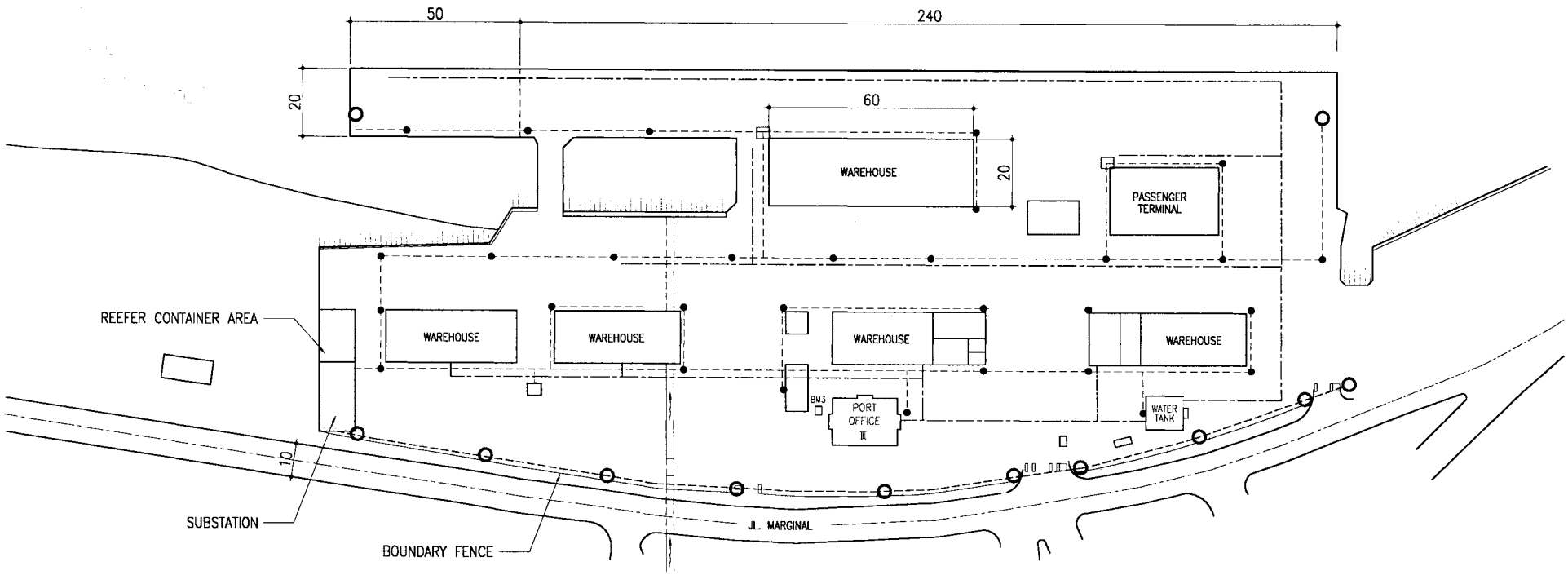
APPENDICES TO CHAPTER 4
PORTS SECTOR

DRAWINGS
FOR
3 YEARS URGENT REHABILITATION WORK

REHABILITATION OF WEST CONTAINER STACKING YARD - DILI PORT
PLAN OF UTILITIES



STREET LIGHT

- DOUBLE ARM H=9.0m
- SINGLE ARM H=9.0m

LIGHTING TOWER

- LIGHTING TOWER H=20.0m

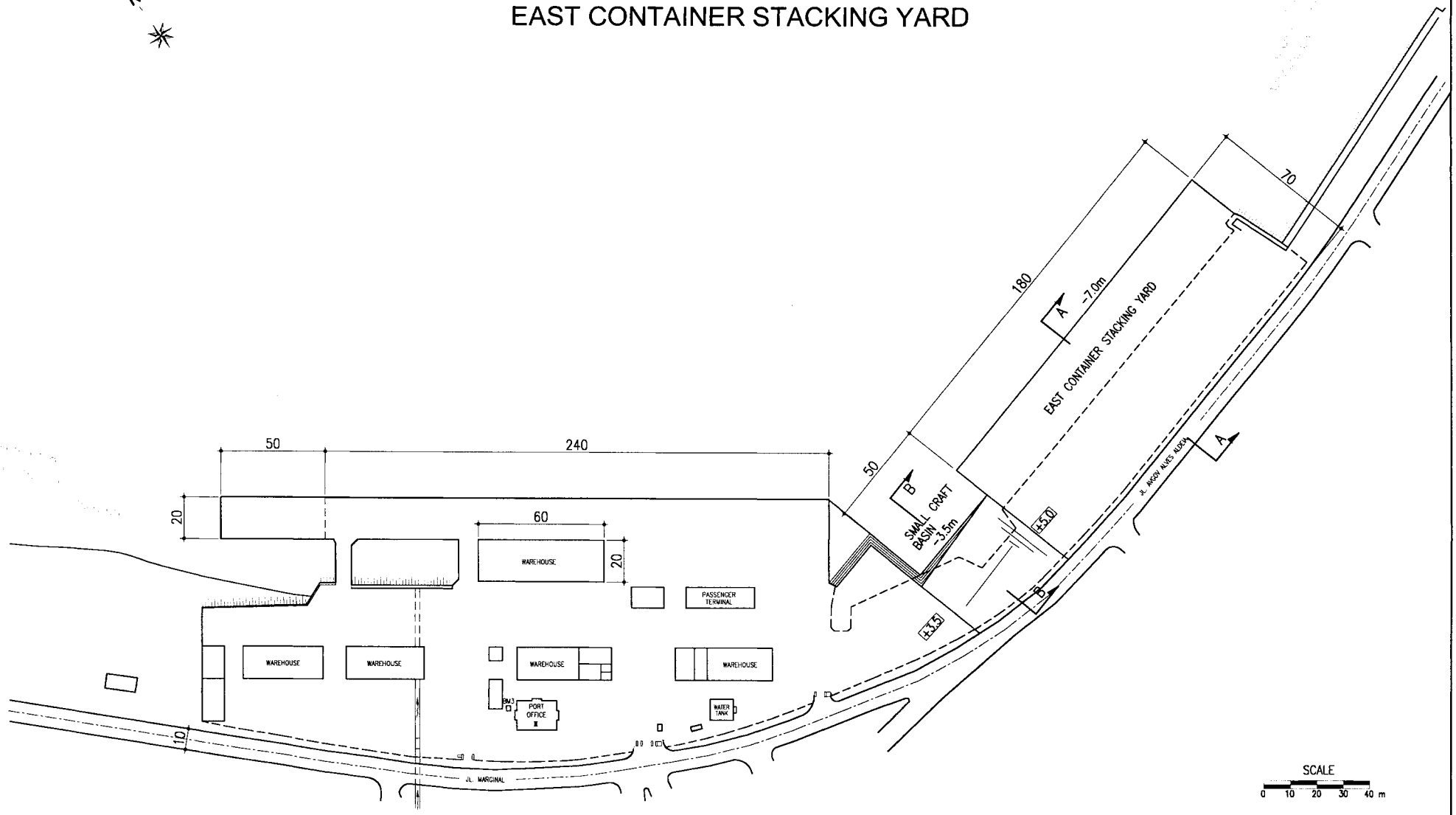
WATER SUPPLY & FIREFIGHTING LINE

POWER DISTRIBUTION

SCALE 0 10 20 30 40 m

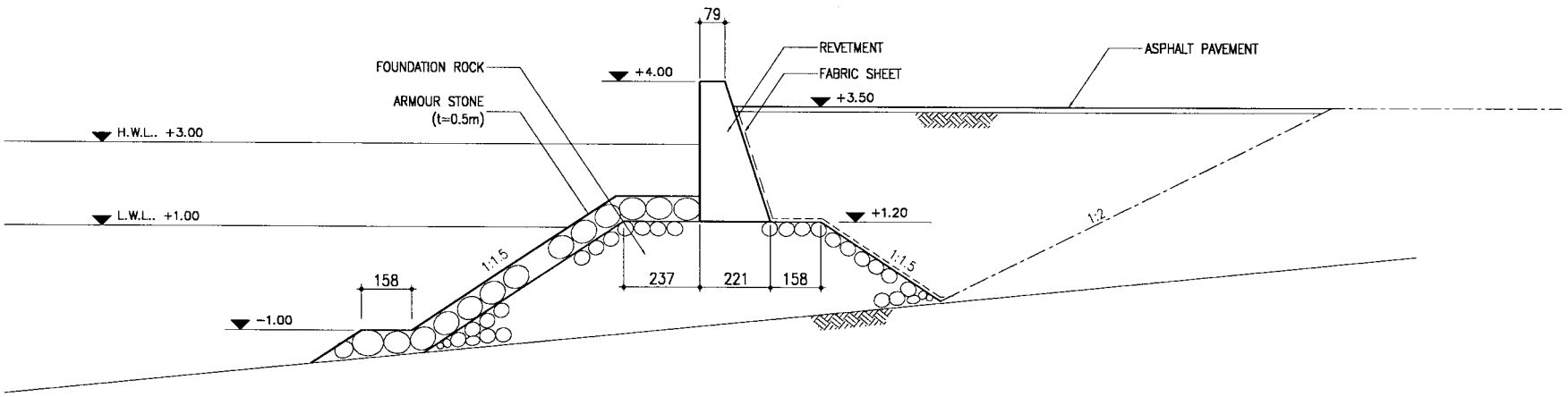
UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)	3 YEARS URGENT REHABILITATION PLAN (PORT)	TITLE: REHABILITATION OF WEST CONTAINER STACKING YARD - DILI PORT PLAN OF UTILITIES		JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000	APP. 4.2.4 DRAWING (1)	

DILI PORT
EAST CONTAINER STACKING YARD



UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)	3 YEARS URGENT REHABILITATION PLAN (PORT)	TITLE:	DILI PORT EAST CONTAINER STACKING YARD	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000	APP. 4.2.4 DRAWING (2)	

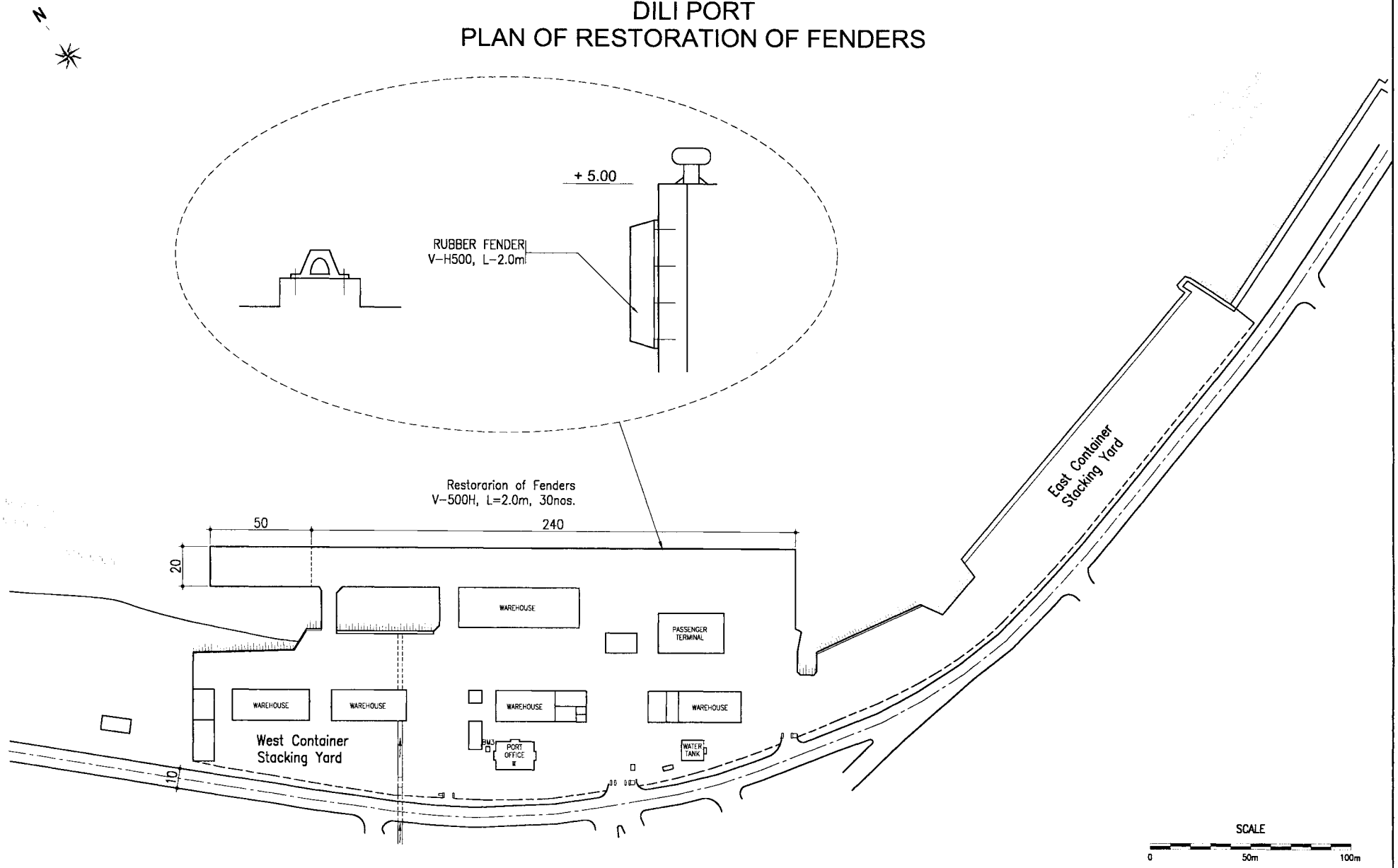
DILI PORT
TYPICAL CROSS SECTION OF NEW REVETMENT
FOR EAST CONTAINER STACKING YARD



SCALE
0 1.0 2.0 3.0 4.0 5.0m

UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)	3 YEARS URGENT REHABILITATION PLAN (PORT)	TITLE: TYPICAL CROSS SECTION OF NEW REVETMENT FOR EAST CONTAINER STACKING YARD	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000 / APP. 4.2.4 DRAWING (3)	

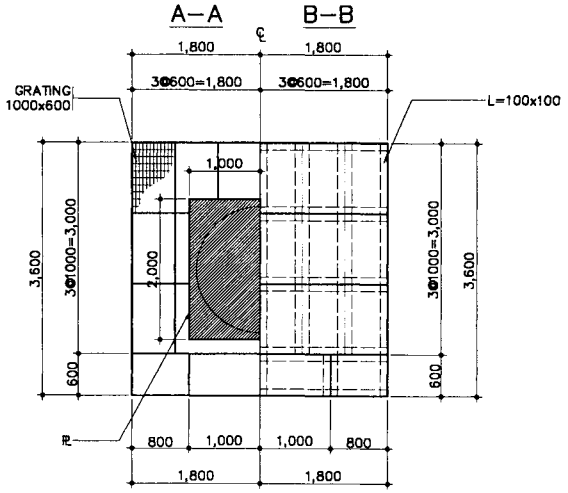
DILI PORT
PLAN OF RESTORATION OF FENDERS

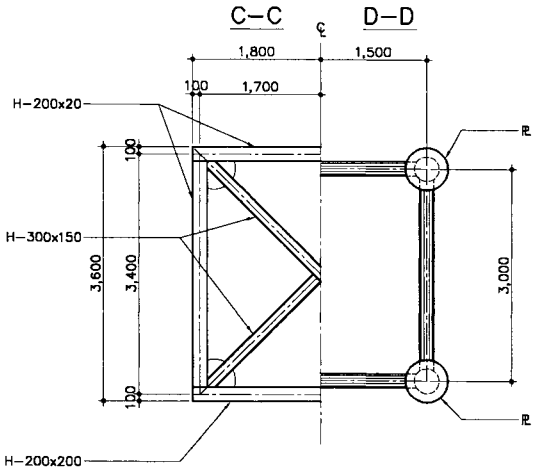


UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)	3 YEARS URGENT REHABILITATION PLAN (PORT)	TITLE: DILI PORT PLAN OF RESTORATION OF FENDERS	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000 / APP. 4.2.4 DRAWING (4)	

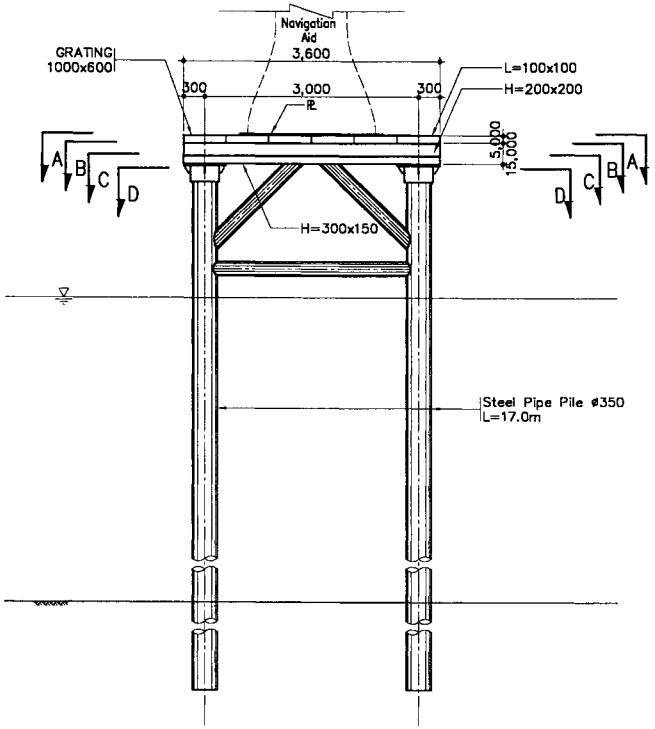
DILI PORT
STRUCTURAL PLAN OF FOUNDATION FOR NAVIGATION AIDS

PLAN





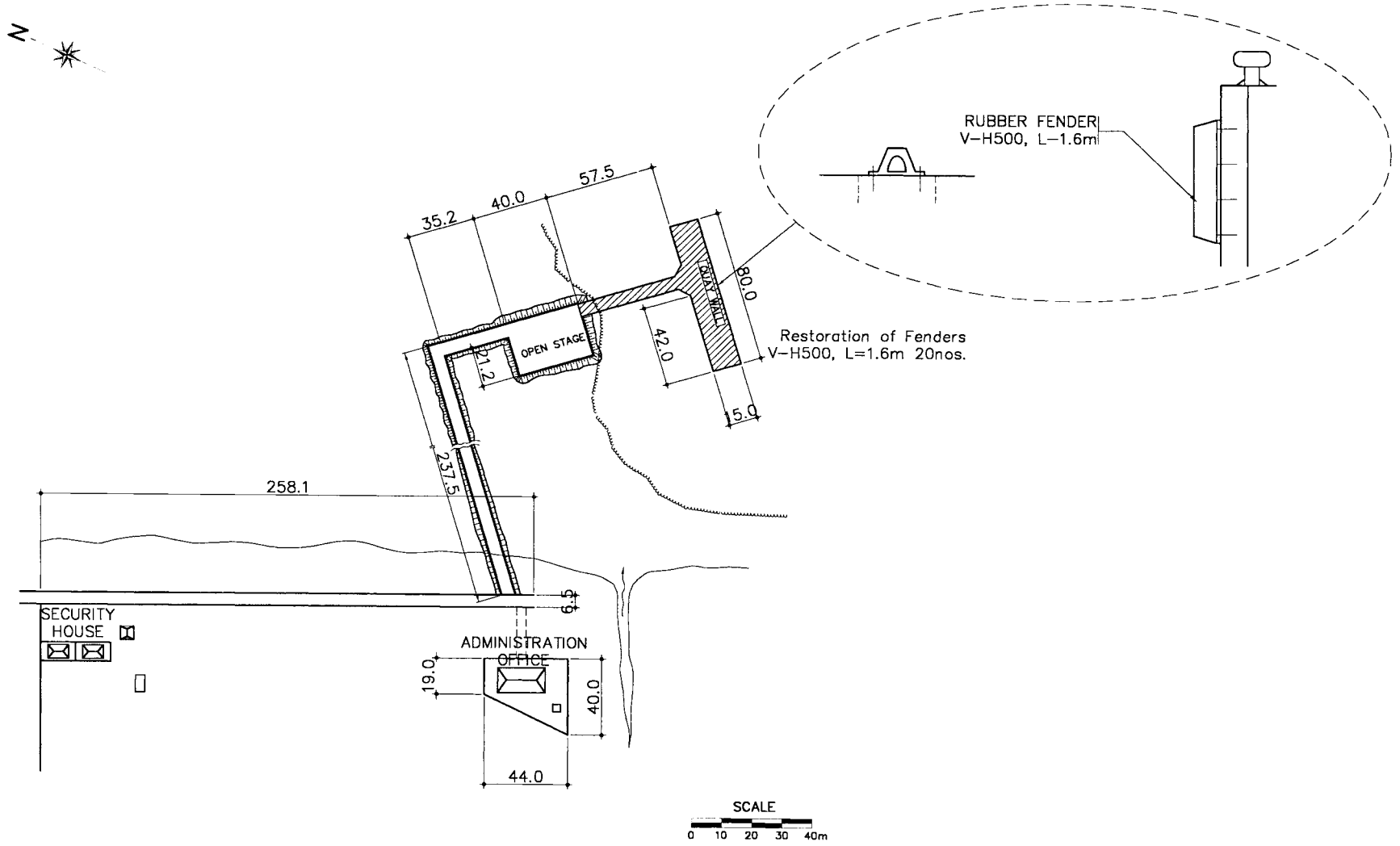
SIDE VIEW



A4 - 5

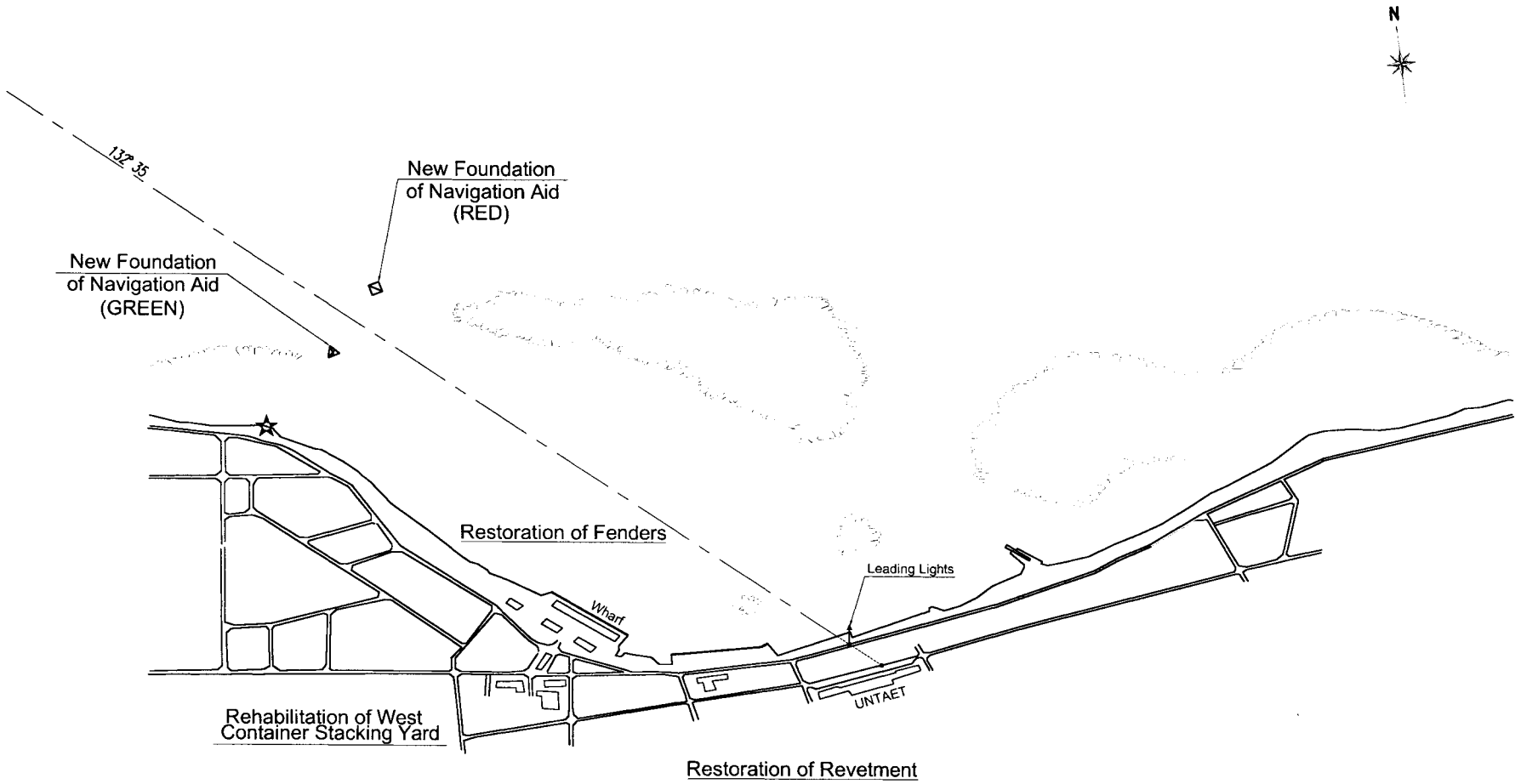
UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)	3 YEARS URGENT REHABILITATION PLAN (PORT)	TITLE: STRUCTURAL PLAN OF FOUNDATION FOR NAVIGATION AIDS	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000 / APP. 4.2.4 DRAWING (5)	

RESTORATION OF FENDER SYSTEM - COM PORT



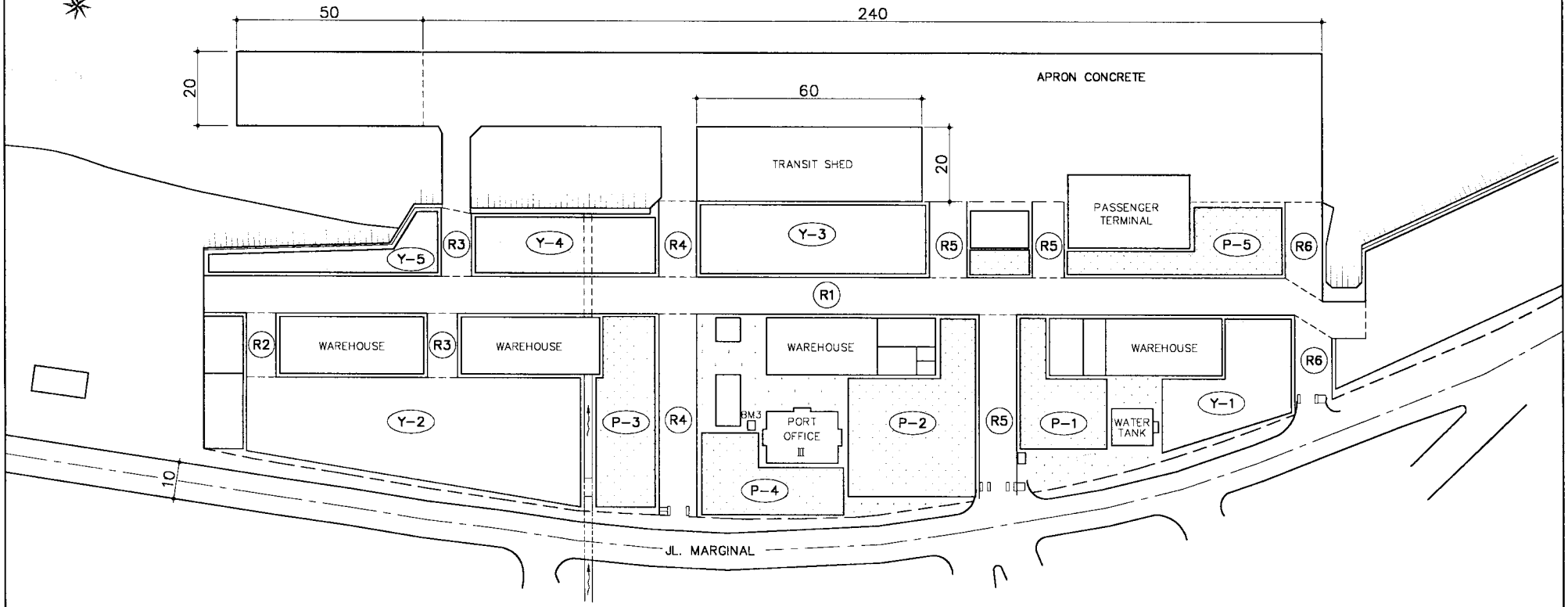
UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)	3 YEARS URGENT REHABILITATION PLAN (PORT)	TITLE: RESTORATION OF FENDERS SYSTEM - COM PORT	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000 / APP.4.2.4 DRAWING (6)	

DILI PORT
GENERAL PLAN OF URGENT REHABILITATION PLAN



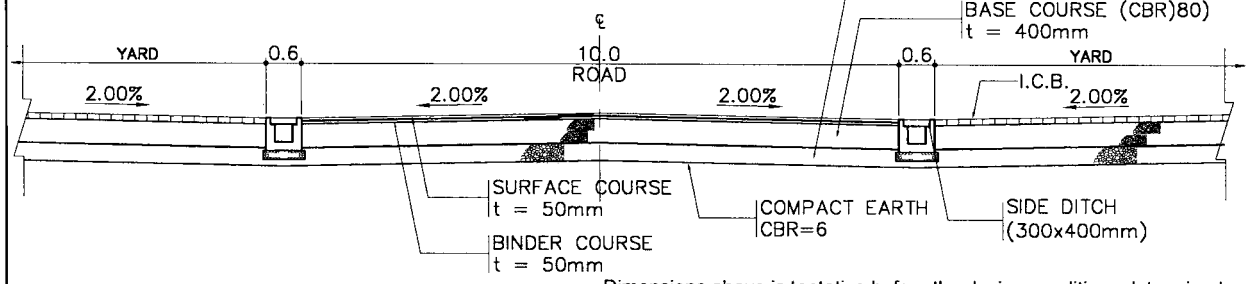
UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)	3 YEARS URGENT REHABILITATION PLAN (PORT)	TITLE: DILI PORT GENERAL PLAN OF URGENT REHABILITATION PLAN		JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000	APP. 4.2.4 DRAWING (7)	

REHABILITATION OF WEST CONTAINER STACKING YARD - DILI PORT
PLAN OF PAVEMENT



SCALE
0 10 20 30 40 m

DRAWING OF DILI PORT IMPROVEMENT
TYPICAL SECTION OF PAVEMENT (FREE SCALE)



Dimensions above is tentative before the design conditions determined.

DISTANCE OF ROAD

MARK		UNIT	QUANTITY
ROAD	R1	m	310
	R2	m	18
	R3	m	36
	R4	m	75
	R5	m	90
	R6	m	44
	Sub-Total	m	573

QUANTITY OF YARD PAVEMENT

MARK		UNIT	QUANTITY	MARK		UNIT	QUANTITY
YARD	Y-1	m^2	790	PARKING	P-1	m^2	550
	Y-2	m^2	2,450		P-2	m^2	1,240
	Y-3	m^2	1,100		P-3	m^2	780
	Y-4	m^2	720		P-4	m^2	620
	Y-5	m^2	440		P-5	m^2	740
	Sub-Total	m^2	5,500		Sub-Total	m^2	3,930
AREA (YARD+PARKING) = 9,430m^2							

UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)	3 YEARS URGENT REHABILITATION PLAN (PORT)	TITLE: REHABILITATION OF WEST CONTAINER STACKING YARD - DILI PORT PLAN OF PAVEMENT	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000	APP. 4.2.4 DRAWING (8)

APP. 4.3.1 Project Profile for the Study on Urgent Rehabilitation Plan in East Timor

Project No.	P-1	Project Name	Restoration of Navigation Aids and Fender System at Dili Port

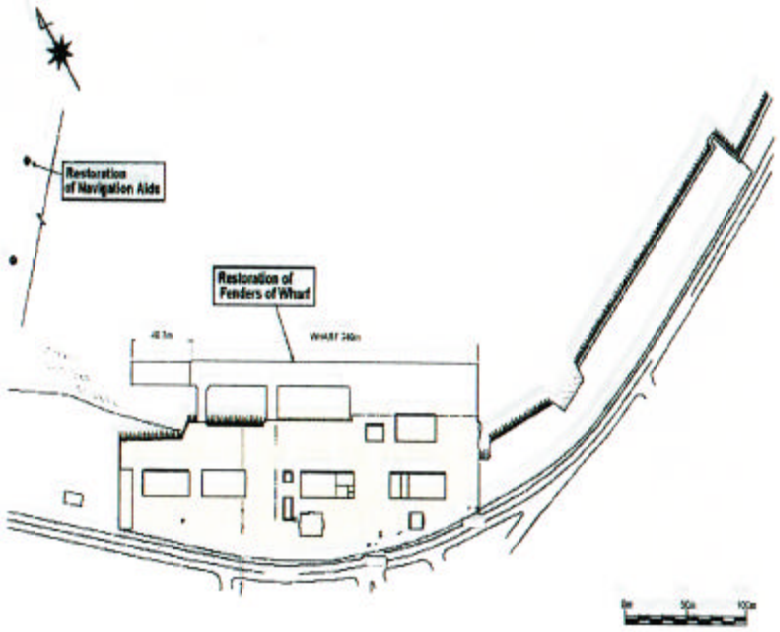
Development Body	UNDP
Operation Body	UNTAET

Development Method	
[x]	B/Q bidding
[ ]	BOT/BT
[ ]	Other

Financial Assistance	
[x]	Required
[ ]	Not required

Project cost (Tousant US$) Exchange rate: 1US$=105Yen (June, 2000)	
Total	**2,500**
Civil works	2,000
Contingency (5% of Civil works)	100
Engineering (20% of Civil works)	400

Location Map



Major Development Components

1. New Foundation for Navigation Aids	
1.1 Temporary Installation of Navi. Aids	2 Nos.
1.2 Pile Driving	8 Nos.
1.3 Erection of the Stages	2 Nos.
1.4 Installation of Navigation Aids	2 Nos.
1.5 Removal of Old Stages	2 Nos.
1.6 Corrosion Protection	8 Nos.
2. Restoration of Fenders	
2.1 Removal of Existing Fenders	30 Nos.
2.2 Treatment of Existing Concrete Bases	30 Nos.
2.3 Installation of New Fenders	30 Nos.

Implementation Schedule

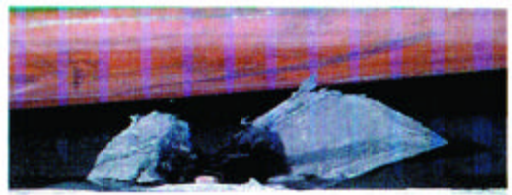
Year	2000/2001	2001/2002	2002/2003
D/D and tendering	■		
Construction	■		

Project Description

Existing pile foundations for Navigation Aids have been become superannuated. These facilities need to restore to prevent the collapse of the pile structure. And almost all fenders at the wharf have been broken. It also shall be necessary to restore.

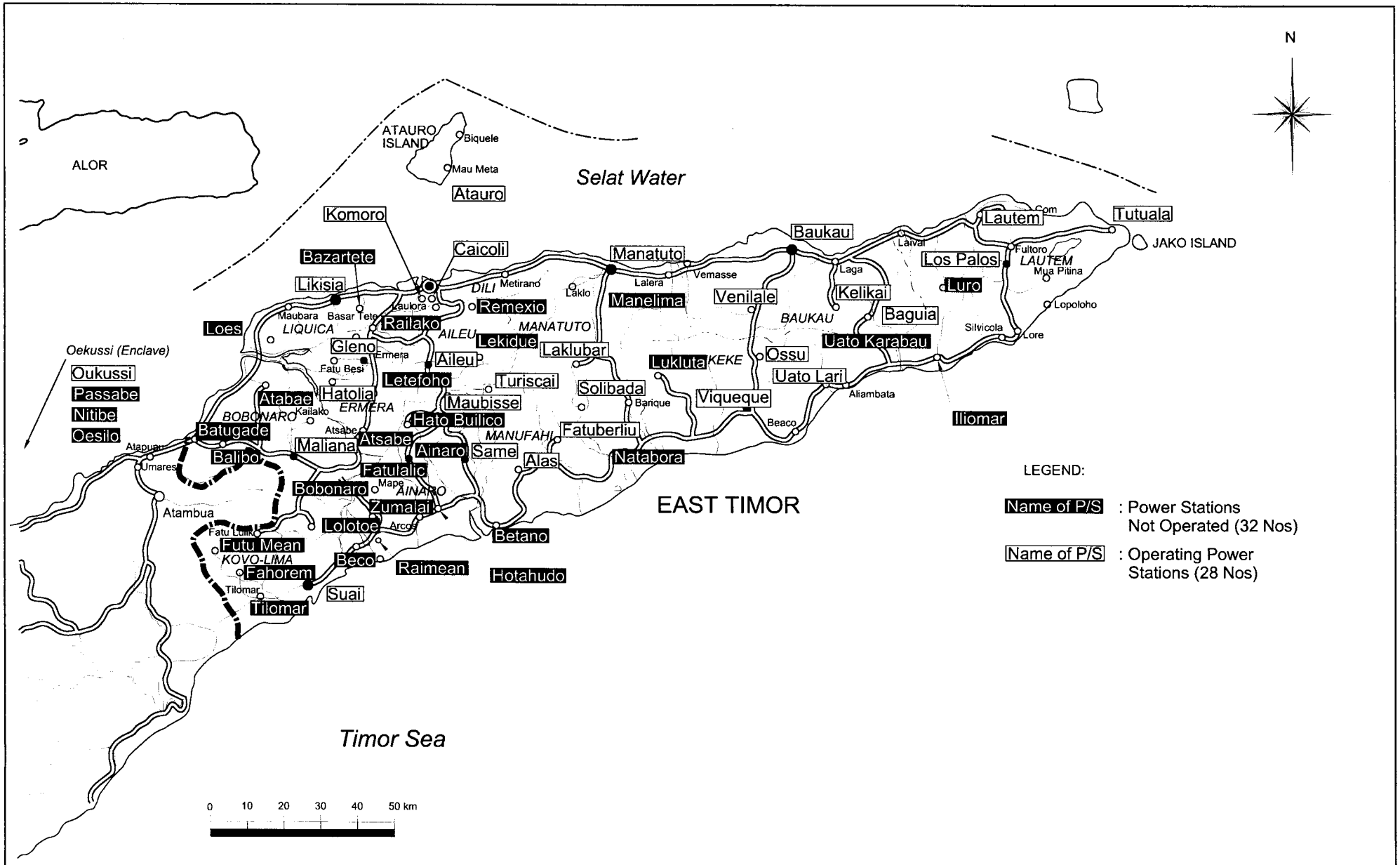
This project will be expected smooth and safety operation of the ship maneuvering at Dili Port.

Site Picture



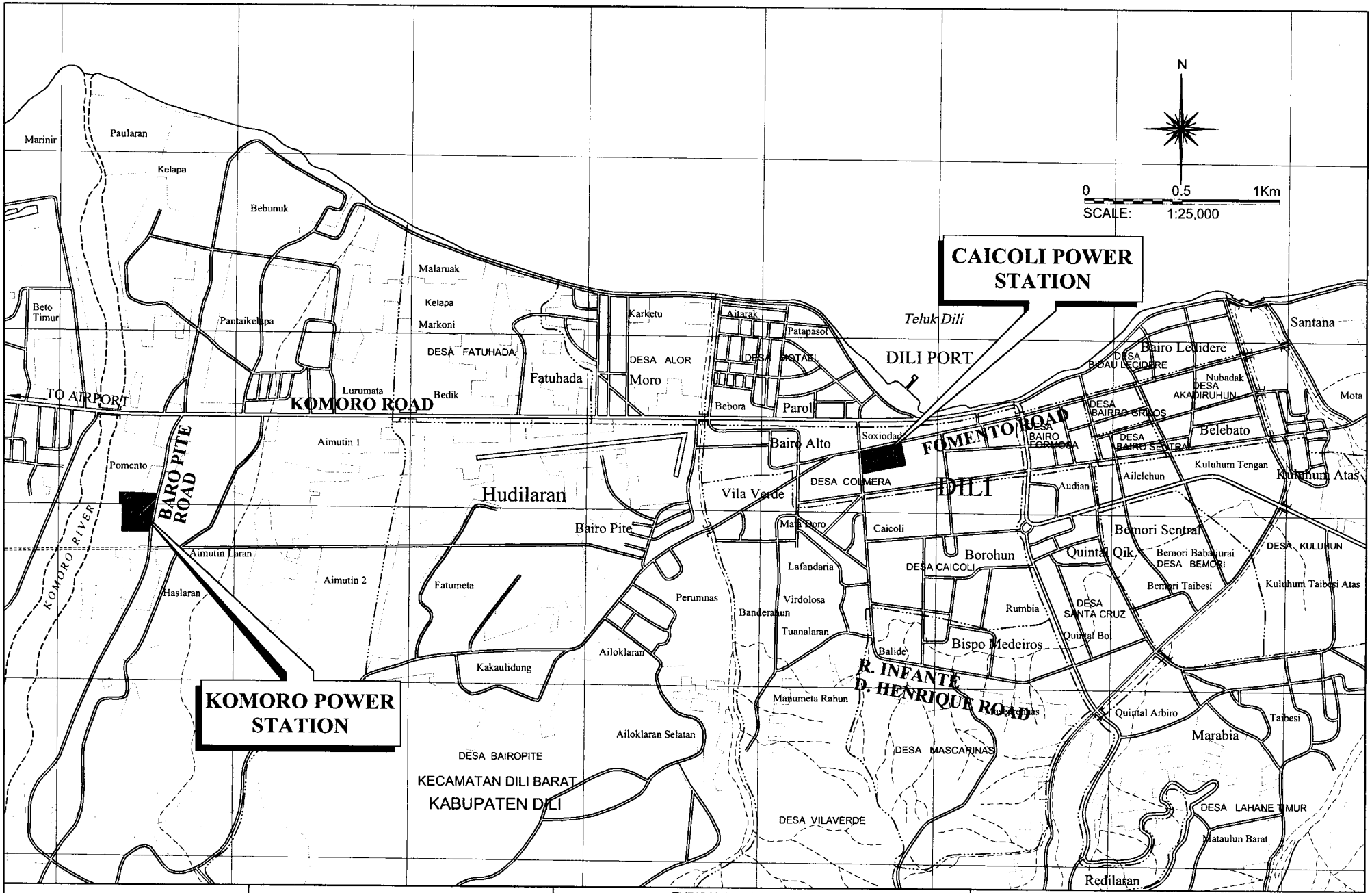
APPENDICES TO CHAPTER 5
POWER SECTOR

DRAWINGS
FOR
3 YEARS URGENT REHABILITATION WORK



A5 - 1

UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)		TITLE: LOCATION MAP OF EXISTING POWER STATION IN EAST TIMOR	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000 / APP. 5.1.3- DRAWING No. 01	



A5 - 2

UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)		TITLE: TYPICAL LAYOUT DRAWING OF RURAL POWER STATION	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000 / APP. 5.1.3- DRAWING No. 02	

Inventory of Power Stations in East Timor

Appendix-APP.5.1.3(3)
(As of the End of June 2000)

No.	Name of Districts	Name of Power Station	Unit No.of D/G	Rated Output Capacity (kW)	Available Capacity (kW)	Name of Manufacturer and Year				Current Conditions			Remarks (Causes and content of damages)
						Engine		Alternator		operating good	operating barely	not operated	
1	2	3	4	5	6	7		8		9	10	11	12
1	Dili	Caicoli	1	1,560.0	800.0	ENGLISH ELEC.	'73	Brush	'73		x		
			2	1,560.0	0.0	ENGLISH ELEC.	'73	Brush	'73			x	Out of order and too old to recover
			3	460.0	0.0	Lister	'68	Brush	'68			x	- ditto -
			4	1,030.0	0.0	?	?	Brush	'73			x	- ditto -
			5	1,140.0	0.0	MWM	?	AVK	?			x	- ditto -
			6	880.0	0.0	Daihatsu	'81	Fuji	'81			x	- ditto -
			7	1,030.0	400.0	?	?	Brush	'73		x		
			Total	7,660.0	1,200.0								
2	Dili	Komoro	1	2,540.0	1,800.0	MAK	'84	Siemens	'84		x		Lack of maintenance tools and spare parts
			2	2,540.0	1,800.0	MAK	'84	Siemens	'84		x		
			3	3,000.0	2,800.0	Niigata	'88	Meiden	'88	x			
			4	2,800.0	2,400.0	PAL-MAK	?	Pindad	?	x			
			5	2,800.0	2,400.0	PAL-MAK	?	Pindad	?	x			
			Total	13,680.0	11,200.0								
3	Dili	Ataruo	1	50.0	48.0	Deutz	'94	Stanford	'94	x			
			2	20.0	0.0	Deutz	'98	Partner	'98			x	Panel broken
			Total	70.0	48.0								
4	Baucau	Baucau	1	528.0	0.0	MWM	'95	Leroy	'95			x	
			2	508.0	420.0	Caterpillar	'95	?	?	x			
			3	528.0	220.0	MWM	'95	?	?		x		
			4	240.0	0.0	Deute	'95	Stanford	'86			x	
			5	260.0	0.0	Bisma	'95	Stanford	'86			x	
			6	810.0	0.0	MWM	'95	Leroy	'95			x	
			Total	2,874.0	640.0								

No.	Name of Districts	Name of Power Station	Unit No.of D/G	Rated Output Capacity (kW)	Available Capacity (kW)	Name of Manufacturer and Year				Current Conditions			Remarks (Causes and content of damages)
						Engine		Alternator		operating good	operating barely	not operated	
1	2	3	4	5	6	7		8		9	10	11	12
5	Baucau	Venilale	1	40.0	32.0	Bisma	?	AVK	?	x			
			2	40.0	32.0	Bisma	?	AVK	?	x			
			Total	80.0	64.0								
6	Baucau	Baguia	1	25.0	20.0	Deutz	'86	Stanford	'86	x			6hours operation per day
			2	25.0	20.0	Deutz	'86	Stanford	'86	x			
			Total	50.0	40.0								
7	Baucau	Quelicai	1	50.0	40.0	Deutz	'86	Stanford	'86	x			Repaired by Portugal
			2	50.0	40.0	Deutz	'86	Stanford	'86	x			Repaired by Portugal
			Total	100.0	80.0								
8	Lospalos	Lospalos	1	240.0	0.0	Deutz	?	Stanford	?			x	
			2	240.0	0.0	Deutz	?	Stanford	?			x	
			3	-	-	-		-		-	-	-	
			4	260.0	180.0	Bisma	?	Stanford	?		x		
			5	800.0	0.0	MWM	?	Leroy	?			x	
			6	508.0	400.0	Caterpillar	?	?	?	x			
			Total	2,048.0	580.0								
9	Lospalos	Tutuala	1	40.0	0.0	Bisma	'87	Stanford	'87			x	Damaged
			2	40.0	32.0	Bisma	'84	Stanford	'84	x			
			Total	80.0	32.0								
10	Lospalos	Iliomar	1	40.0	0.0	-		-				x	Burnt completely
			Total	40.0	0.0								
11	Lospalos	Luro	1	40.0	0.0								
			2										
			Total	40.0	0.0								

No.	Name of Districts	Name of Power Station	Unit No.of D/G	Rated Output Capacity (kW)	Available Capacity (kW)	Name of Manufacturer and Year				Current Conditions			Remarks (Causes and content of damages)
						Engine		Alternator		operating good	operating barely	not operated	
1	2	3	4	5	6	7		8		9	10	11	12
12	Lospalos	Lautem	1	25.0	25.0								
			2										
			Total	25.0	25.0								
13	Manatuto	Manatuto	1	800.0	400.0	Cummins	?	Petbow	?		x		
			2	288.0	150.0	Deutz	'95	AVK	'95		x		
			3	?	0.0	Deutz	?	Removed	?			x	Out of order
			4	125.0	0.0	Deutz	?	Siemens	?			x	Out of order
			5	-	-	-		-				x	Scrap
			Total	1,213.0	550.0								
14	Manatuto	Lacluber	1	25.0	25.0	Bisma	?	Stanford	?			x	Totally burnt
												x	Totally burnt
			Total	25.0	25.0								
15	Manatuto	Soibada	1	50.0	40.0	Bisma	'85	Stanford	'85	x			6 hours daily operation
			2	50.0	40.0	Deutz	'84	Stanford	'84	x			6 hours daily operation
			Total	100.0	80.0								
16	Manatuto	Natarbora	1	50.0	0.0	Deutz	'84	Stanford	'84			x	Burnt
			Total	50.0	0.0								
17	Manatuto	Manelima	1	60.0	0.0	Deutz	'84	Stanford	'84	x			Repaired by UNTAET
			Total	60.0	0.0								
18	Aileu	Aileu	1	280.0	170.0	Deutz	?	Stanford	?		x		
			2	100.0	0.0	Deutz	?	Siemens	?			x	Secular deterioration and lack of sapre parts
			3	300.0	0.0	Yanmmer	'86	ToyoDenki	'86			x	
			Total	680.0	170.0								

No.	Name of Districts	Name of Power Station	Unit No.of D/G	Rated Output Capacity (kW)	Available Capacity (kW)	Name of Manufacturer and Year				Current Conditions			Remarks (Causes and content of damages)
						Engine		Alternator		operating good	operating barely	not operated	
1	2	3	4	5	6	7		8		9	10	11	12
19	Aileu	Maubisse	1	40.0	20.0	Deutz	?	Partner	?		x		
			2	40.0	0.0	Bisma	?	AVK	?			x	Lack of tools and spare parts
			Total	80.0	20.0								
20	Aileu	Remexio	1	20.0	0.0	Bisma	?	Stanford	?			x	Totally burnt
			2	20.0	0.0	Bisma	?	Stanford	?			x	Totally burnt
			Total	40.0	0.0								
21	Aileu	Lequidoe	1	50.0	0.0	Deutz	'85	Stanford	'85	x			Repaired by UNTAET
			Total	50.0	0.0								
22	Viqueque	Viqueque	1	300.0	240.0	BF12L	?	Stanford	?	x			
			2	300.0	0.0	BF12L	?	Stanford	?			x	Lack of tools and spare parts
			3	260.0	240.0	Bisma	?	Stanford	?	x			
			4	100.0	0.0	Deutz	?	Siemens	?			x	Lack of tools and spare parts
			5	100.0	100.0	Komatsu	?	Stanford	?	x			
			Total	1,060.0	580.0								
23	Viqueque	Ossu	1	40.0	30.0	Bisma	?	Stanford	?				
			2	104.0	0.0	Deutz	'97	Leroy	'97				
			Total	144.0	30.0	Bisma	?	AVK	'86				
24	Viqueque	Uatu Lari	1	100.0	80.0	Deutz	'86	AVK	'86	x			
			2	80.0	0.0	Deutz	'86	AVK	'86			x	Damaged
			3	80.0	0.0	Komdsuh	'89	Komdsuh	'89			x	Damaged
			Total	260.0	80.0								
25	Viqueque	Uatu Carbau	1	100.0	0.0	Deutz	'86	Stanford	'86			x	Damaged
			2	100.0	0.0	Deutz	'88	Stanford	'88			x	Damaged
			Total	200.0	0.0								
26	Viqueque	Lacluta	1	50.0	0.0	Deutz	'86	Stanford	'86			x	Heavily destroyed
			Total	50.0	0.0								

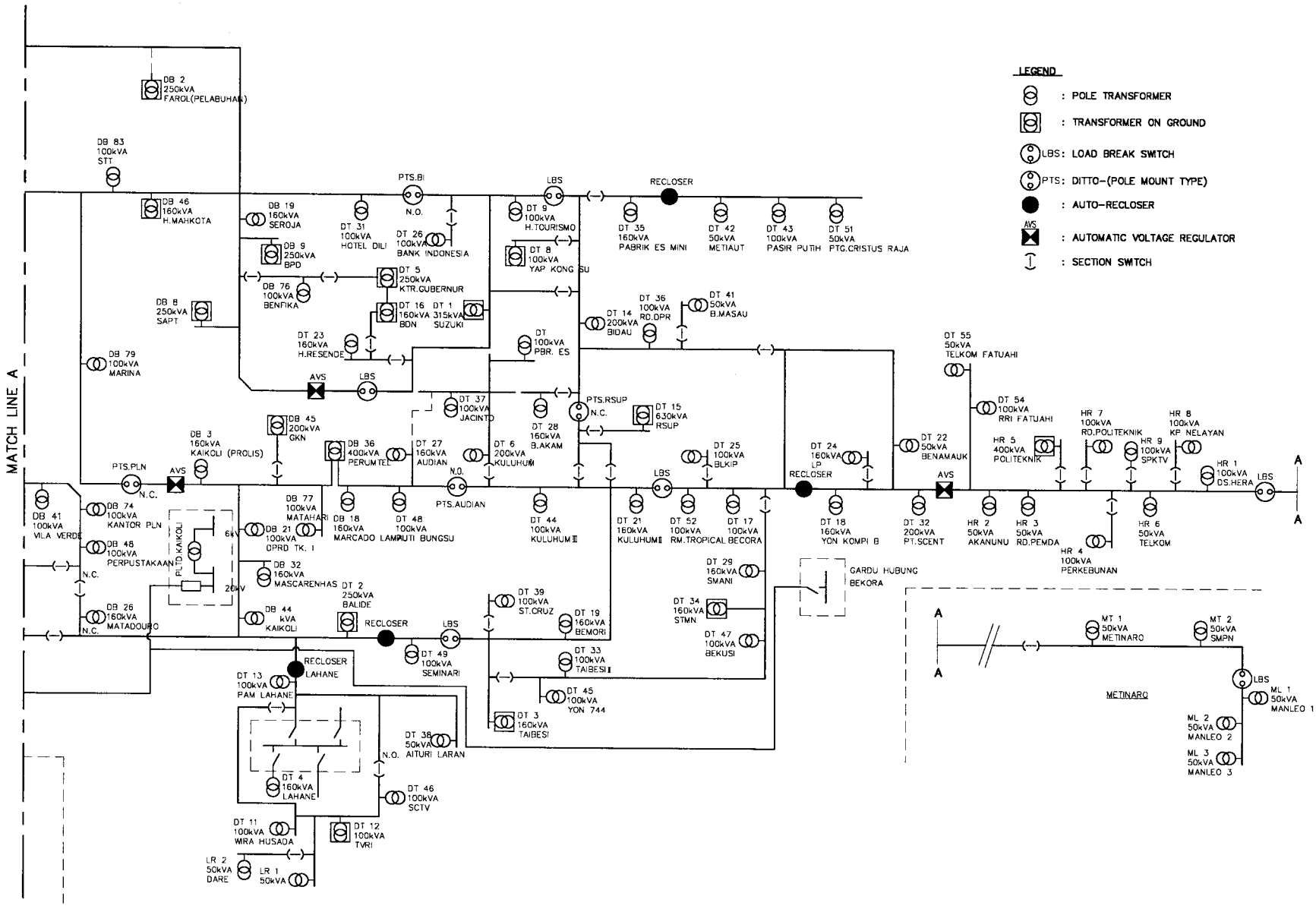
No.	Name of Districts	Name of Power Station	Unit No.of D/G	Rated Output Capacity (kW)	Available Capacity (kW)	Name of Manufacturer and Year				Current Conditions			Remarks (Causes and content of damages)
						Engine		Alternator		operating good	operating barely	not operated	
1	2	3	4	5	6	7		8		9	10	11	12
27	Same	Same	1	308.0	200.0	Deutz	'85	Stanford	'85		x		
			2	325.0	200.0	Deutz	'85	Stanford	'85		x		
			3	200.0	0.0	BAMBF6	'85	BF6M	'85			x	Damage in radiator
			4	200.0	0.0	BAMBF12	'85	BF12M	'85			x	Damage in radiator
			Total	1,033.0	400.0								
28	Same	Fatuberliu	1	40.0	24.0	Deutz	'87	Stanford	'89		x		5 hours daily operation
			2	40.0	0.0	Deutz	'87	Stanford	'87			x	Valve&connection rod broken
			Total	80.0	24.0								
29	Same	Alas	1	50.0	40.0	Deutz	'85	Stanford	'85	x			6 hours daily operation
			Total	50.0	40.0								
30	Same	Turiscai	1	50.0	40.0	Deutz	'85	Stanford	'85	x			Repaired by UNTAET
			Total	50.0	40.0								
31	Same	Betano	1	40.0	0.0	Deutz	'89	Stanford	'89			x	Destroyed
			Total	40.0	0.0								
32	Ainaro	Ainaro	1	129.0	0.0	Deutz	'85	Stanford	'85			x	Burnt
			2	300.0	0.0	Deutz	'85	Stanford	'85			x	Destroyed
			3	325.0	0.0	Deutz	'87	Stanford	'87			x	Destroyed
			4	340.0	0.0	Deutz	'87	Stanford	'87			x	Destroyed
			5	300.0	0.0	Deutz	'95	Stanford	'95			x	Destroyed
			Total	1,394.0	0.0								
33	Ainaro	Hato udo	1	60.0	0.0	Deutz	'89	Stanford	'89			x	Burnt/Scrap
			Total	60.0	0.0								

No.	Name of Districts	Name of Power Station	Unit No.of D/G	Rated Output Capacity (kW)	Available Capacity (kW)	Name of Manufacturer and Year				Current Conditions			Remarks (Causes and content of damages)
						Engine		Alternator		operating good	operating barely	not operated	
1	2	3	4	5	6	7		8		9	10	11	12
34	Ainaro	Hato bilico	1	20.0	0.0	Deutz	?	Stanford	?			x	Totally destroyed
			2	-	-	-		-				x	Removed from site for repair
			Total	20.0	0.0								
35	Ainaro	Fatululic	1	40.0	0.0	-		-				x	Lost(being removed from site)
			Total	40.0	0.0								
36	Ermera	Gleno	1	880.0	0.0	MWM	'97	AVK	'97			x	Severely destroyed
			2	800.0	0.0	RB	?	Petbow	?			x	Severely destroyed
			3	240.0	0.0	MWM	?	Stanford	?			x	Engine totally burnt
			4	-	-	-		-				x	Engine totally burnt
			5	-	-	Deutz	?	Removed	?			x	Most of the parts removed
			6	180.0	180.0	Cummins	'00	Cummins	'00	x			New generator installed by UNTAET
			Total	2,100.0	180.0								
37	Ermera	Letefoho	1	25.0	0.0	Deutz	'83	Stanford	'83	x			Repaired by UNTAET
			Total	25.0	0.0								
38	Ermera	Hatolia	1	40.0	30.0	Deutz	'85	Stanford	'85	x			Repaired by UNTAET
			Total	40.0	30.0								
39	Ermera	Atsabe	1	25.0	0.0	-		-				x	Burnt/Scrap
			2	25.0	0.0	-		-				x	Burnt/Scrap
			Total	50.0	0.0								
40	Ermera	Railako	1	20.0	0.0	Bisma	?	Stanford	?			x	Severely destroyed
			2	20.0	0.0	Bisma	?	Stanford	?			x	Severely destroyed
			Total	40.0	0.0								
41	Ermera	Ermera	1	30.0	0.0	Isuzu	?	Denyo	?			x	Temporary
			2	40.0	30.0	SDMO	'99	SDMO	'99	x			Temporary
			Total	70.0	30.0								

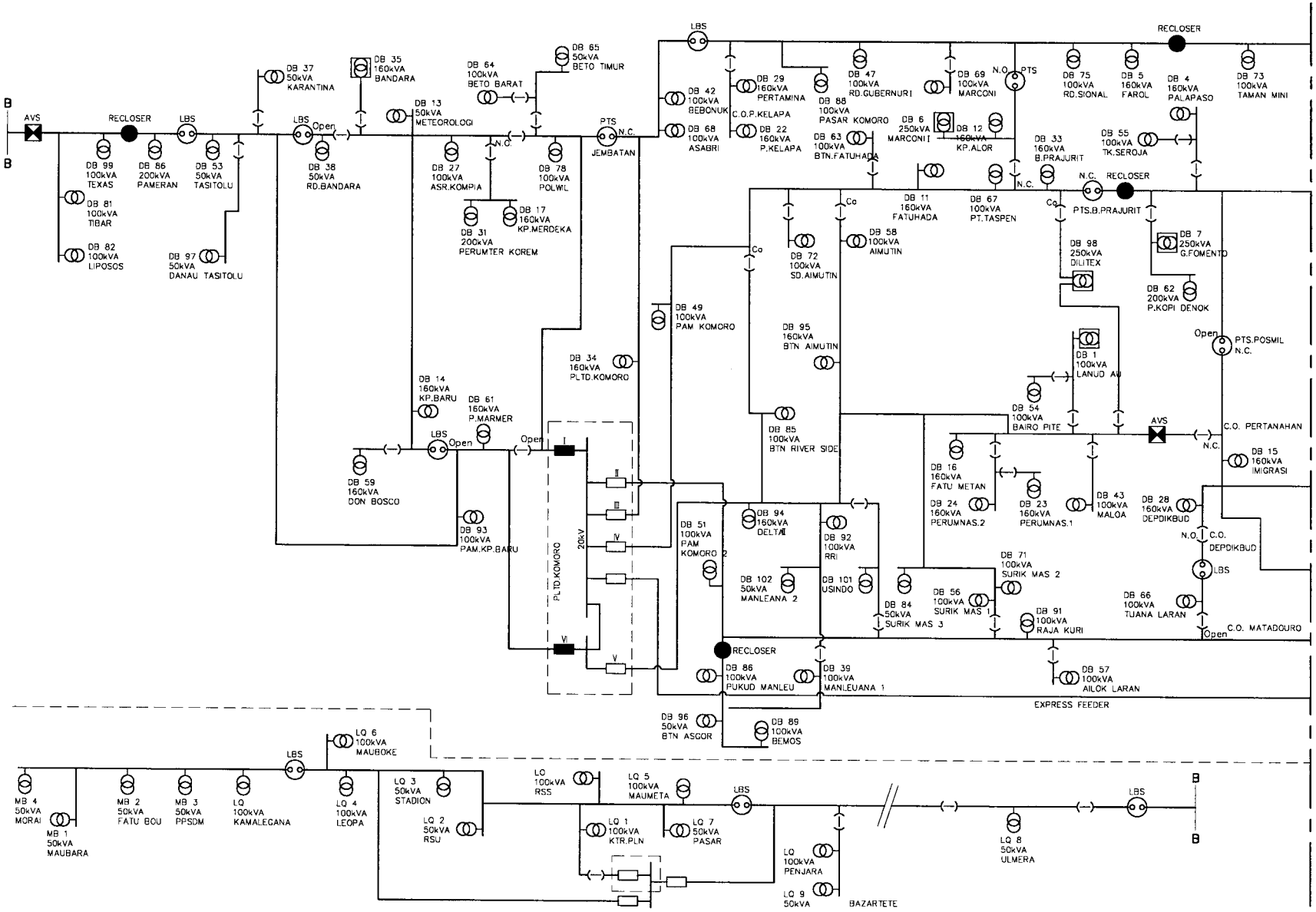
No.	Name of Districts	Name of Power Station	Unit No.of D/G	Rated Output Capacity (kW)	Available Capacity (kW)	Name of Manufacturer and Year				Current Conditions			Remarks (Causes and content of damages)
						Engine		Alternator		operating good	operating barely	not operated	
1	2	3	4	5	6	7		8		9	10	11	12
42	Maliana	Maliana	1	325.0	0.0	Deutz	'85	Stanford	'85			x	Panel & transformer damaged
			2	325.0	0.0	Deutz	'85	Deutz	'85			x	Panel & transformer damaged
			3	357.0	0.0	MWM	'85	Stanford	'85			x	Panel & transformer damaged
			4	528.0	500.0	MWM	'85	Partner	'98	x			
			5	220.0	0.0	Deutz	'98	Deutz	'82			x	Scrap
			6	126.0	0.0	Deutz	'84	Siemens	'84			x	Scrap
			Total	1,881.0	500.0								
43	Maliana	Bobonaro	1	50.0	0.0	Deutz	'85	Stanford	'85			x	Scrap
			2	65.0	0.0	Deutz	'85	Stanford	'85			x	Scrap
			3	51.0	0.0	Deutz	'98	Stanford	'98			x	Repairable
			4	51.0	0.0	Deutz	'98	Stanford	'98			x	Repairable
			Total	217.0	0.0								
44	Maliana	Batugade	1	40.0	0.0	?	?	?	?			x	Totally damaged
			2	40.0	0.0	?	?	?	?			x	Totally damaged
			Total	80.0	0.0								
45	Maliana	Atabae	1	60.0	0.0	-		-				x	Lost(being removed from site)
			Total	60.0	0.0								
46	Maliana	Balibo	1	40.0	0.0	Deutz	'85	Stanford	'85			x	Destroyed
			2	40.0	0.0	Deutz	'85	Stanford	'85			x	Destroyed
			Total	80.0	0.0								
47	Maliana	Lolotoe	1	40.0	0.0								
			Total	40.0	0.0								
48	Suai	Suai	1	300.0	285.0	Deutz	'97	Stanford	'97	x			
			2	360.0	0.0	Deutz	'95	Deutz	'95			x	Burnt/Scrap
			3	428.0	0.0	Deutz	'85	Stanford	'85			x	Burnt/Scrap
			4	600.0	0.0	Partner	'96	Partner	'96			x	Burnt/Scrap
			5	515.0	0.0	SWD	'76	Heemat	'76			x	Burnt/Scrap
			Total	2,203.0	285.0								

No.	Name of Districts	Name of Power Station	Unit No.of D/G	Rated Output Capacity (kW)	Available Capacity (kW)	Name of Manufacturer and Year				Current Conditions			Remarks (Causes and content of damages)
						Engine		Alternator		operating good	operating barely	not operated	
1	2	3	4	5	6	7		8		9	10	11	12
49	Suai	Zumalai	1	40.0	0.0	Deutz	'84	Stanford	'84			x	
			2	40.0	0.0	Deutz	'84	Stanford	'84			x	
			Total	80.0	0.0								
50	Suai	Fohorem	1	40.0	0.0								
			Total	40.0	0.0								
51	Suai	Tilomar	1	40.0	0.0	-		-				x	Lost(being removed from site)
			Total	40.0	0.0								
52	Suai	Beco	1	40.0	0.0								
			Total	40.0	0.0								
53	Suai	Raimean	1	40.0	0.0	Deutz	'95	MVK	'95			x	Destroyed
			2	40.0	0.0	Deutz	'97	Partner	'97			x	Destroyed
			Total	80.0	0.0								
54	Suai	Fatumean	1	40.0	0.0								
			Total	40.0	0.0								
55	Oekussi	Oekussi	1	440.0	150.0								
			2	40.0	0.0								
			3	40.0	0.0								
			4	25.0	0.0								
			5	50.0	0.0								
			Total	595.0	150.0								
56	Oekussi	Passabe	1	40.0	0.0								
			Total	40.0	0.0								

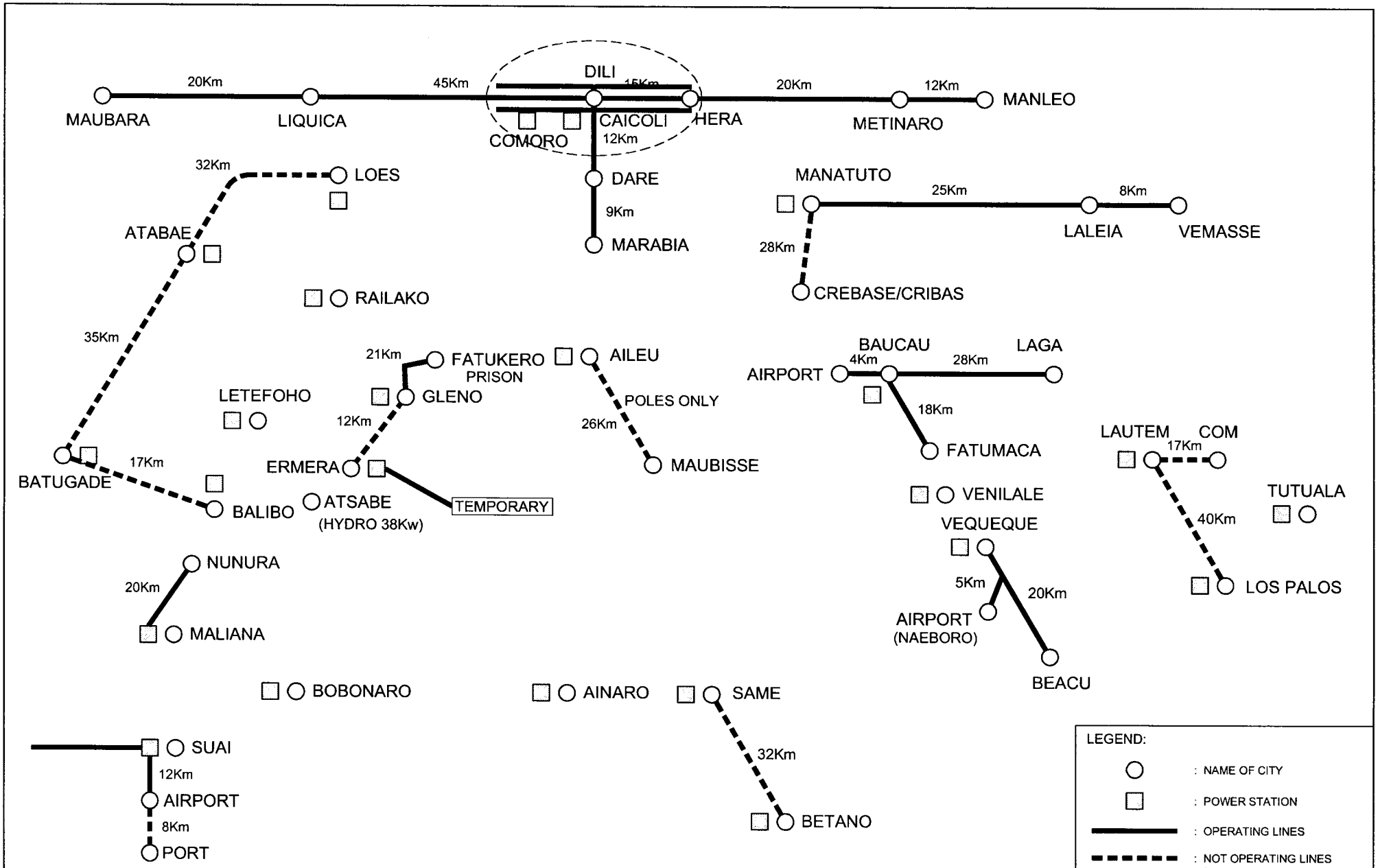
No.	Name of Districts	Name of Power Station	Unit No.of D/G	Rated Output Capacity (kW)	Available Capacity (kW)	Name of Manufacturer and Year				Current Conditions			Remarks (Causes and content of damages)
						Engine		Alternator		operating good	operating barely	not operated	
1	2	3	4	5	6	7		8		9	10	11	12
57	Oekussi	Nitibe	1	40.0	0.0								
			Total	40.0	0.0								
58	Oekussi	Oesilo	1	25.0	0.0								
			Total	25.0	0.0								
59	Liquica	Loes	1	25.0	0.0	Deutz	?	Stanford	'85			x	Totally burnt
			2	25.0	0.0	Deutz	?	Stanford	'85			x	Totally burnt
			Total	50.0	0.0								
60	Liquica	Bazartete	1	20.0	0.0	Bisma	?	Stanford	?			x	Severely burnt
			Total	20.0	0.0								
	Grand Total			41,502.0	17,123.0								



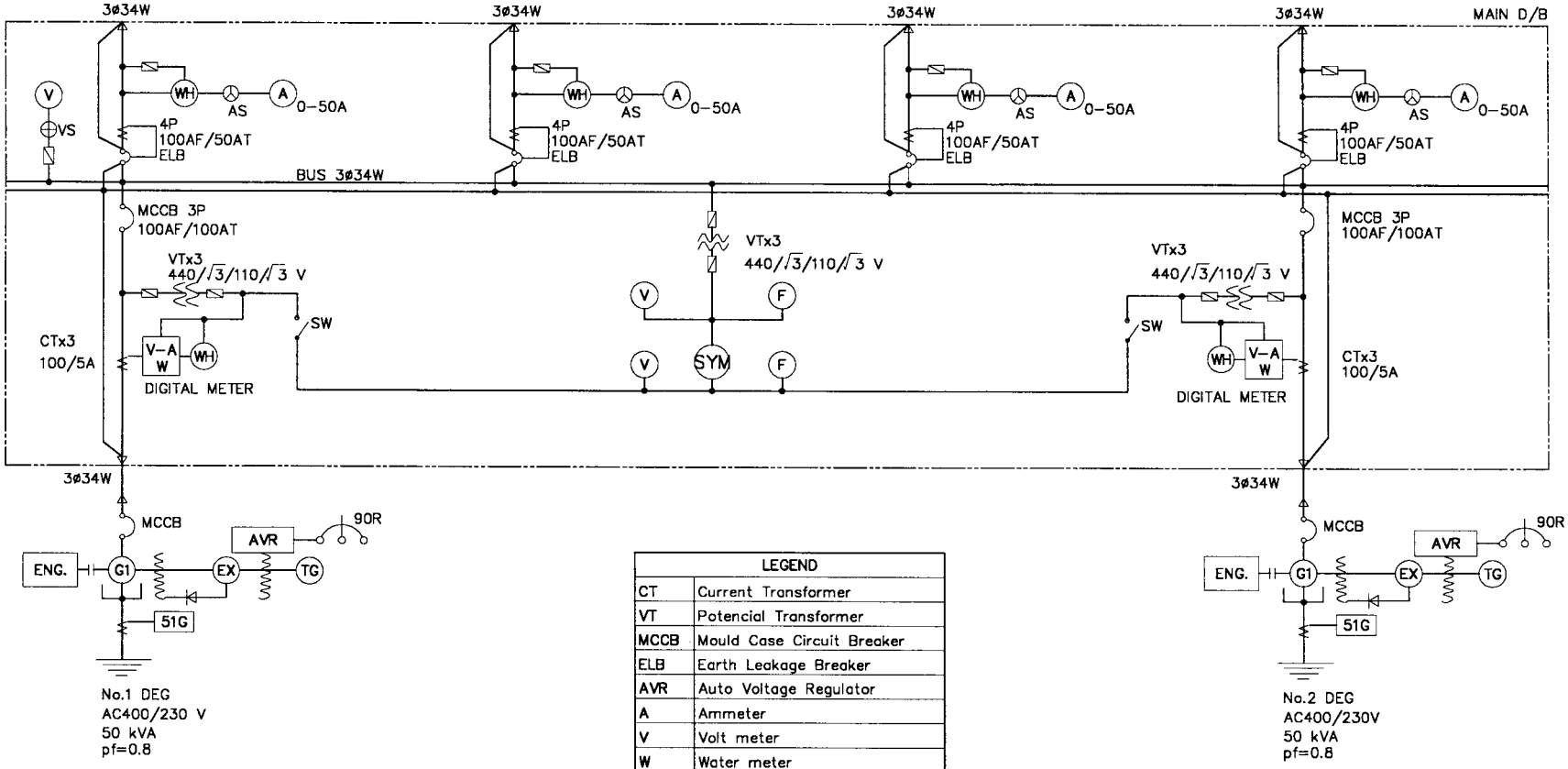
UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)		TITLE: SINGLE LINE DIAGRAM OF POWER SYSTEM IN DILI	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000	APP. 5.1.3- DRAWING No. 04-1/2



UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)		TITLE: SINGLE LINE DIAGRAM OF POWER SYSTEM IN DILI	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000	APP. 5.1.3- DRAWING No. 04-2/2

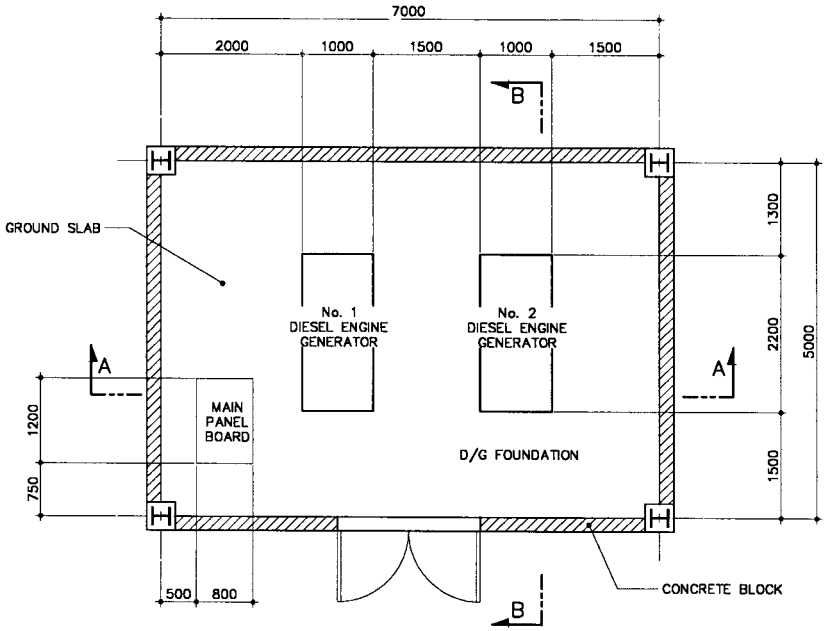


UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)		TITLE: 20 KV DISTRIBUTION LINE IN EAST TIMOR	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000 / APP. 5.1.3-DRAWING No. 05	



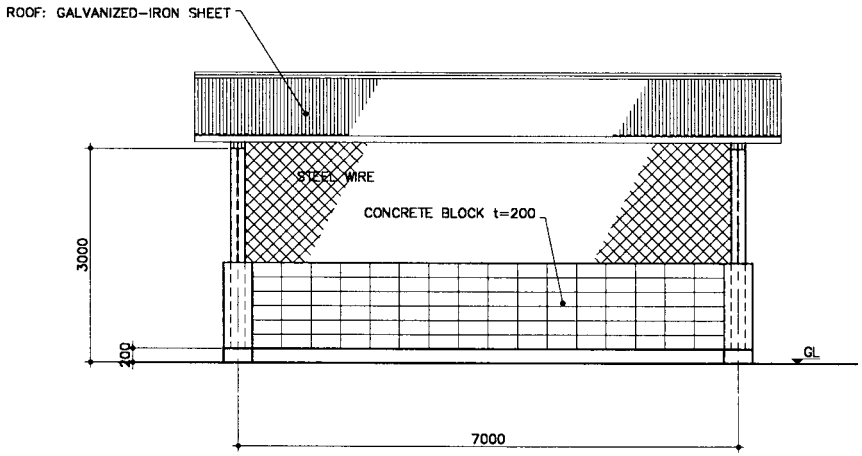
LEGEND	
CT	Current Transformer
VT	Potencial Transformer
MCCB	Mould Case Circuit Breaker
ELB	Earth Leakage Breaker
AVR	Auto Voltage Regulator
A	Ammeter
V	Volt meter
W	Water meter
WH	Watt–Hour meter
51G	Over current ground relay

UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)		TITLE: TYPICAL SINGLE LINE DIAGRAM OF RURAL POWER STATION	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000 / APP. 5.2.3- DRAWING No. 01	



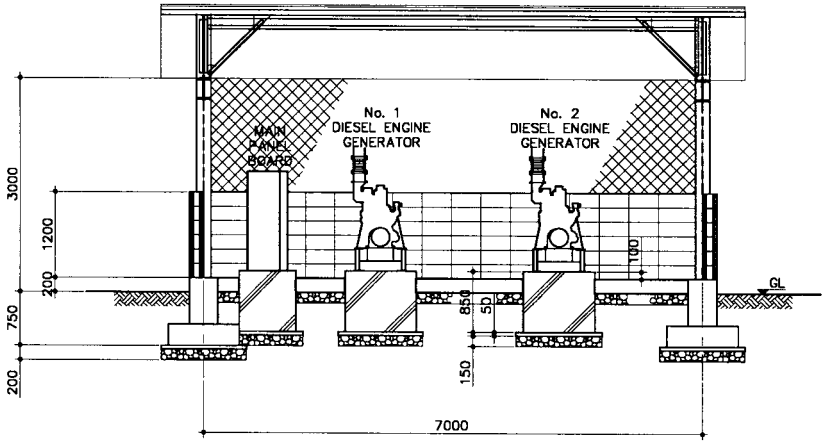
PLAN

SCALE: 1:100



ELEVATION

SCALE: 1:100



A–A SECTION

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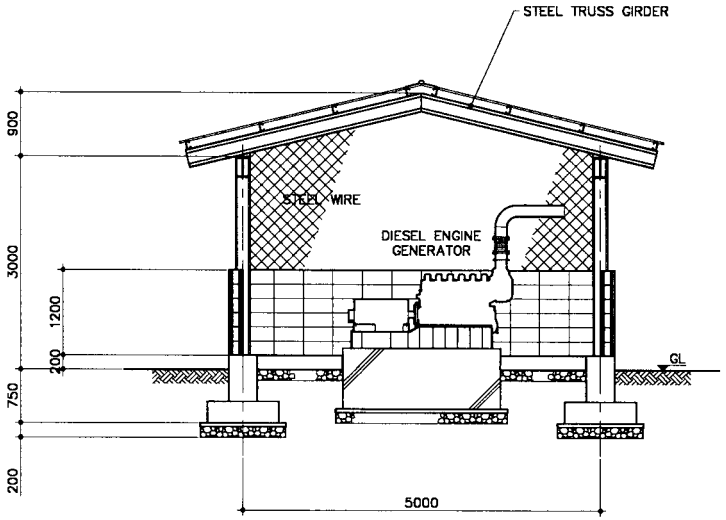
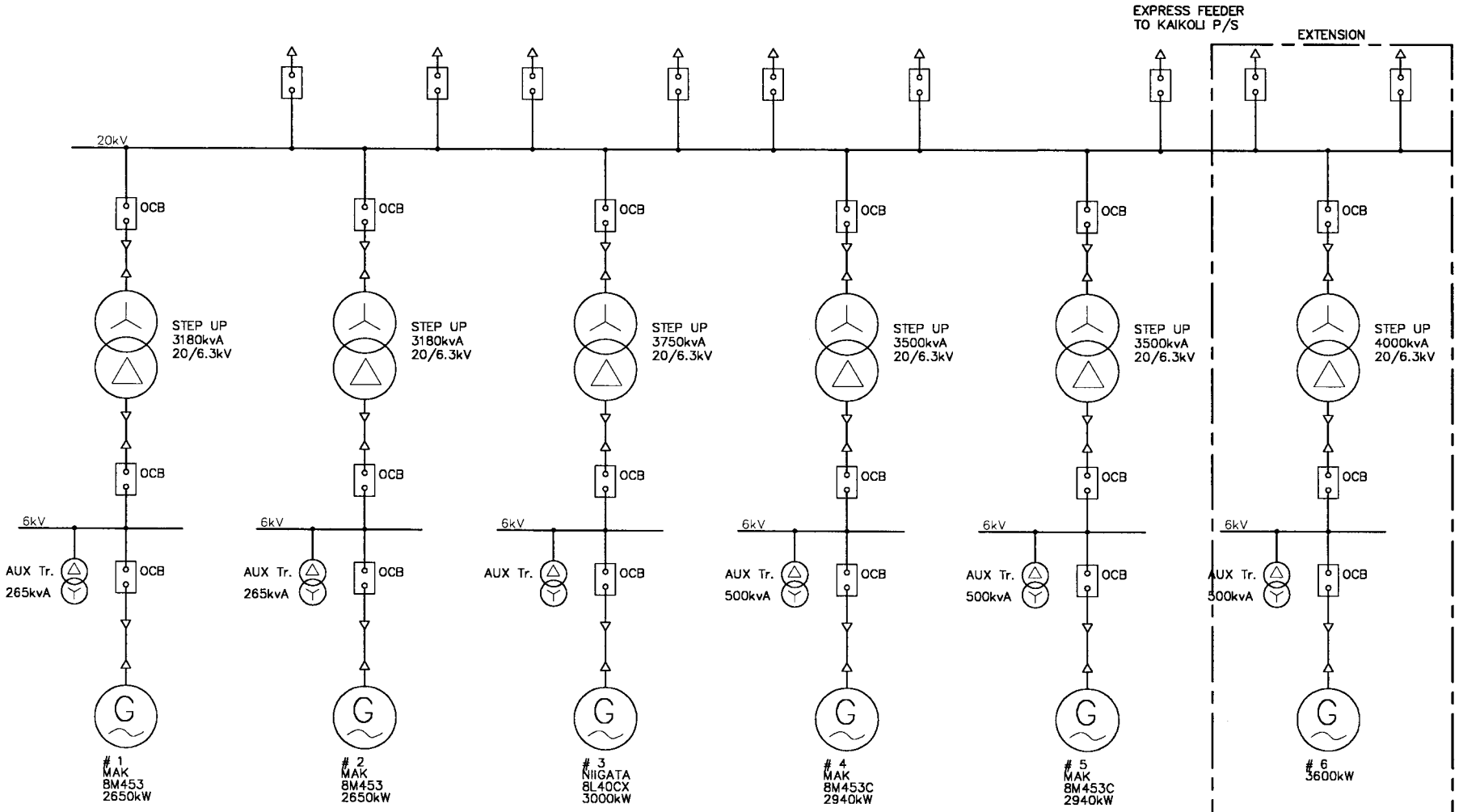


B–B SECTION

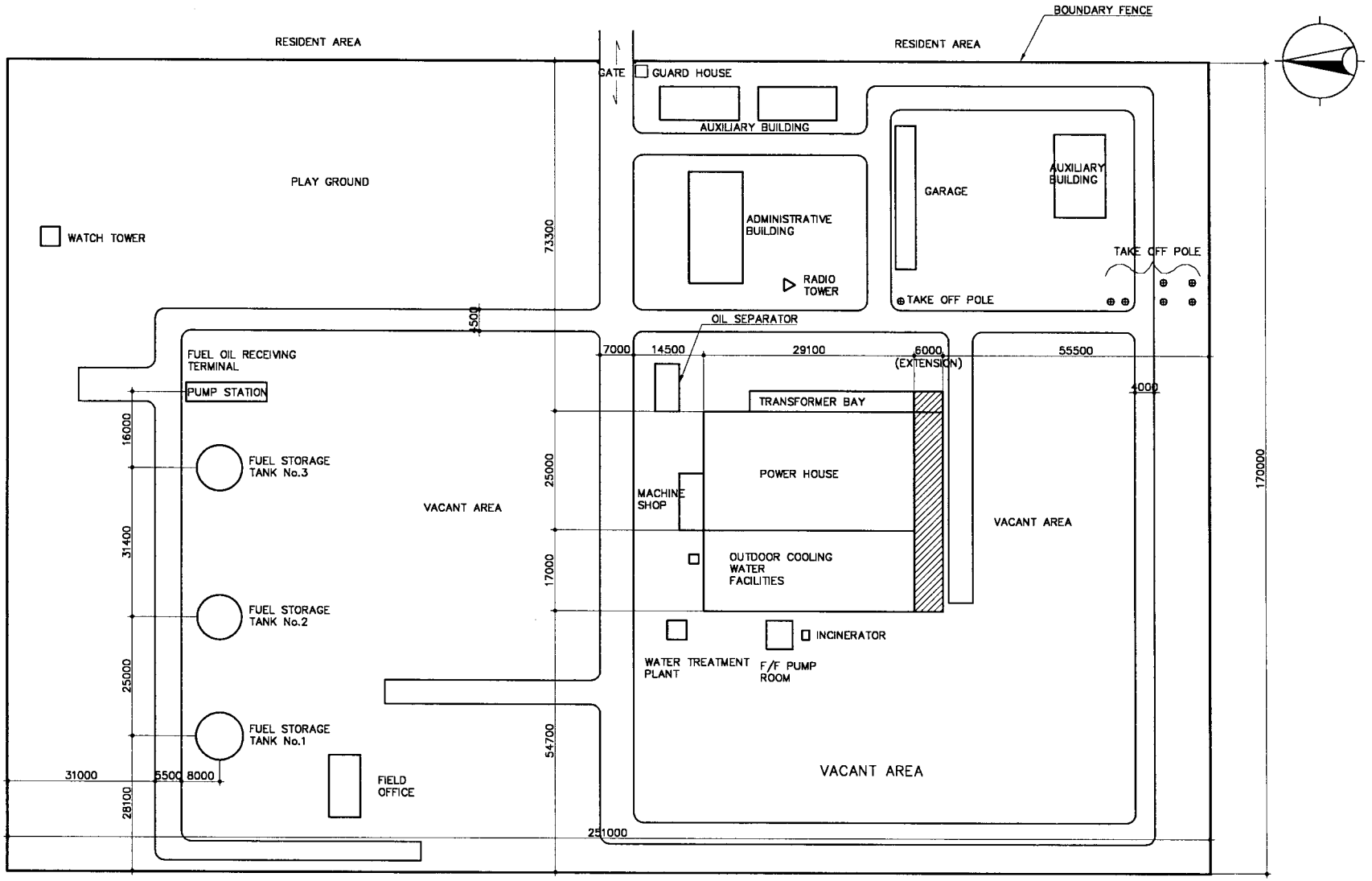
SCALE: 1:100

NOTE: ALL DIMENSIONS ARE REFERENCE ONLY

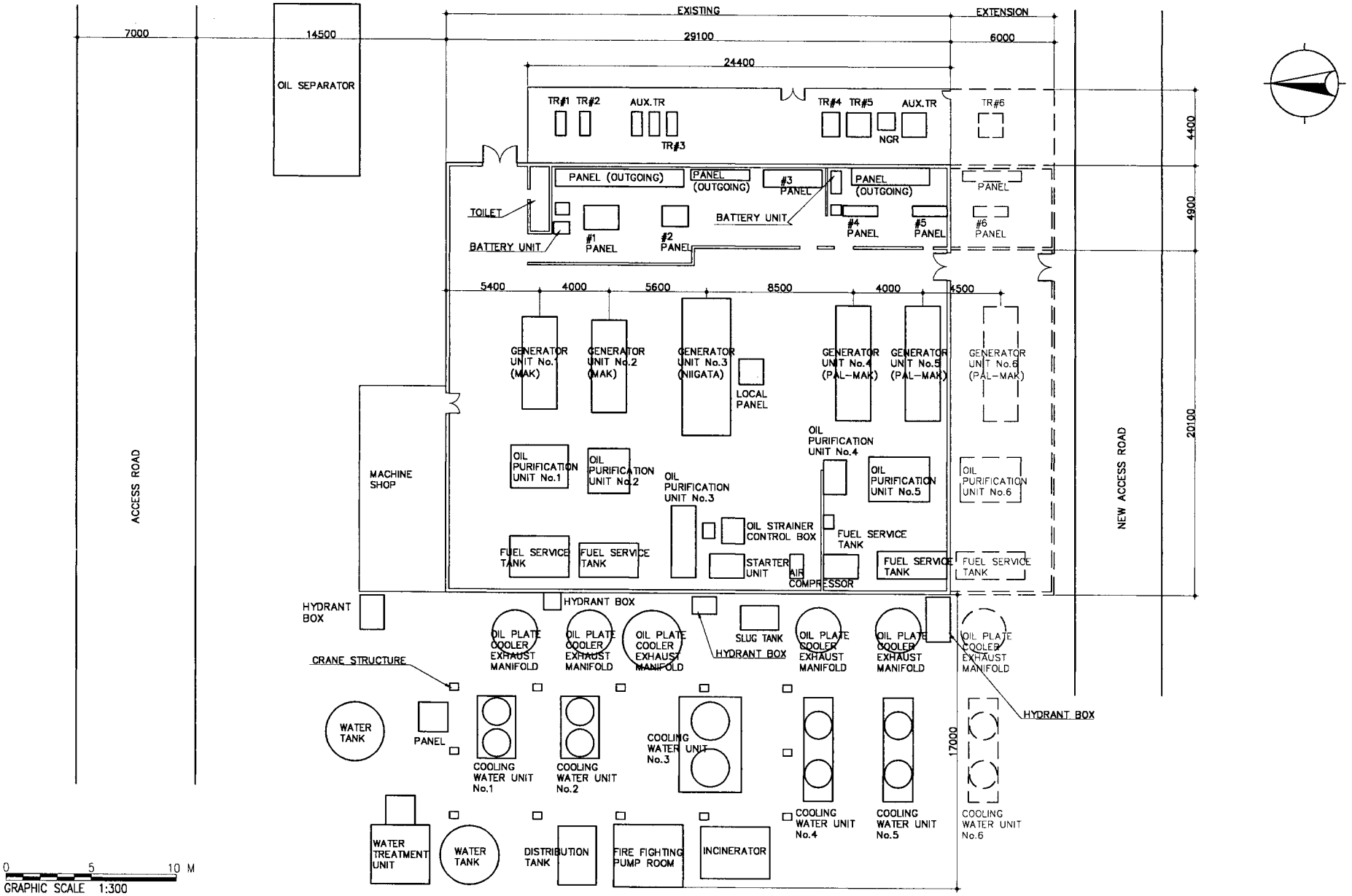
UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)		TITLE: TYPICAL LAYOUT DRAWING OF RURAL POWER STATION	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000	APP. 5.2.3- DRAWING No. 02



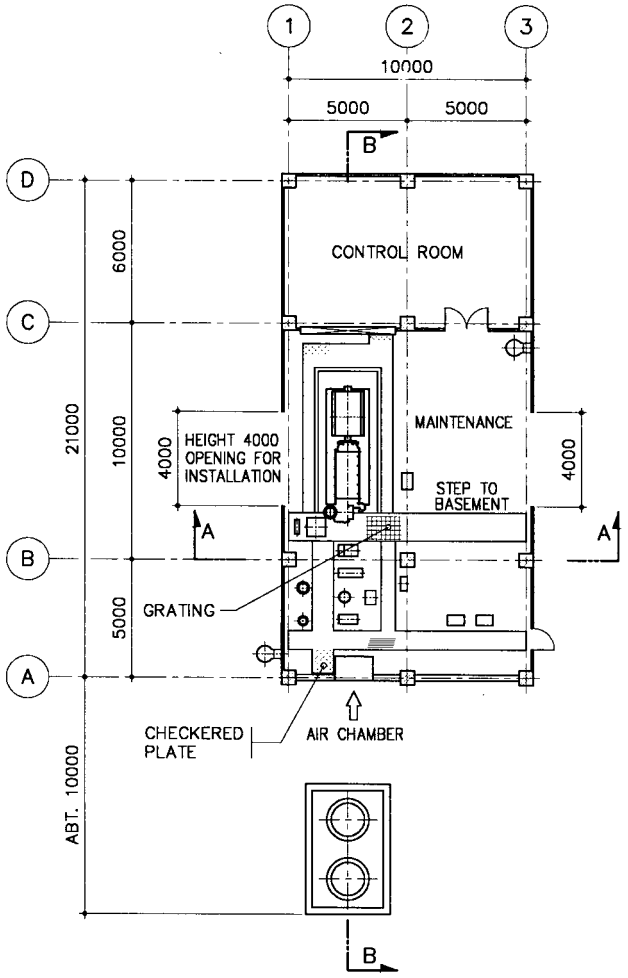
UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)		TITLE: SINGLE LINE DIAGRAM OF KOMORO POWER STATION	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000 / APP. 5.2.3- DRAWING No. 03	



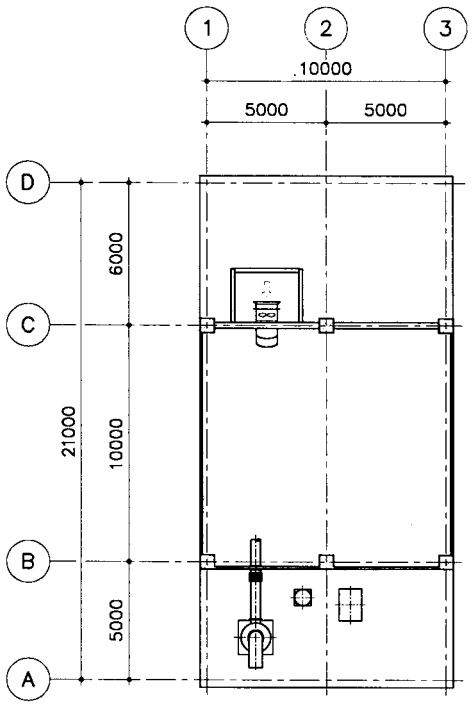
UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)		TITLE: GENARAL LAYOUT OF KOMORO POWER STATION	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000 / APP. 5.2.3- DRAWING No. 04	



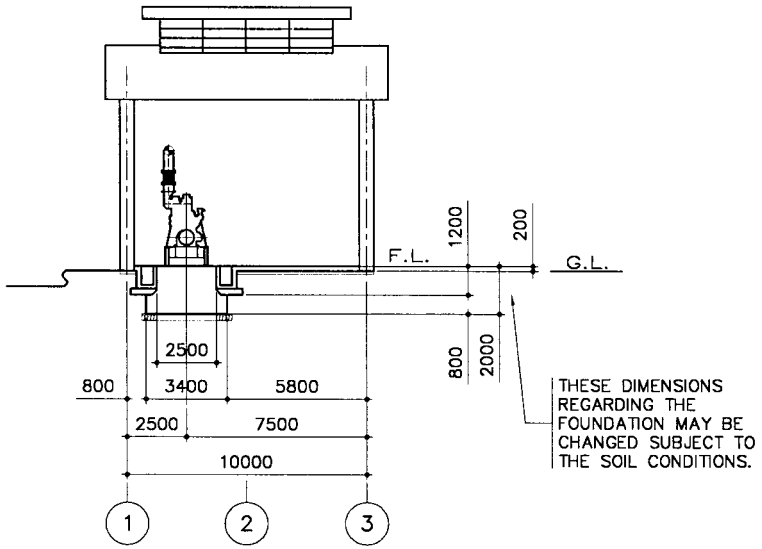
UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)		TITLE: EQUIPMENTL LAYOUT OF KOMORO POWER STATION	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000	APP. 5.2.3- DRAWING No. 05



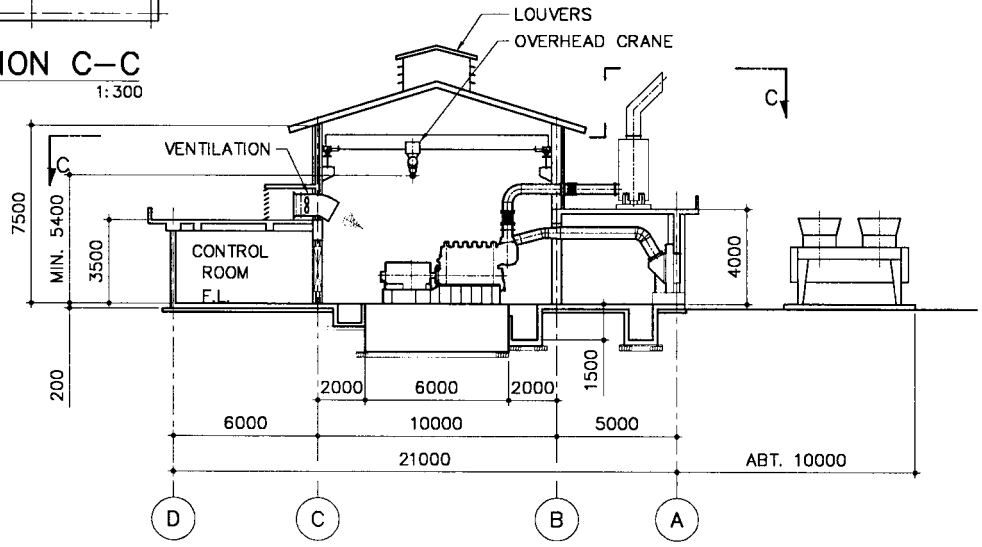
PLAN
SCALE: 1:300



SECTION C–C
SCALE: 1:300



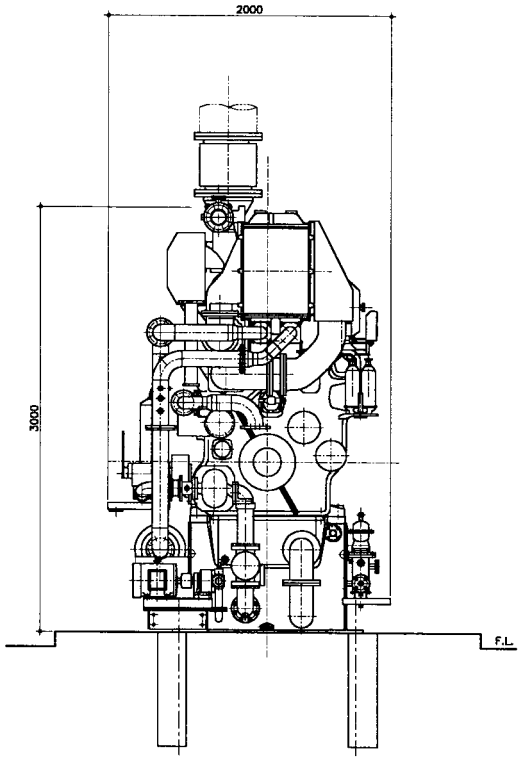
SECTION A–A
SCALE: 1:300

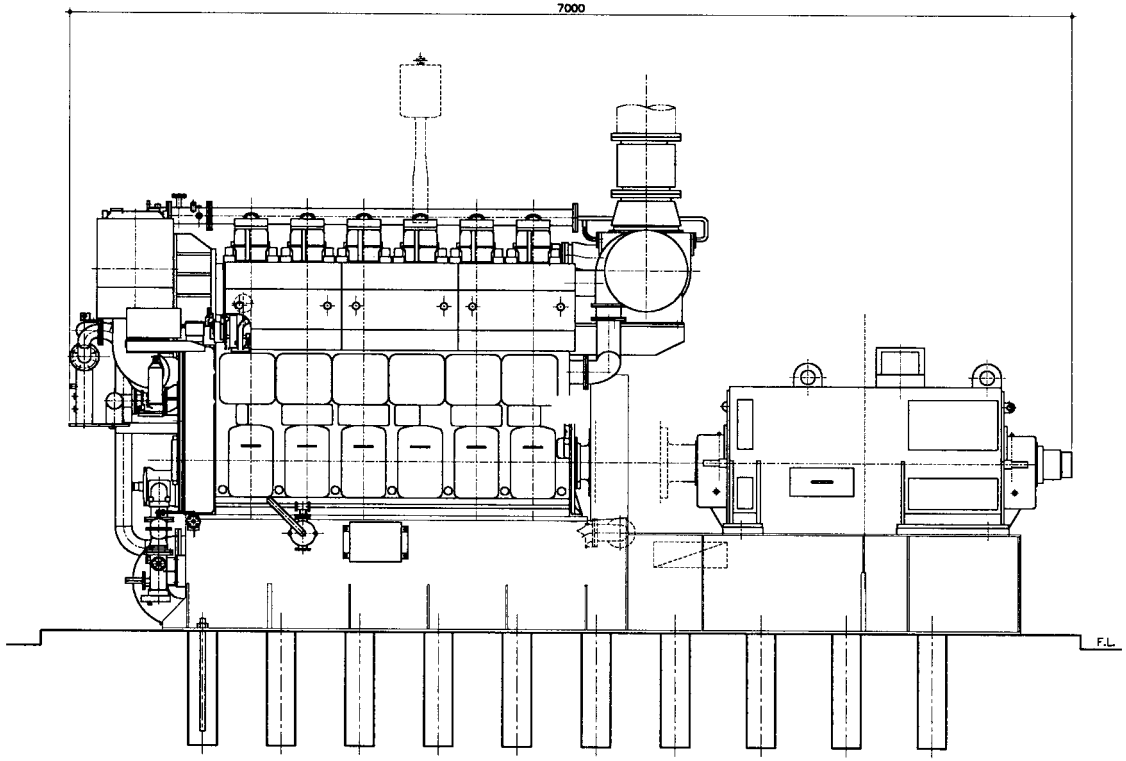


SECTION B–B
SCALE: 1:300

NOTE: ALL DIMENSIONS ARE REFERENCE ONLY

UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)		TITLE: TYPICAL DRAWING OF 1.0 MW POWER STATION	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000 / APP. 5.2.3-DRAWING No. 06	





NOTE: ALL DIMENSIONS ARE REFERENCE ONLY

UNITED NATIONS TRANSITIONAL ADMINISTRATION IN EAST TIMOR (UNTAET)		TITLE: TYPICAL DRAWING OF 1.0 MW GENERATOR	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL NIPPON KOEI CO., LTD YACHIYO ENGINEERING CO., LTD.
		JULY, 2000 / APP. 5.2.3- DRAWING No. 07	

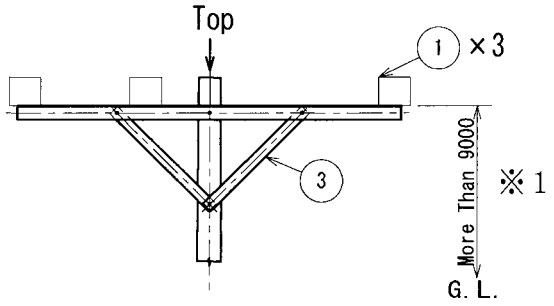
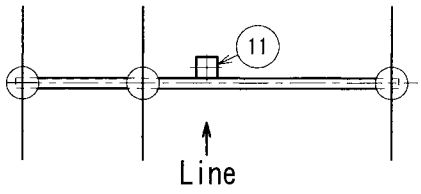
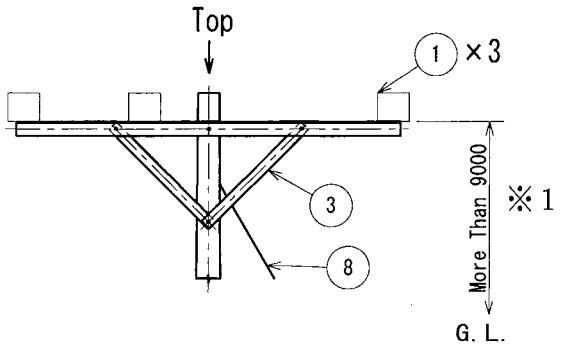
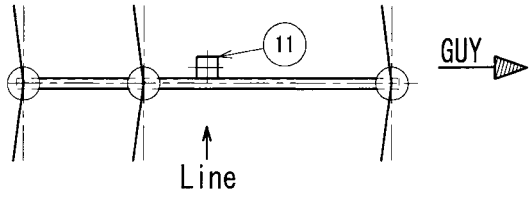
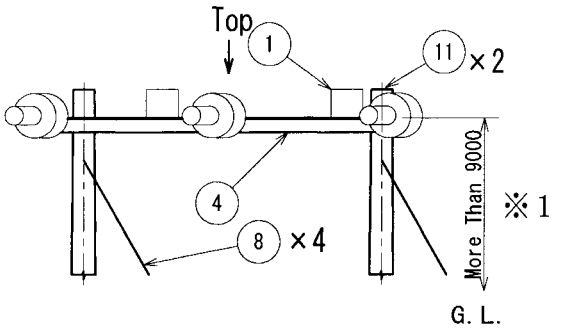
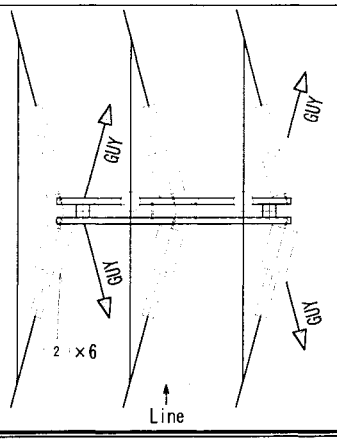
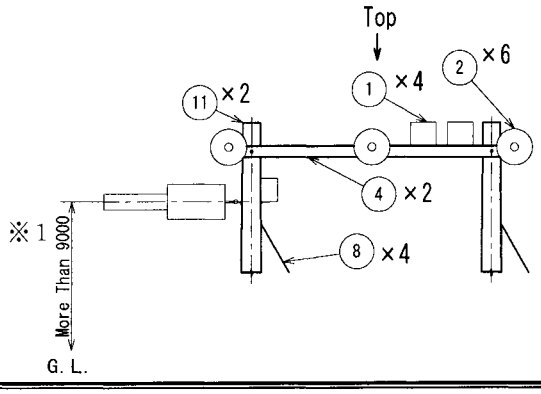
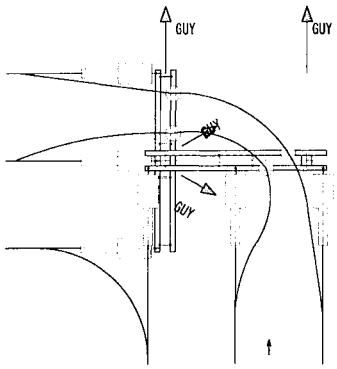
Typical Drawing of 22kV Pole Arrangement

The drawings are showing typical scheme of electric pole arrangement for 22kV distribution lines.

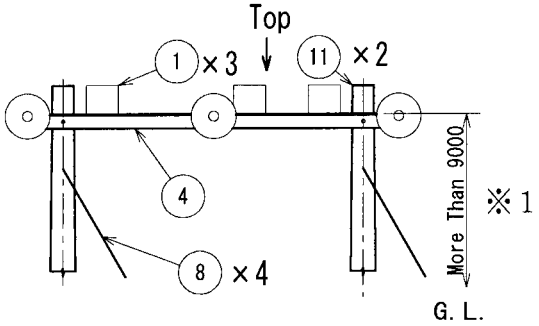
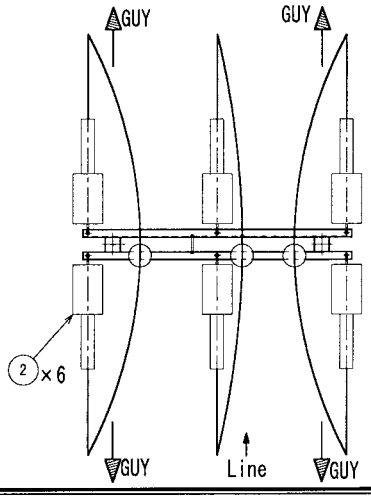
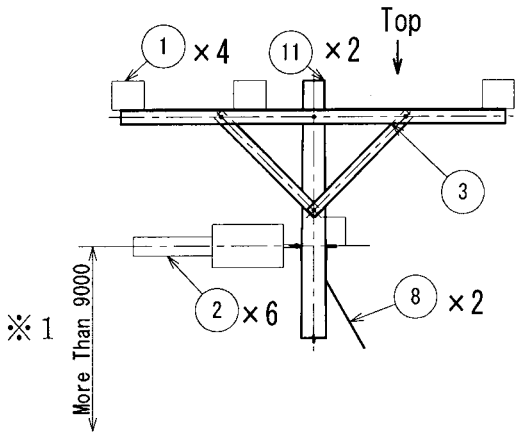
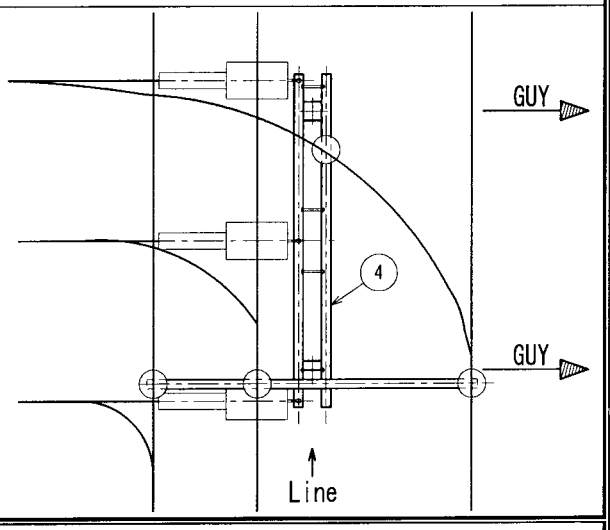
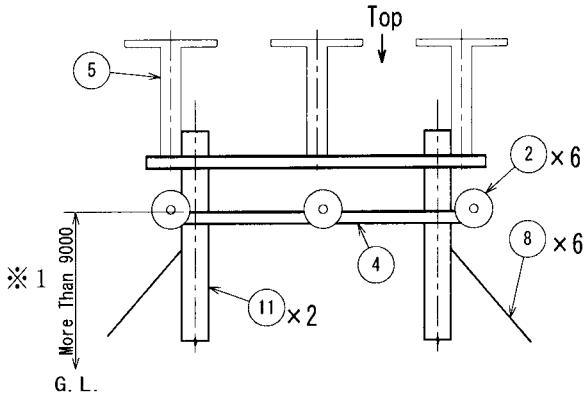
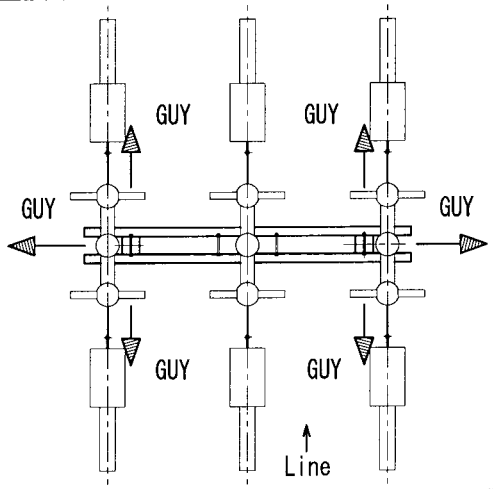
Symbol List of Equipment and Materials on the 22kV Electric Poles

Symbol	Description	Remarks
①	Pin Insulator Set	
②	Disc Insulator Set	
③	Cross-arm Set for Pin Insulator	
④	Cross-arm Set for Disc Insulator	
⑤	LBS Set	
⑥	Transformer Set	With Fuse SW
⑦	Dead End Cable Support Set	With Disconnecting SW
⑧	Guy Wire Set	
⑨	Arrester Set	
⑩	Cross-arm Set for Arrestors	
⑪	Concrete Pole	
⑫	Steel Pole	

22kV Typical Pole Arrangement

Line View	Top View
Type A: Intermediate-1 Pole Line Angle $0 \leqq \theta \leqq 5$	
	
Type B: Intermediate-2 Pole Line Angle $5 \leqq \theta \leqq 15$	
	
Type C: Light Angle Pole Line Angle $15 \leqq \theta \leqq 45$	
	
Type D: Heavy Angle Pole Line Angle $45 \leqq \theta \leqq 90$	
	

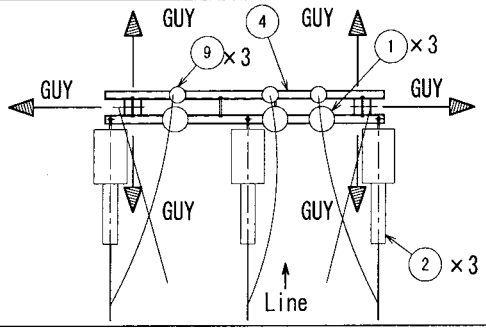
22kV Typical Pole Arrangement

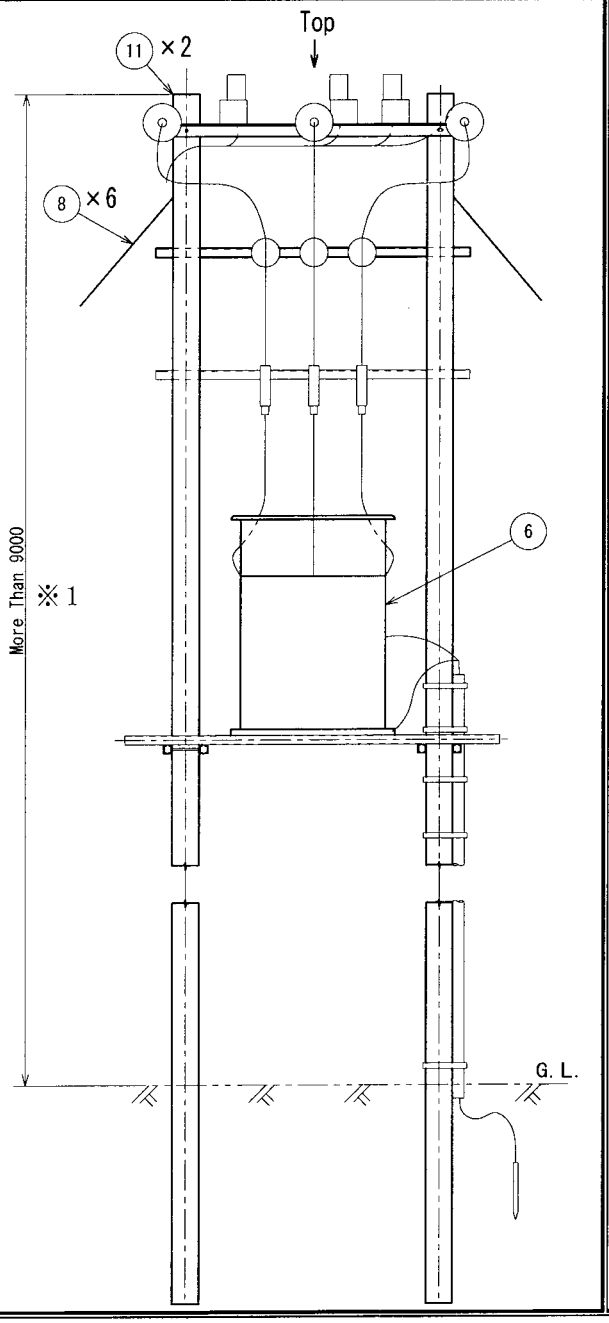
Line View	Top View
Type E: Section Pole Line Angle $0 \leqq \theta \leqq 45$	
	
Type F: Branch Pole Line Angle $0 \leqq \theta \leqq 15$	
	
Type G: LBS Pole Line Angle $0 \leqq \theta \leqq 15$	
	

22kV Typical Pole Arrangement

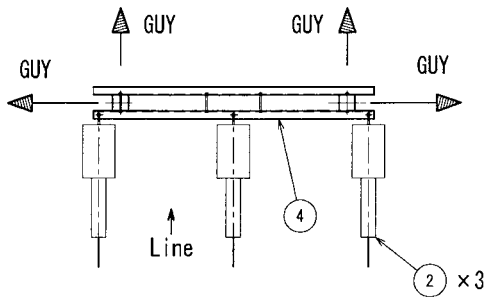
View

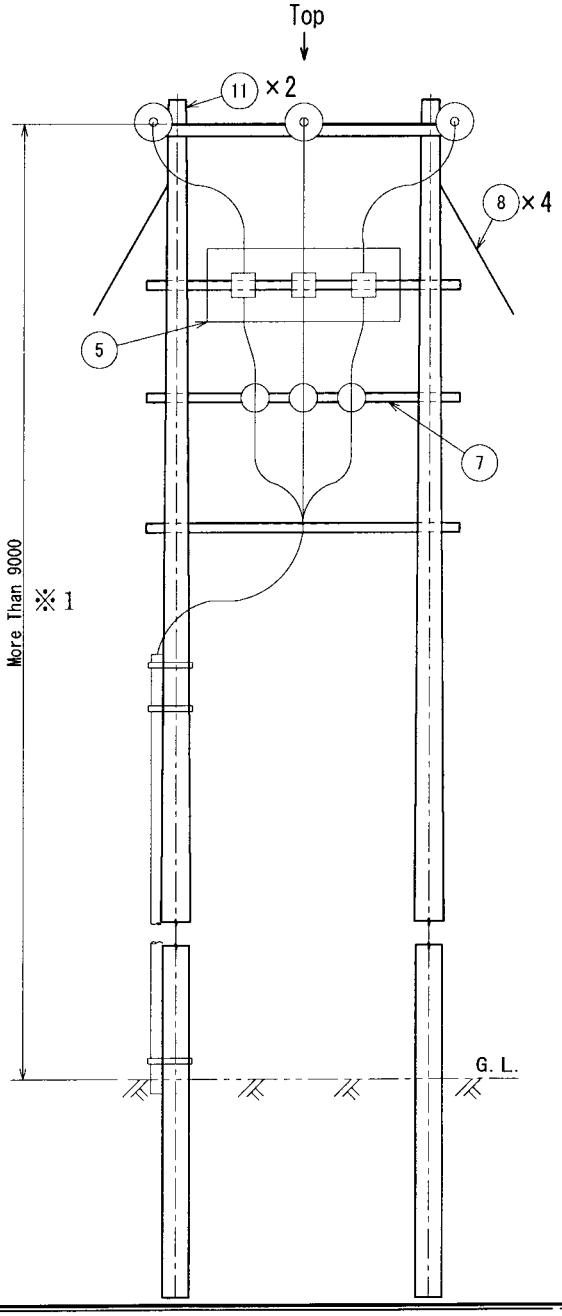
Type H: Transformer Pole
Line Angle $0 \leqq \theta \leqq 15$





Type J: Terminal Pole
Line Angle $0 \leqq \theta \leqq 5$



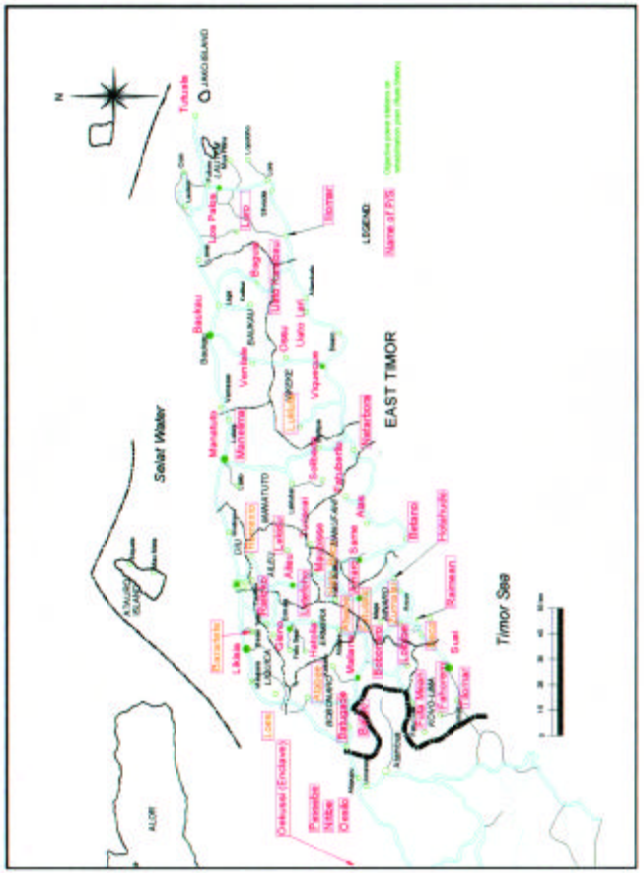


APP. 5.3.1 Project Profile for the Study on Urgent Rehabilitation Plan in East Timor

Project No.		Project Name	Restoration of Rural Power Stations (Restoration Plan No.1)
Development Body	UNTAET	Development Method	Financial Assistance
Operation Body	UNDP/UNOPS	■ B/Q bidding □ BOT/BT □ Other	■ Required □ Not required

Project Cost (Tousant US$)	
Exchange rate: 1US$=110Yen (June, 2000)	
Total	5,180.-
Equipment works	4,608.-
contingency (10% of Civil works)	0.-
Engineering	572.-

Location Map



Major Development Components

This plan aims to rebuild 32 small scale rural power stations including Ainaro which were destroyed or burned in the conflict following the referendum on independence and are not currently operating. Location of each power station are shown in Location map and the construction work of each power station is consist of following:

① 2 sets of diesel engine generator with prime output capacity 40 kW or more for each. Shall be installed.
② Electrical system of 3 phase 4 wire 415/240V, 50 Hz shall be applied.
③ Air cooling system applied for diesel engines.
④ Fuel oil shall be of diesel oil.
⑤ Manual synchronization shall be applied.
⑥ Equipment foundation and roofing shall be constructed.
⑦ Spear parts for 2 years shall be provided.

Implementation Schedule

Year	2000/2001	2001/2002	2002/2003
D/D and tendering			
Construction			

Project Description

Among 60 power stations throughout the country, 32 rural power stations including Ainaro have suspended its operations with some reason as of the end of June, 2000. For this reason, in districts where power stations are idle, major inconvenience is imparted not only on citizen life but also the activities of social welfare facilities such as schools, health centers, district centers and churches, etc. Accordingly, the greatest requirement placed on PAET, which is the power utility operator in East Timor, is that the minimum necessary power supply to local citizens be restored immediately along with ensuring power supply to the capital, Dili.

Site Picture

APP. 5.3.2 Project Profile for the Study on Urgent Rehabilitation Plan in East Timor

Project No.		Project Name	Maintaining of Performance at Komoro Power Station (Restoration Plan No. 2)
Development Body	UNTAET	Development Method	■ B/Q bidding □ BOT/BT □ Other
Operation Body	UNDP/UNOPS	Financial Assistance	■ Required □ Not required

Project Cost (Tousant US$)	
Exchange rate: 1US$=110Yen (June, 2000)	
Total	2,910.-
Equipment Cost	2,560.-
contingency	0.-
Engineering	350.-

Location Map

Major Development Components

This plan is to maintain the present output capacity (11MW) of Komoro Power Station, which provides stable power supply to Dili and its environs, entails implementation of an overhaul, supply of spare parts and restoration of auxiliary equipment as follows:

1. Target Equipment : 5 Existing diesel engine generators
2. Works to be carried out by the supplier
   - ① Implementation of overhaul and supply of spare parts and consumable materials
   - ② Supply of special tools and general tools
   - ③ Supply of equipment and materials necessary for repair of existing auxiliaries.
   - ④ Supply of chemicals for the existing cooling water softeners for one year
   - ⑤ Supply of an 11-ton tank
   - ⑥ Instruments for daily inspections of cooling water and fuel oil
   - ⑦ Dispatch of technical advisors:

Implementation Schedule

Year	2000/2001	2001/2002	2002/2003
D/D and tendering			
Construction			

Project Description

Komoro Power Station is supplying electricity power of 73% of all demand throughout East Timor. However, Komoro Power Station is unable to implement periodic inspections and/or maintenance and overhauls due to shortages of spare parts and tools, and there is no way of knowing how long present output can be maintained or when breakdowns will occur. Accordingly it is very important to ensure the total present output (11.0 MW) of Komoro Power Station, and urgently implement an overhaul as well as supplying necessary spare parts and tools for next overhaul

Site Picture

APP. 5.3.3 Project Profile for the Study on Urgent Rehabilitation Plan in East Timor

Project No.		Project Name	Strengthening of Komoro Power Station (Restoration Plan No. 3)
Development Body	UNTAET	Development Method	■ B/Q bidding □ BOT/BT □ Other
Operation Body	UNDP/UNOPS	Financial Assistance	■ Required □ Not required

Project Cost (Tousant US$)	
Exchange rate: 1US$=110Yen (June, 2000)	
Total	7,200.-
Civil works	1,200.-
Equipment cost	5,290.-
Engineering	710.-

Location Map

Major Development Components

This plan has been compiled with the objective of securing enough firm capacity at Komoro Power Station and achieving a stable supply of power to consumers. Contents of Work and Basic Specifications are as follows:

①Construction of the diesel engine generator (output capacity 3.6 MW 1 unit)

②Construction of the auxiliaries and electrical equipment required for the above ①

③ Construction of the electrical equipment required for distribution facilities, etc.:

④ Procurement of spare parts, tools for maintenance & inspection, and operation, maintenance, inspection & overhaul manuals, as well as implementation of OJT, for the power plant equipment, auxiliary equipment and electrical equipment

⑤ Necessary civil engineering and building works required for construction of the power plant

Project Description

Power demand in Dili and its environs has increased at an average rate of 1.3% per month (16% per year) and the shortage of the firm capacity will be reached to 3.6 MW at March 2002,ven if an emergency overhaul at Komoro power station is implemented and present output is maintained by Restoration plan No.2.

Therefore, in addition to securing the present output of Komoro Power Station, it is necessary to upgrade the power generation capacity of Komoro Power station with an output of 3.6 MW), in order to supply stable power to the consumers in Dili and its environs..

Implementation Schedule

Year	2000/2001	2001/2002	2002/2003
D/D and tendering		■	
Construction			

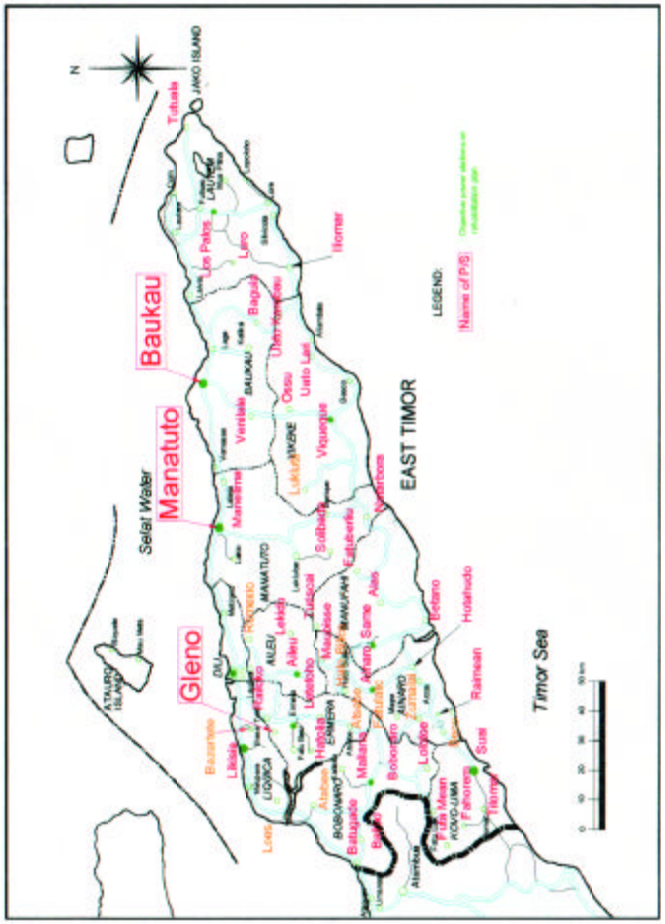
Site Picture

APP. 5.3.4 Project Profile for the Study on Urgent Rehabilitation Plan in East Timor

Project No.		Project Name	Resumption of Operation in Major Cities (Restoration Plan No. 4)
Development Body	UNTAET	Development Method	Financial Assistance
Operation Body	UNDP/UNOPS	■ B/Q bidding □ BOT/BT □ Other	■ Required □ Not required

Project Cost (Tousant US$)	
Exchange rate: 1US$=110Yen (June, 2000)	
Total	7,630. -
Civil works	2,400. -
Equipment Cost	4.530. -
Engineering	700. -

Location Map



Major Development Components

This is a plan for restoration of three power stations in the cities of Baucau, Gleno and Manatuto. Contents of Works and Basic equipment specifications are as follows(for each Power Station):

①Construction of the diesel engine generator (output capacity 1.0 MW 1 unit)

②Construction of the auxiliaries and electrical equipment required for the above ①

③ Construction of the electrical equipment required for distribution facilities, etc.:

④ Procurement of spare parts, tools for maintenance & inspection, and operation, maintenance, inspection & overhaul manuals, as well as implementation of OJT, for the power plant equipment, auxiliary equipment and electrical equipment

⑤ Necessary civil engineering and building works required for construction of the power plant

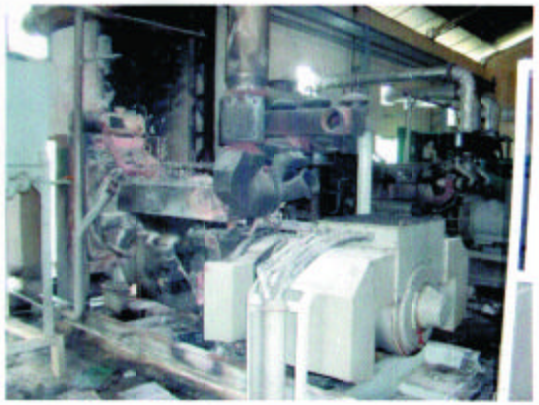
Implementation Schedule

Year	2000/2001	2001/2002	2002/2003
D/D and tendering			
Construction			

Project Description

This is a plan for restoration of three power stations in the cities of Baucau, Gleno and Manatuto. Those cities are expected to re- construction of local government facilities, social welfare facilities and commercial facilities, etc. in near future. Therefore, a new diesel generator for each city shall be constructed as temporary substitute existing units, which were completely destroyed in the conflict.

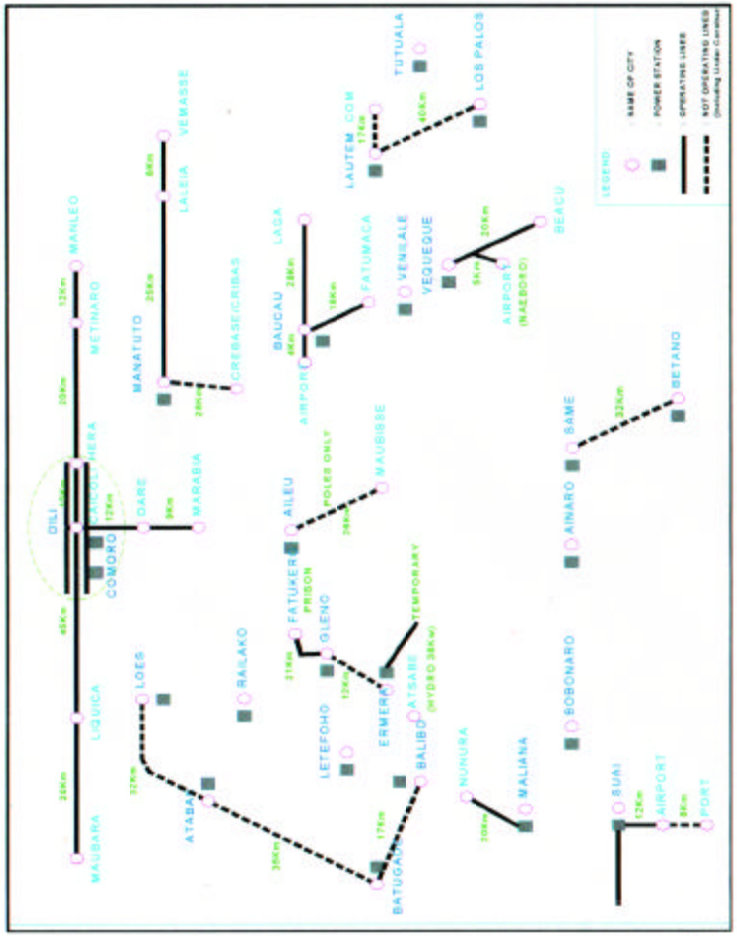
Site Picture



APP. 5.3.5 Project Profile for the Study on Urgent Rehabilitation Plan in East Timor

Project No.		Project Name	Restoration and Strengthening of Medium Voltage Distribution Lines (Restoration Plan No. 5)	Project Cost (Thousand US$) Exchange rate: 1US$=110Yen (June, 2000)	
Development Body	UNTAET	Development Method	Financial Assistance	Total	5,500.-
		■ B/Q bidding	■ Required	Civil works	
Operation Body	UNDP/UNOPS	□ BOT/BT	□ Not required	Equipment Cost	5,000.-
		□ Other		Engineering	500.-

Location Map



Major Development Components

Approximately 70 km of 20 kV distribution lines shall be newly constructed or repaired over the next three years. Work contents of this Project and equipment specification are as follows:.

① Pole-mounted distribution transformers (22 kV/415/240 V)
② Conductor for 22 kV overhead distribution lines (steel-cored aluminum cable)
③ 22 kV lightning arresters (for single phase)
④ Cutout switches with fuses
⑤ 22 kV insulators and fitting
⑥ Steel poles (h = 12 m and 15 m)
⑦ Assembling materials (cross arms, arm ties, step bolts, spikes, earth wires and rods, etc.)
⑧ Automatic voltage regulators (20kV ± 10%)
⑨ Procurement of tools maintenance and inspection
⑩ Procurement of a street lighting wagon.
⑪ Procurement of a truck with a crane
⑫ Procurement of operation, maintenance, inspection manuals and implementation of OJT

Implementation Schedule

Year	2000/2001	2001/2002	2002/2003
D/D and tendering		■	
Construction			

Project Description

The 20 kV distribution network adopted in large and medium cities in East Timor. When the restoration of power stations in Dili and other large and medium cities is implemented in line with the advancement of restoration and recovery in the country, it will be necessary to construct new distribution lines and/or repair existing lines to new consumers such as newly constructed or rehabilitated government facilities, social welfare facilities, commercial facilities, etc. Therefore, a plan to restore and strengthen of medium voltage (20 kV) distribution lines (total length approximately 70 km which is about 10% of existing line length) shall be compiled in the Project.

Site Picture