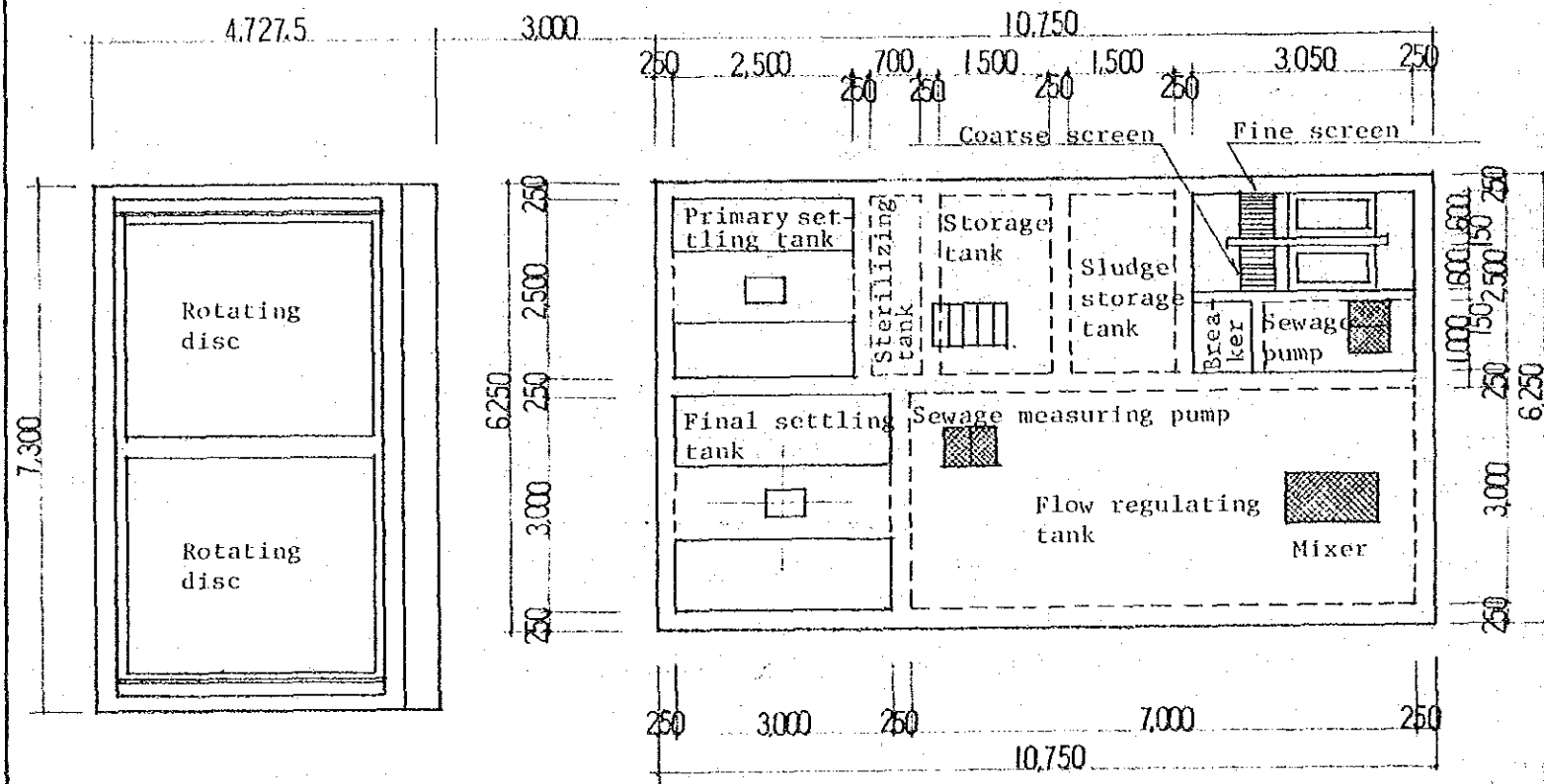
Model plan equipment details	Sewage treatment facilities (Plan)	Model plan code	S-200
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Equipment list

Name	Specification	Q'ty	Remarks
Primary settling plus rotating disc method	120 m <sup>3</sup> /day	1	

1. Flowsheet: Same as that of 60 m<sup>3</sup>/day

2. Plan



Model plan equipment details	Sewage treatment facilities (Plan I)	Model plan code	S-300
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Layout	Equipment list			
	Name	Specification	Q'ty	Remarks
<p>1. Flowsheet: Same as that of 60 m<sup>3</sup>/day</p> <p>2. Plan</p>	<p>Primary settling plus rotating disc method</p>	<p>240 m<sup>3</sup>/day</p>	<p>1</p>	

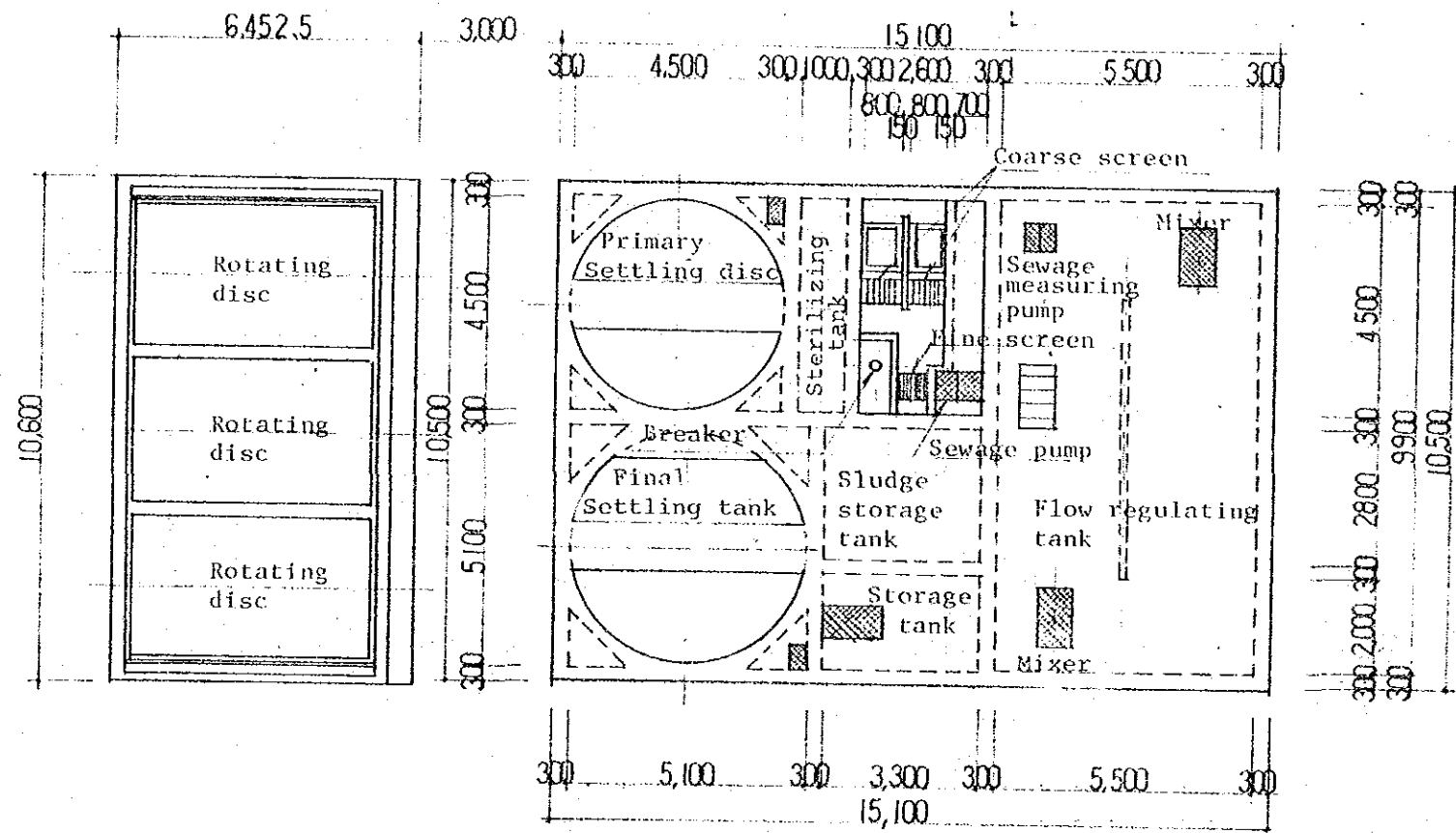
Model plan equipment details	Sewage treatment facilities (Plan I)	Model plan code	S-450
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Equipment list

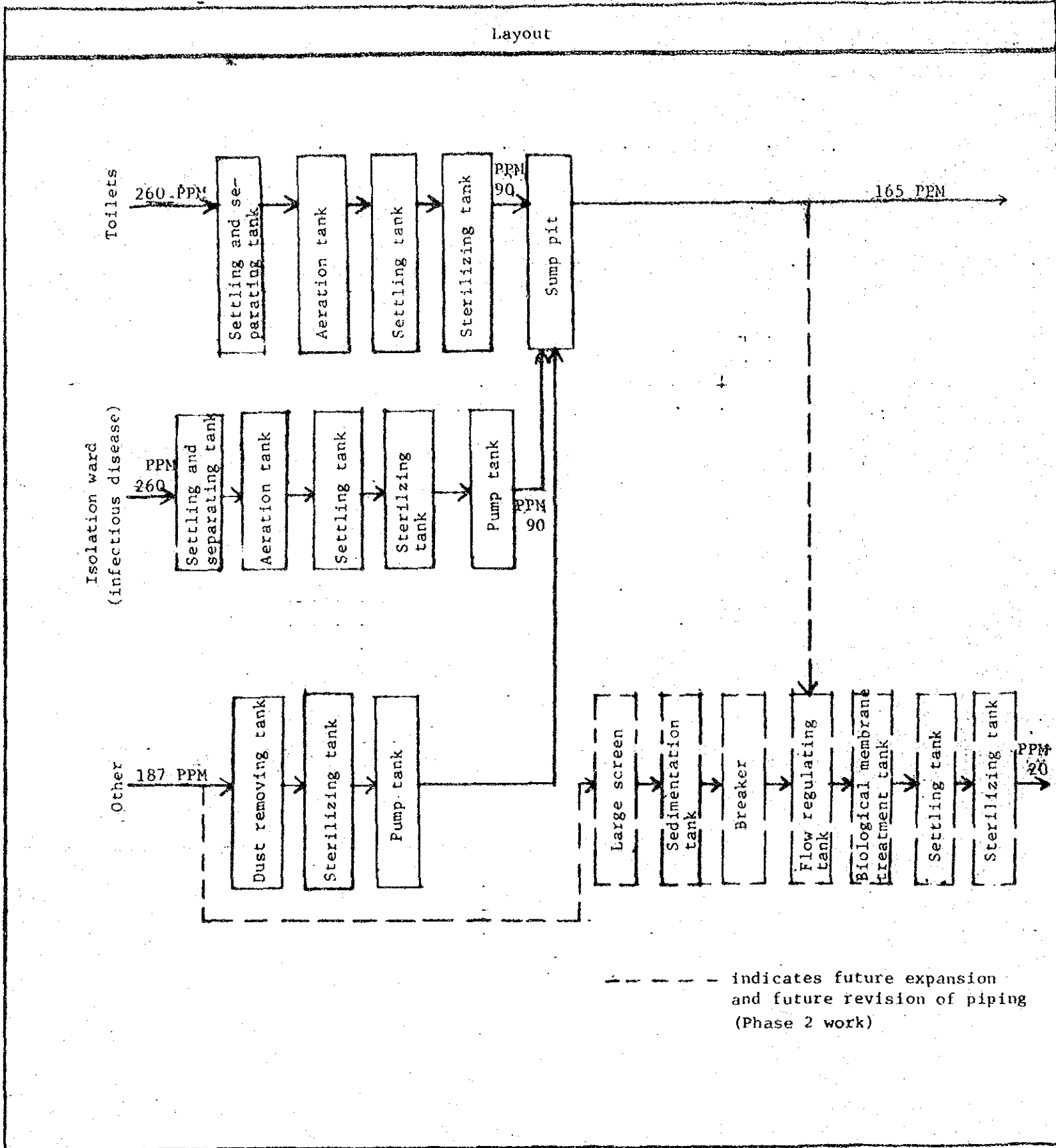
Name	Specification	Q'ty	Remarks
Primary settling plus rotating disc method	360 m <sup>3</sup> /day	1	

1. Flowsheet: Same as that of 60 m<sup>3</sup>/day

2. Plan



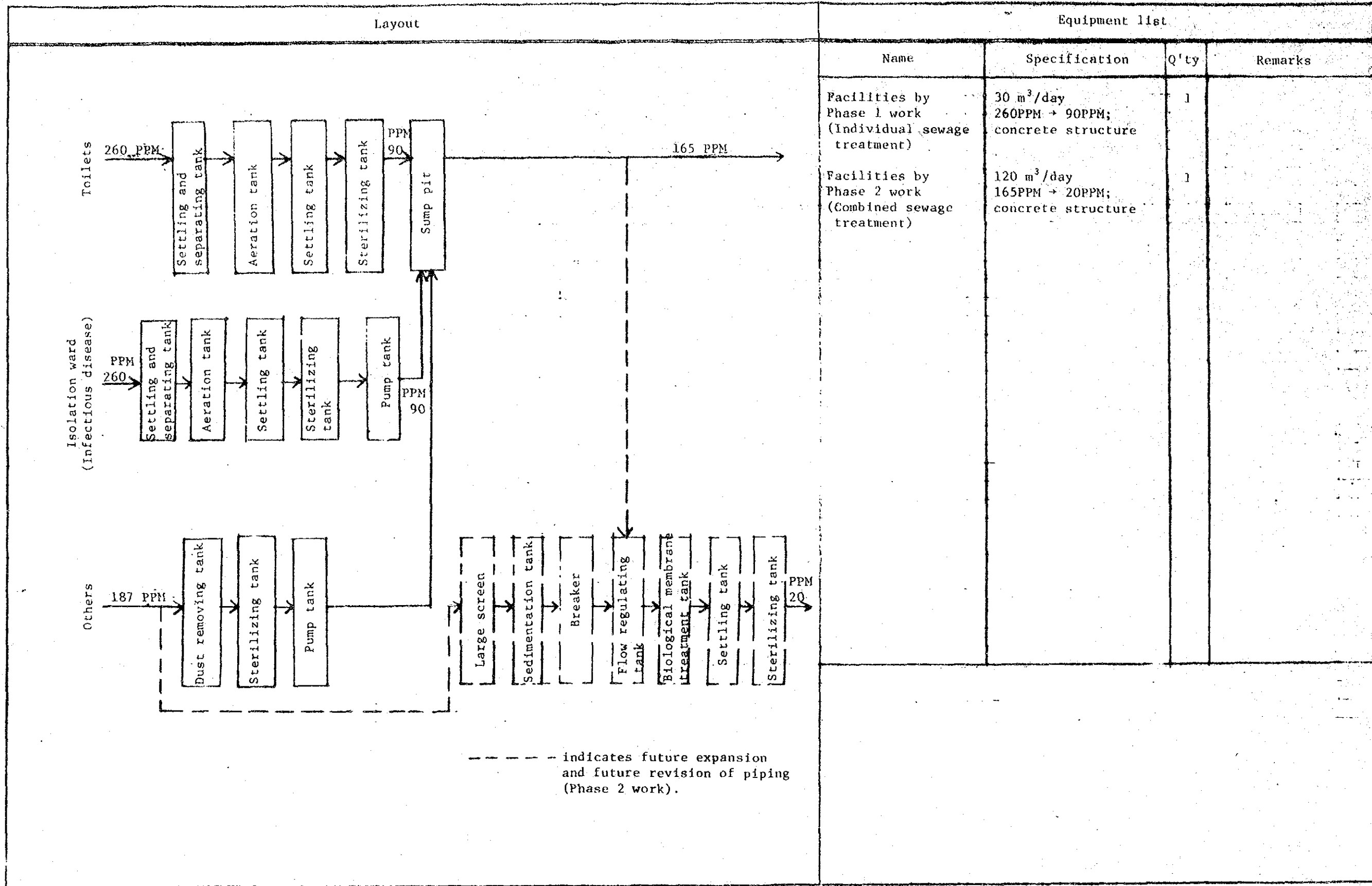
Model plan equipment details	Sewage treatment facilities (Plan II)	Model plan code	S-100
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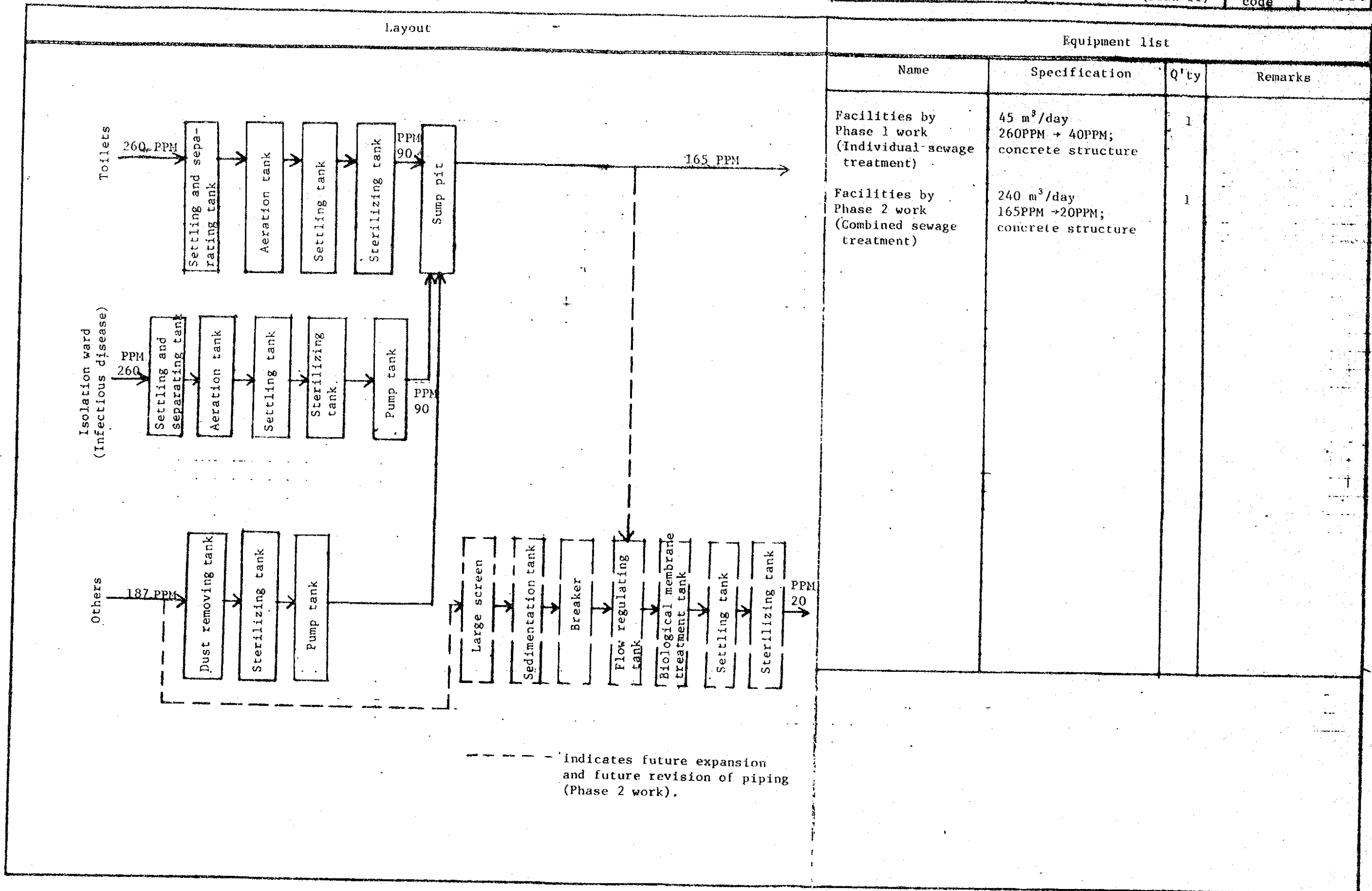
Equipment list

Name	Specification	Q'ty	Remarks
Facilities by Phase 1 work (Individual sewage treatment)	15 m <sup>3</sup> /day 260PPM → 90PPM; concrete structure	1	
Facilities by Phase 2 work (Combined sewage treatment)	60 m <sup>3</sup> /day 165PPM → 20PPM; concrete structure	1	

Model plan equipment details	Sewage treatment facilities (Plan II)	Model plan code	S-200
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Model plan equipment details	Sewage treatment facilities (Plan II)	Model plan code	S-300
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Equipment list

Name	Specification	Q'ty	Remarks
Facilities by Phase 1 work (Individual sewage treatment)	45 m <sup>3</sup> /day 260PPM → 40PPM; concrete structure	1	
Facilities by Phase 2 work (Combined sewage treatment)	240 m <sup>3</sup> /day 165PPM → 20PPM; concrete structure	1	

Model plan equipment details	Sewage treatment facilities (Plan II)	Model plan code	S-450
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