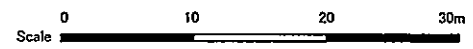
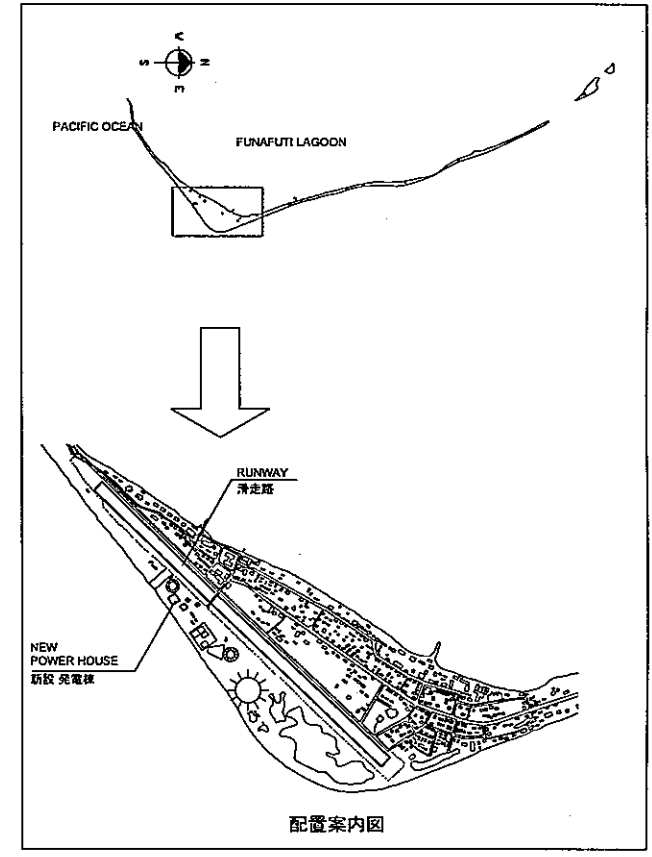
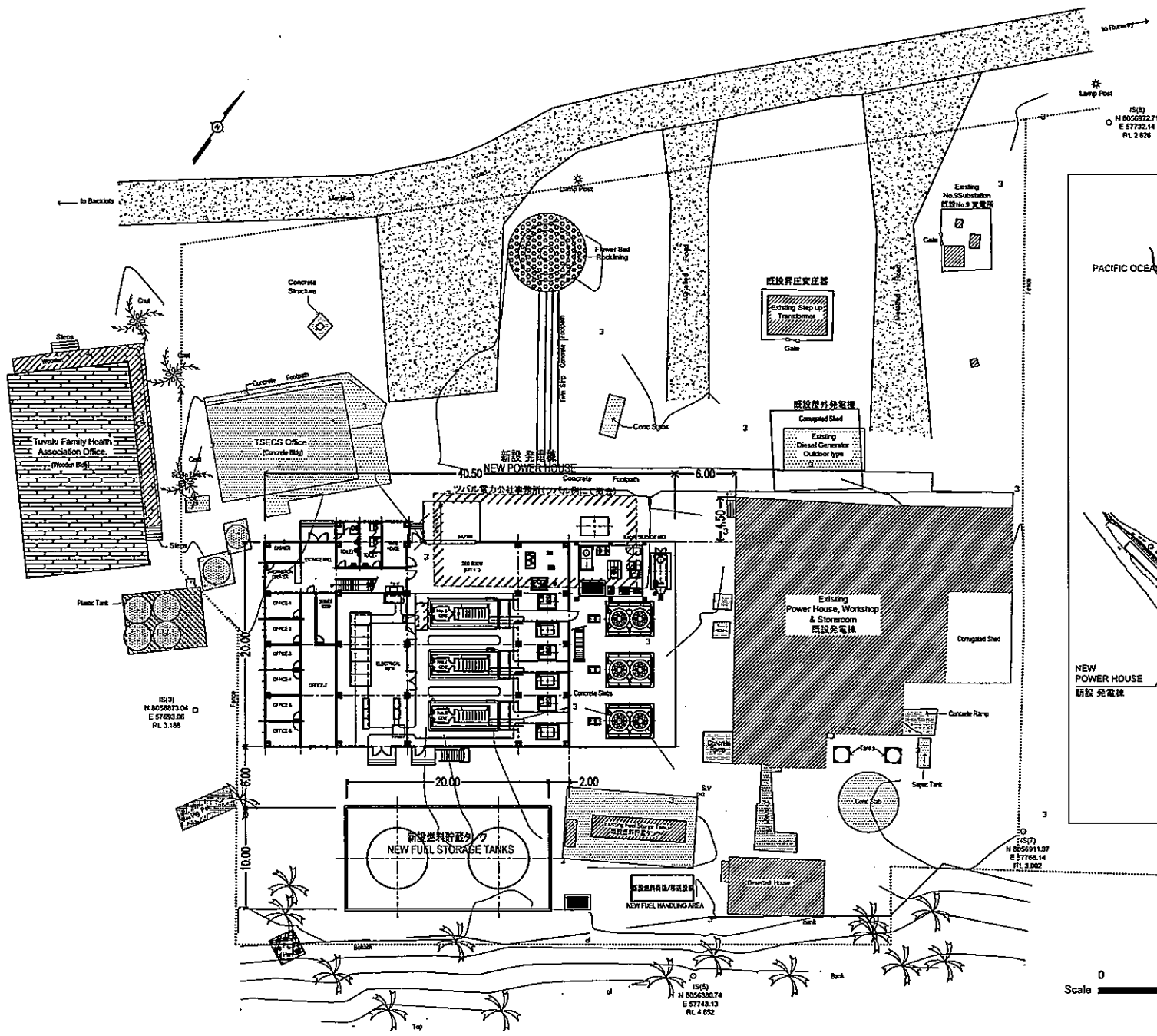
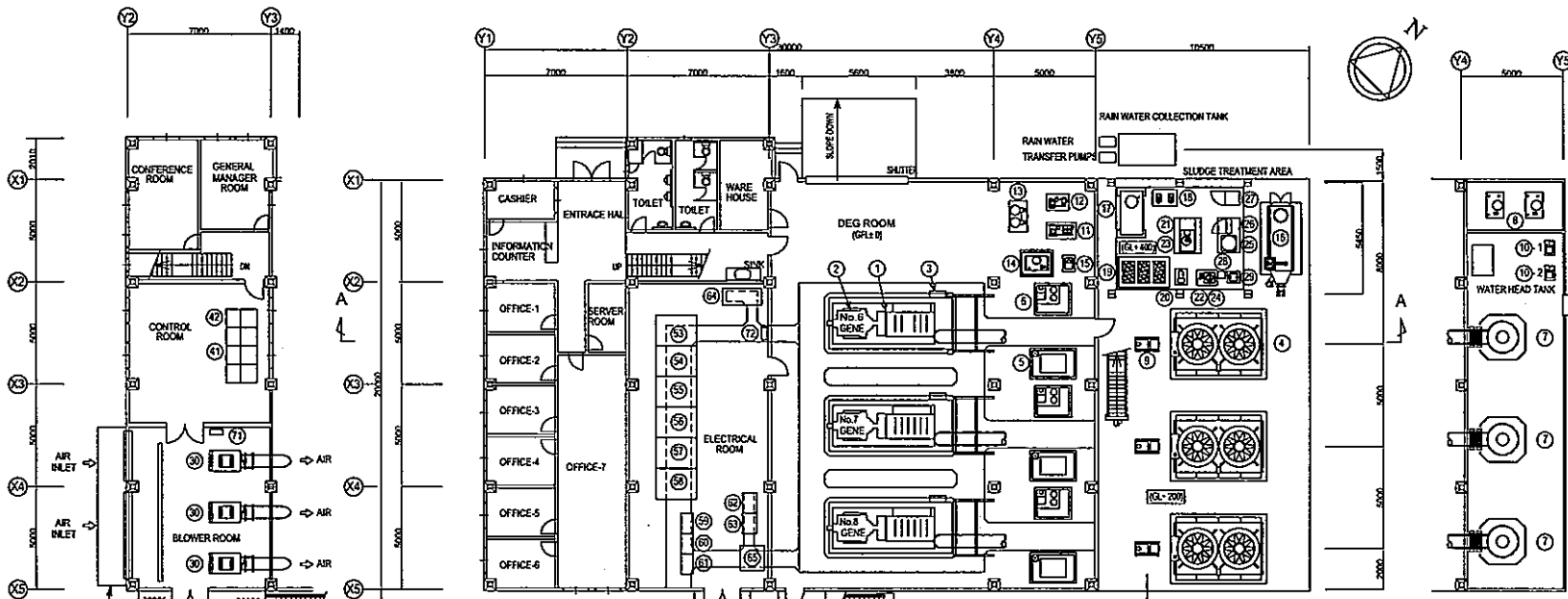


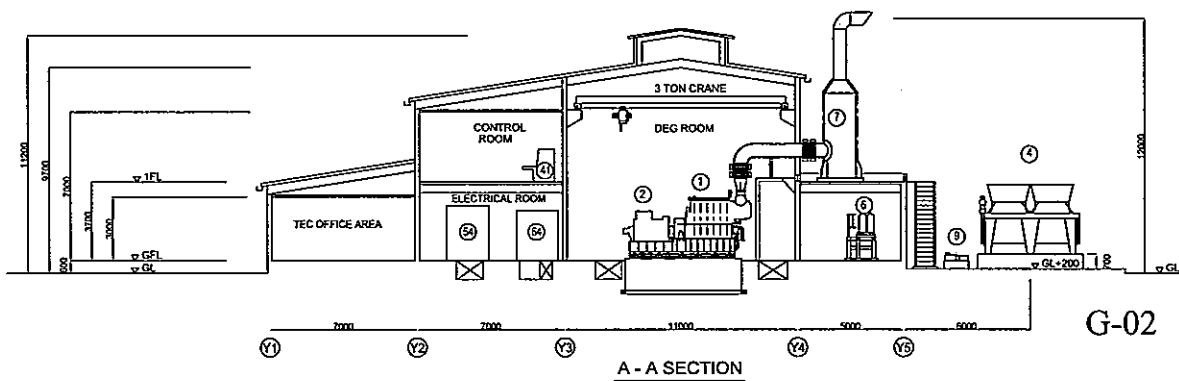
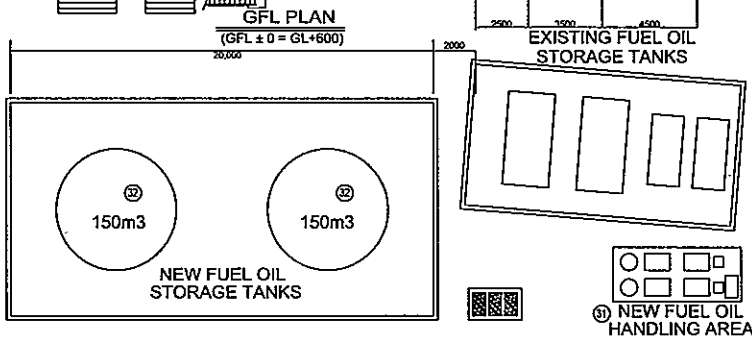
## **6. BASIC DESIGN DRAWINGS**



G-01 LAYOUT OF NEW POWER HOUSE  
新発電機棟 全体配置図



No.	EQUIPMENT NAME	Qty
1	DIESEL ENGINE	3
2	GENERATOR (600kW)	3
3	LOCAL CONTROL PANEL	3
4	RADIATOR	3
5	FUEL OIL AUXILIARY EQUIPMENT	3
6	LUBRICATING OIL AUXILIARY EQUIPMENT	3
7	EXHAUST GAS SILENCER	3
8	FUEL OIL SERVICE TANK	2
9	LT WATER CIRCULATING PUMP	3
	(GT WATER CIRCULATING PUMP; ENGINE DRIVEN)	3
10-1	HT WATER EXPANSION TANK	1
10-2	LT WATER EXPANSION TANK	1
11	AIR COMPRESSOR(ENGINE DRIVEN)	1
12	AIR COMPRESSOR(MOTOR DRIVEN)	1
13	AIR RECEIVER	2
14	WASTE OIL TANK	1
15	WASTE OIL DISCHARGE PUMP	1
16	INCINERATOR	1
17	WATER TREATMENT UNIT & TREATED WATER TANK	1
18	WATER FEED PUMP	2
19	OIL WATER SEPARATOR	1
20	SLUDGE DISCHARGE PUMP	1
21	SLUDGE TRANSFER PUMP	1
22	OIL WATER TRANSFER PUMP	1
23	SLUDGE COLLECTION TANK	1
24	OILY WATER SEPARATOR UNIT	1
25	SLUDGE TANK	1
26	INCINERATOR CONTROL PANEL	1
27	SLUDGE TREATMENT LOCAL PANEL	1
28	OIL DRAIN TANK	1
29	OIL CHECK TANK	1
30	BLOWER	3
31	FUEL OIL HANDLING AREA	1
32	FUEL OIL STORAGE TANK	2
41	GENERATOR CONTROL DESK	3
42	GENERATOR CONTROL DESK (COMMON)	1
		2
53	11kV GENERATOR CB PANEL (No. 6 DEG)	1
54	11kV GENERATOR CB PANEL (No. 7 DEG)	1
55	11kV GENERATOR CB PANEL (No. 8 DEG)	1
56	11kV No.1 & 2 FEEDER CB PANEL	1
57	11kV No.3 & 4 FEEDER CB PANEL	1
58	STATION TRANSFORMER PANEL	1
59	No.6 GENERATOR UNIT MCC	1
60	No.7 GENERATOR UNIT MCC	1
61	No.8 GENERATOR UNIT MCC	3
62	COMMON MCC	1
63	UNIT DISTRIBUTION PANEL	1
64	DC 110V BATTERY AND CHARGER PANEL	1
65	GENERATOR NEUTRAL PANEL	1
71	VENTILATION BLOWER CONTROL PANEL	1
72	BUILDING DISTRIBUTION PANEL	1



G-02 ARRANGEMENT OF NEW DEG UNIT  
発電設備配置図

A-22

**\* BUILDING PROFILE \***

- STRUCTURE AND SCALE : STEEL STRUCTURE, 2STORIES
- FOUNDATION TYPE : SPREAD FOUNDATION
- ALLOWABLE BEARING CAPACITY : 10 ton/m<sup>2</sup>
- BUILDING FACILITY :

ELECTRIC SERVICE : MAIN FEEDER AND POWER SYSTEM, LIGHTING AND SOCKET OUTLET SYSTEM,

FIRE ALARM SYSTEM, TELEPHONE AND INTERPHONE SYSTEM, LIGHTNING PROTECTION SYSTEM

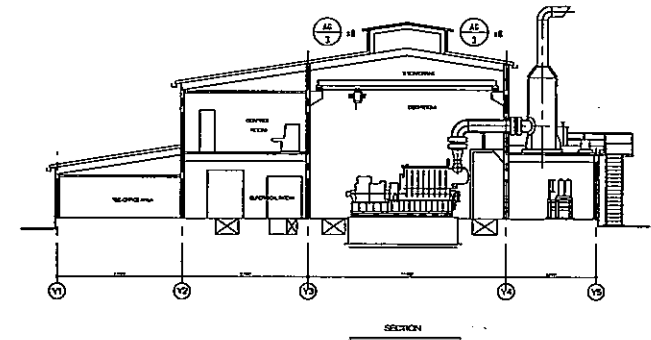
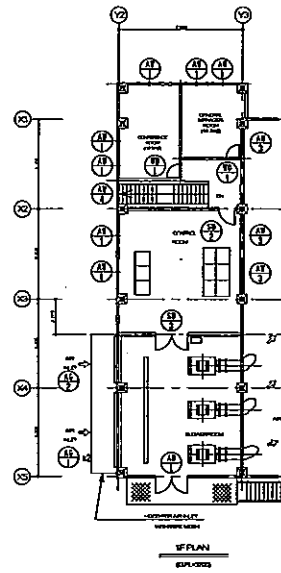
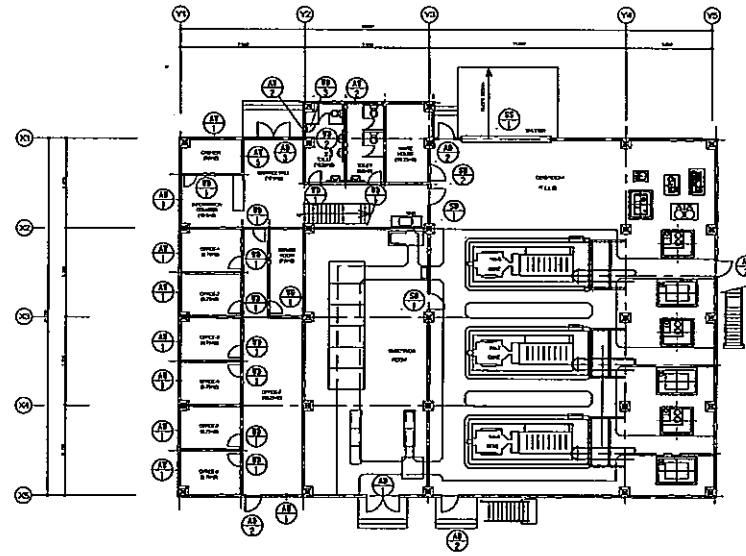
MECHANICAL SERVICE : PLUMBING SYSTEM, VENTILATION AND AIRCONDITIONING SYSTEM

1. GENERAL			
SITE AREA	5,900 m <sup>2</sup> (APPROXIMATELY)		
BUILDING AREA	614 m <sup>2</sup>		
TOTAL FLOOR AREA	768 m <sup>2</sup>		
UNDER GROUND STRUCTURE	R. C. CONSTRUCTION		
UPPER GROUND STRUCTURE	STEEL STRUCTURE		
2. EXTERIOR FINISHING			
TOP ROOF	RIBBED METAL ROOF H=170mm ACID-RESISTANT HIGH-POLYMER ROOF STEEL SHEET T=D.5mm		
LOWER ROOF	WATER PROOFING BY COATING PROTECTION & SLOPING CONCRETE T=80mm(average)		
EXTERIOR WALL LOWER EXTERIOR WALL	RIBBED WALL CLADDING H=34mm ACID-RESISTANT HIGH-POLYMER CLAD STEEL SHEET T=0.6mm WITH HEAT INSULATION PAINT FINISH ON CONCRETE BLOCK		
BASE BOARD	CONCRETE FINISH		
3. INTERIOR FINISHING			
ITEM		FINISHING / SPECIFICATION	
GF	DEG ROOM	FLOOR	CONCRETE STEEL TROWEL FINISH, OILPROOF PAINT FINISH
		WALL	GLASSWOOL ACOUSTIC BOARD t=50mm, CEMENT BOARD t=12mm
		CEILING	GLASSWOOL ACOUSTIC BOARD t=50mm, CEMENT BOARD t=12mm
	ELECTRICAL ROOM	FLOOR	CONCRETE STEEL TROWEL FINISH, DUSTPROOF PAINT FINISH
		WALL	CEMENT BOARD t=12 PAINT FINISH, PAINT FINISH ON CONCRETE BLOCK
		CEILING	—
	WARE HOUSE	FLOOR	CONCRETE STEEL TROWEL FINISH
		WALL	CEMENT BOARD t=12 PAINT FINISH, PAINT FINISH ON CONCRETE BLOCK
		CEILING	CEMENT BOARD t=12mm, PAINT FINISH
	TOILET	FLOOR	PORCELANE TILE 150X150
		WALL	CEMENT BOARD t=12 PAINT FINISH, PAINT FINISH ON MORTAR
		CEILING	CEMENT BOARD t=12mm, PAINT FINISH
	OFFICE, SERVER R.M, ENTRANCE HALL CASHER, CORRIDOR INFORMATION ROOM	FLOOR	MORTAR STEEL TROWEL, POLYVINYL TILE t=2.0mm
		WALL	CEMENT BOARD t=12mm, PAINT FINISH
		CEILING	CEMENT BORD t=12mm, ROCKWOOL CEILING BOARD t=12mm
1F	CONFERENCE ROOM MANAGER ROOM CONTROL ROOM	FLOOR	MORTAR STEEL TROWEL, POLYVINYL TILE t=2.0mm
		WALL	CEMENT BOARD t=12mm, PAINT FINISH
		CEILING	CEMENT BORD t=12mm, ROCKWOOL CEILING BOARD t=12mm
	BLOWER ROOM	FLOOR	CONCRETE STEEL TROWEL FINISH, DUSTPROOF PAINT FINISH
		WALL	GLASSWOOL ACOUSTIC BOARD t=50mm, CEMENT BOARD t=12mm
		CEILING	GLASSWOOL ACOUSTIC BOARD t=50mm, CEMENT BOARD t=12mm

A-001 ; NEW POWER HOUSE PROFILE AND FINISHING SCHEDULE

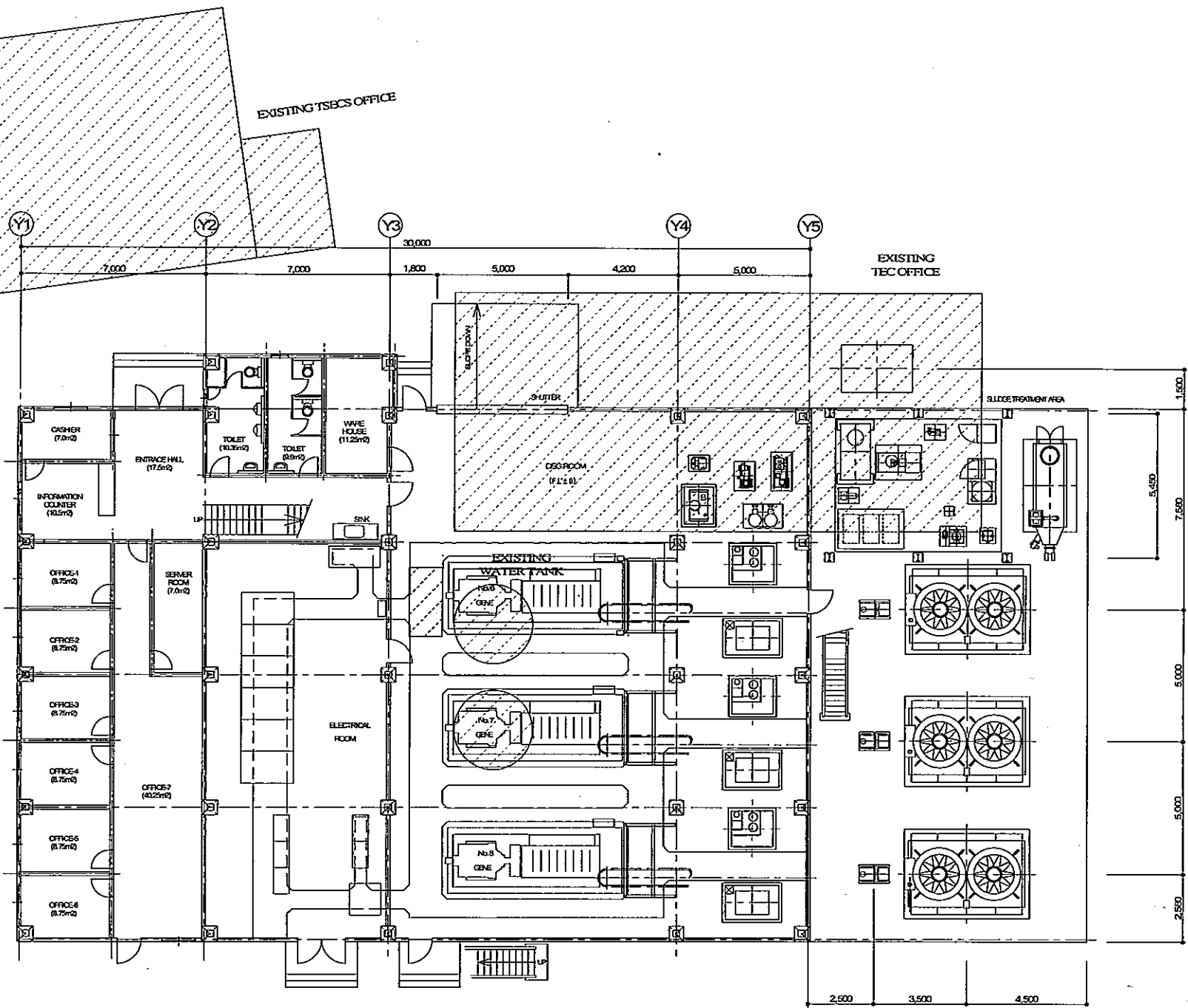
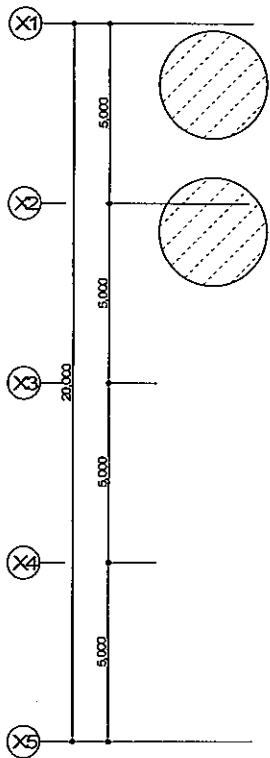
新発電機棟 建物概要及び仕上表

4. DOORS & WINDOWS SCHEDULES				
ITEM	QUANTITY	SIZE (W X H)	REMARKS	
AW 1	ALUMINIUM WINDOW	16	1,200 X 1,200	- HORIZONTAL SLIDING - CLEAR FLOAT GLASS t=5mm
AW 2	ALUMINIUM WINDOW	2	600 X 600	- HORIZONTAL SLIDING - CLEAR FLOAT GLASS t=5mm
AW 3	ALUMINIUM WINDOW	3	1,200 X 1,200	- FIXED - CLEAR FLOAT GLASS t=5mm
AW 4	ALUMINIUM WINDOW	1	600 X 600	- FIXED - CLEAR FLOAT GLASS t=5mm
AW 5	ALUMINIUM WINDOW	1	1,200 X 1,200	- HORIZONTAL SLIDING FOR COUNTER - CLEAR FLOAT GLASS t=5mm
AD 1	ALUMINIUM DOOR	2	1,800 X 2,000	- DOUBLE SWING - FLASH DOOR
AD 2	ALUMINIUM DOOR	4	900 X 2,000	- SINGLE SWING - FLASH DOOR
AD 3	ALUMINIUM DOOR	1	1,500 X 2,000	- DOUBLE SWING, ALUMINIUM FRAME DOOR - CLEAR FLOAT GLASS t=5mm
AG 1	ALUMINIUM GRILL	2	2,000 X 1,500	
AG 2	ALUMINIUM GRILL	1	2,500 X 1,500	
AG 3	ALUMINIUM GRILL	16	2,200 X 1,000	
SD 1	STEEL DOOR	2	900 X 2,000	- SINGLE SWING, AIR TIGHT TYPE - FLASH DOOR, PAINT FINISH
SD 2	STEEL DOOR	2	900 X 2,000	- SINGLE SWING - FLASH DOOR, PAINT FINISH
SD 3	STEEL DOOR	1	1,800 X 2,000	- DOUBLE SWING, AIR TIGHT TYPE - FLASH DOOR, PAINT FINISH
SS 1	STEEL SHUTTER	1	5,000 X 4,500	- ELECTRIC SHUTTER - ACID-RESISTANT PAINT FINISH BY STICKING
WD 1	WOODEN DOOR	13	800 X 2,000	- SINGLE SWING - FLASH DOOR, PAINT FINISH
WD 2	WOODEN DOOR	3	600 X 1,800	- SINGLE SWING - FLASH DOOR, PAINT FINISH
WD 3	WOODEN DOOR	1	450 X 1,800	- SINGLE SWING - FLASH DOOR, PAINT FINISH



A-002 ; NEW POWER HOUSE FITTING SCHEDULE  
新発電機棟 建具表及び建具符号図

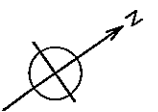
A-25



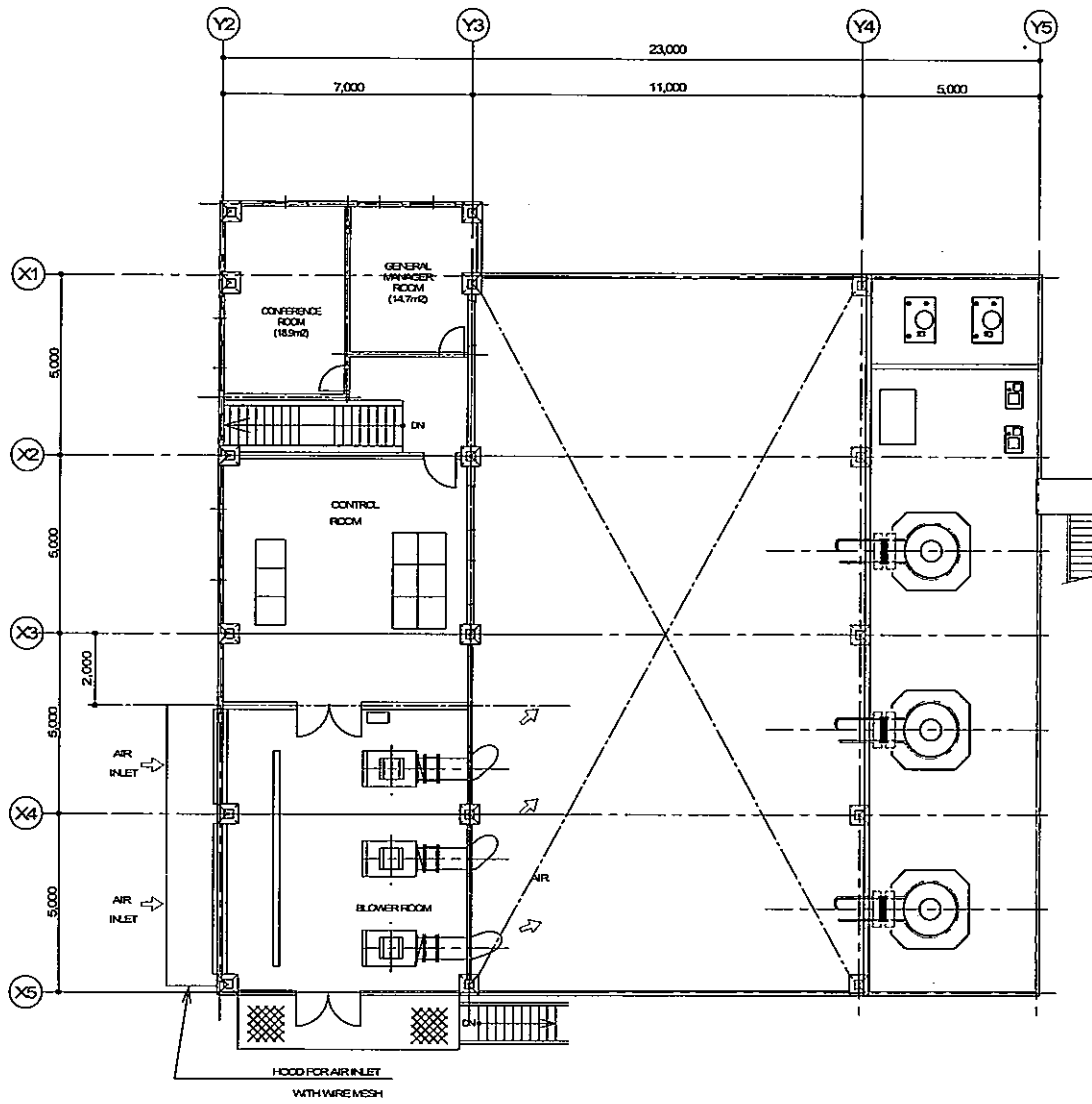
EXISTING TSBCS OFFICE

EXISTING TEC OFFICE

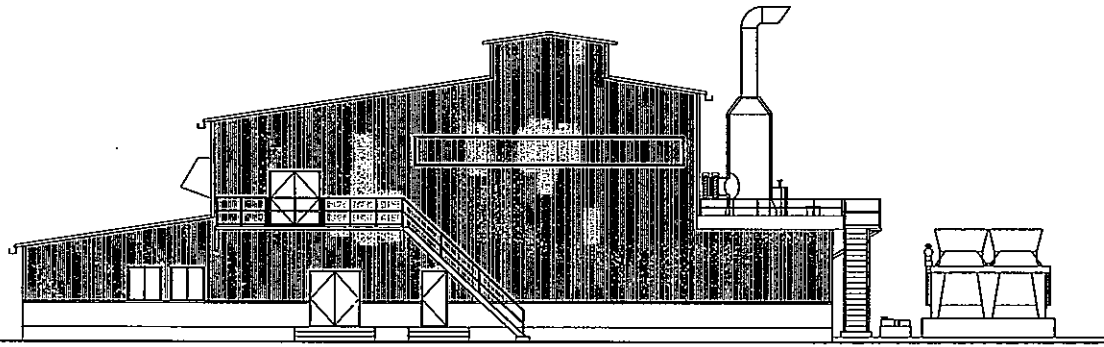
GF PLAN  
(FL=GL+000)



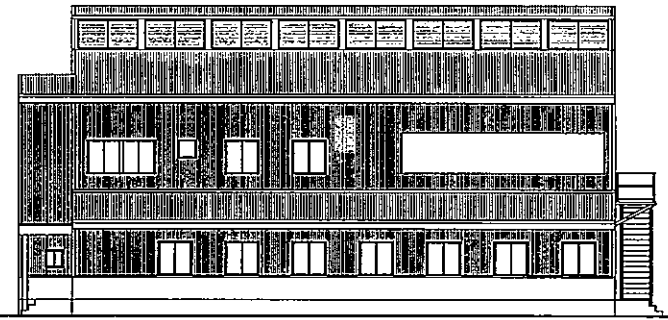
A-26



1F PLAN  
(G.FL-3700)

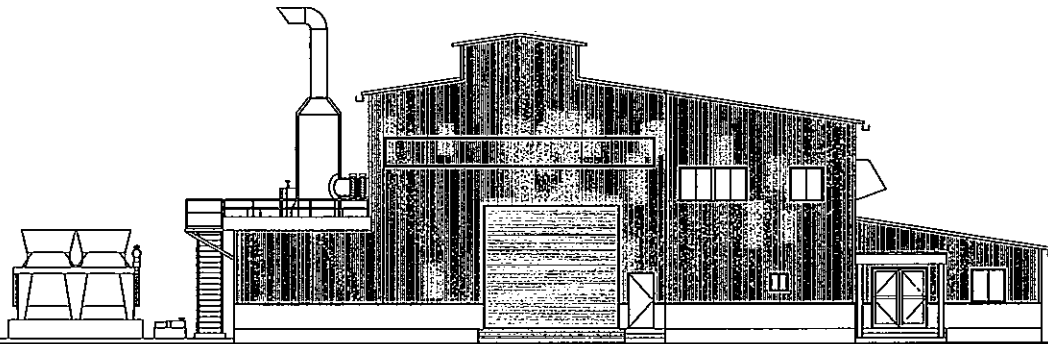


SOUTH EAST ELEVATION

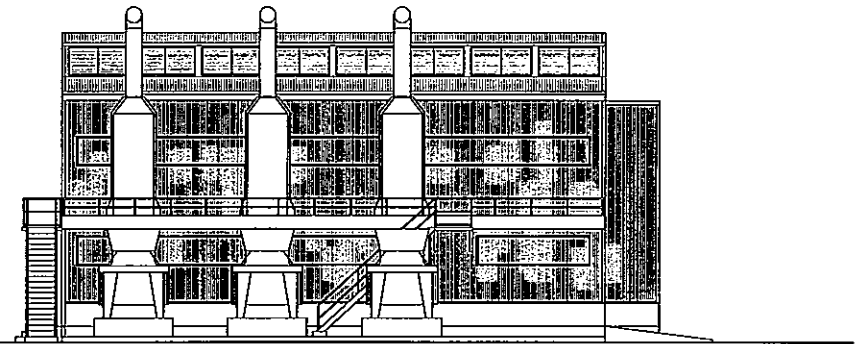


SOUTH WEST ELEVATION

A-27



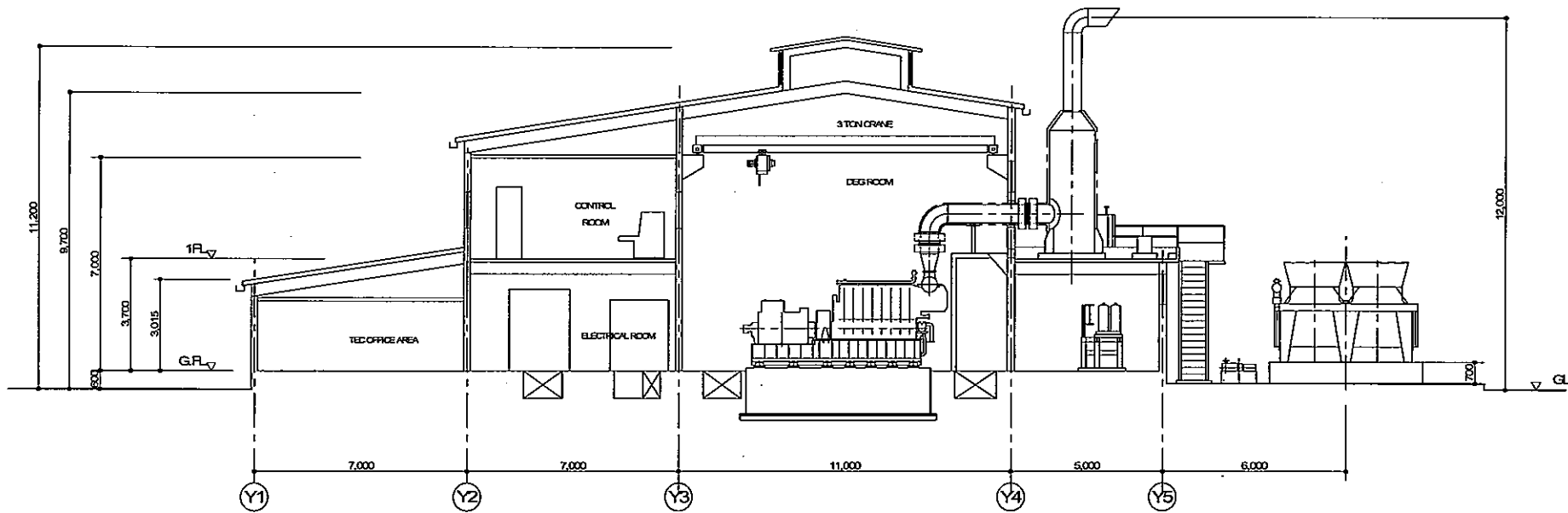
NORTH WEST ELEVATION



NORTH EAST ELEVATION

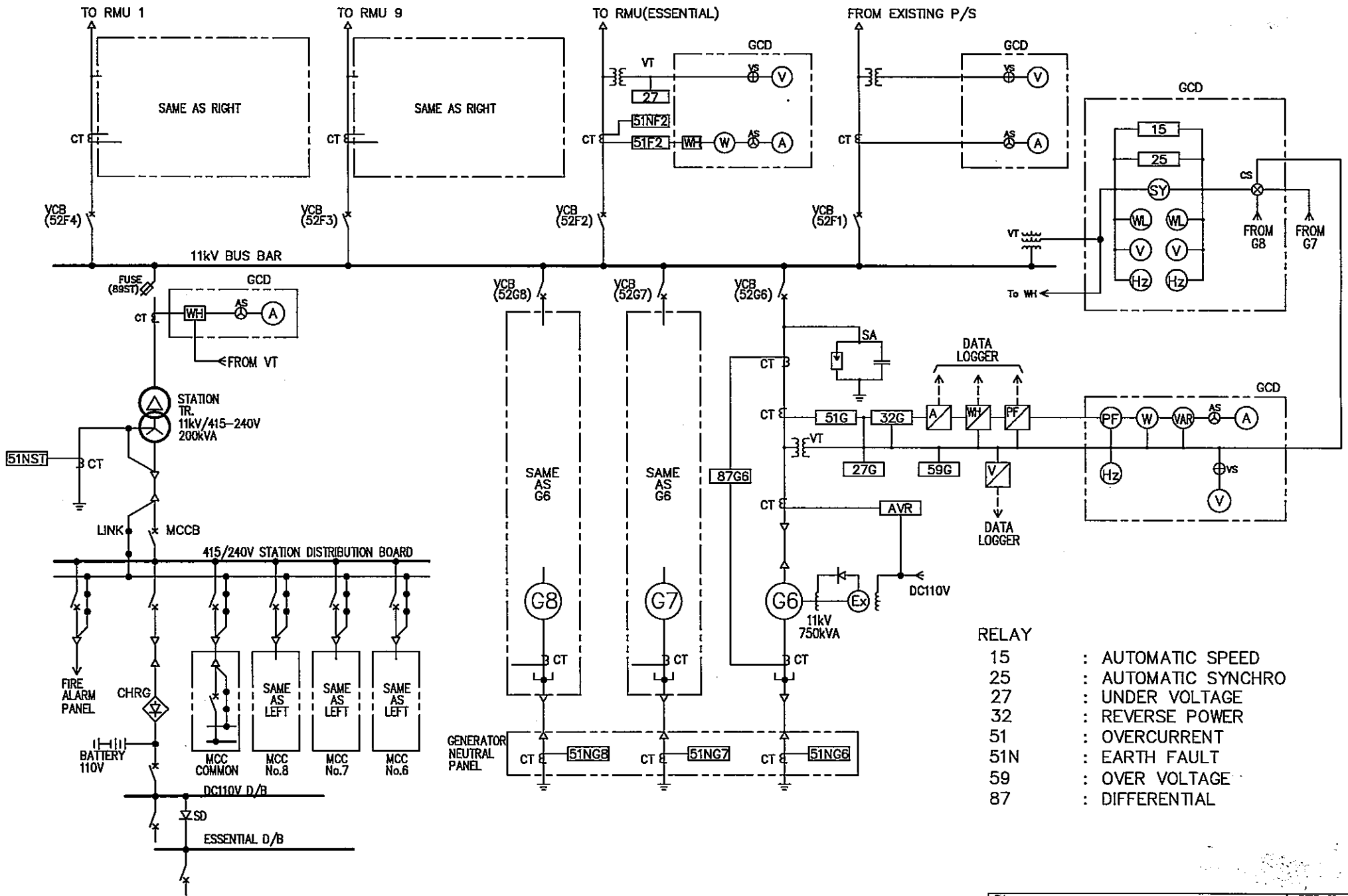


A-28









SECTION

A-29











- RELAY
- 15 : AUTOMATIC SPEED
  - 25 : AUTOMATIC SYNCHRO
  - 27 : UNDER VOLTAGE
  - 32 : REVERSE POWER
  - 51 : OVERCURRENT
  - 51N : EARTH FAULT
  - 59 : OVER VOLTAGE
  - 87 : DIFFERENTIAL

















## 1. PIPINGS

SYMBOL	DESCRIPTIONS
	PIPING LINE
	HEAT INSULATED PIPING LINE
	CONNECTED PIPE
 OR 	NON-CONNECTED PIPE
	OUT OF SCOPE

## 2. ACCESSORIES

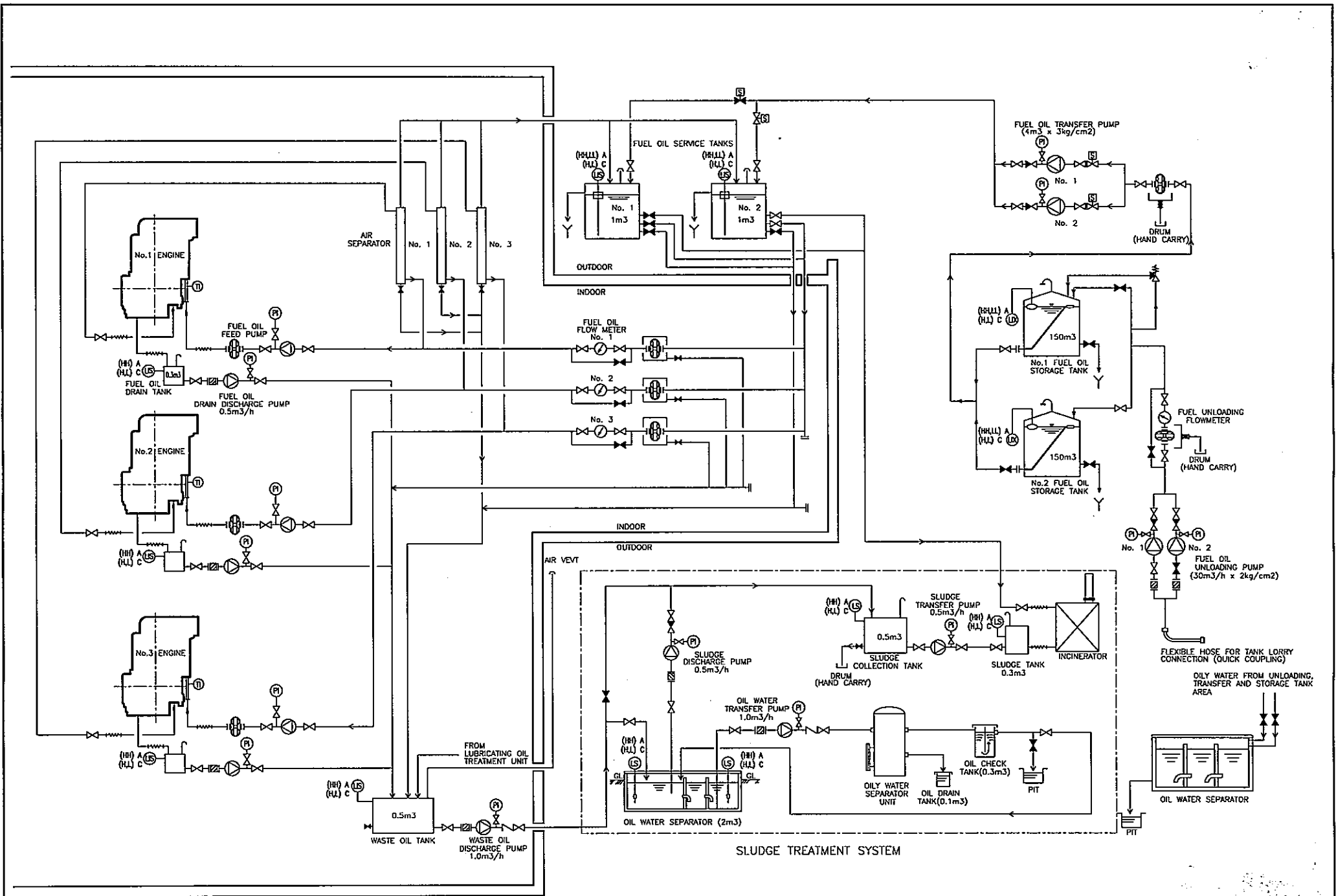
SYMBOL	DESCRIPTIONS
	PUMP
	DUPLEX FILTER
	SINGLE FILTER
	AIR FILTER
	Y-TYPE STRAINER
	EXPANTION JOINT
	FLEXIBLE TUBE
	FLOW METER

## 3. VALVES

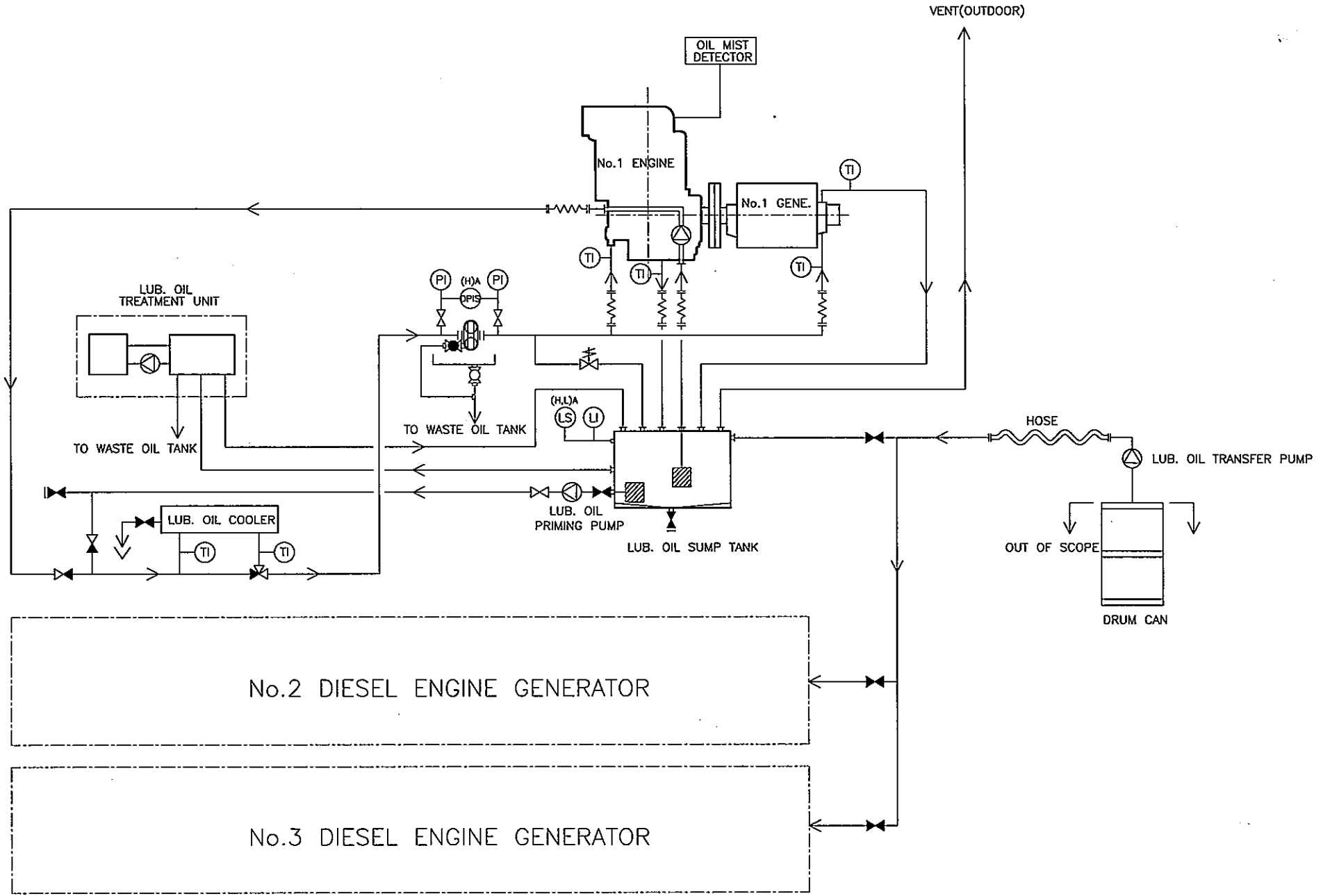
SYMBOL	DESCRIPTIONS
	GATE VALVE
	GATE VALVE (NORMAL CLOSE)
	GLOBE VALVE
	GLOBE VALVE (NORMAL CLOSE)
	BUTTERFLY VALVE
	CHECK VALVE
	SCREW-DOWN CHECK VALVE
	THREE WAY VALVE
	THREE WAY TEMP. CONTROL VALVE
	PRESSURE REDUCING VALVE
	AIR PRESSURE REDUCING VALVE
	MOTOR VALVE
	SOLENOID VALVE
	AIR OPERATE VALVE
	SAFETY VALVE
	FLOAT VALVE

## 4. INSTRUMENT

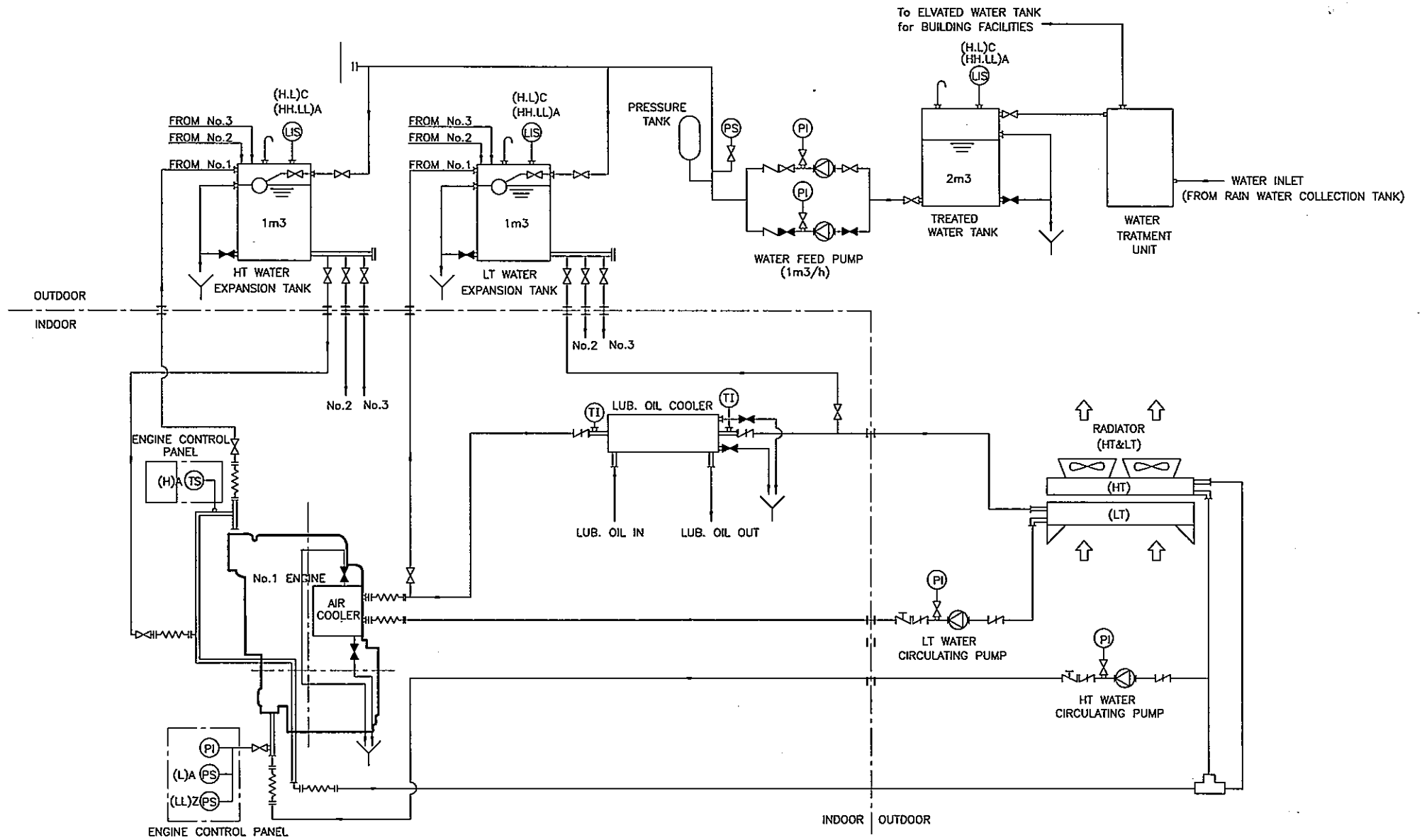
SYMBOL	DESCRIPTIONS
P	PRESSURE
T	TEMPERATURE
L	LEVEL
I	INDICATOR
S	SWITCH
E	ELEMENT
V	VIBRATION
M	OIL MIST
R	RECORDER
X	TRANSMITTER
A	ALARM
C	CONTROL
(H)	HIGH
(HH)	HIGH HIGH
(L)	LOW
(LL)	LOW LOW
(Z)	ENGINE SHUT DOWN



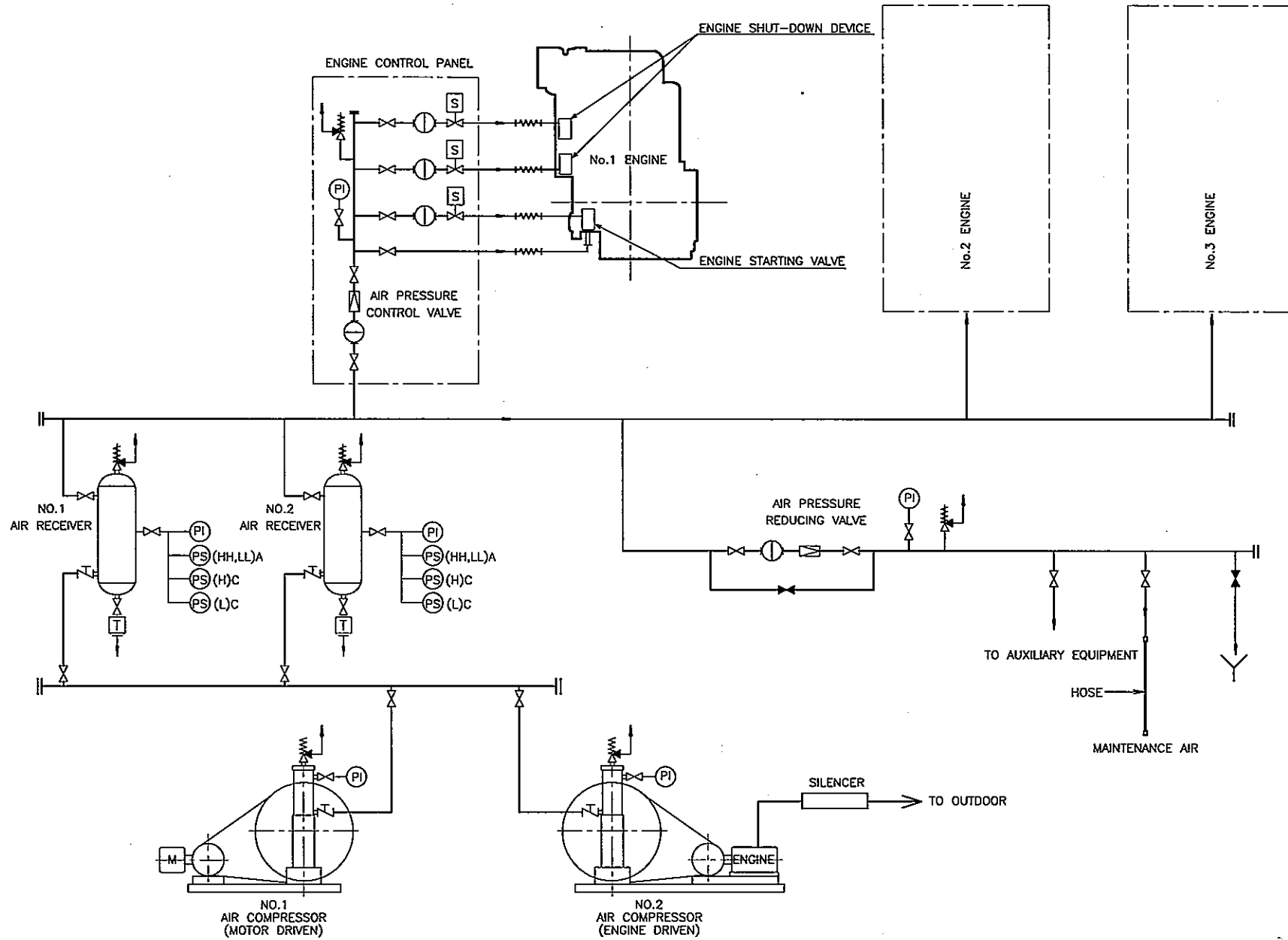
M-02 FUEL OIL FLOW DIAGRAM  
燃料系統圖



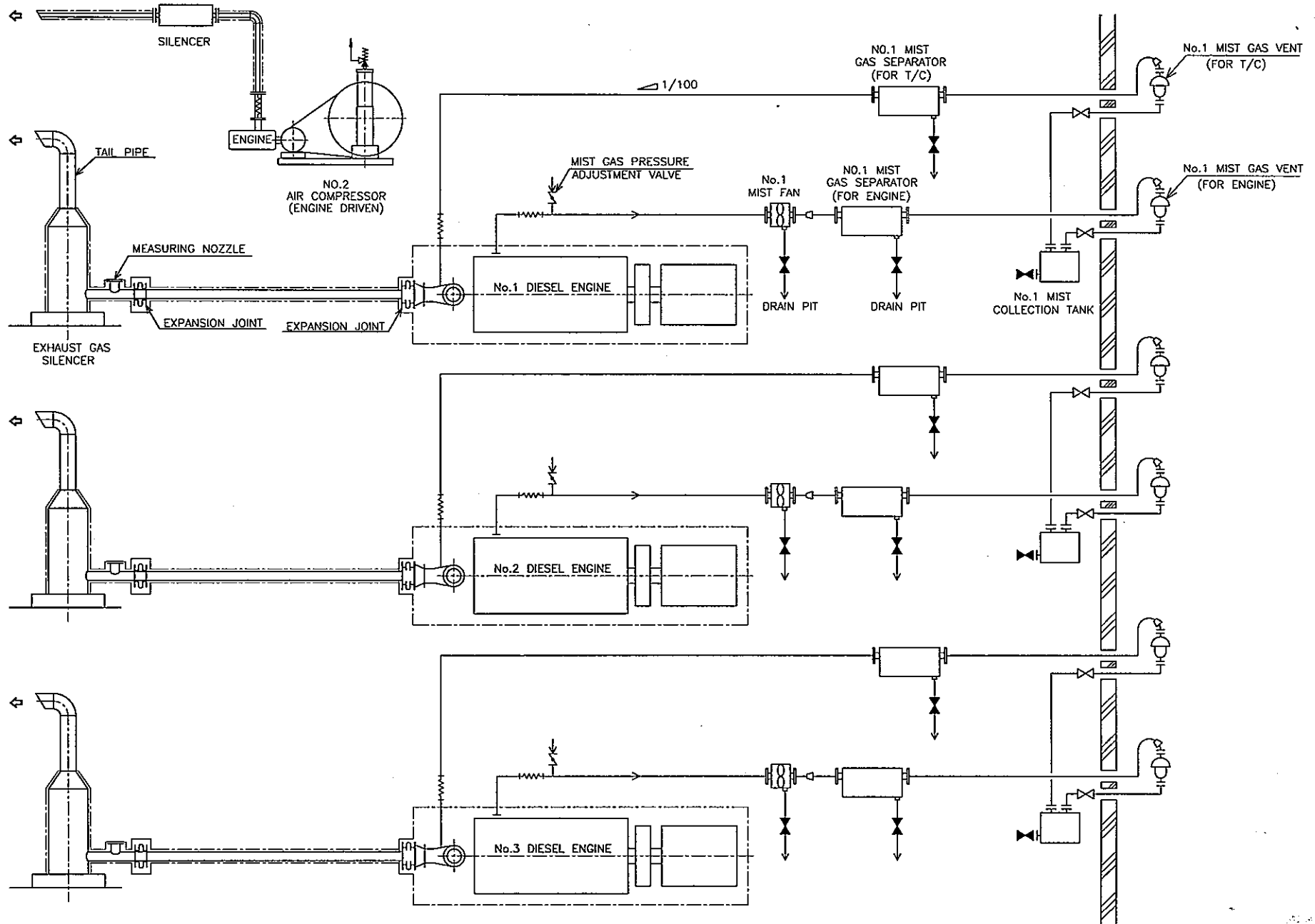
M-03 LUBRICATING OIL FLOW DIAGRAM  
潤滑油系統図



M-04 COOLING WATER FLOW DIAGRAM  
 冷却水系統圖

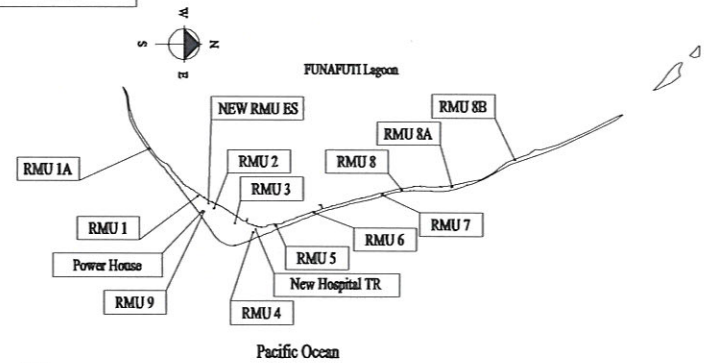
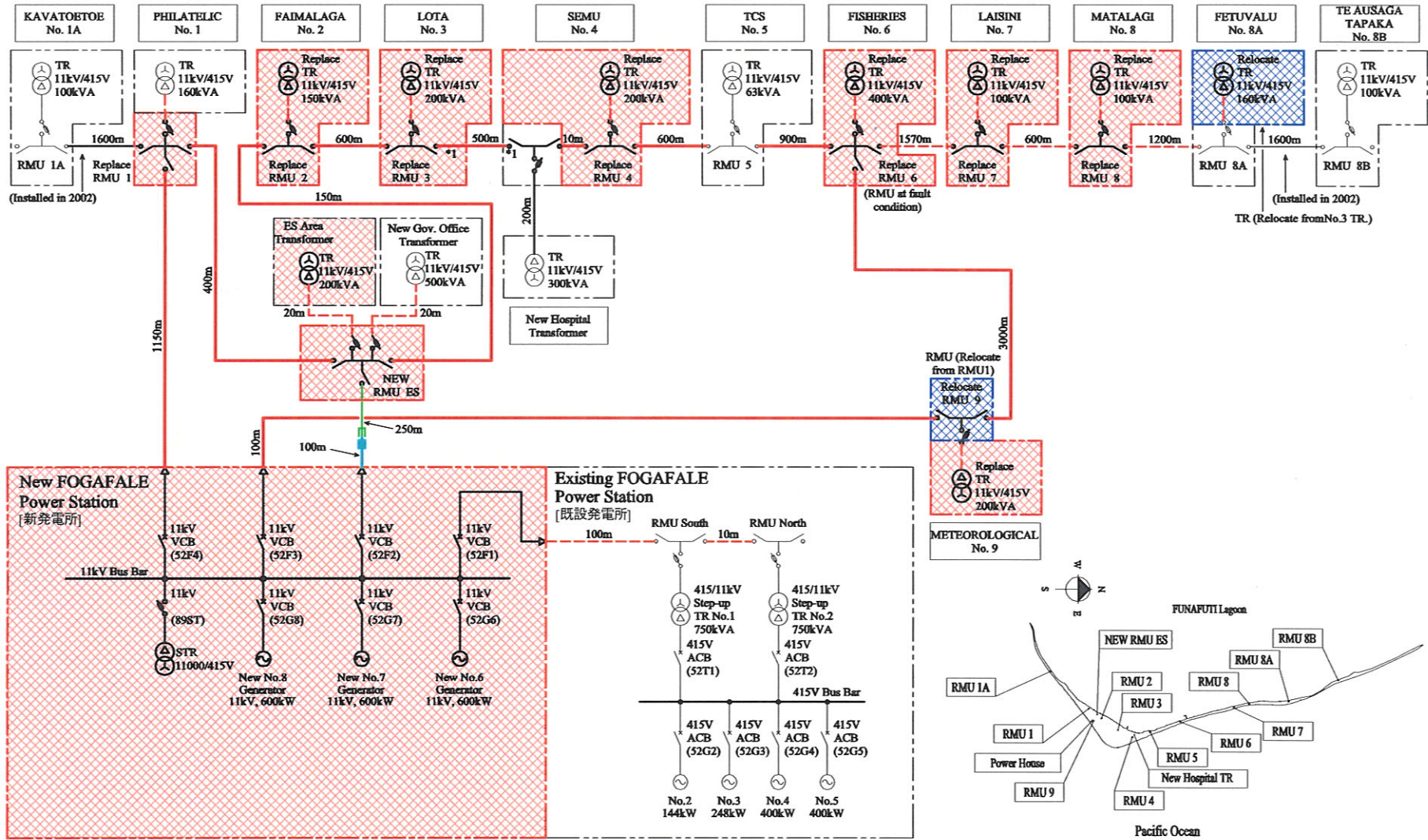


M-05 COMPRESSED AIR FLOW DIAGRAM  
 壓縮空氣系統圖



M-06 EXHAUST GAS FLOW DIAGRAM  
吸排氣系統圖





凡例 Legend	
RMU: 配電用開閉器盤 Ring Main Unit	発電機 Generator
TR: 変圧器 Transformer	既設設備 Existing Facilities
STR: 所内変圧器 Station Transformer	新設設備 New Facilities
CB: 遮断器 (VCB:真空遮断器, ACB:空気遮断器) Circuit Breaker (VCB: Vacuum Circuit Breaker, ACB: Air Circuit Breaker)	既設 11kV XLPE ケーブル (銅導体, 25mm <sup>2</sup> ) Existing 11kV XLPE Cable (Cu, 25mm <sup>2</sup> )
DS: 断路器 Disconnecting Switch	既設 11kV XLPE ケーブル (アルミ導体, 25mm <sup>2</sup> ) Existing 11kV XLPE Cable (Al, 25mm <sup>2</sup> )
	新設 11kV XLPE ケーブル (銅導体, 25mm <sup>2</sup> ) New 11kV XLPE Cable (Cu, 25mm <sup>2</sup> )
	新設 11kV XLPE ケーブル (アルミ導体, 25mm <sup>2</sup> ) New 11kV XLPE Cable (Al, 25mm <sup>2</sup> )
	ケーブルジョイント Cable Joint

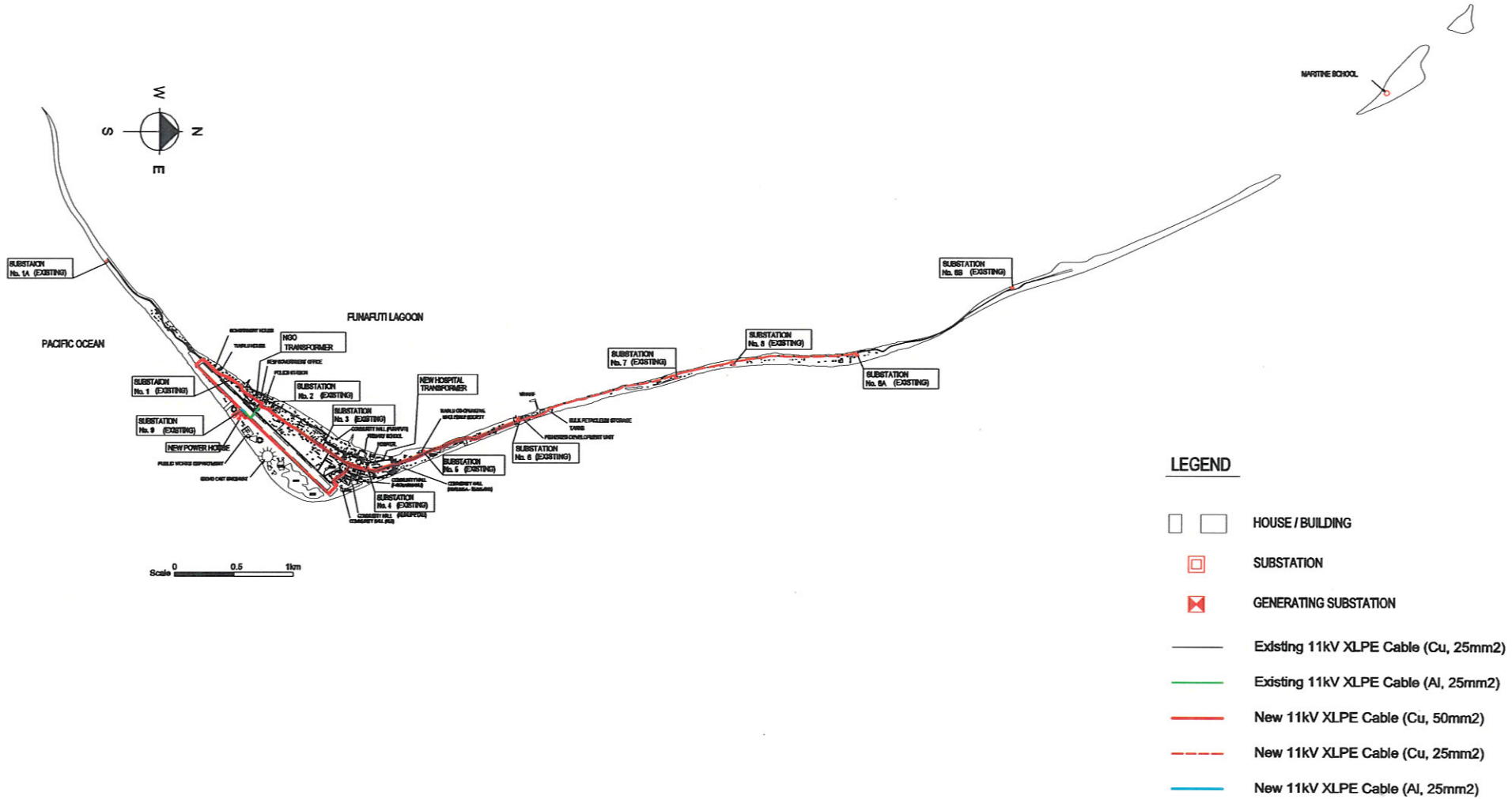
備考  
Remarks

1. \*1 は常時開放を示す  
\*1 Shows Normally Open

2. ケーブル互長は参考値である  
Cable length is only for reference.

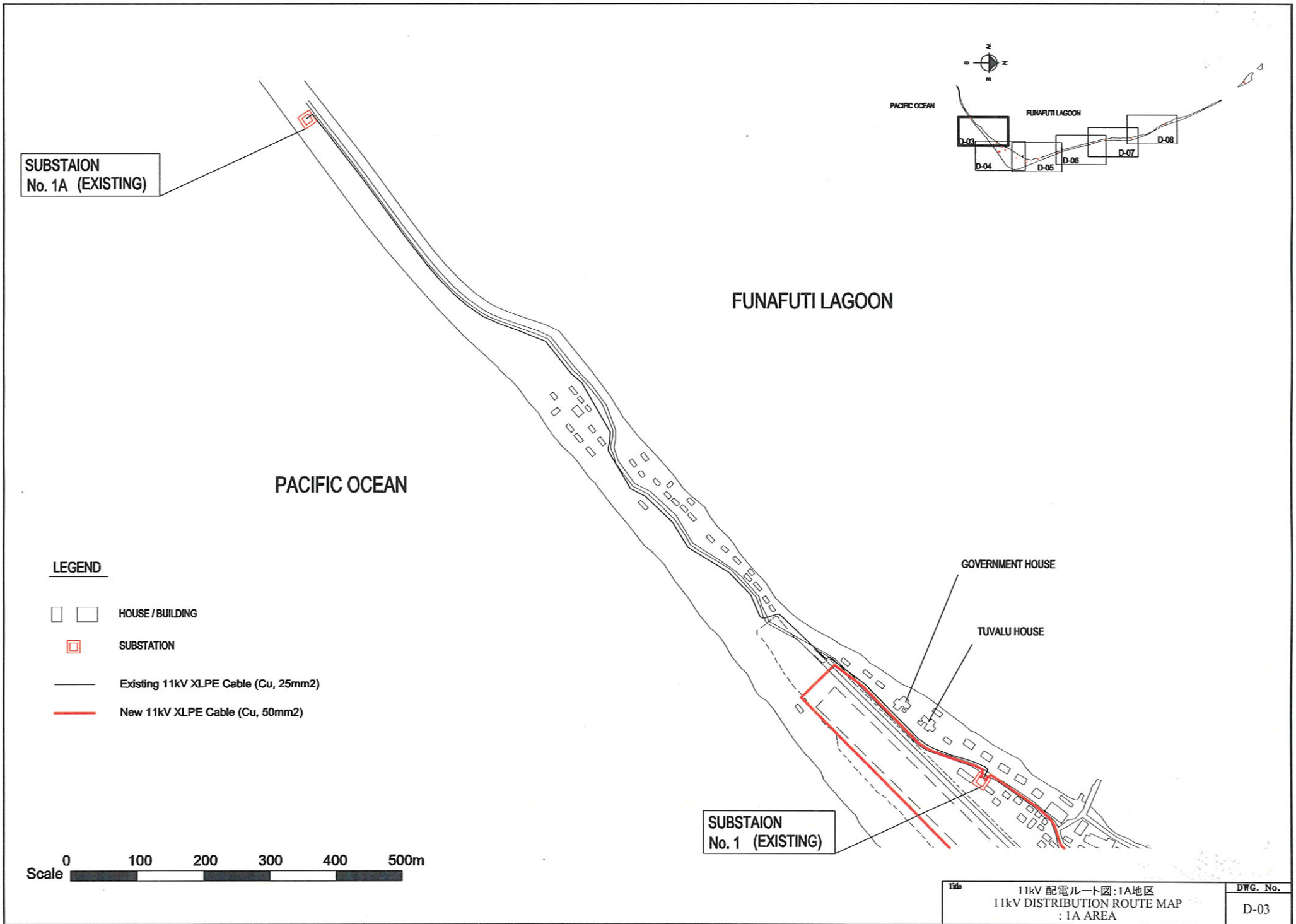
本計画範囲(新設)  
Scope of the Project (Replace)

本計画範囲(移設)  
Scope of the Project (Relocate)



**LEGEND**

- HOUSE / BUILDING
- SUBSTATION
- GENERATING SUBSTATION
- Existing 11kV XLPE Cable (Cu, 25mm<sup>2</sup>)
- Existing 11kV XLPE Cable (Al, 25mm<sup>2</sup>)
- New 11kV XLPE Cable (Cu, 50mm<sup>2</sup>)
- New 11kV XLPE Cable (Cu, 25mm<sup>2</sup>)
- New 11kV XLPE Cable (Al, 25mm<sup>2</sup>)



SUBSTAION  
No. 1A (EXISTING)

FUNAFUTI LAGOON

PACIFIC OCEAN

**LEGEND**

- HOUSE / BUILDING
- SUBSTATION
- Existing 11kV XLPE Cable (Cu, 25mm<sup>2</sup>)
- New 11kV XLPE Cable (Cu, 50mm<sup>2</sup>)

GOVERNMENT HOUSE

TUVALU HOUSE

SUBSTAION  
No. 1 (EXISTING)



Title	11kV 配電ルート図:1A地区	DWG. No.
	11kV DISTRIBUTION ROUTE MAP : 1A AREA	

NEW GOVERNMENT OFFICE

NGO TRANSFORMER,  
ES AREA TRANSFORMER  
AND NEW RMU ES

POLICE STATION

VAJAKU LAGI HOTEL

SUBSTATION  
No. 2 (EXISTING)

SUBSTATION  
No. 1 (EXISTING)

FUNAFUTI LAGOON

PACIFIC OCEAN

NEW POWER HOUSE

EXISTING POWER HOUSE

SUBSTATION  
No. 9 (EXISTING)

PUBLIC WORKS DEPARTMENT








SUBSTATION  
No. 3 (EXISTING)

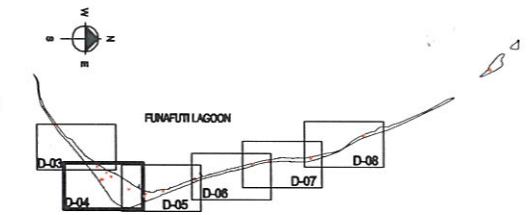
COMMUNITY HALL (FUNAFUTI)

COMMUNITY HALL (NUKUFETAU)

COMMUNITY HALL (NUI)






**LEGEND**

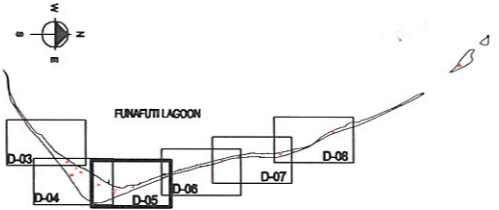
-  HOUSE / BUILDING
-  SUBSTATION
-  GENERATING SUBSTATION
-  Existing 11kV XLPE Cable (Cu, 25mm<sup>2</sup>)
-  Existing 11kV XLPE Cable (Al, 25mm<sup>2</sup>)
-  New 11kV XLPE Cable (Cu, 50mm<sup>2</sup>)
-  New 11kV XLPE Cable (Al, 25mm<sup>2</sup>)



Title	11kV 配電ルート図: 中心地区(1/2)	DWG. No.
	11kV DISTRIBUTION ROUTE MAP : CENTRAL AREA(1/2)	
		D-04

**LEGEND**

-  HOUSE / BUILDING
-  SUBSTATION
-  Existing 11kV XLPE Cable (Cu, 25mm<sup>2</sup>)
-  New 11kV XLPE Cable (Cu, 50mm<sup>2</sup>)
-  New 11kV XLPE Cable (Cu, 25mm<sup>2</sup>)



FISHERIES DEVELOPMENT UNIT

SUBSTATION No. 6 (EXISTING)

**FUNAFUTI LAGOON**



SUBSTATION No. 3 (EXISTING)

COMMUNITY HALL (FUNAFUTI)

TUVALU CO-OPERATIVE WHOLESALE SOCIETY

NEW HOSPITAL TRANSFORMER

PRIMARY SCHOOL

HOSPITAL

SUBSTATION No. 5 (EXISTING)

COMMUNITY HALL (NANUMEA - SEIMEANA)

SUBSTATION No. 4 (EXISTING)

COMMUNITY HALL (FAKAIAAMANU)

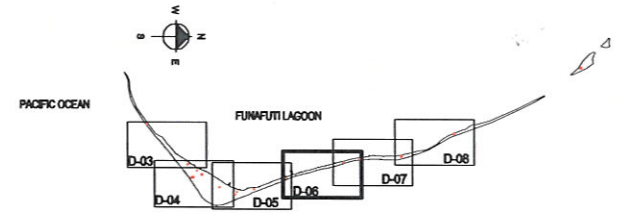
COMMUNITY HALL (NUKUFETAU)

COMMUNITY HALL (NUI)

A-40

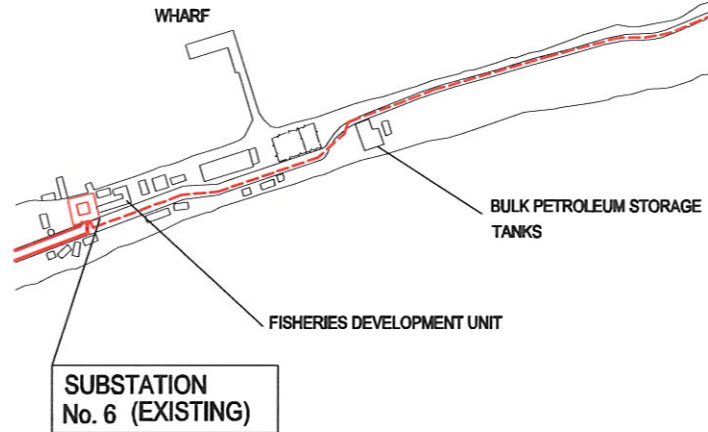
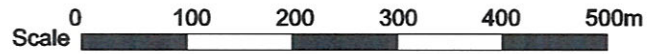
**LEGEND**

-  HOUSE / BUILDING
-  SUBSTATION
-  New 11kV XLPE Cable (Cu, 50mm<sup>2</sup>)
-  New 11kV XLPE Cable (Cu, 25mm<sup>2</sup>)



**FUNAFUTI LAGOON**





**SUBSTATION No. 7 (EXISTING)**

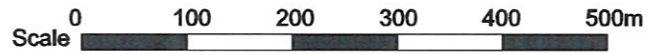
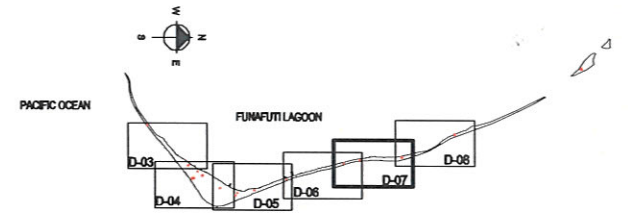


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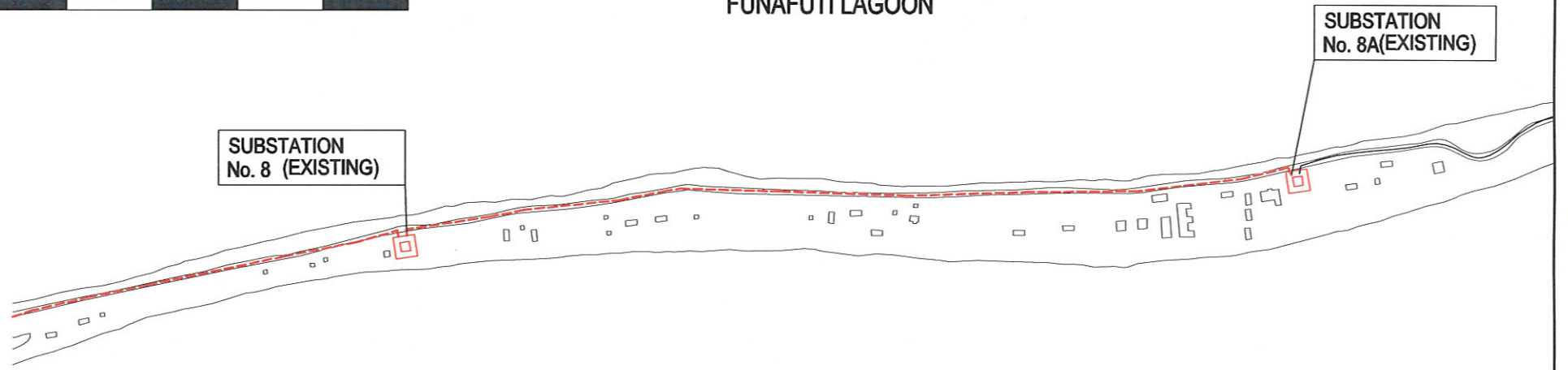
Title	11kV 配電ルート図:7地区	DWG. No.
	11kV DISTRIBUTION ROUTE MAP : 7 AREA	
		D-06

**LEGEND**

-  HOUSE / BUILDING
-  SUBSTATION
-  Existing 11kV XLPE Cable (Cu, 25mm<sup>2</sup>)
-  New 11kV XLPE Cable (Cu, 25mm<sup>2</sup>)







**FUNAFUTI LAGOON**

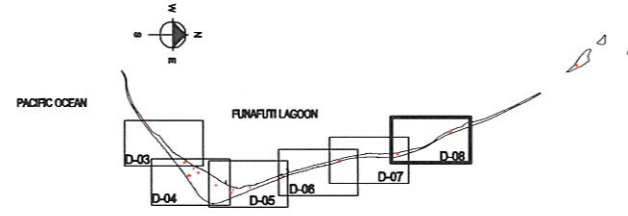


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Title	11kV 配電ルート図:8地区	DWG. No.
	11kV DISTRIBUTION ROUTE MAP : 8 AREA	
		D-07

**LEGEND**

-  HOUSE / BUILDING
-  SUBSTATION
-  Existing 11kV XLPE Cable (Cu, 25mm2)
-  New 11kV XLPE Cable (Cu, 25mm2)



FUNAFUTI LAGOON

SUBSTATION  
No. 8B (EXISTING)

SUBSTATION  
No. 8A (EXISTING)

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Title	11kV 配電ルート図: 8A地区	DWG. No.
	11kV DISTRIBUTION ROUTE MAP : 8A AREA	