

## **Reference Drawings**

## REFERENCE DRAWING LIST

ANNEXED TABLE-1	MAIN EQUIPMENT LIST
ANNEXED TABLE-2	AUXILIARY EQUIPMENT LIST (VSAT SYSTEM)
ANNEXED TABLE-3	AUXILIARY EQUIPMENT LIST (MICROWAVE SYSTEM)
ANNEXED TABLE-4	AUXILIARY EQUIPMENT LIST (VHF/HF SYSTEM)
ANNEXED TABLE-5	AUXILIARY EQUIPMENT LIST (MANILA COAST STATION)
FIGURE-1	OVERVIEW OF PCG COMMUNICATIONS SYSTEM
FIGURE-2	SYSTEM CONFIGURATION OF VSAT COMMUNICATION SYSTEM
FIGURE-3	SYSTEM CONFIGURATION OF MICROWAVE COMMUNICATION SYSTEM WITH IP/TELEPHONE NETWORK
FIGURE-4	SYSTEM CONFIGURATION OF VHF/HF RADIO SYSTEM
FIGURE-5	SYSTEM CONFIGURATION OF MANILA COAST STATION (REHABILITATION)
FIGURE-6	EQUIPMENT LAYOUT PLAN FOR PCG HEADQUARTERS
FIGURE-7	EQUIPMENT LAYOUT PLAN FOR OPERATION CENTER
FIGURE-8	ANTENNA LAYOUT PLAN FOR OPERATION CENTER
FIGURE-9	GENERAL LAYOUT PLAN FOR TRANSMITTING STATION
FIGURE-10	EQUIPMENT LAYOUT PLAN FOR TRANSMITTING STATION
FIGURE-11	ANTENNA LAYOUT PLAN FOR TRANSMITTING STATION
FIGURE-12	GENERAL LAYOUT PLAN FOR RECEIVING STATION
FIGURE-13	ANTENNA LAYOUT PLAN FOR RECEIVING STATION
FIGURE-14	EQUIPMENT LAYOUT PLAN FOR RECEIVING STATION
FIGURE-15	EQUIPMENT LAYOUT PLAN FOR ANC OPERATION OFFICE
FIGURE-16	EQUIPMENT LAYOUT PLAN FOR H1CGD MANILA
FIGURE-17	EQUIPMENT LAYOUT PLAN FOR H2CGD CEBU
FIGURE-18	EQUIPMENT LAYOUT PLAN FOR H3CGD ZAMBOANGA
FIGURE-19	EQUIPMENT LAYOUT PLAN FOR H4CGD PALAWAN
FIGURE-20	EQUIPMENT LAYOUT PLAN FOR H5CGD BATANGAS
FIGURE-21	EQUIPMENT LAYOUT PLAN FOR H6CGD ILOILO
FIGURE-22	EQUIPMENT LAYOUT PLAN FOR H7CGD SAN FERNANDO
FIGURE-23	EQUIPMENT LAYOUT PLAN FOR H8CGD DAVAO
FIGURE-24	EQUIPMENT LAYOUT PLAN FOR H9CGD LEGASPI
FIGURE-25	EQUIPMENT LAYOUT PLAN FOR H10CGD CAGAYAN DE ORO
FIGURE-26	32M CYLINDRICAL TOWER AT PCG HEADQUARTERS
FIGURE-27	VSAT ANTENNA SUPPORT AT OPERATION CENTER
FIGURE-28	VSAT ANTENNA FOR FIXED STATIONS
FIGURE-29	62M 4-LEGS ANGLE TOWER AT H1PCG MANILA
FIGURE-30	VHF/HF ANTENNAS AT H2CGD, H3CGD, AND CGSs

**EQUIPMENT LIST (1/2)**

ANNEXED TABLE-1

Form-1

Equipment No.	Component No.	Equipment Name	Unit	Quantity	Details of Quantity										
					Manila Area		Other Areas								
1	1.1 1.2 1.3 1.4 1.5	VSAT Communication System HUB Station's Equipment Fixed Station's Equipment Transportable Station's Equipment Exchange (PABX) Auxiliary Equipment of VSAT	lot lot lot set lot	1 9 1 1 1	1	(1)	1	(1)	1	(1)					
											Headquarters	1	(1)	1	(1)
											Op. Centre	1	(1)	1	(1)
											VSAT Transportable	1	(1)	1	(1)
											Transmitting Station	1	(1)	1	(1)
											Receiving Station	1	(1)	1	(1)
											Sanglay Point	1	(1)	1	(1)
											H1CGD (Manila)	1	(1)	1	(1)
											H2CGD (Cebu)	1	(1)	1	(1)
											H3CGD (Zamboanga)	1	(1)	1	(1)
											H4CGD (Palawan)	1	(1)	1	(1)
											H5CGD (Batangas)	1	(1)	1	(1)
											H6CGD (Iloilo)	1	(1)	1	(1)
											H7CGD (San Fernando)	1	(1)	1	(1)
											H8CGD (Davao)	1	(1)	1	(1)
H9CGD (Legaspi)	1	(1)	1	(1)											
H10CGD (Cagayan De Oro)	1	(1)	1	(1)											
2	2.1 2.2 2.3 2.4 2.5 2.6 2.7	Microwave Communication System 7.5GHz Antenna (1.2mφ) 7.5GHz Antenna (0.6mφ) 7.5GHz Multiplex Radio Equipment Tower-A (62m Angle Tower) Tower-B (32m Cylinder Mast) Tower-C (12m Steel Mast) Auxiliary Equipment of Micro	set set set set set set lot	2 8 10 1 1 1 1	2	(1)	1	(1)	1	(1)					
											7.5GHz Antenna (1.2mφ)	2	(1)	1	(1)
											7.5GHz Antenna (0.6mφ)	8	(1)	1	(1)
											7.5GHz Multiplex Radio Equipment	10	(1)	1	(1)
											Tower-A (62m Angle Tower)	1	(1)	1	(1)
											Tower-B (32m Cylinder Mast)	1	(1)	1	(1)
											Tower-C (12m Steel Mast)	1	(1)	1	(1)

Remarks: Kinds and number of components in (parentheses) depends on the Equipment.

**EQUIPMENT LIST (2/2)**

ANNEXED TABLE-1

Form-1

Equipment No.	Component No.	Equipment Name	Unit	Quantity	Details of Quantity																
					Manila Area		Other Areas														
					Headquarters	Operation Centre	VSAT Transportable	Transmitting Station	Receiving Station	Sanglay Point	H1CGD (Manila)	H2CGD (Cebu)	H3CGD (Zamboanga)	H4CGD (Palawan)	H5CGD (Batangas)	H6CGD (Iloilo)	H7CGD (San Fernando)	H8CGD (Davao)	H9CGD (Legaspi)	H10CGD (Cagayan De Oro)	
3	3.1	VHF/HF Radio System	set	10			1				6	2	2								
	3.2	VHF Transceiver (for Spur Link)	set	1							2	7	7								
	3.3	VHF Transceiver (for VSAT Transportable)	set	16																	
	3.4	HF Transceiver	set	1																	
4	4.1	Auxiliary Equipment of VHF/HF	lot	1																	
	4.2	Rehabilitation of Manila Coast St.	lot	1																	
	4.3	VHF Transceiver	set	1																	
	4.4	Voice/PTT Matrix Equipment	set	1																	
	4.5	Modem Equipment	set	1																	
	4.6	Management Console	set	1																	
	4.7	Management/Telephone Console	set	1																	
	4.8	Telephone Console	set	1																	
	4.9	DSC/NBDP Console	set	2																	
	4.10	NAVTEX Console	set	2																	
	4.11	NAVTEX Monitor Equipment	set	1																	
	4.12	5kW MF Transmitter	set	1																	
	4.13	Modem Unit	set	5																	
	4.14	MF/HF Receiver	lot	1																	
		RCC Console	lot	1																	
		Auxiliary Equipment of Coast St.	lot	1																	

Remarks: Kinds and number of components in (parentheses) depends on the Equipment.





Auxiliary Equipment List (Microwave Communication System)

Component No.	Equipment Name	Quantity	Details of Quantity																
			Manila Area		Receiving Station	Transmitting Station	Ope. Centre		Headquarters	Sangley Point	H1CGD (Manila)								
				VSAT Transportable			Operation Centre												
2.7.1	Multiplex Terminal Unit	6	1	3		1	1												
2.7.2	Uninterruptible Power Supply (2.0kVA)	3	1	1															
2.7.3	Uninterruptible Power Supply (1.0kVA)	3				1													

Auxiliary Equipment List (VHF/HF Radio System)

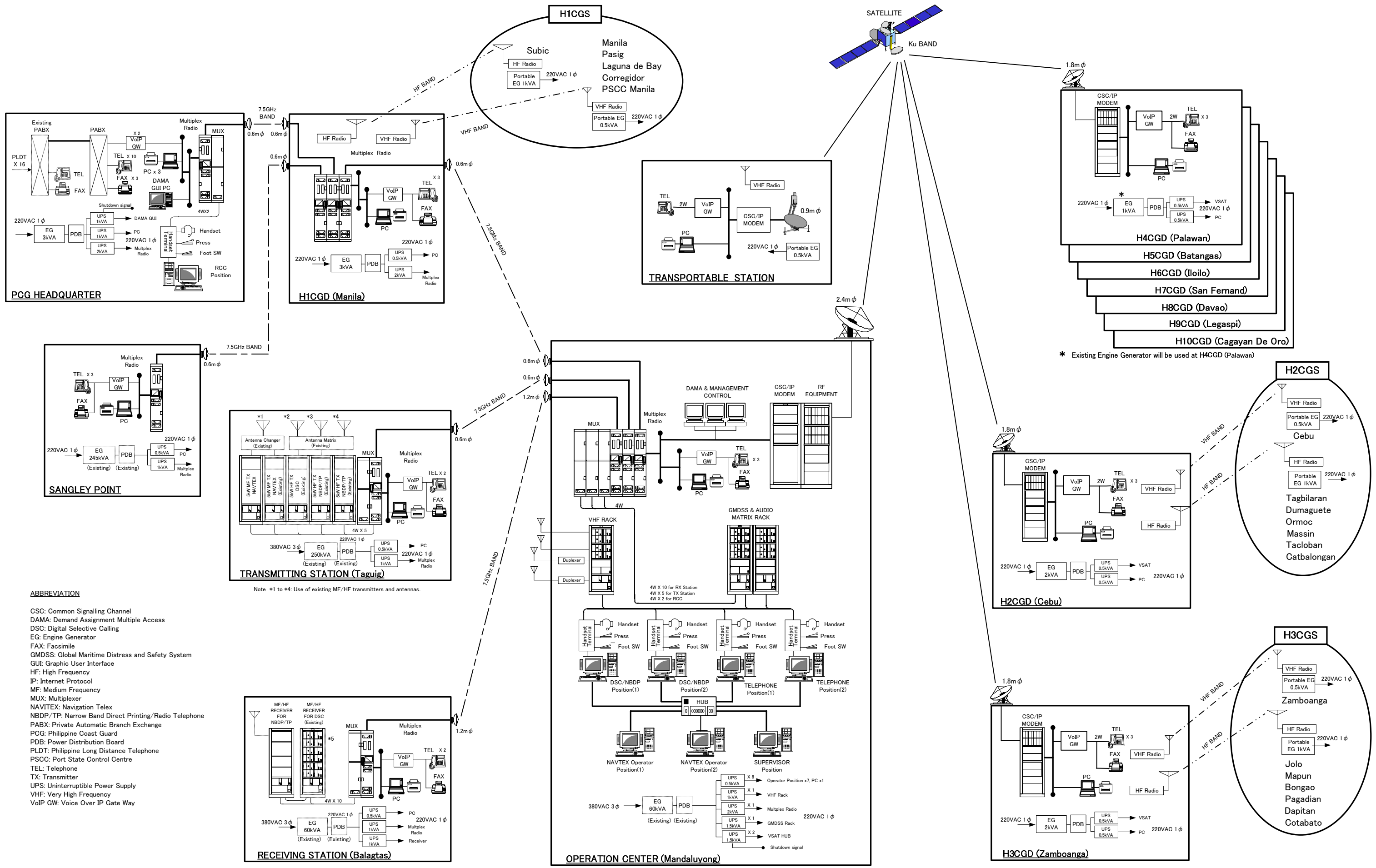
ANNEXED TABLE-4

		Quantity		Details of Quantity																															
Component No.	Equipment Name			H1CGD(Manila) Area			H2CGD(Cebu) Area					H3CGD(Zamboanga) Area																							
3.4.1	Engine Generator (1.0kVA)	13		CGS Manila	1	CGS Subic	1	CGS Cebu	1	CGS Tagbilaran	1	CGS Dumaguete	1	CGS Ormoc	1	CGS Maasin	1	CGS Tacloban	1	CGS Catbalogan	1	CGS Zamboanga	1	CGS Dapitan	1	CGS Pagadian	1	CGS Mapun	1	CGS Jolo	1	CGS Bongao	1	CGS Cotabato	1
3.4.1	Engine Generator (0.5kVA)	7		CGS Manila	1	CGS Pasig	1																												



Auxiliary Equipment List (Manila Coast Station)

Component No.	Equipment Name	Quantity	Details of Quantity															
			Manila Area															
			Headquarters	Operation Centre	VSAT Transportable	Transmitting Station	Receiving Station	Sangley Point	H1CGD (Manila)									
4.14.1	MF Antenna Tuner	1				1												
4.14.2	HF Balun Transformer	2				2												
4.14.3	Uninterruptible Power Supply (1.5kVA)	1		1														
4.14.4	Uninterruptible Power Supply (1.0kVA)	2		1			1											



**ABBREVIATION**

- CSC: Common Signalling Channel
- DAMA: Demand Assignment Multiple Access
- DSC: Digital Selective Calling
- EG: Engine Generator
- FAX: Facsimile
- GMDSS: Global Maritime Distress and Safety System
- GUI: Graphic User Interface
- HF: High Frequency
- IP: Internet Protocol
- MF: Medium Frequency
- MUX: Multiplexer
- NAVITEX: Navigation Telex
- NBDP/TP: Narrow Band Direct Printing/Radio Telephone
- PABX: Private Automatic Branch Exchange
- PCG: Philippine Coast Guard
- PDB: Power Distribution Board
- PLDT: Philippine Long Distance Telephone
- PSCC: Port State Control Centre
- TEL: Telephone
- TX: Transmitter
- UPS: Uninterruptible Power Supply
- VHF: Very High Frequency
- VoIP GW: Voice Over IP Gate Way

FIGURE-1 OVERVIEW OF PCG COMMUNICATIONS SYSTEM

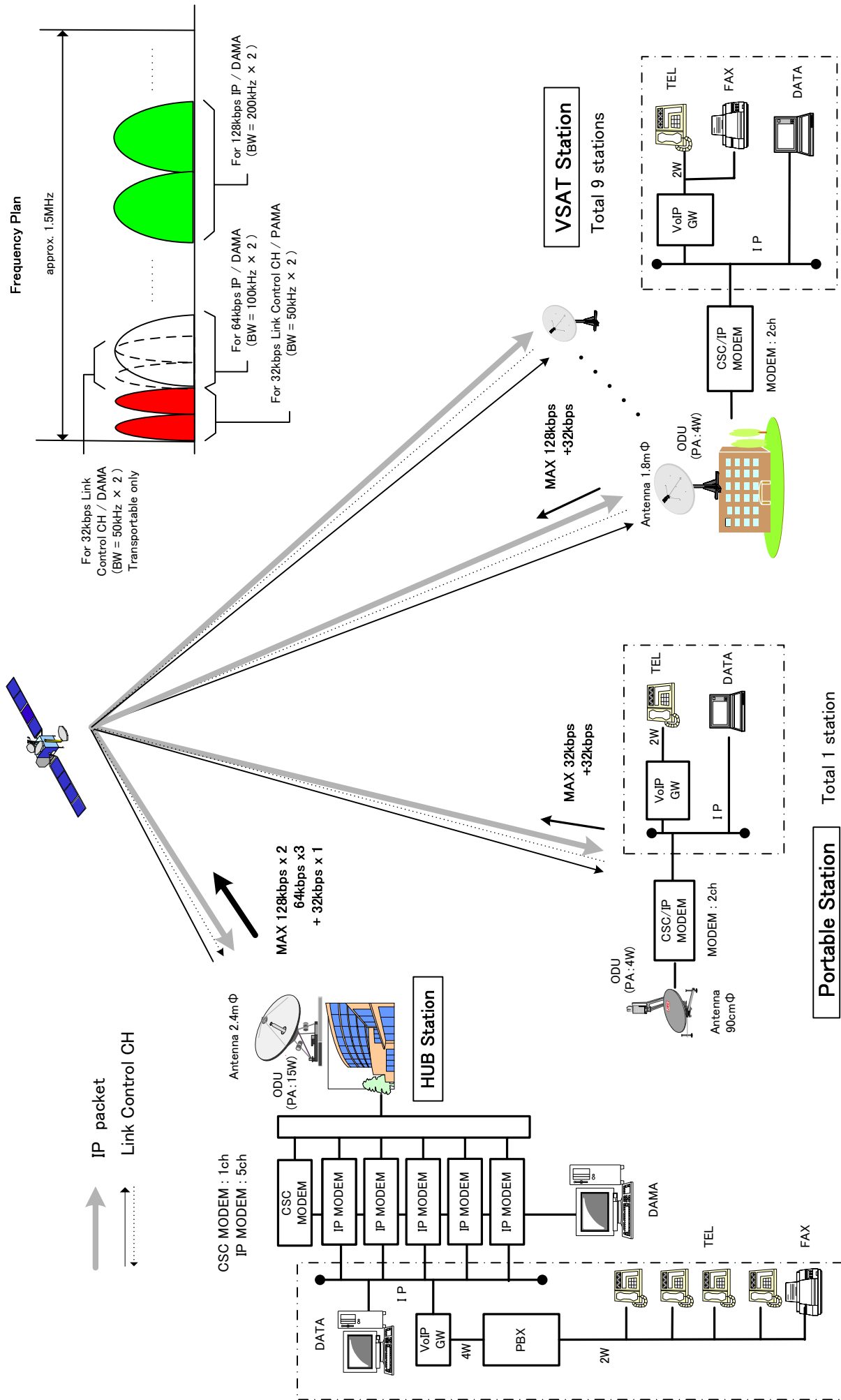


FIGURE-2 SYSTEM CONFIGURATION OF VSAT COMMUNICATION SYSTEM

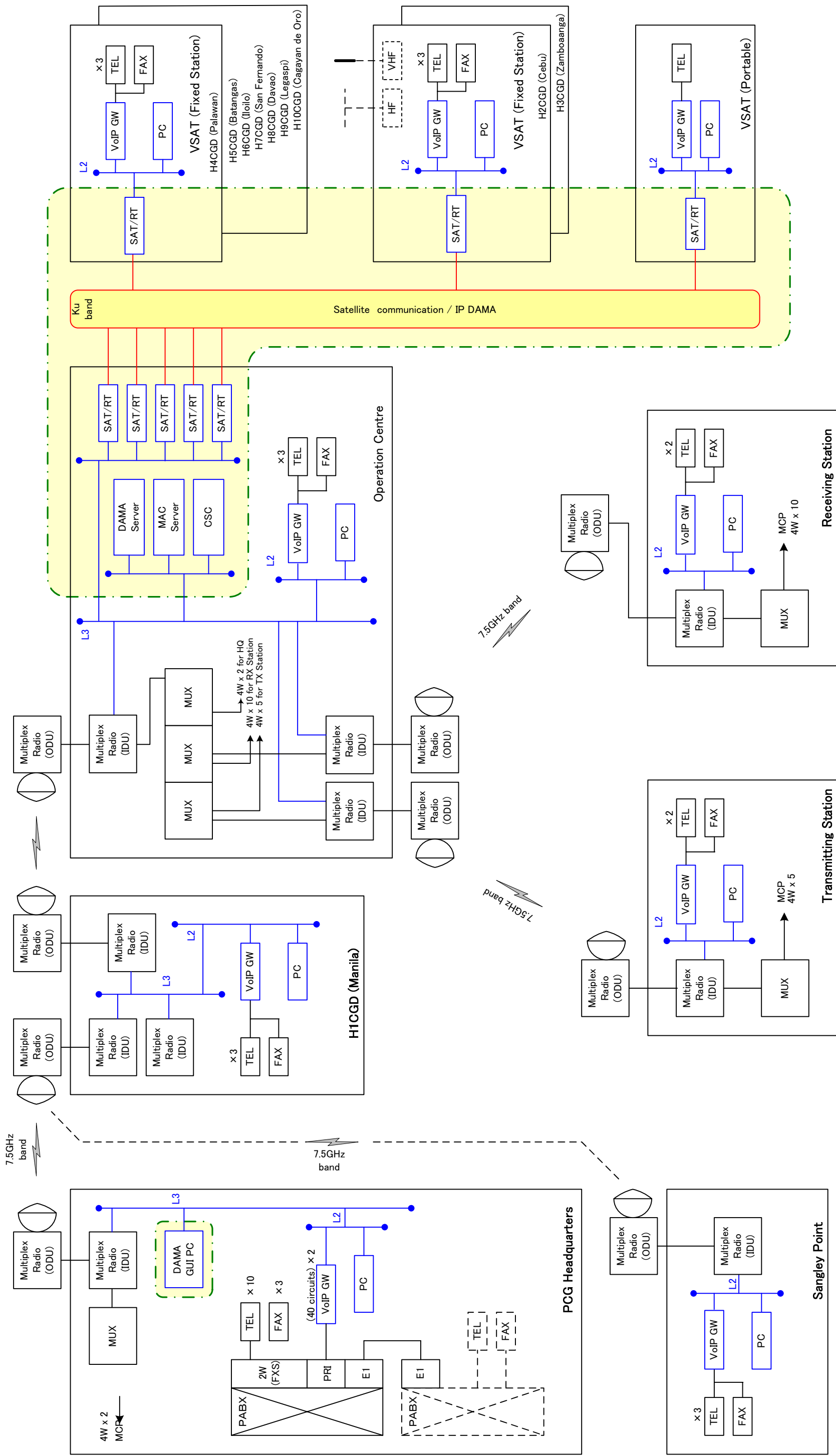


FIGURE-3 SYSTEM CONFIGURATION OF MICROWAVE COMMUNICATION SYSTEM WITH IP/TELEPHONE NETWORK

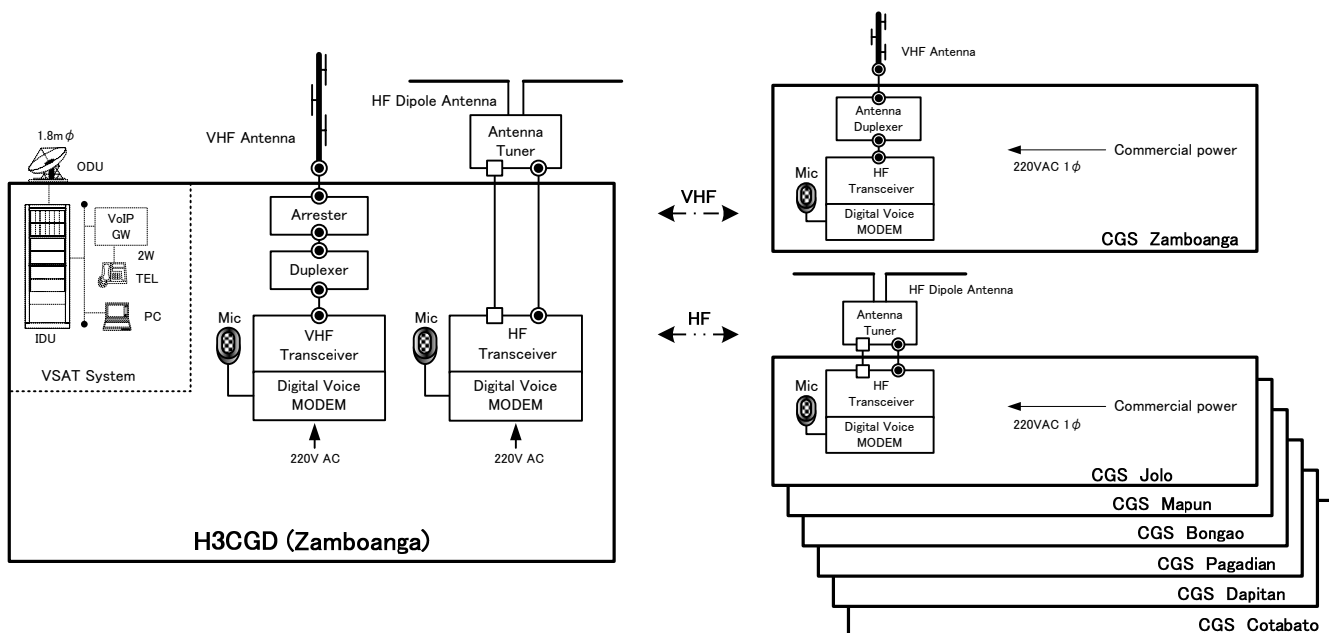
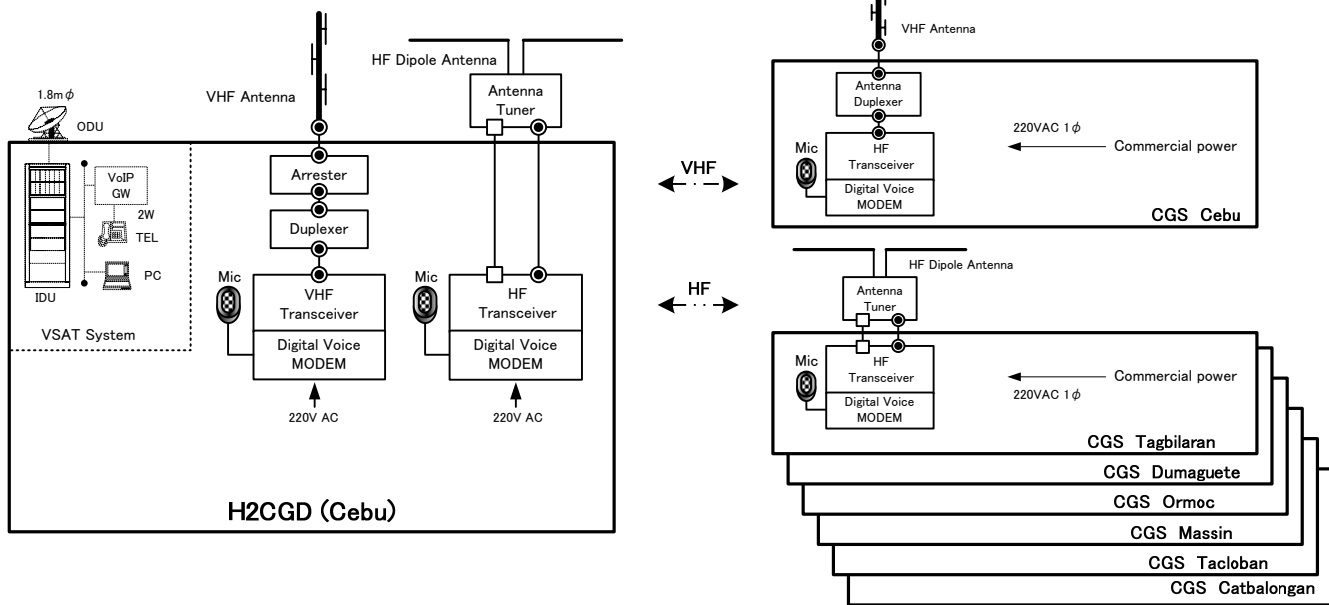
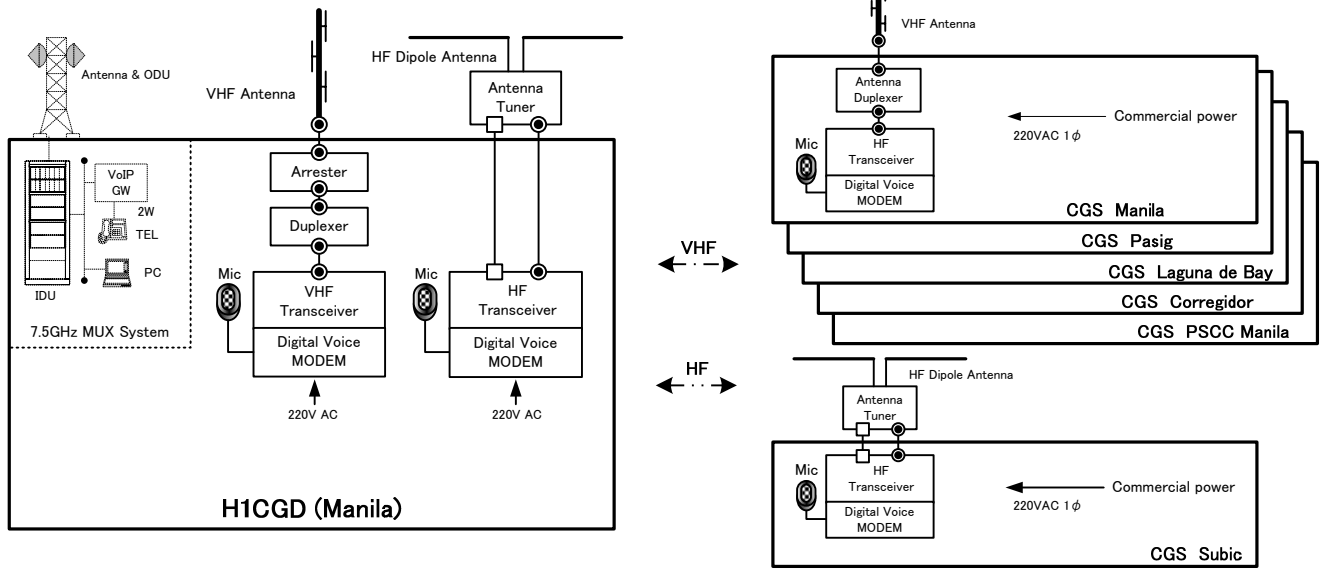
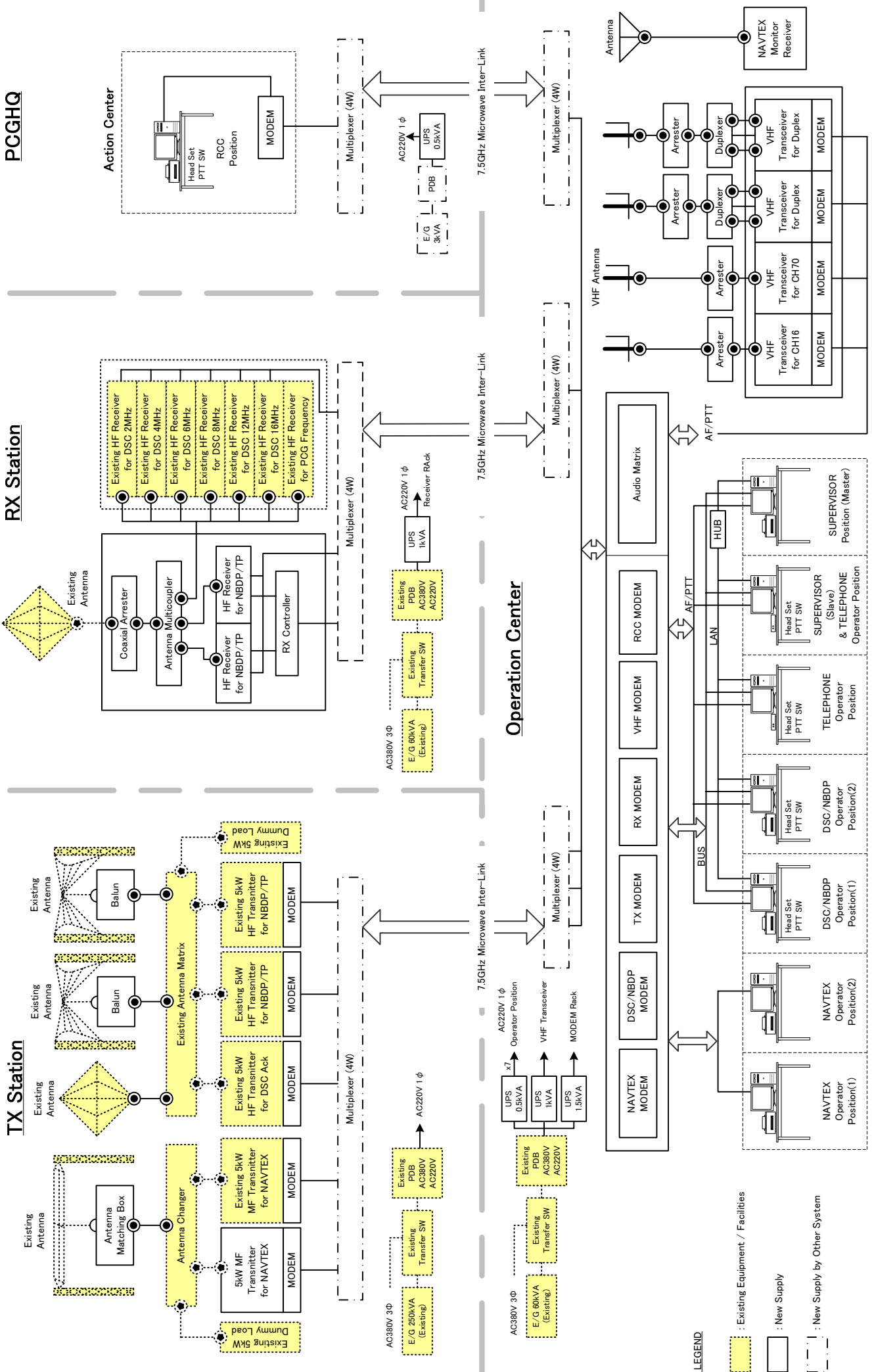


FIGURE-4 SYSTEM CONFIGURATION OF VHF/HF RADIO SYSTEM

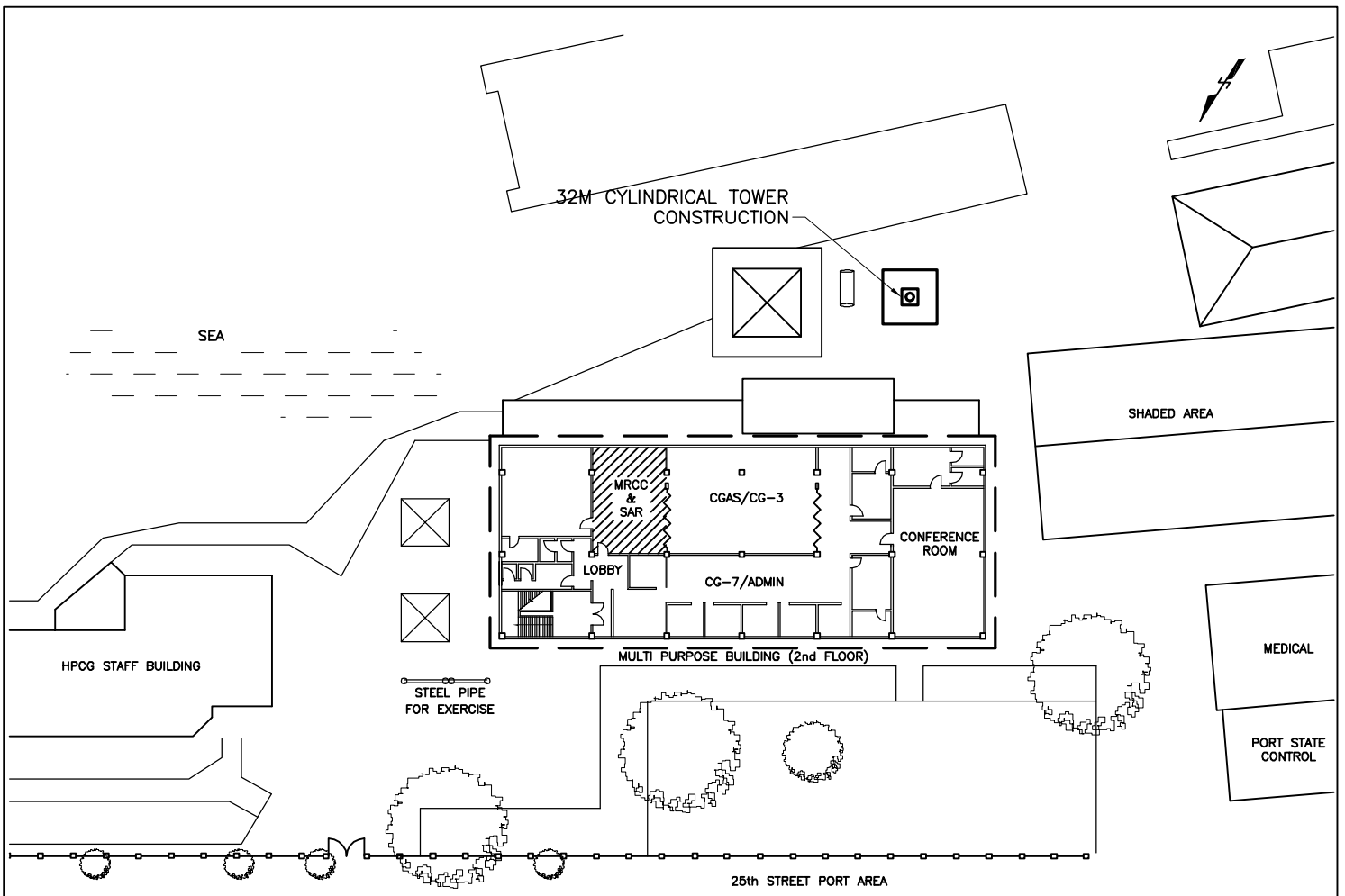
**PCGHQ**

**RX Station**

**TX Station**

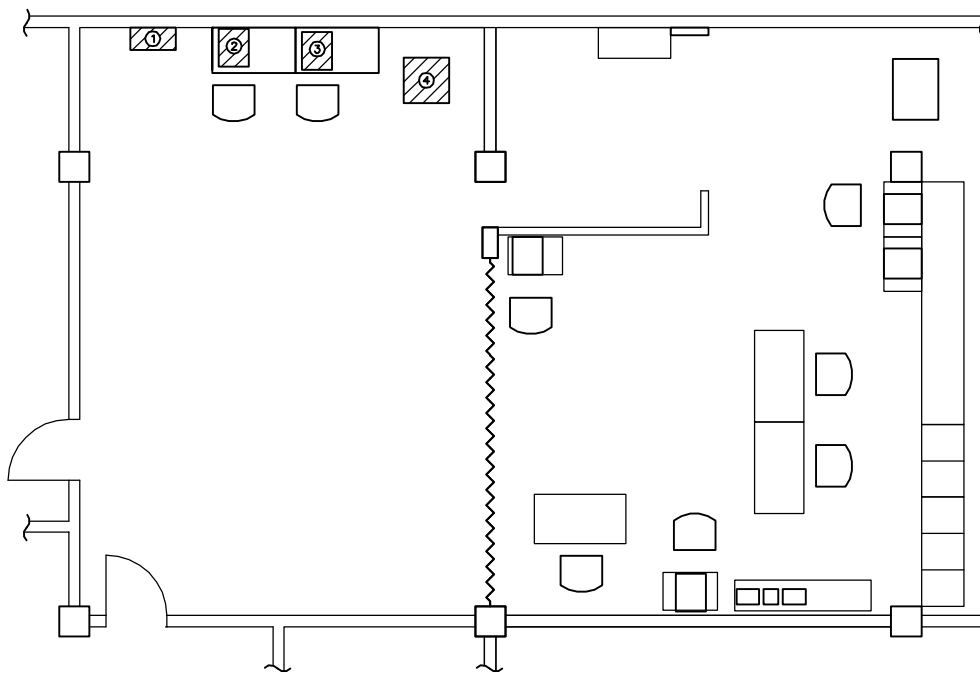


**FIGURE-5 SYSTEM CONFIGURATION OF MANILA COAST STATION (REHABILITATION)**



**SITE LAYOUT AND MAIN BUILDING FLOOR PLAN**

SCALE 1/500



**LEGEND**

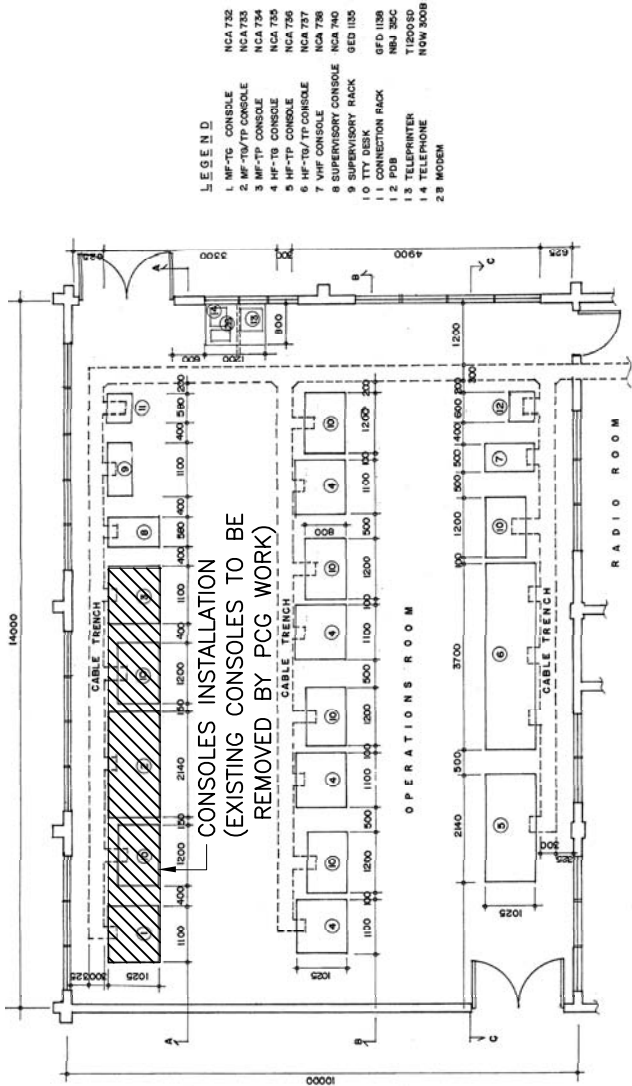
- ① PABX
- ② RCC POSITION
- ③ DAMA GUI
- ④ 19" CABINET FOR MICROWAVE (IDU/L2SW/L3SW/VoIP/MUX)

**EQUIPMENT LAYOUT FOR MRCC&SAR ROOM**

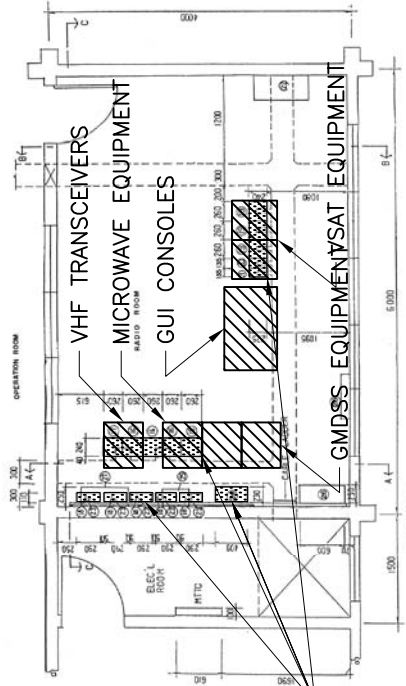
SCALE 1/100

FIGURE-6 EQUIPMENT LAYOUT PLAN FOR PCG HEADQUARTERS



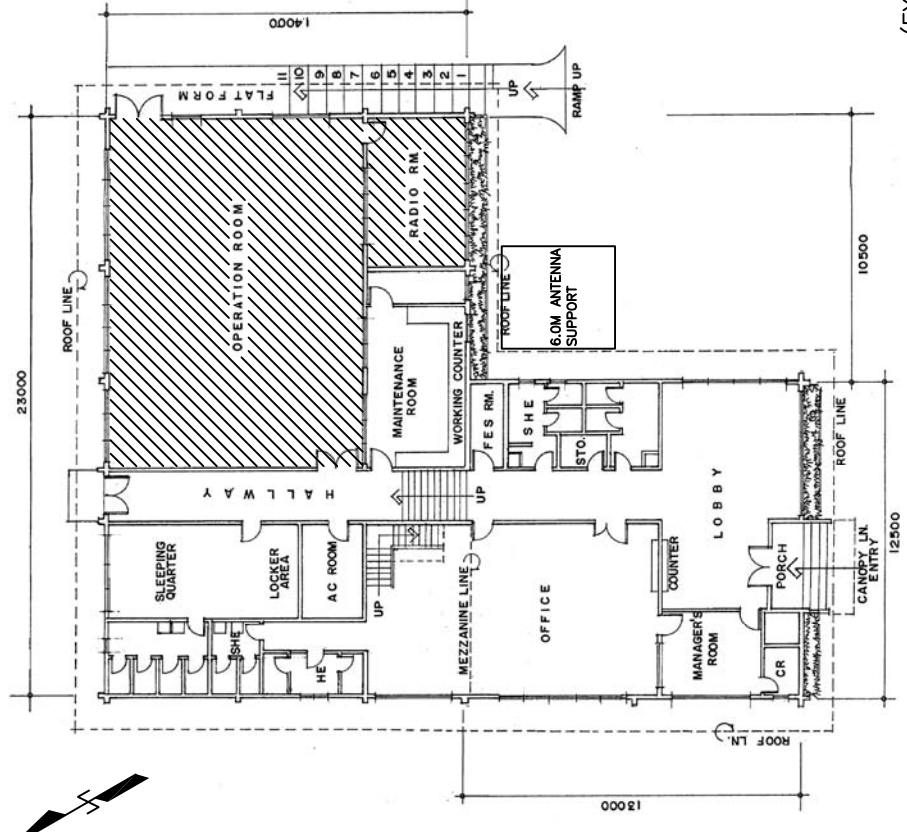


**EQUIPMENT LAYOUT FOR OPERATION ROOM**  
SCALE 1/150



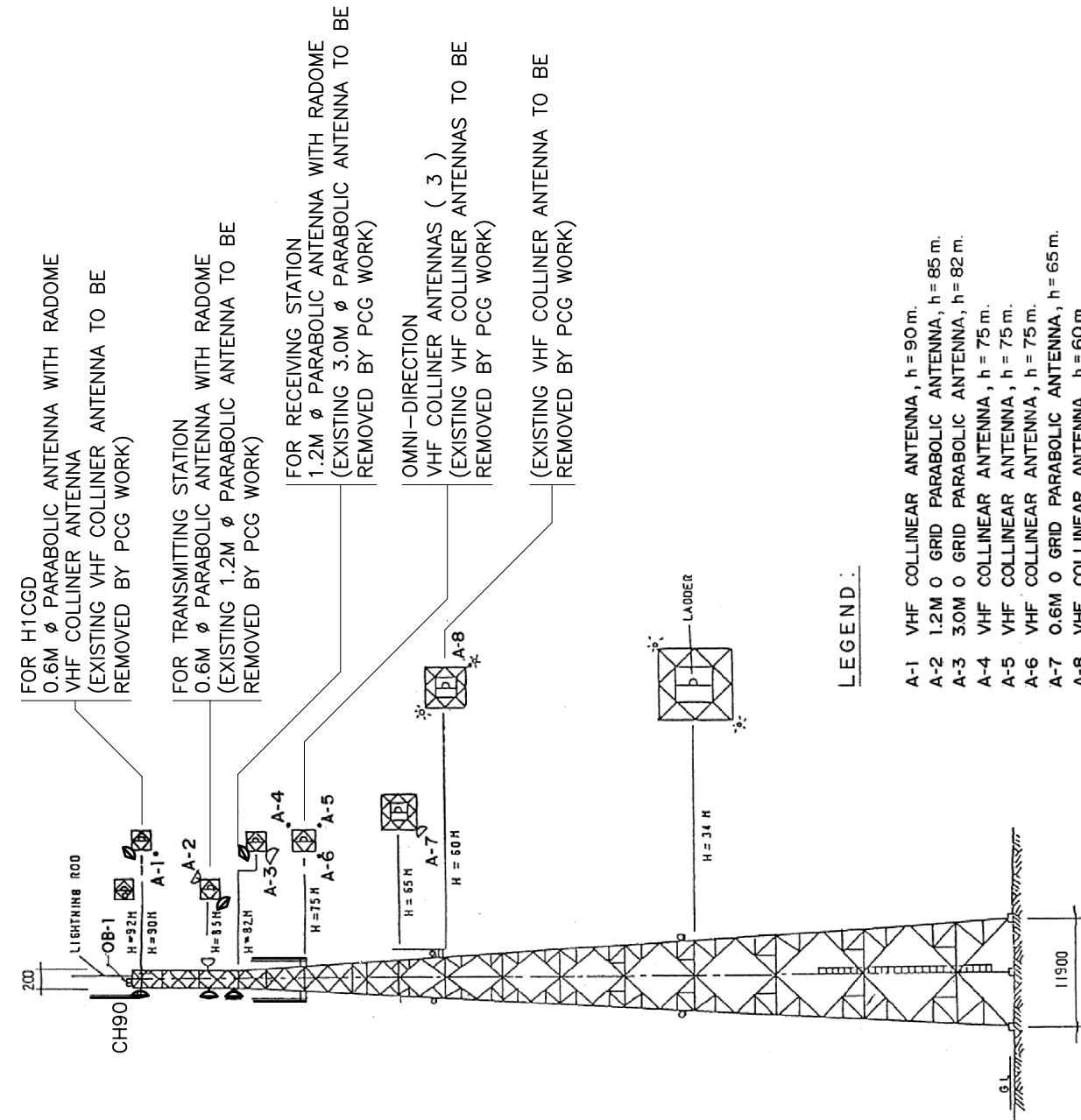
**(EXISTING EQUIPMENT TO BE REMOVED BY PCG WORK)**

**EQUIPMENT LAYOUT FOR RADIO ROOM**  
SCALE 1/100



**FIGURE-7 EQUIPMENT LAYOUT PLAN FOR OPERATION CENTER**





ANTENNA ELEVATION LAYOUT  
(N.T.S.)

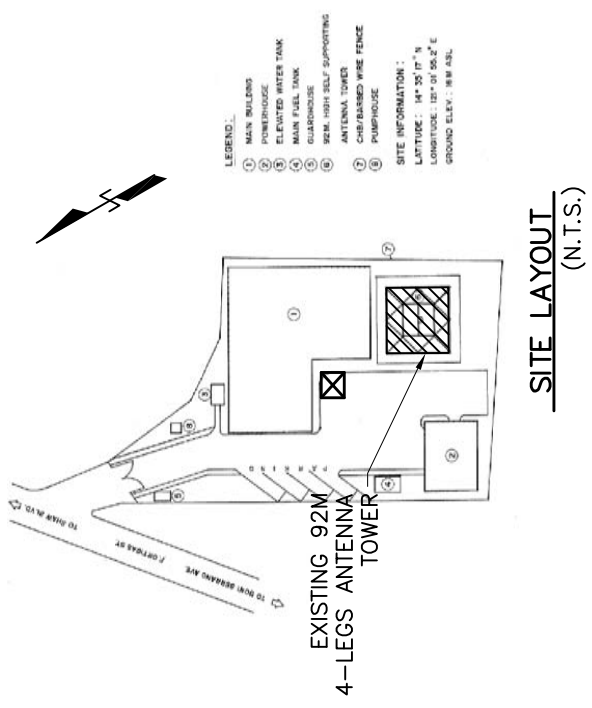
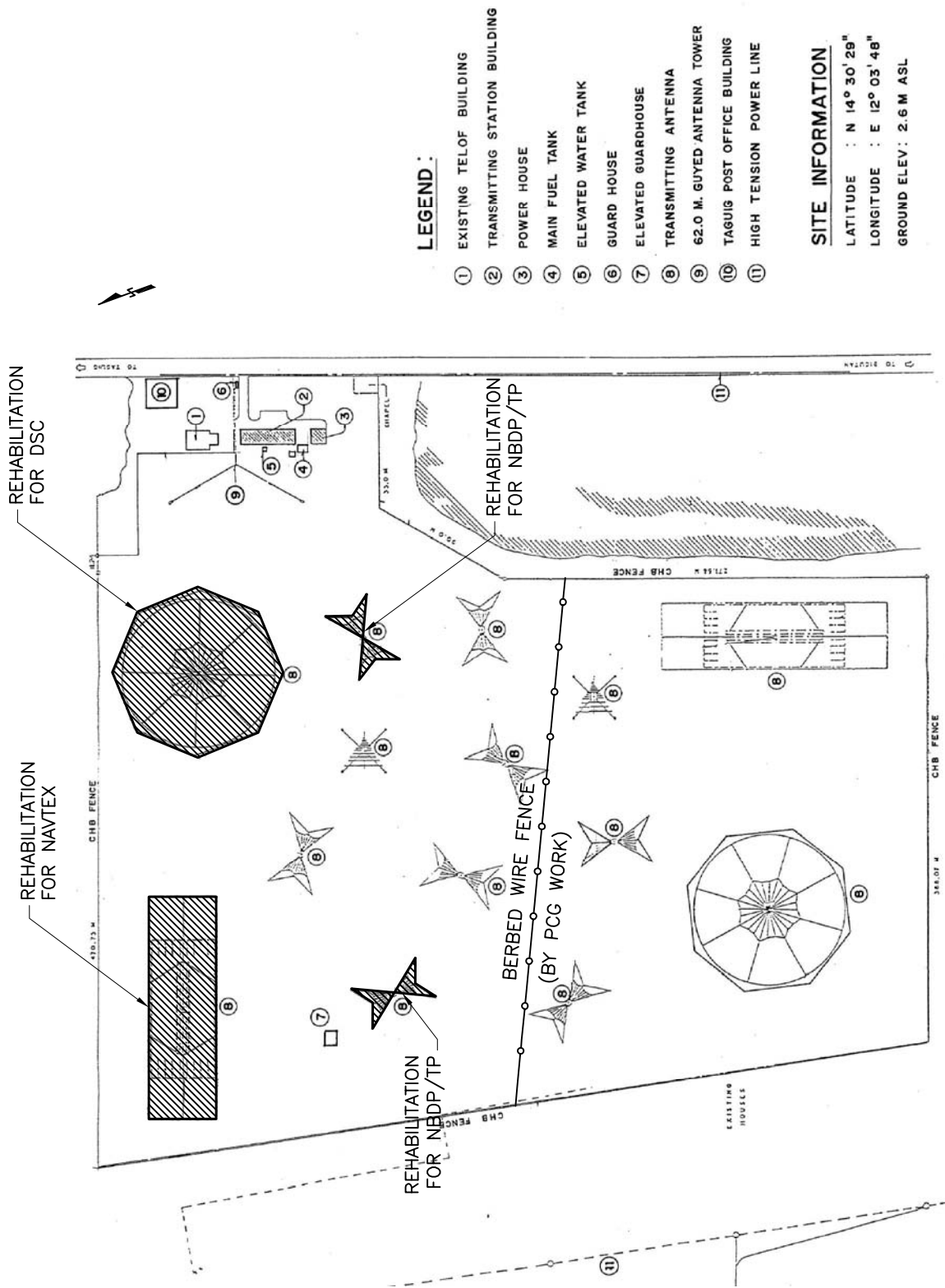
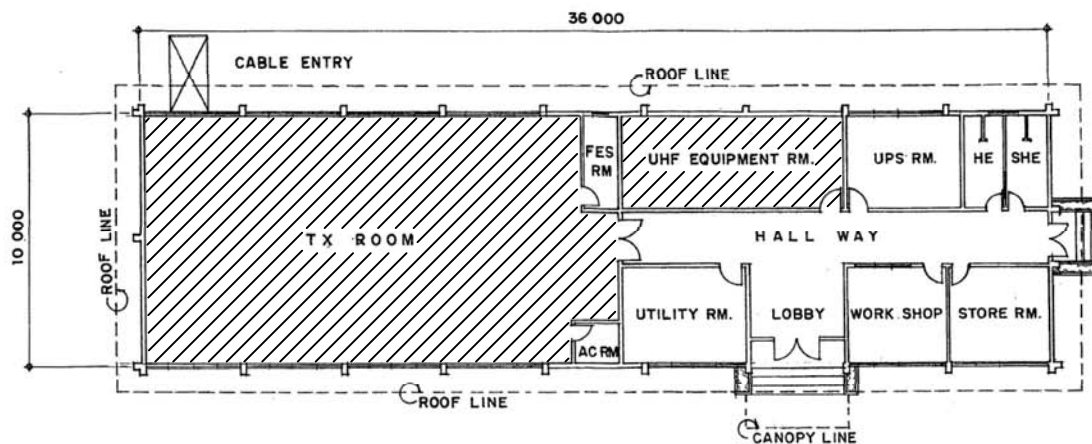


FIGURE-8 ANTENNA LAYOUT PLAN FOR OPERATION CENTER

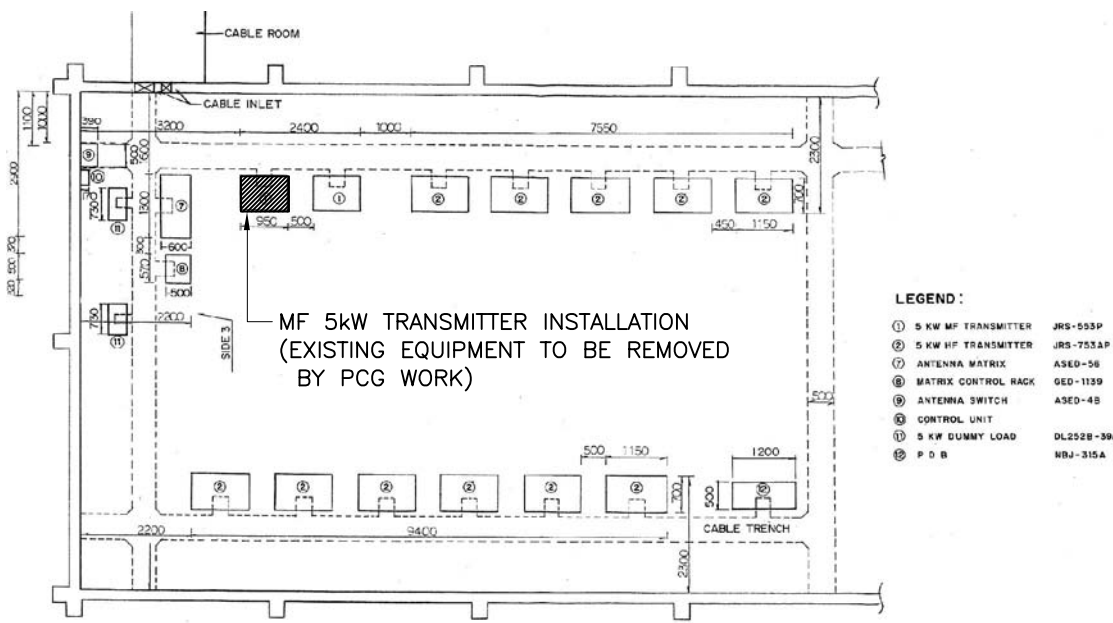


**TX STATION SITE LAYOUT PLAN**  
 SCALE 1/5,000

FIGURE-9 GENERAL LAYOUT PLAN FOR TRANSMITTING STATION

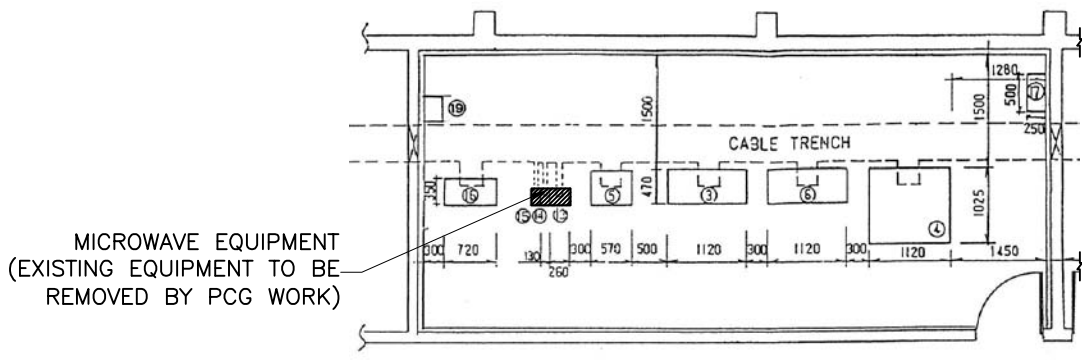


**MAIN BUILDING FLOOR PLAN**  
SCALE 1/300



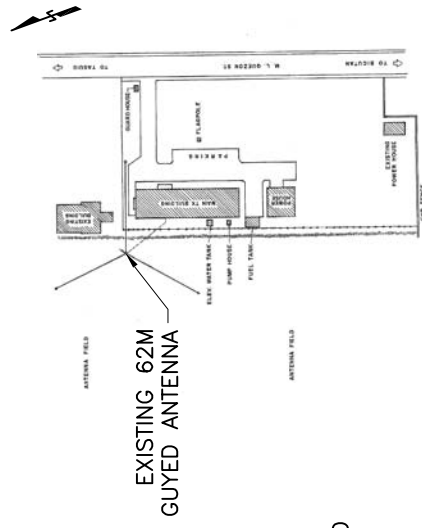
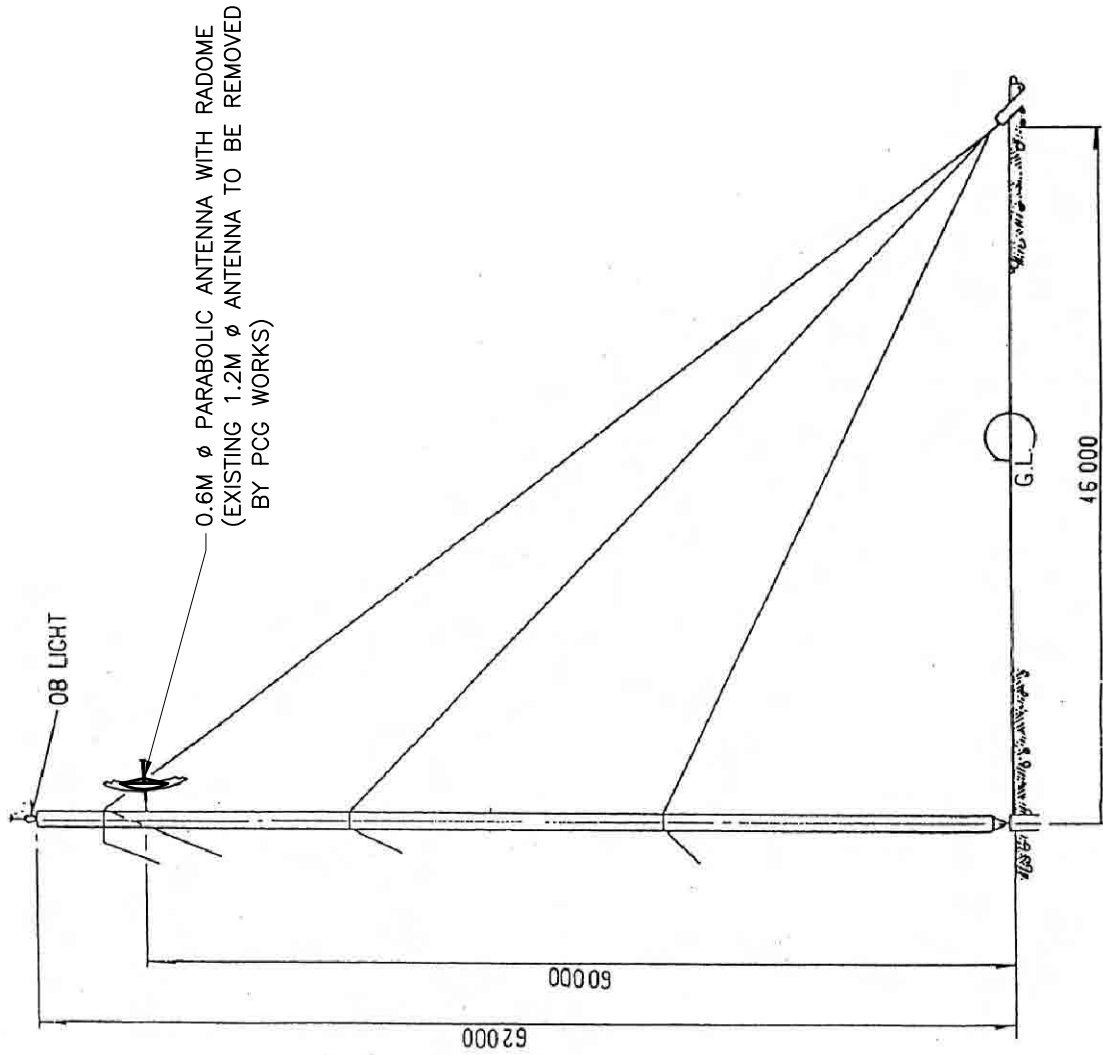
- LEGEND :**
- ① 5 KW MF TRANSMITTER JRS-553P
  - ② 5 KW HF TRANSMITTER JRS-753AP
  - ③ ANTENNA MATRIX ASED-56
  - ④ MATRIX CONTROL RACK GED-1139
  - ⑤ ANTENNA SWITCH ASED-48
  - ⑥ CONTROL UNIT
  - ⑦ 5 KW DUMMY LOAD DL252B-39A
  - ⑧ P O B NRJ-315A

**EQUIPMENT LAYOUT FOR TRANSMITTER ROOM**  
SCALE 1/150



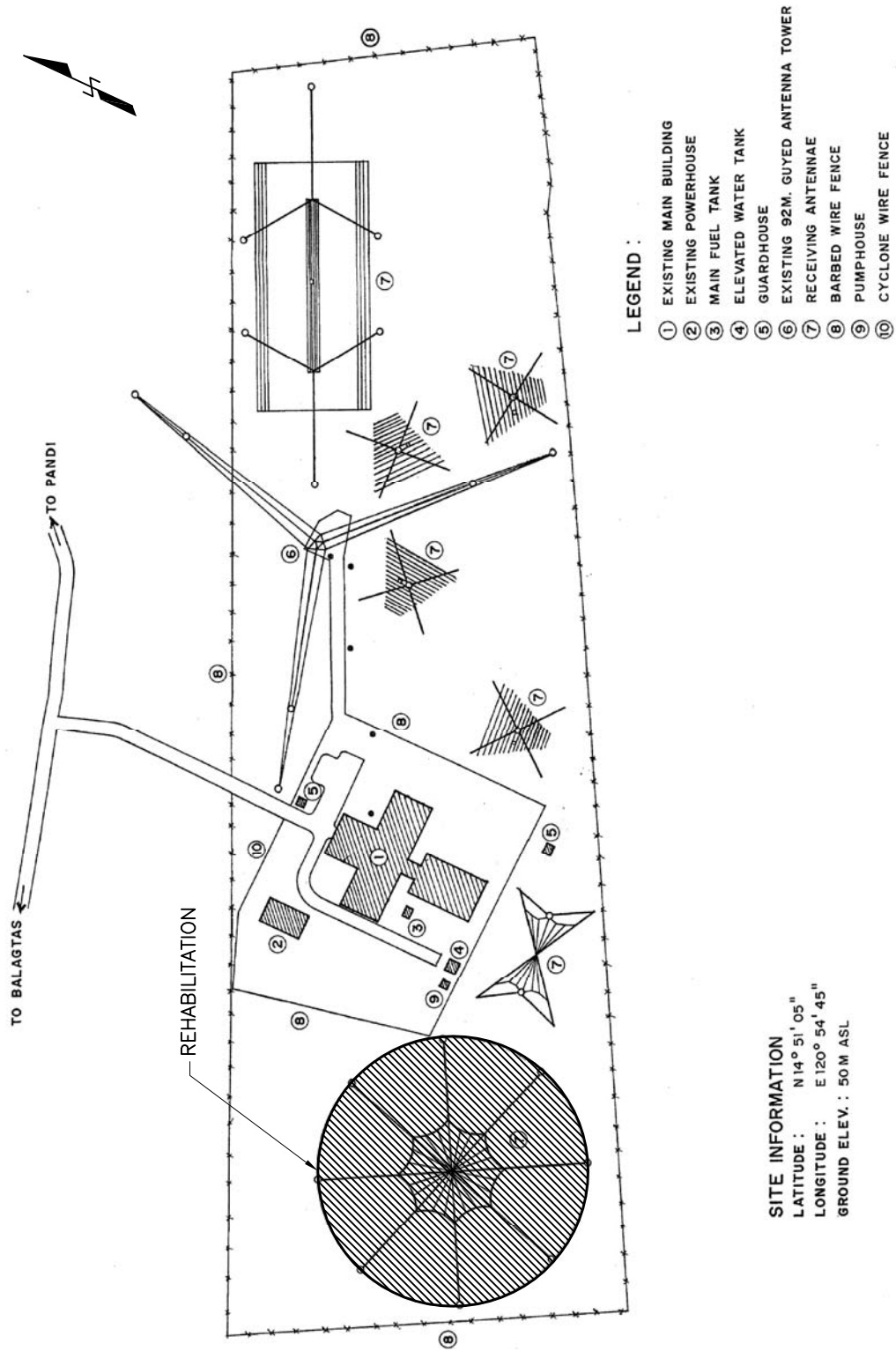
**EQUIPMENT LAYOUT FOR UHF EQIP. ROOM**  
SCALE 1/100

**FIGURE-10 EQUIPMENT LAYOUT PLAN FOR TRANSMITTING STATION**



ANTENNA ELEVATION LAYOUT  
(S=1/500)

FIGURE-11 ANTENNA LAYOUT PLAN FOR TRANSMITTING STATION



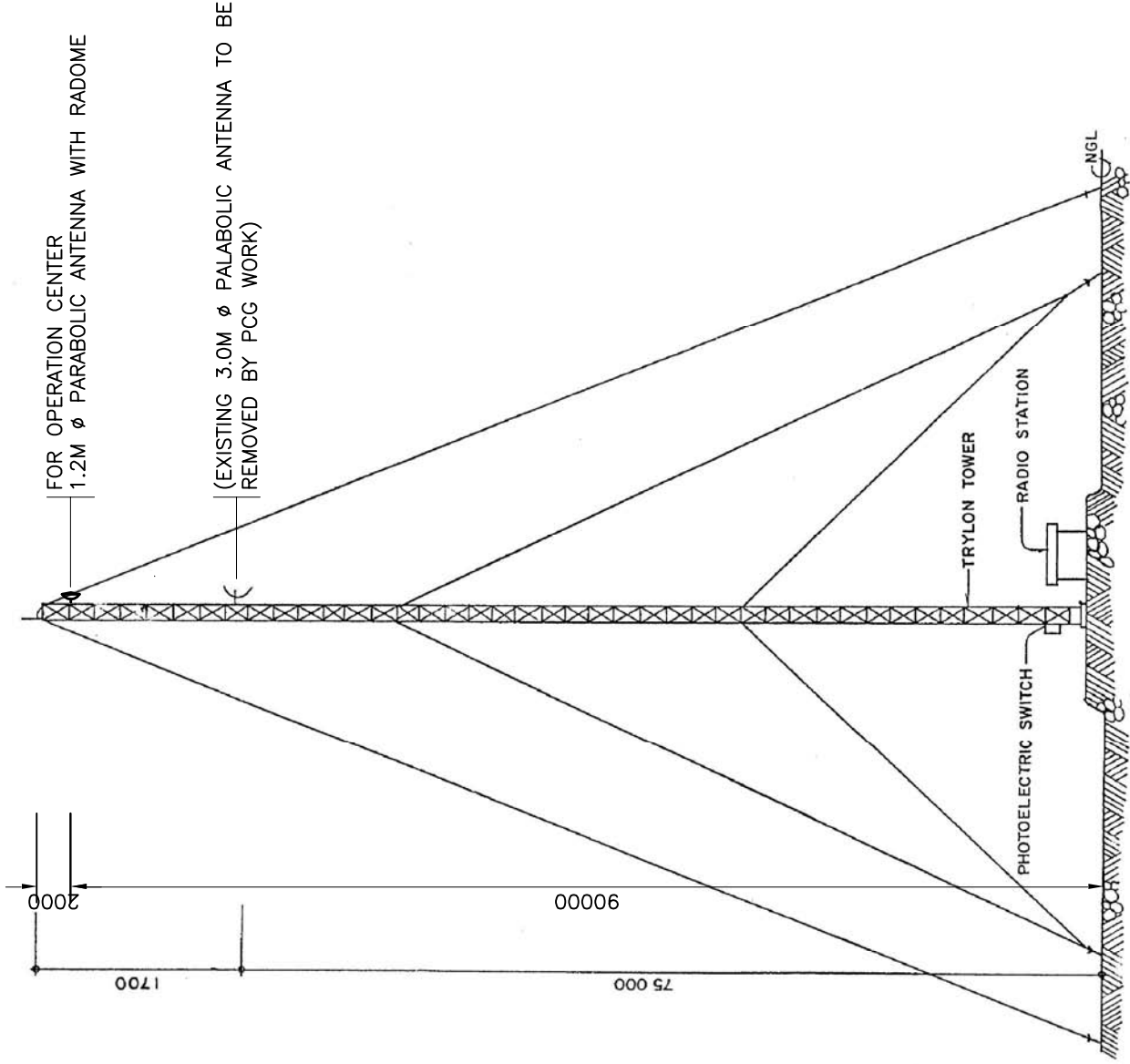
**LEGEND :**

- ① EXISTING MAIN BUILDING
- ② EXISTING POWERHOUSE
- ③ MAIN FUEL TANK
- ④ ELEVATED WATER TANK
- ⑤ GUARDHOUSE
- ⑥ EXISTING 92M. GUYED ANTENNA TOWER
- ⑦ RECEIVING ANTENNAE
- ⑧ BARBED WIRE FENCE
- ⑨ PUMPHOUSE
- ⑩ CYCLONE WIRE FENCE

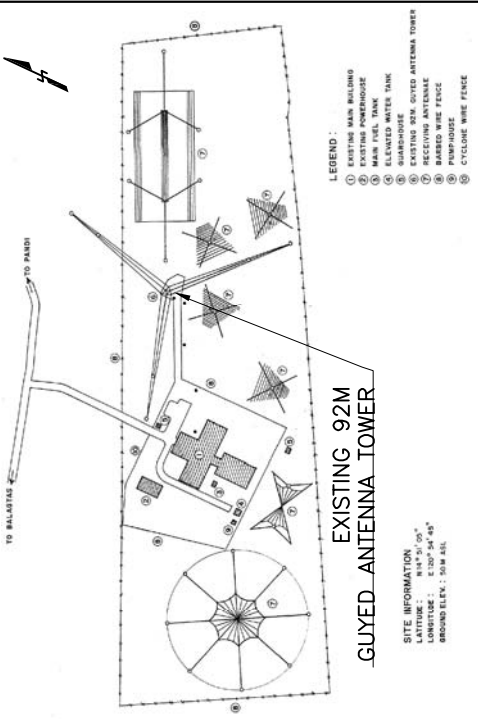
**SITE INFORMATION**  
 LATITUDE : N 14° 51' 05"  
 LONGITUDE : E 120° 54' 45"  
 GROUND ELEV. : 50M ASL

**RX STATION SITE LAYOUT PLAN**  
 (N.T.S.)

FIGURE-12 GENERAL LAYOUT PLAN FOR RECEIVING STATION

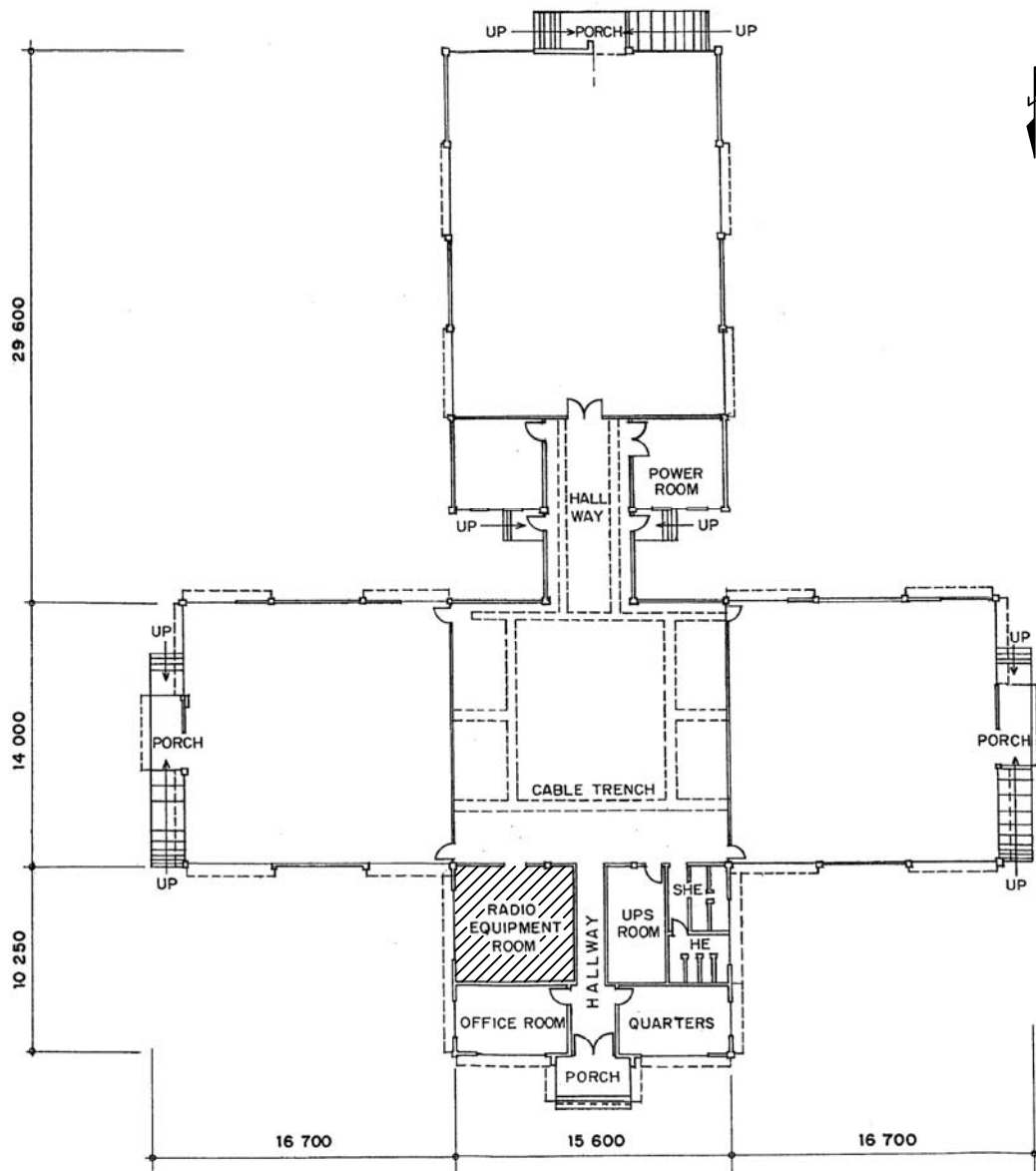


ANTENNA ELEVATION LAYOUT  
(N.T.S.)



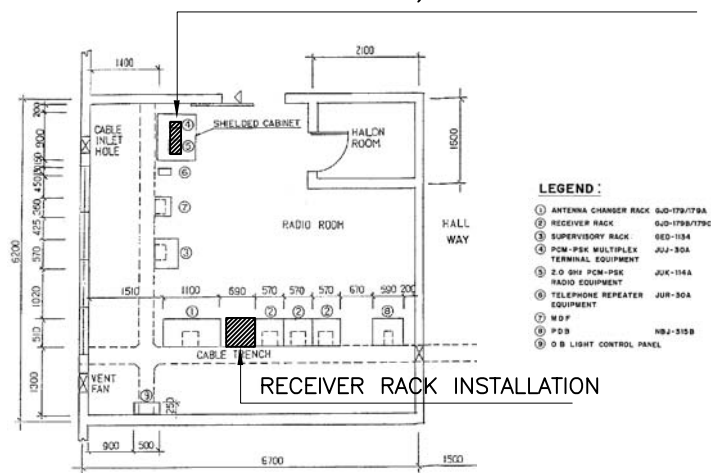
SITE LAYOUT  
(N.T.S.)

FIGURE-13 ANTENNA LAYOUT PLAN FOR RECEIVING STATION



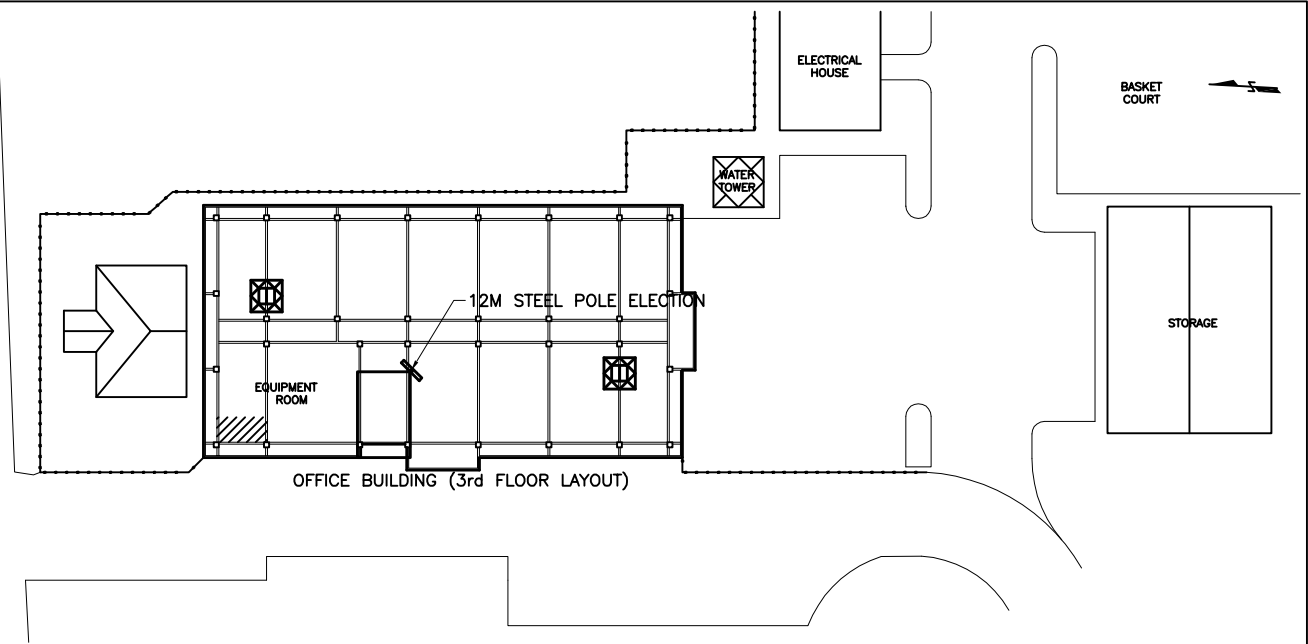
**MAIN BUILDING FLOOR PLAN**  
SCALE 1/400

MICROWAVE EQUIPMENT INSTALLATION  
(EXISTING EQUIPMENT TO BE REMOVED  
BY PCG WORK)

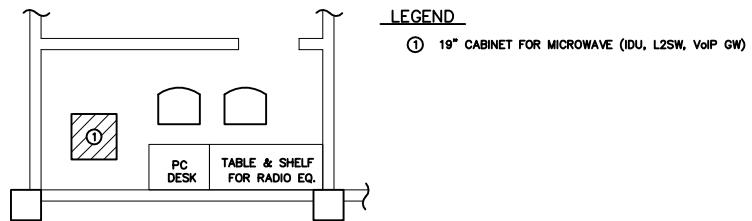


**EQUIPMENT LAYOUT FOR RADIO ROOM**  
SCALE 1/450

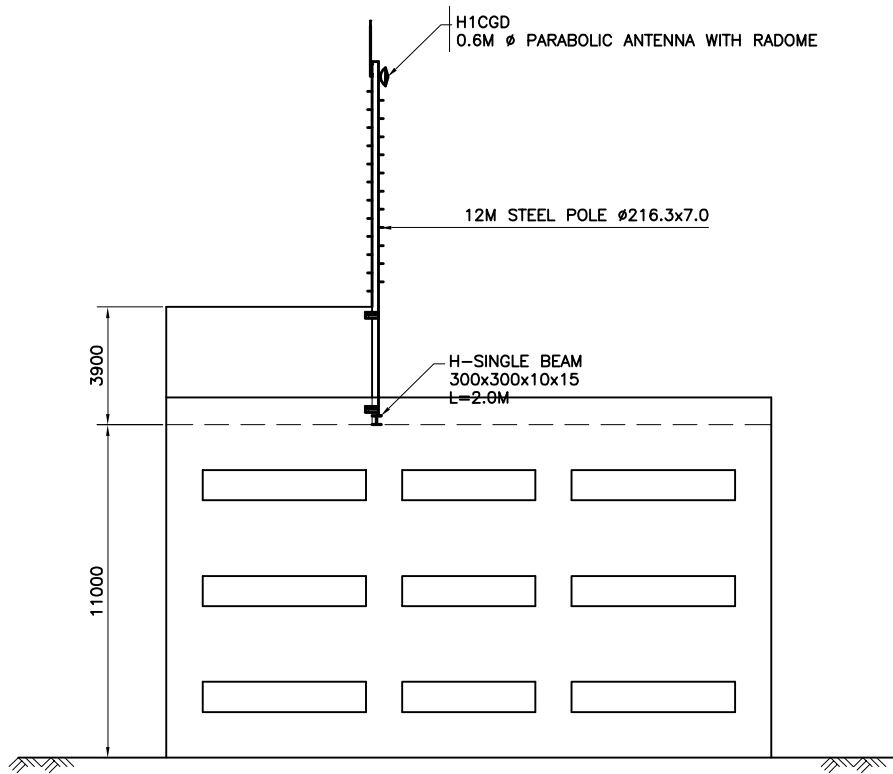
FIGURE-14 EQUIPMENT LAYOUT PLAN FOR RECEIVING STATION



**SITE LAYOUT AND MAIN BUILDING FLOOR PLAN**  
SCALE 1/600



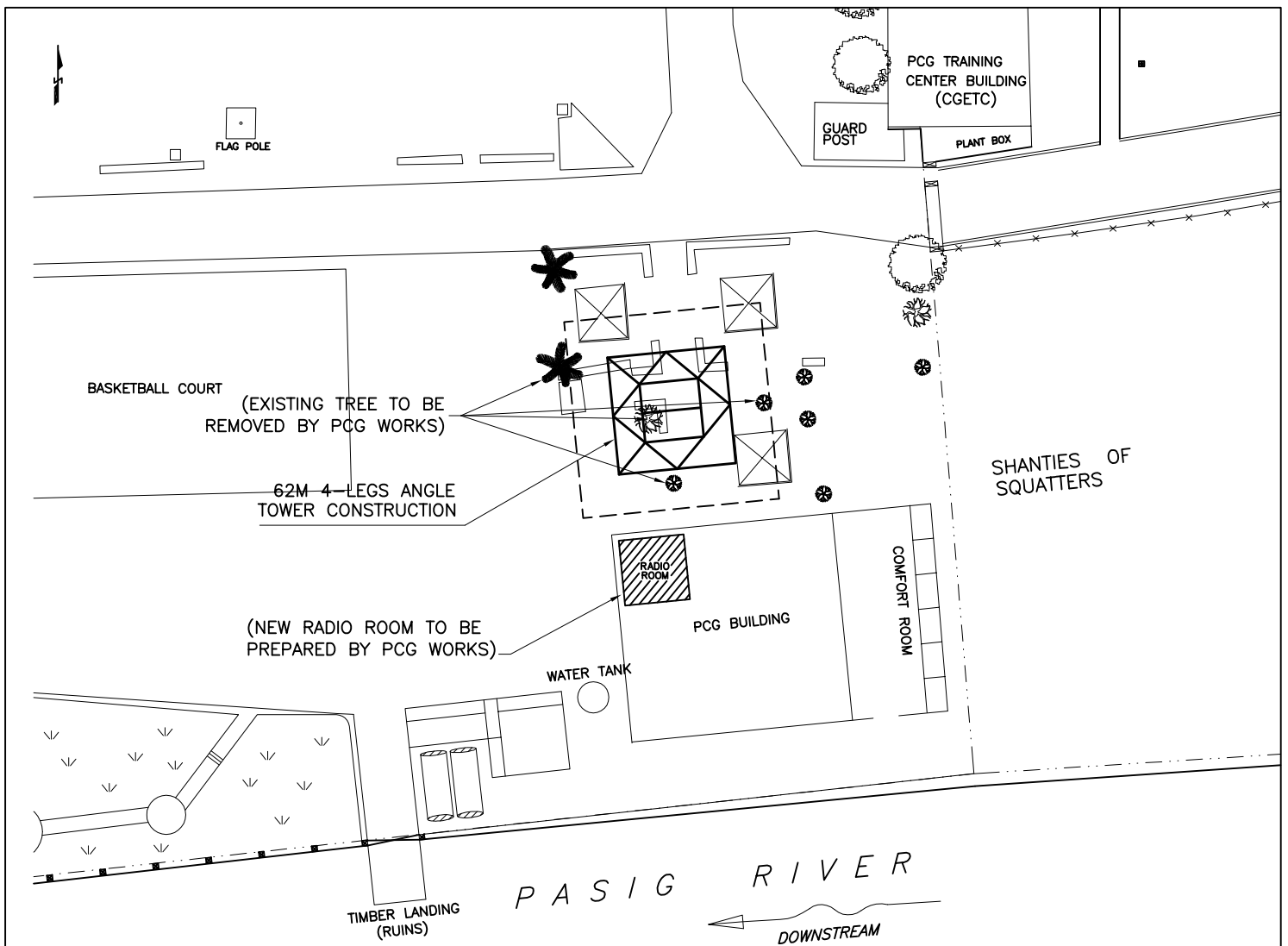
**EQUIPMENT LAYOUT FOR EQUIPMENT ROOM**  
SCALE 1/100



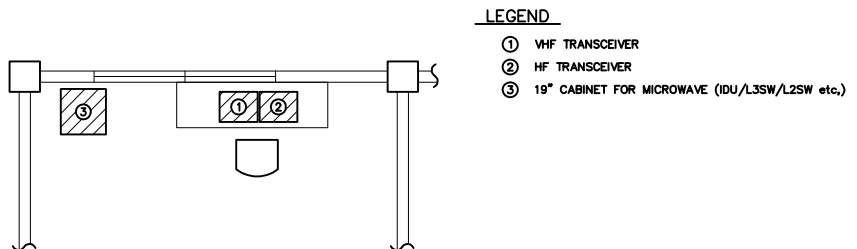
**ANTENNA ELEVATION LAYOUT**  
SCALE 1/250

**FIGURE-15 EQUIPMENT LAYOUT PLAN FOR ANC OPERATION OFFICE**





SITE LAYOUT PLAN  
SCALE 1/500

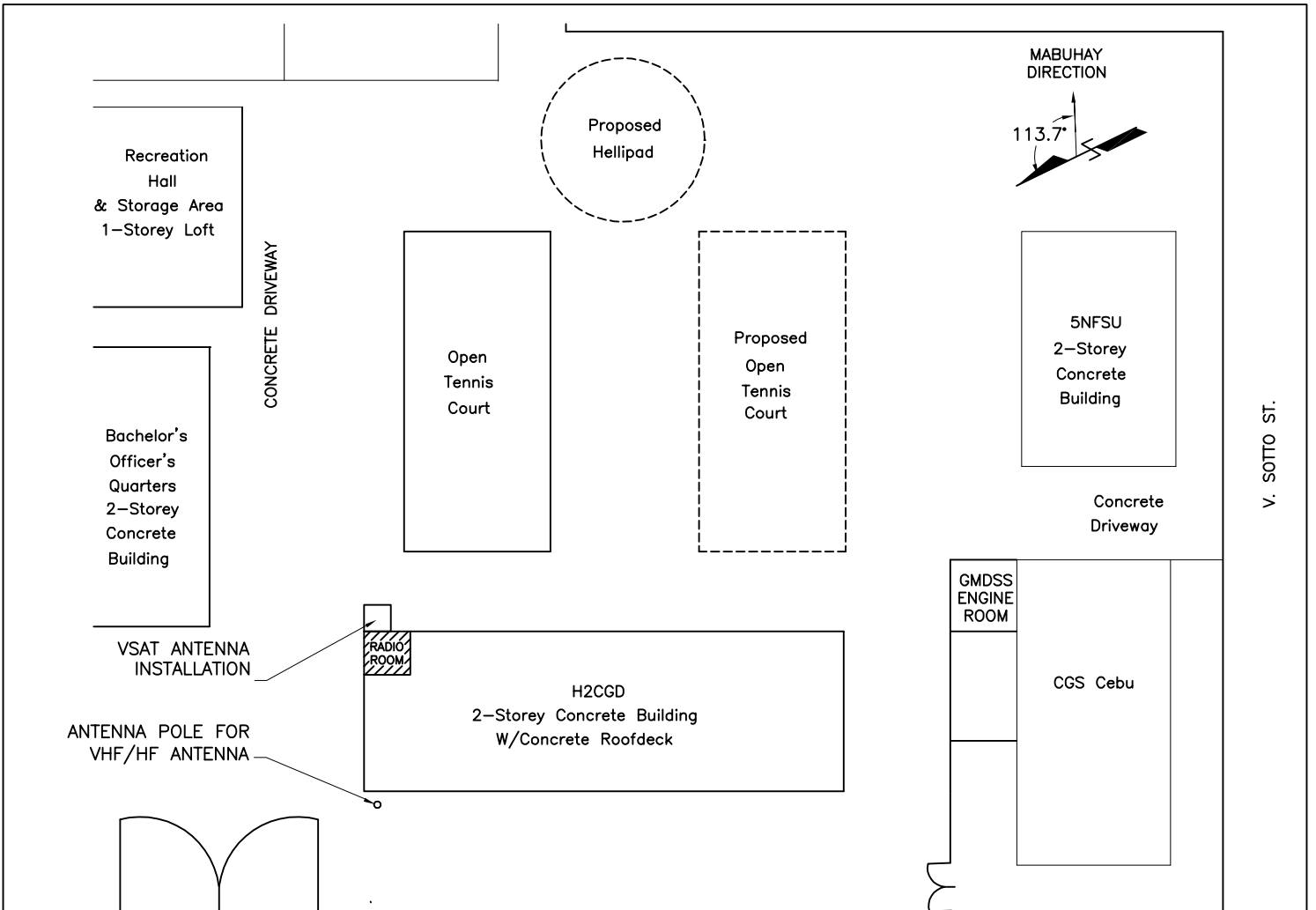


LEGEND

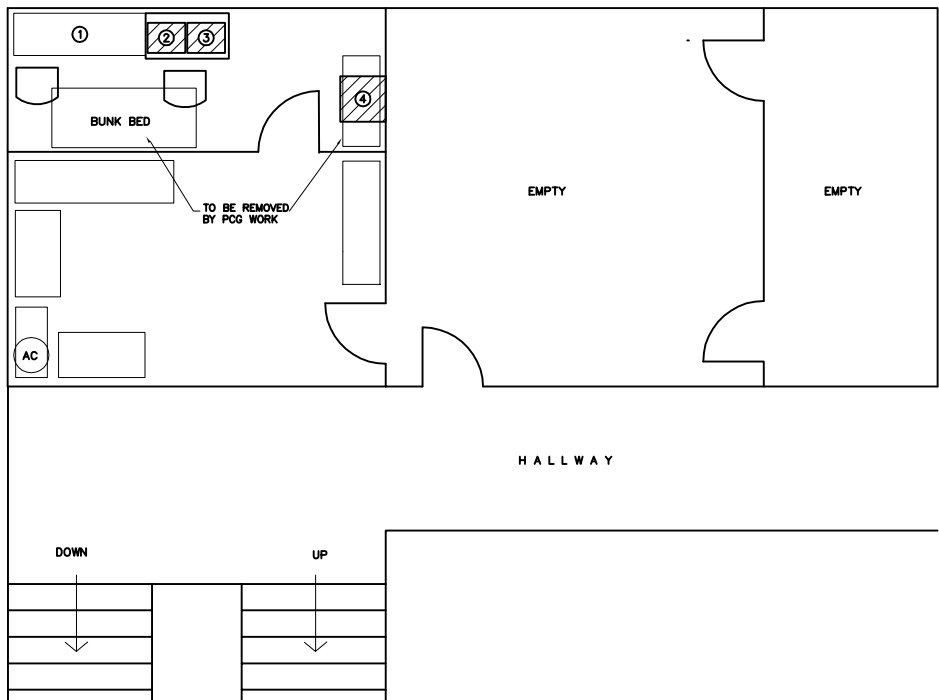
- ① VHF TRANSCEIVER
- ② HF TRANSCEIVER
- ③ 19" CABINET FOR MICROWAVE (IDU/L3SW/L2SW etc.)

EQUIPMENT LAYOUT FOR RADIO ROOM  
SCALE 1/100

FIGURE-16 EQUIPMENT LAYOUT PLAN FOR H1CGD MANILA



**SITE LAYOUT PLAN**  
SCALE 1/500

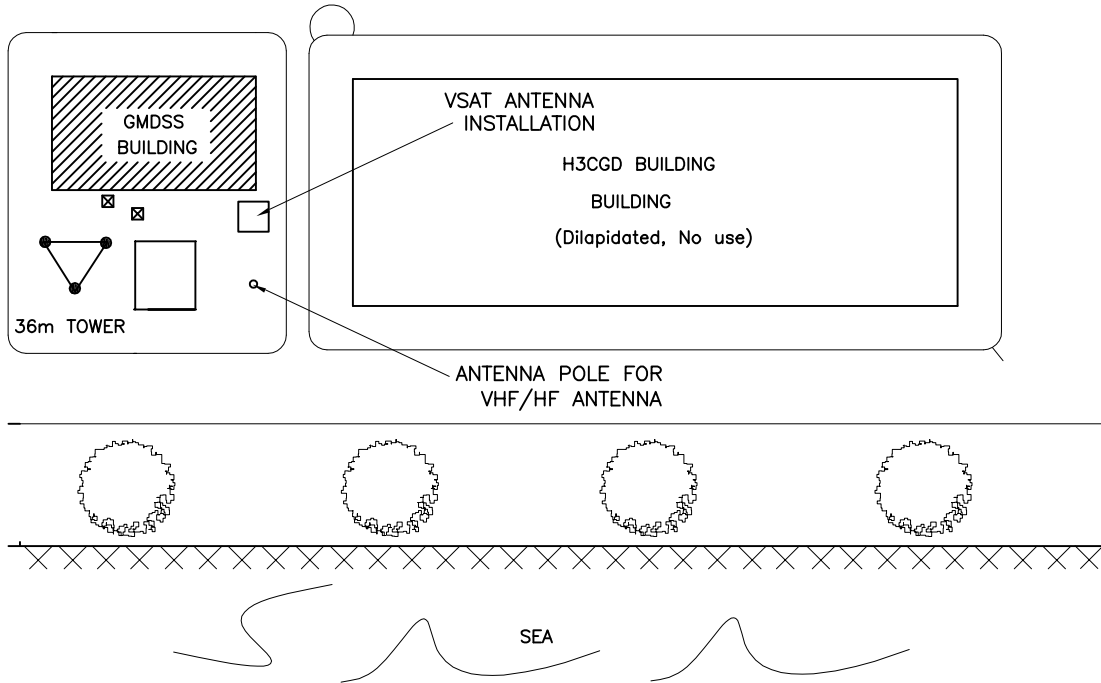
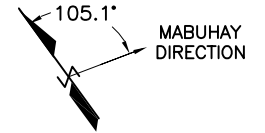


- LEGEND**
- ① EXISTING RADIO RACK
  - ② VHF TRANSCEIVER
  - ③ HF TRANSCEIVER
  - ④ 19" CABINET FOR VSAT (IDU/VoIP)

**EQUIPMENT LAYOUT FOR RADIO ROOM**  
SCALE 1/100

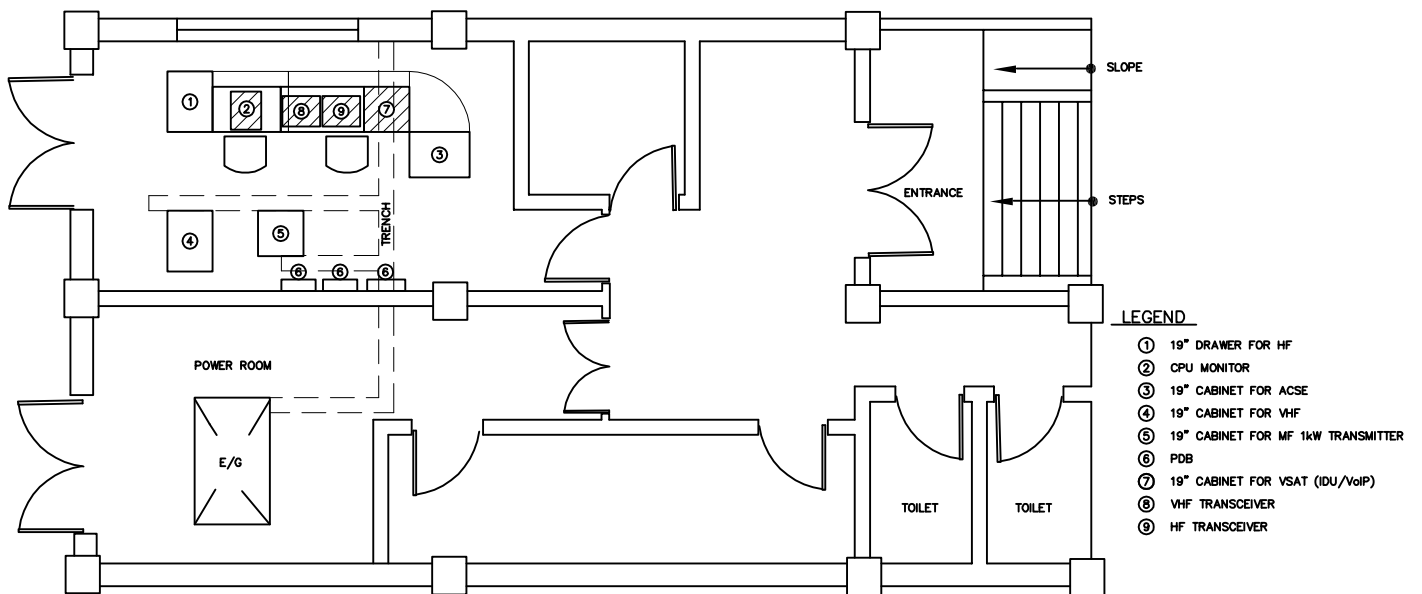
**FIGURE-17 EQUIPMENT LAYOUT PLAN FOR H2CGD CEBU**

NAVY PARADE GROUND



SITE LAYOUT AND MAIN BUILDING FLOOR PLAN

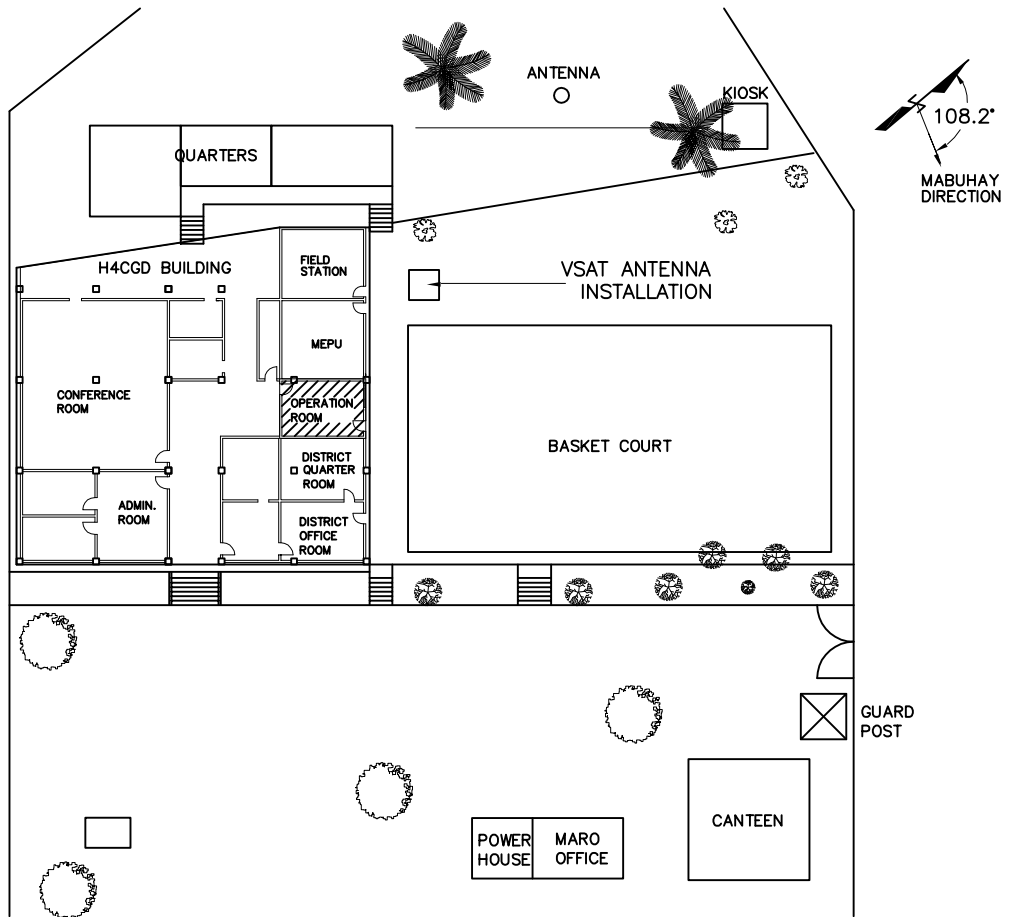
SCALE 1/500



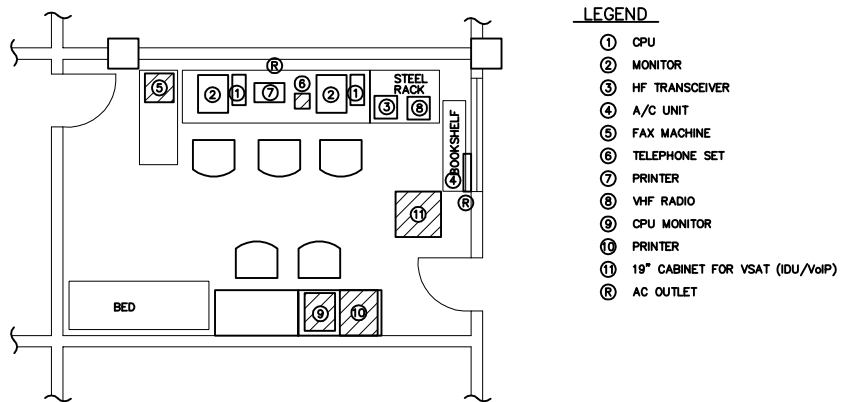
EQUIPMENT LAYOUT FOR RADIO ROOM

SCALE 1/100

FIGURE-18 EQUIPMENT LAYOUT PLAN FOR H3CGD ZAMBOANGA

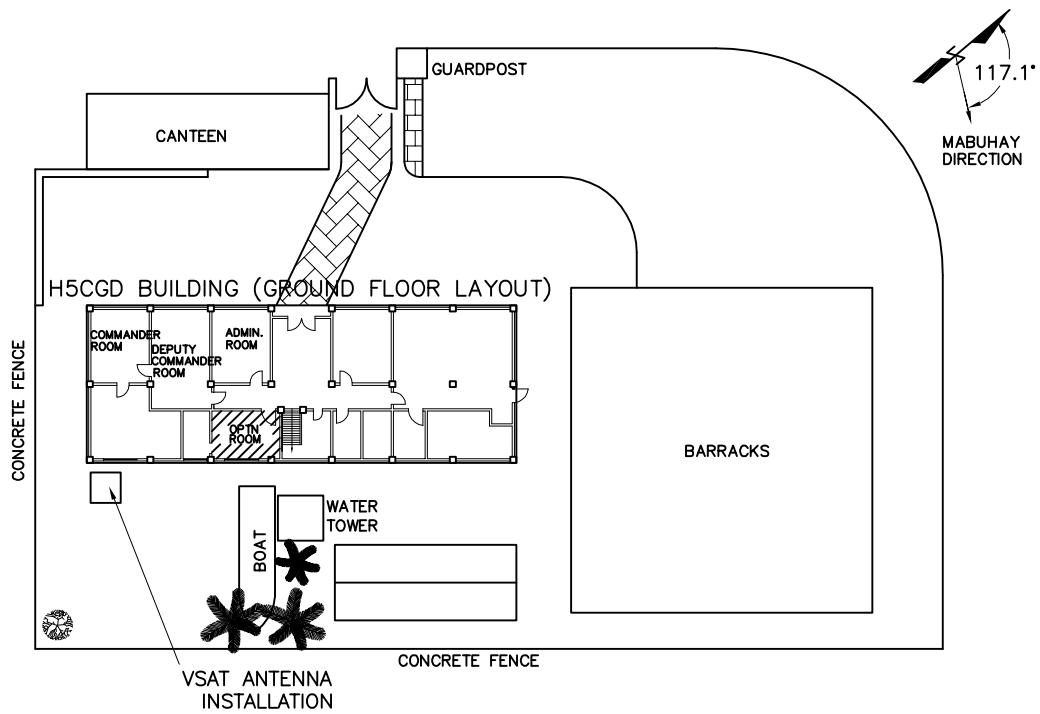


SITE LAYOUT AND MAIN BUILDING FLOOR PLAN  
SCALE 1/500



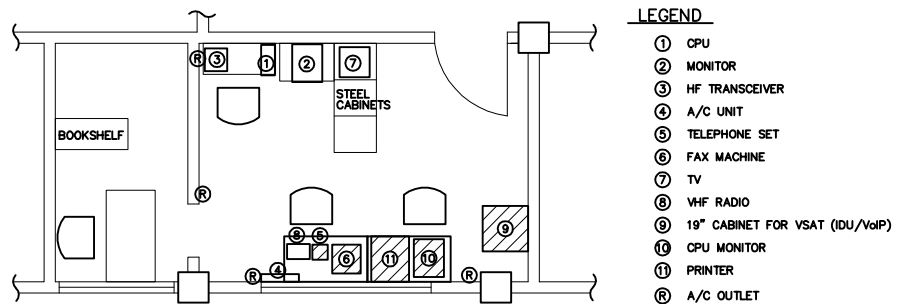
EQUIPMENT LAYOUT FOR OPERATION ROOM  
SCALE 1/100

FIGURE-19 EQUIPMENT LAYOUT PLAN FOR H4CGD PALAWAN



SITE LAYOUT AND MAIN BUILDING FLOOR PLAN

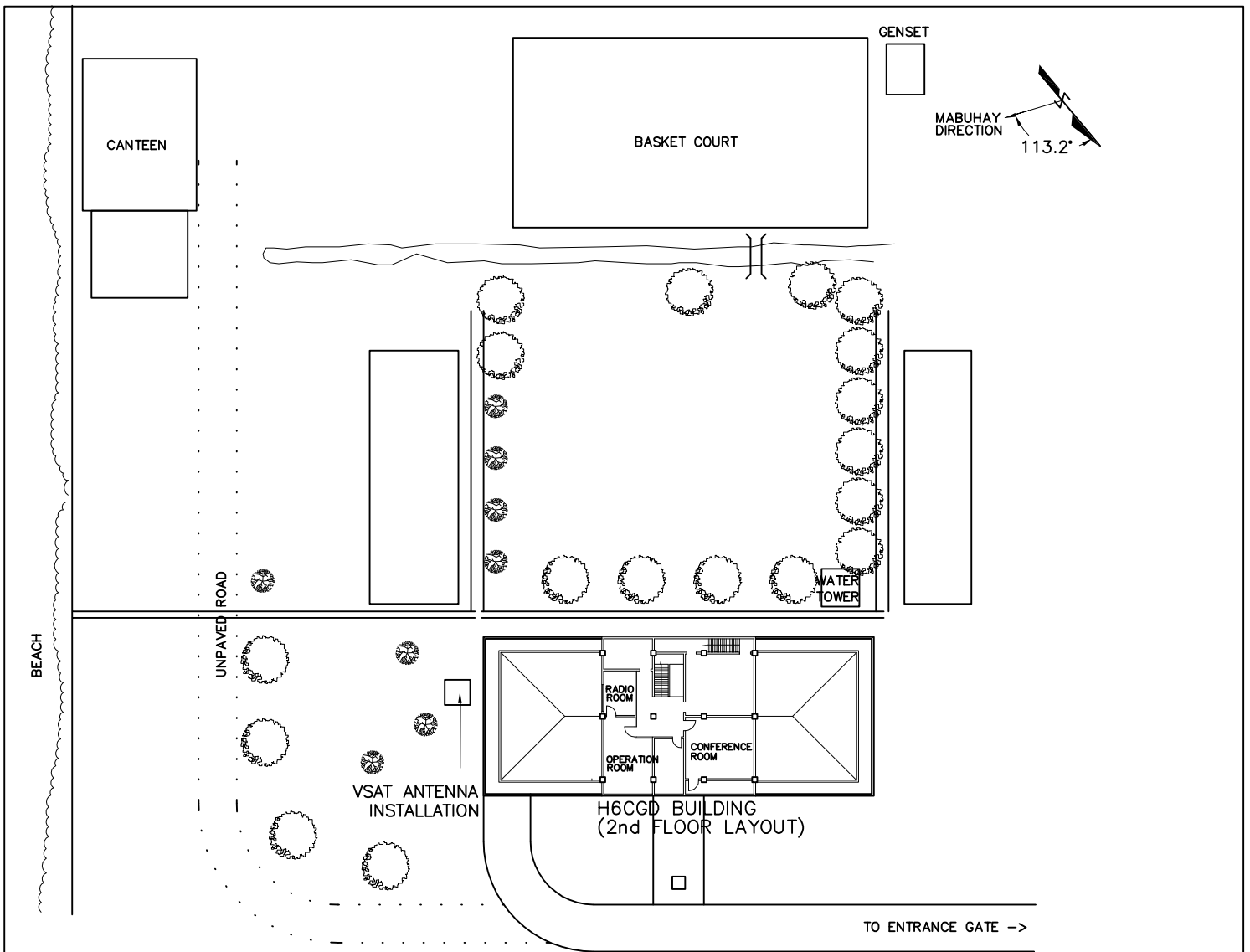
SCALE 1/500



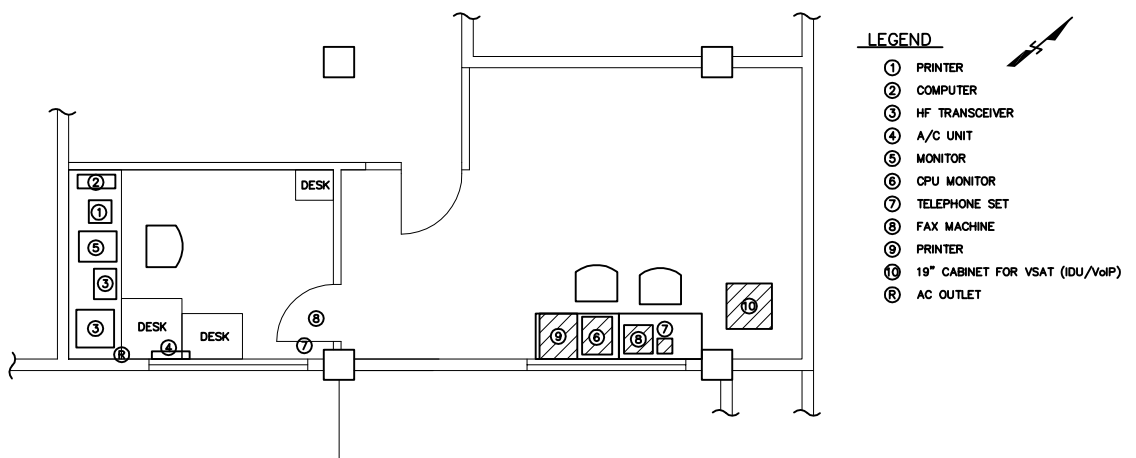
EQUIPMENT LAYOUT FOR OPERATION ROOM

SCALE 1/100

FIGURE-20 EQUIPMENT LAYOUT PLAN FOR H5CGD BATANGAS

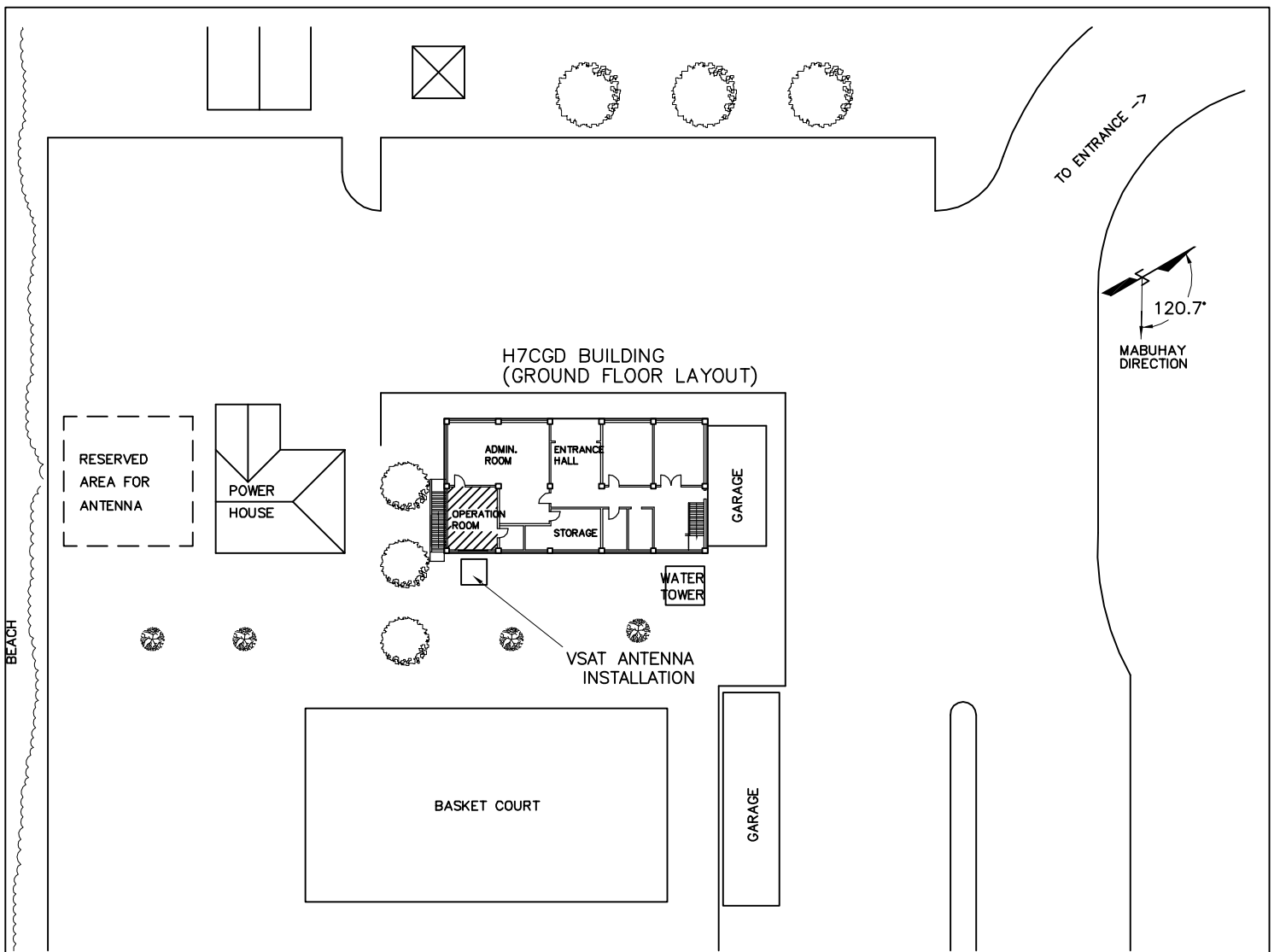


SITE LAYOUT AND MAIN BUILDING FLOOR PLAN  
SCALE 1/500

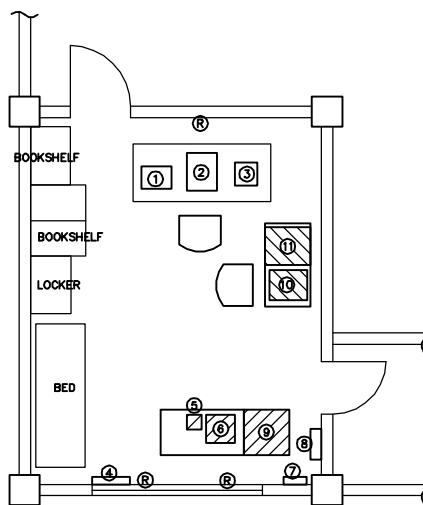


EQUIPMENT LAYOUT FOR RADIO/OPERATION ROOM  
SCALE 1/100

FIGURE-21 EQUIPMENT LAYOUT PLAN FOR H6CGD ILOILO



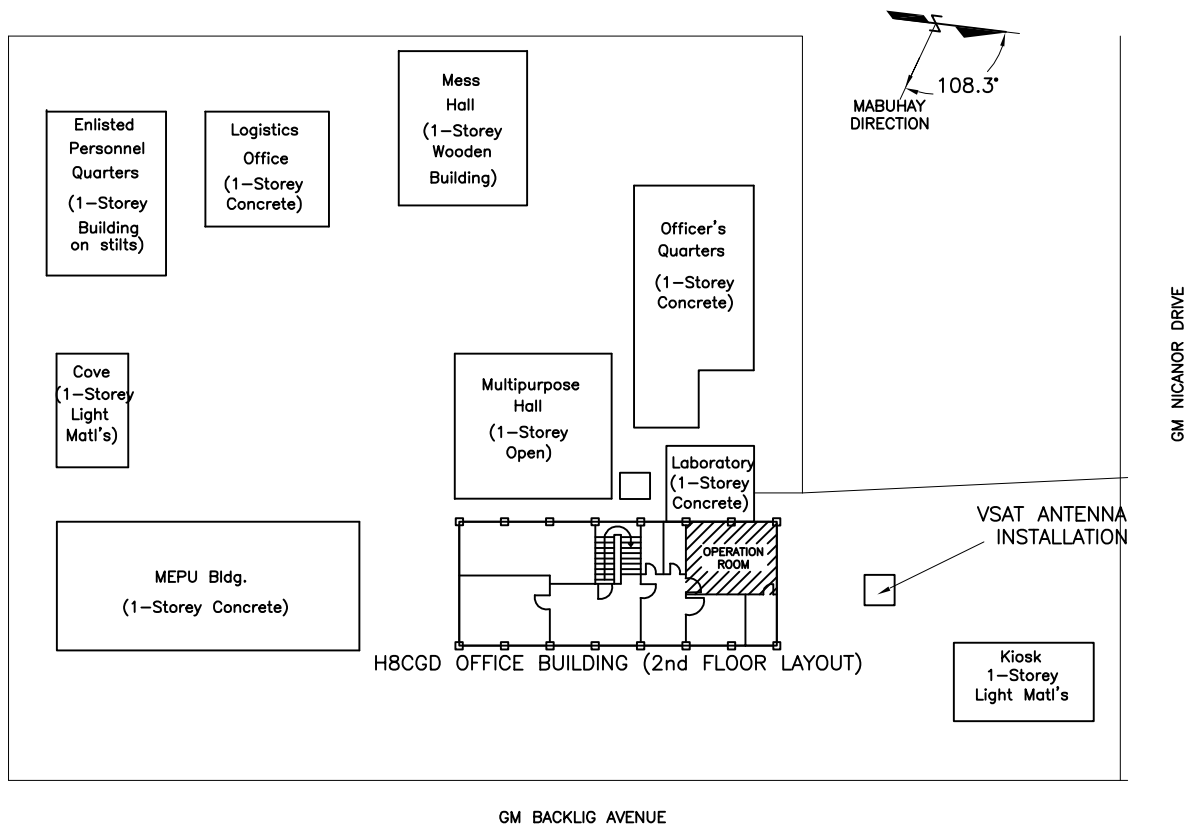
**SITE LAYOUT AND MAIN BUILDING FLOOR PLAN**  
SCALE 1/500



- LEGEND**
- ① PRINTER
  - ② COMPUTER
  - ③ HF TRANSCEIVER
  - ④ A/C UNIT
  - ⑤ TELEPHONE SET
  - ⑥ FAX MACHINE
  - ⑦ FUSE BOX
  - ⑧ TERMINAL BOX
  - ⑨ 19" CABINET FOR VSAT (IDU/VolP)
  - ⑩ CPU MONITOR
  - ⑪ PRINTER
  - Ⓜ A/C OUTLET

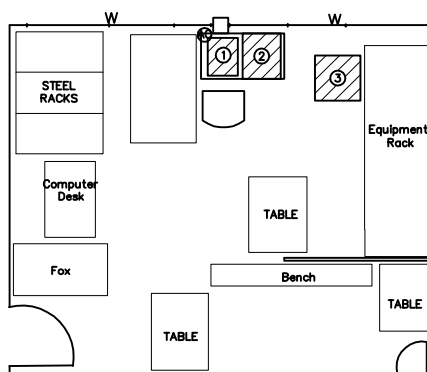
**EQUIPMENT LAYOUT FOR OPERATION ROOM**  
SCALE 1/100

FIGURE-22 EQUIPMENT LAYOUT PLAN FOR H7CGD SAN FERNANDO



SITE LAYOUT AND MAIN BUILDING FLOOR PLAN

SCALE 1/500



LEGEND

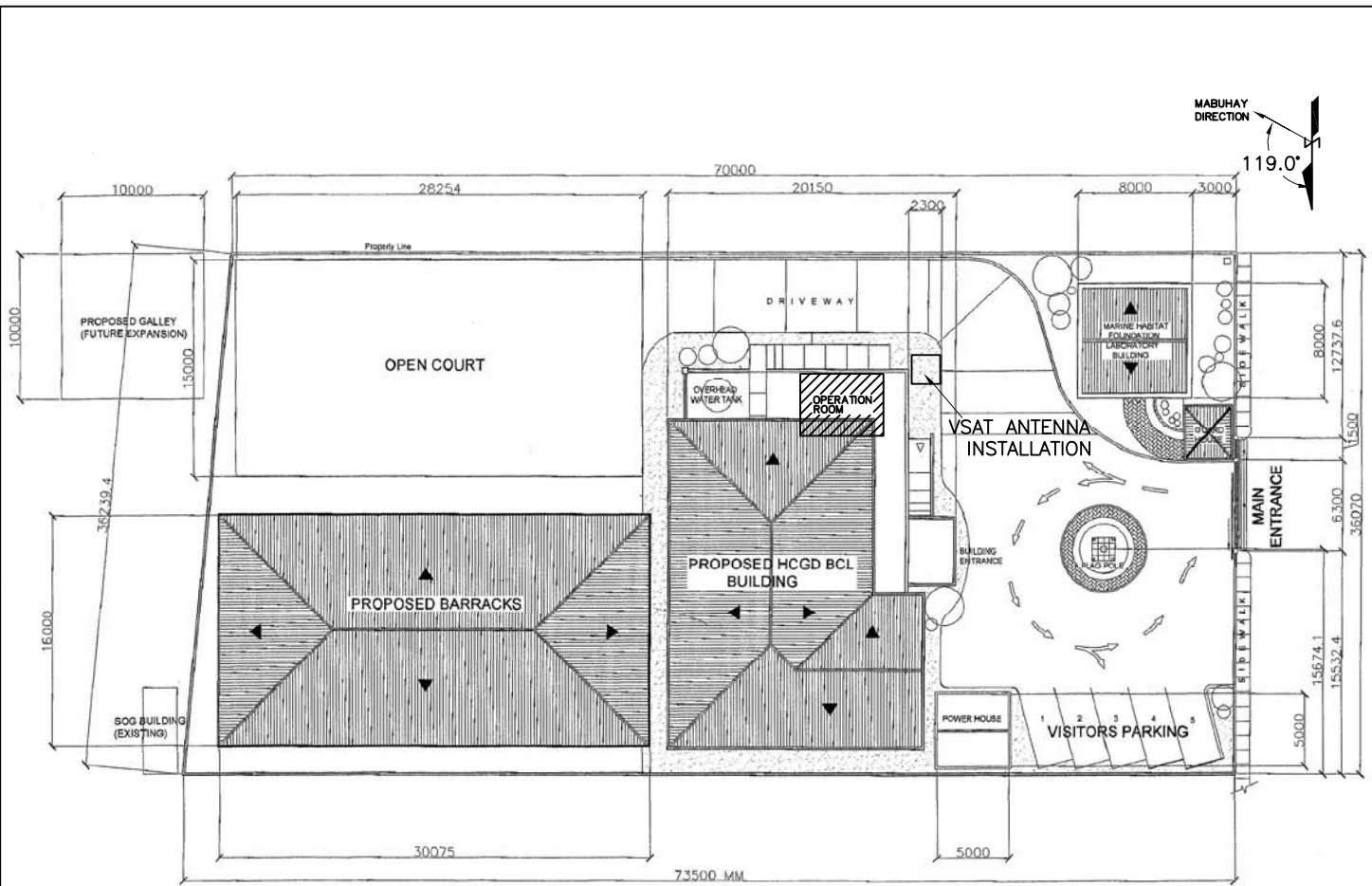
- ① OPERATOR CONSOLE
- ② PRINTER
- ③ 19" CABINET FOR VSAT (IDU/VoIP)

EQUIPMENT LAYOUT FOR OPERATION ROOM

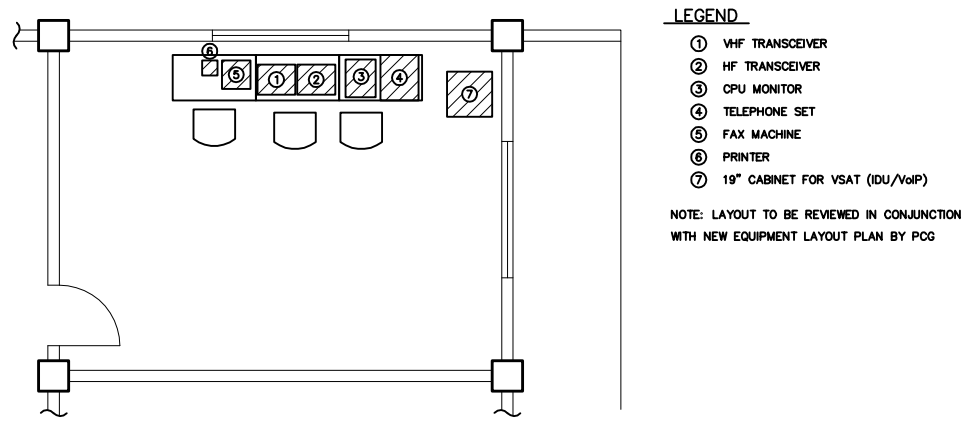
SCALE 1/100

FIGURE-23 EQUIPMENT LAYOUT PLAN FOR H8CGD DAVAO



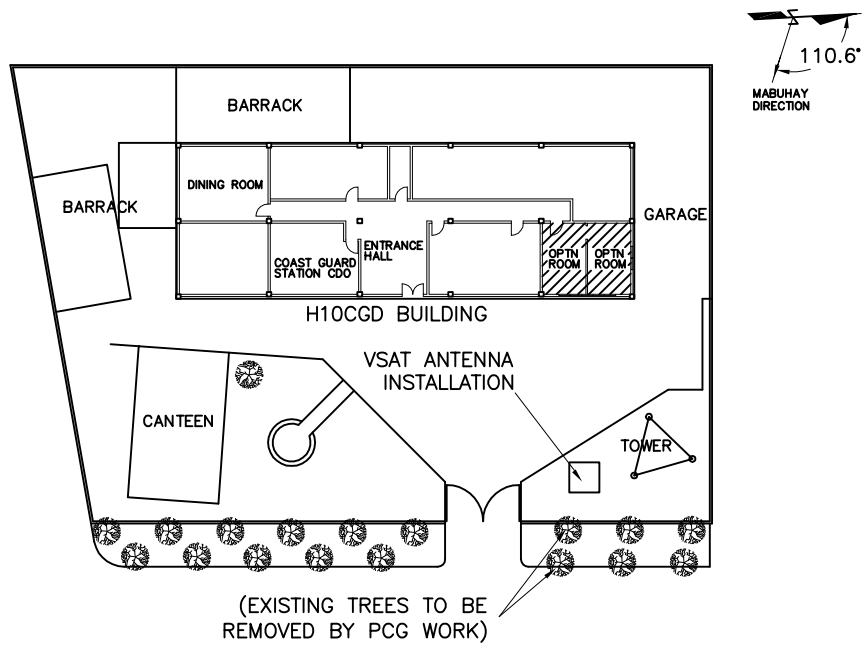


**SITE LAYOUT AND MAIN BUILDING FLOOR PLAN**  
SCALE 1/500



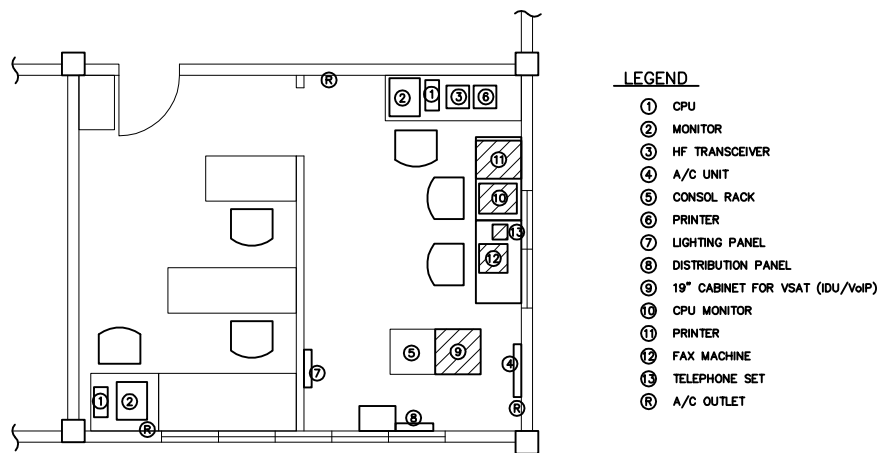
**EQUIPMENT LAYOUT FOR OPERATION ROOM**  
SCALE 1/100

FIGURE-24 EQUIPMENT LAYOUT PLAN FOR H9CGD LEGASPI



SITE LAYOUT AND MAIN BUILDING FLOOR PLAN

SCALE 1/500



EQUIPMENT LAYOUT FOR OPERATION ROOM

SCALE 1/100

FIGURE-25 EQUIPMENT LAYOUT PLAN FOR H10CGD CAGAYAN DE ORO

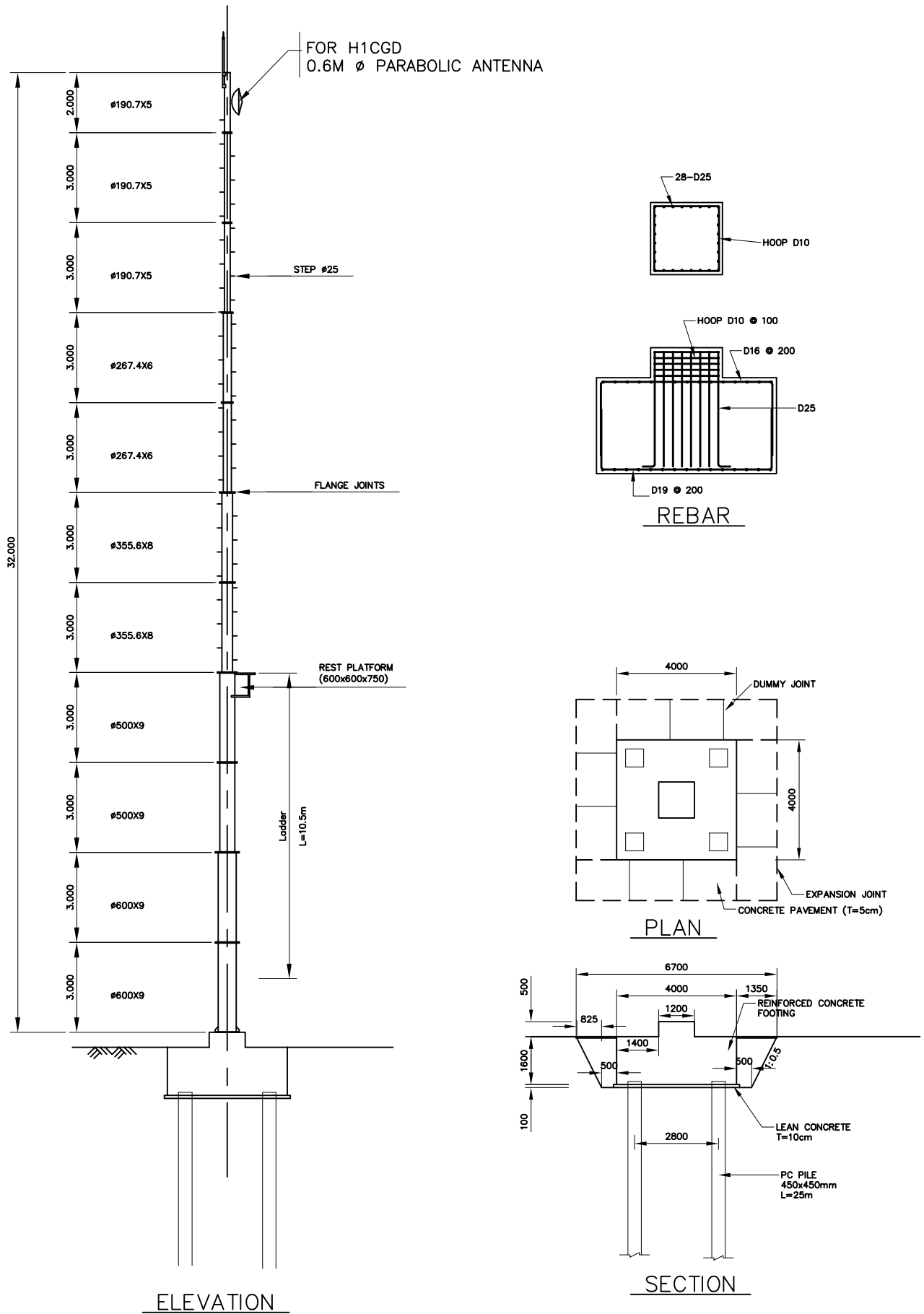
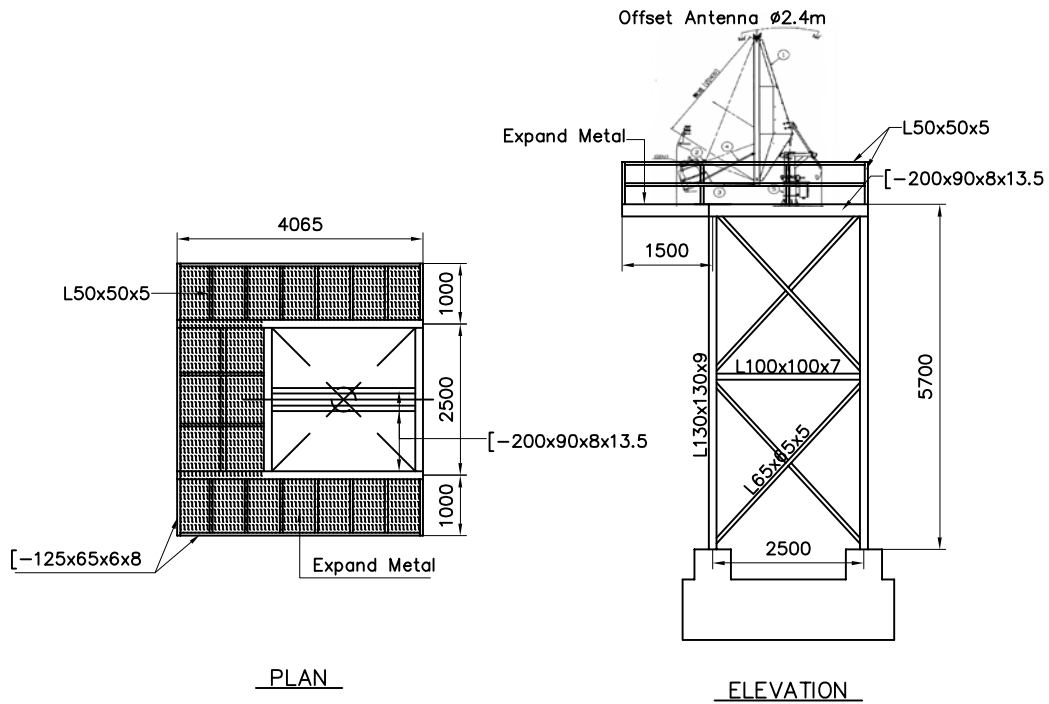
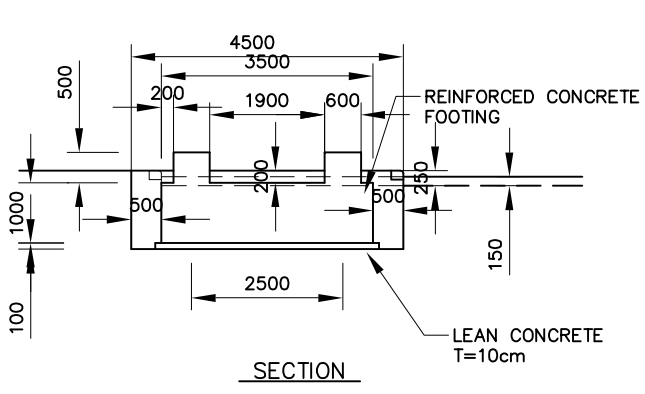
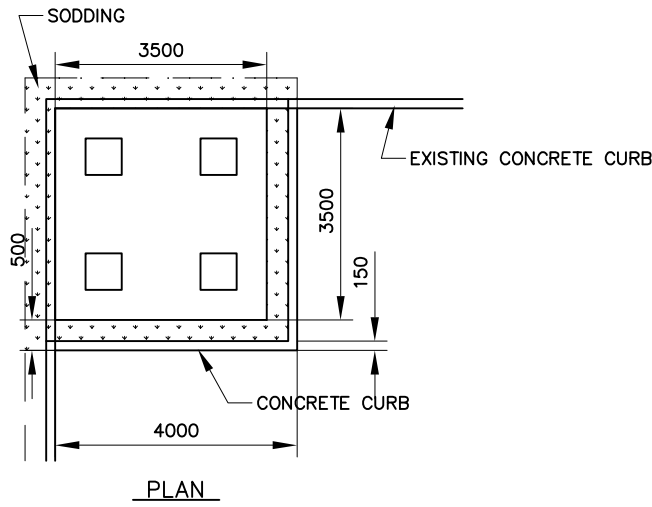


FIGURE-26 32M CYLINDRICAL TOWER AT PCG HEADQUARTERS



ANTENNA SUPPORTING STRUCTURE PLAN



TOWER FOUNDATION

FIGURE-27 VSAT ANTENNA SUPPORT AT OPERATION CENTER

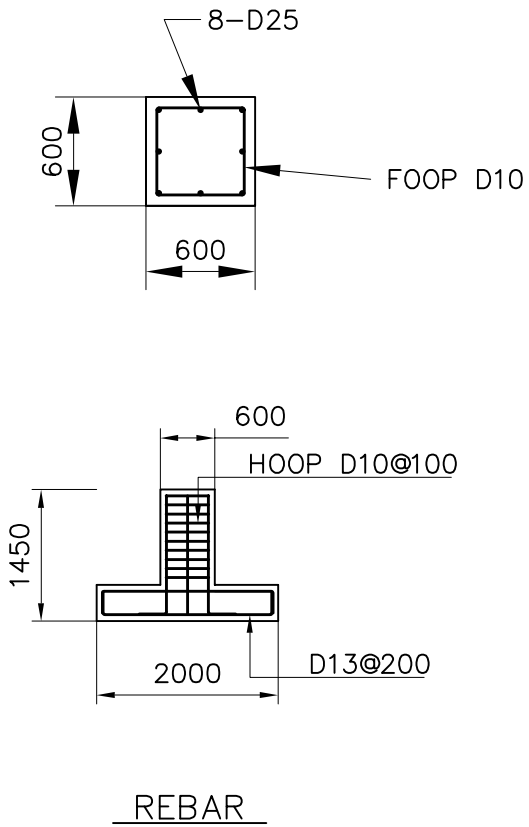
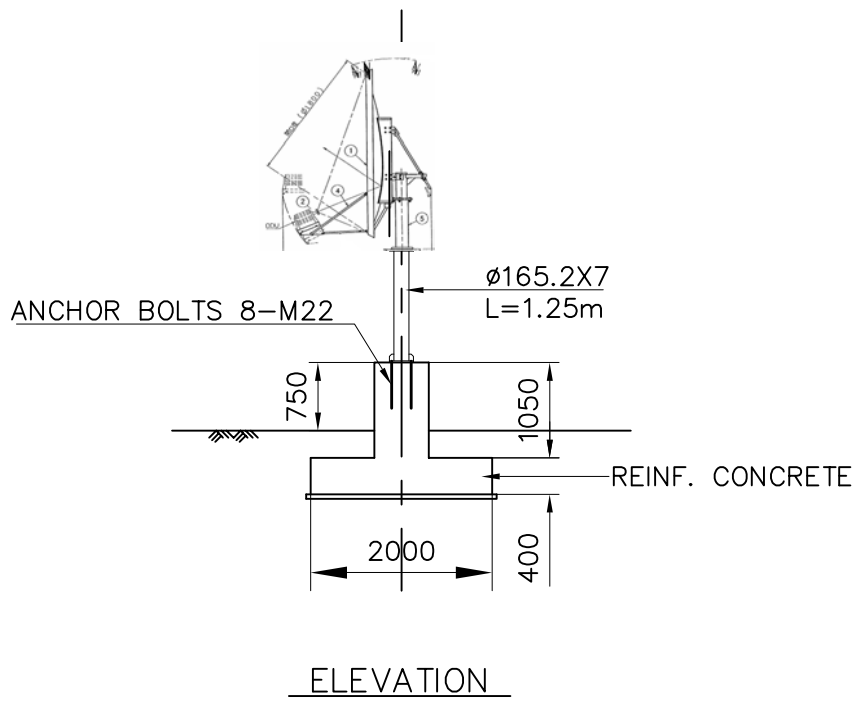


FIGURE-28 VSAT ANTENNA FOR FIXED STATIONS

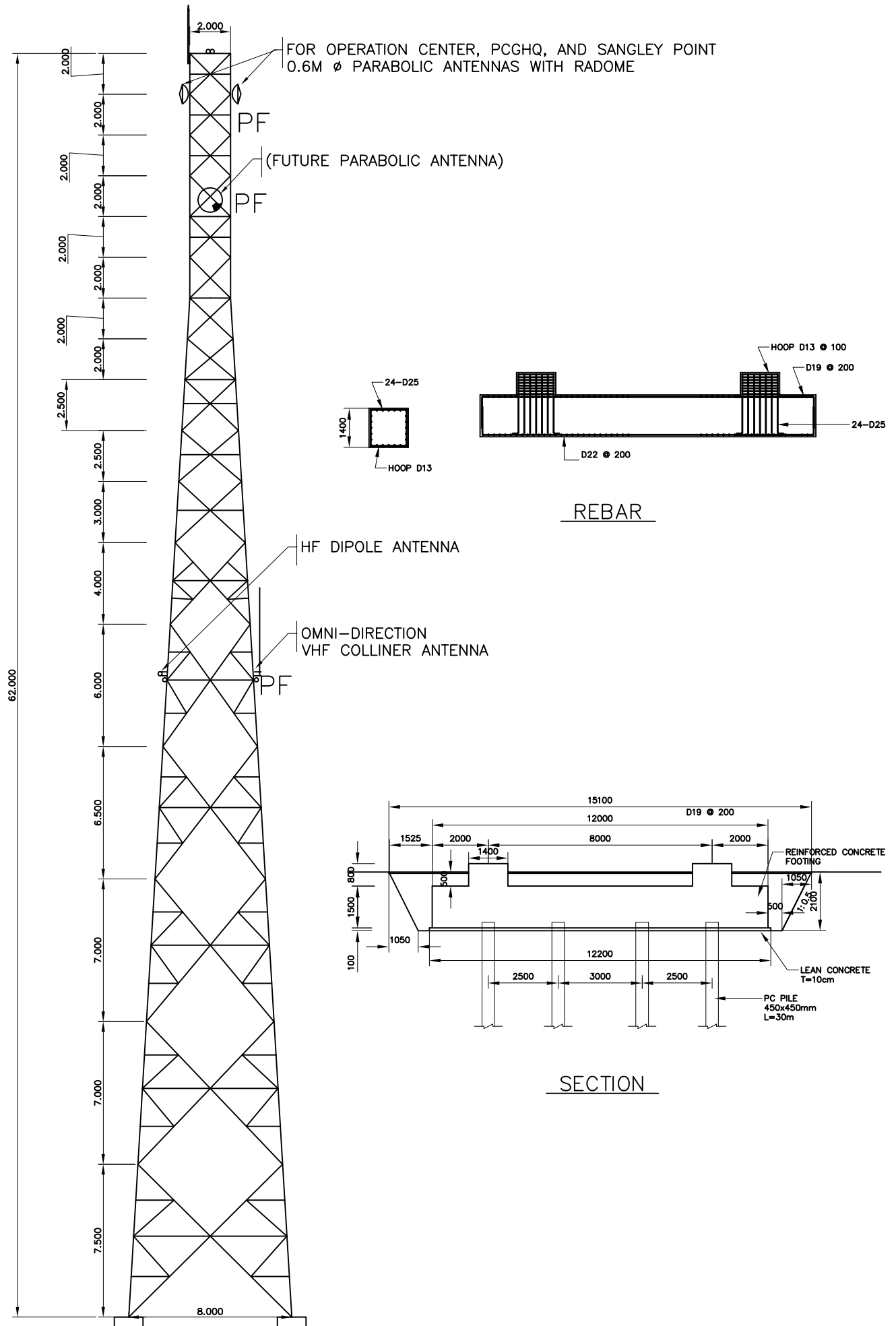
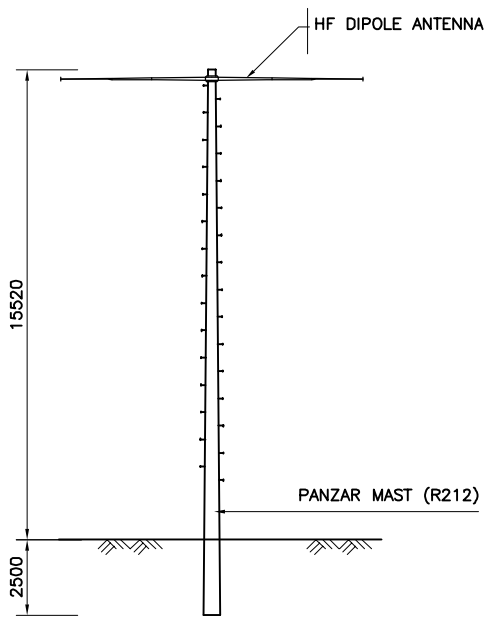
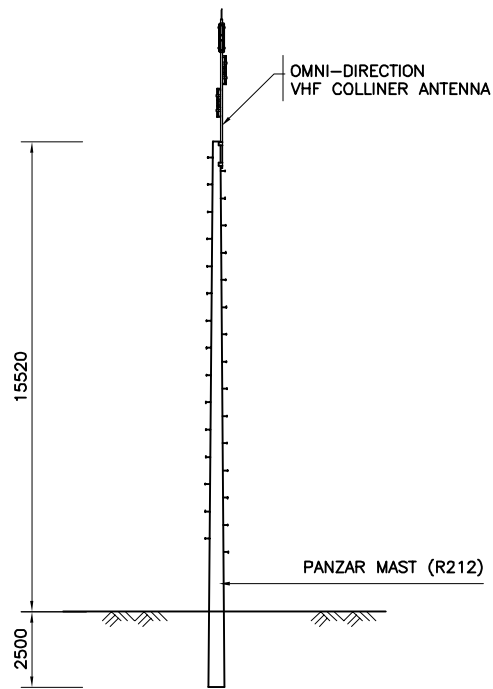


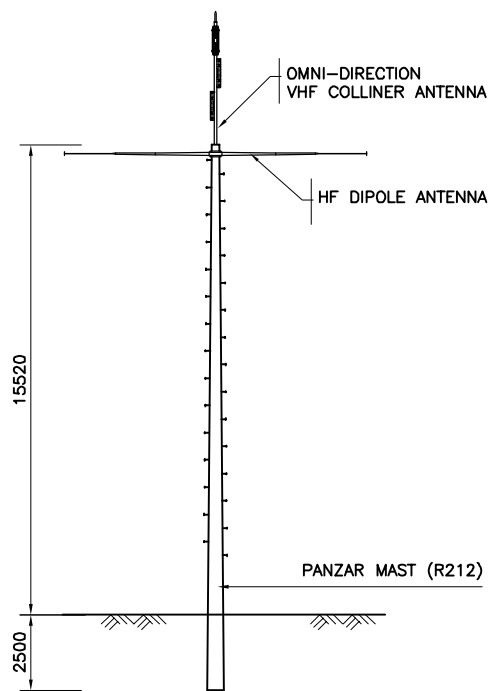
FIGURE-29 62M 4-LEGS ANGLE TOWER AT H1PCG MANILA



**HF ANTENNA ELEVATION LAYOUT**  
SCALE 1/250



**VHF ANTENNA ELEVATION LAYOUT**  
SCALE 1/250



**VHF/HF ANTENNAS ELEVATION LAYOUT (FOR H2CGD AND H3CGD)**  
SCALE 1/250

FIGURE-30 VHF/HF ANTENNAS AT H2PCG, H3PCG, AND CGSs