

4. Power Supply Subsystem

This Section describes existing power facilities in AA IR/ITE, Debre Zeit, Adama West MW Rep. Nazareth primary center, and specifies requirements for the new power facilities to be supplied at the sites by the Contractor.

4.1 Subsystem Configuration

Power Supply Subsystem in AA IR/ITE, Debre Zeit station, Adama West MW Rep. Nazareth primary center shall be basically composed of devices in Table 4.1.

Table 4.1 Power Supply Subsystem

Item	Quantity			
	AA IR/ITE	Debre Zeit Station	Adama West MW Rep.	Nazareth Primary Center
AC UPS	ETC will supply line form Existing	TBD	TBD	ETC will supply line form Existing
AC/DC Converter	1 + 1	1 + 1	1 + 1	1 + 1
Sub-PDB (DC)	1 + 1	1 + 1	1 + 1	1 + 1
Sub-PDB (AC)	N/A	N/A	N/A	N/A

4.2 Description of Available Power Facilities

The following are brief descriptions of available power facilities that mean either existing or will be made available by ETC. The Bidder shall prepare his proposal with due consideration of this description as well as any information collected during his provisional site survey.

4.2.1 AA IR/ITE.

4.2.1.1 Power Distribution Board

The spare Power Distribution Board NFB will supply by ETC. However, the Contractor shall prepare his proposal with due consideration of this description as well as any information collected during his provisional site survey.

4.2.1.2 Available AC Power and Quality

AC Power with the following quality is available in AA/IRE

- Voltage : 220 V ± 10%
- Frequency : 50 Hz ± 4%
- Capacity : IBD (ETC will inform later)

4.2.2 Debre Zeit Station

4.2.2.1 Power Distribution Board

The spare Power Distribution Board NFB will supply by ETC. However, the Contractor shall prepare his proposal with due consideration of this description as well as any information collected during his provisional site survey.

4.2.2.2 Available AC Power and Quality

AC Power with the following quality is available in Debre Zeit

- Voltage : 220 V \pm 10%
- Frequency : 50 Hz \pm 4%
- Capacity : IBD (ETC will inform later)

4.2.3 Adama West MW Rep. Station

4.2.3.1 Power Distribution Board

The spare Power Distribution Board NFB will supply by ETC. However, the Contractor shall prepare his proposal with due consideration of this description as well as any information collected during his provisional site survey.

4.2.3.2 Available AC Power and Quality

AC Power with the following quality is available in Adama West MW Rep. Station

- Voltage : 220 V \pm 10%
- Frequency : 50 Hz \pm 4%
- Capacity : IBD (ETC will inform later)

4.2.4 Nazareth Primary Center

4.2.4.1 Power Distribution Board

The spare Power Distribution Board NFB will supply by ETC. However, the Contractor shall prepare his proposal with due consideration of this description as well as any information collected during his provisional site survey.

4.2.4.2 Available AC Power and Quality

AC Power with the following quality is available in Nazareth Primary Center

- Voltage : 220 V \pm 10%
- Frequency : 50 Hz \pm 4%
- Capacity : IBD (ETC will inform later)

5. System Requirements

This Section describes the required the Equipment list for the Fiber-optical Transmission Link (Backbone) between Addis Ababa and Nazareth in Ethiopia. The STM-16 OPTICAL SYSTEM planned List (AA-Nazareth) and the Optical and Material planned List (AA-Nazareth) are shown in Table 5.1 and Table 5.2 respectively.

Table 5.1 STM-16 OPTICAL SYSTEM (AA-Nazareth) (Tentative) (US \$ 120 yen)

Item	Description	AA(IR/TE)	AA(Fiwaha)	AA(Nefas Silk)	DEBRE ZEIT	ADAMA West	NAZRETH	TOTAL
A.	Foreign Currency Part (STM-16 Multiplexer)							
1.	Rack & Power Distribution Panel							
1.1	ETSI rack (2200H x 600W x 300D mm) with PWR Distribution Panel	1			1	1	1	4
2.	LIGHTWAVE CROSS-CONNECT NODE							
2.1	Shelf with Common	1			1	1	1	4
2.2	STM-16 optical interface unit	2			4	4	2	12
3.	Tributary interface unit							
3.1	STM-1 channel unit							
	Interface Unit for STM-1 Opt.(S1.1.& L1.1 2ch)	8			8	8	8	32
	Interface Unit for STM-1 Electrical (S1.1.& L1.1 2ch)	8			8	8	8	32
3.2	Low order VC crossconnect Unit (TSI,5G)				1			1
3.3	2M channel unit (Interface unit for E1 (42ch))				1			1
4.	Documentation							
4.1	Instruction manual	1			1	1	1	4
5.	Network Management System							
5.1	SDH Local management terminal	1						1
6.	Miscellaneous							
6.1	FC-FC optical cord, standard type (10m)	4			8	8	4	24
6.2	Telephone set for OW	1			1	1	1	4
7.	Distribution frame							
7.1	Distribution frame (LDF)	1	1	1	1	1	1	6
7.2	Distribution frame (DDF)	1			1	1	1	4
8.	Spare Unit	1						1
9.	Test Equipment	1						1
10.	Installation Material	1						1
11.	Installation Work	1						1
SUB TOTAL PRICE (A)								

Table 5.2 Optical & Material List (AA-Nazareth) (Tentative)

Item	Description	Unit	Quantity
B.	Foreign Currency Part (Optical Fiber & Material)		
1.	Civil work		
1.1	M.H Construction (Pieces) (S-2)	ea	70
1.2	ϕ 100 mm PCV 6 DUCT (m)	m	12600
1.3	Road reinstatement work (0.7 m x distance)(Provisional)	m ²	8820
1.4	Road reinstatement work (0.7 m x distance) (Final)	m ²	8820
2.	CABLE WORK		
1.1	8.0m(H)-200(D) Concrete Pole (Pieces)	ea	1,708
1.2	Stay (30SW) (Pieces)	ea	171
1.3	Optical Cable 24C (For duct) (km) 1310nm SM (Ribbon type)	km	12.6
1.4	Optical Cable 24C (For Aerial) (km) 1310nm SM (Ribbon type)	km	85.4
1.5	Optical Cable 24C Closer (For Duct) (Pieces)	ea	5
1.6	Optical Cable 24C Closer (For Aerial) (Pieces)	ea	25
1.7	O/F - 1C Cord (with One side connector) 15m (Pieces)	ea	240
1.8	O/F Cable Connection BOX (48C) (Pieces)	ea	2
1.9	O/F Cable Connection BOX (96C) (Pieces)	ea	4
3.	Transportation		
3.1	Inland Transportation	ea	1
3.2	Custom clearance	ea	1
4.	TAX	ea	1
5.	Spare Installation Material		
5.1	8.0m(H)-200(D) Concrete Pole (Pieces)	ea	40
5.2	Stay (30SW) (Pieces)	ea	24
5.3	Optical Cable 24C (For duct) (km) 1310nm SM (Ribbon type)	km	4.0
5.4	Optical Cable 24C (For Aerial) (km) 1310nm SM (Ribbon type)	km	12.0
5.5	Optical Cable 24C Closer (For Duct) (Pieces)	ea	2
5.6	Optical Cable 24C Closer (For Aerial) (Pieces)	ea	5
5.7	O/F - 1C Cord (with One side connector) 15m (Pieces)	ea	10
5.8	O/F Cable Connection BOX (48C) (Pieces)	ea	0
5.9	O/F Cable Connection BOX (96C) (Pieces)	ea	0
6.	Test Equipment	ea	1
7.	Installation Tool	ea	1
	Sub-Total		

6. Building and Equipment Room Drawing

This Section describes existing Building facilities and Equipment Layout in AA IR/ITE, AA Filwoha, Nefas Silk, Debre Zeit, Adama West MW Rep. Nazareth primary center, and specifies requirements for the new Installation work for Fiber-optic installation, Digital Transmission Multiplexer installation and Power subsystem to be supplied for Contractor. However, if it is not satisfying the Contractor's requirement, then the Contractor shall prepare his proposal with due consideration of this description as well as any information collected during his provisional site survey.

6.1 Building Facilities Information

The corresponding Site layout information is shown in Fig. 6.1-1, Fig.6.1-2, Fig. 6.1-3, Fig. 6.1-4, Fig. 6.1-5, Fig.6.1-6.

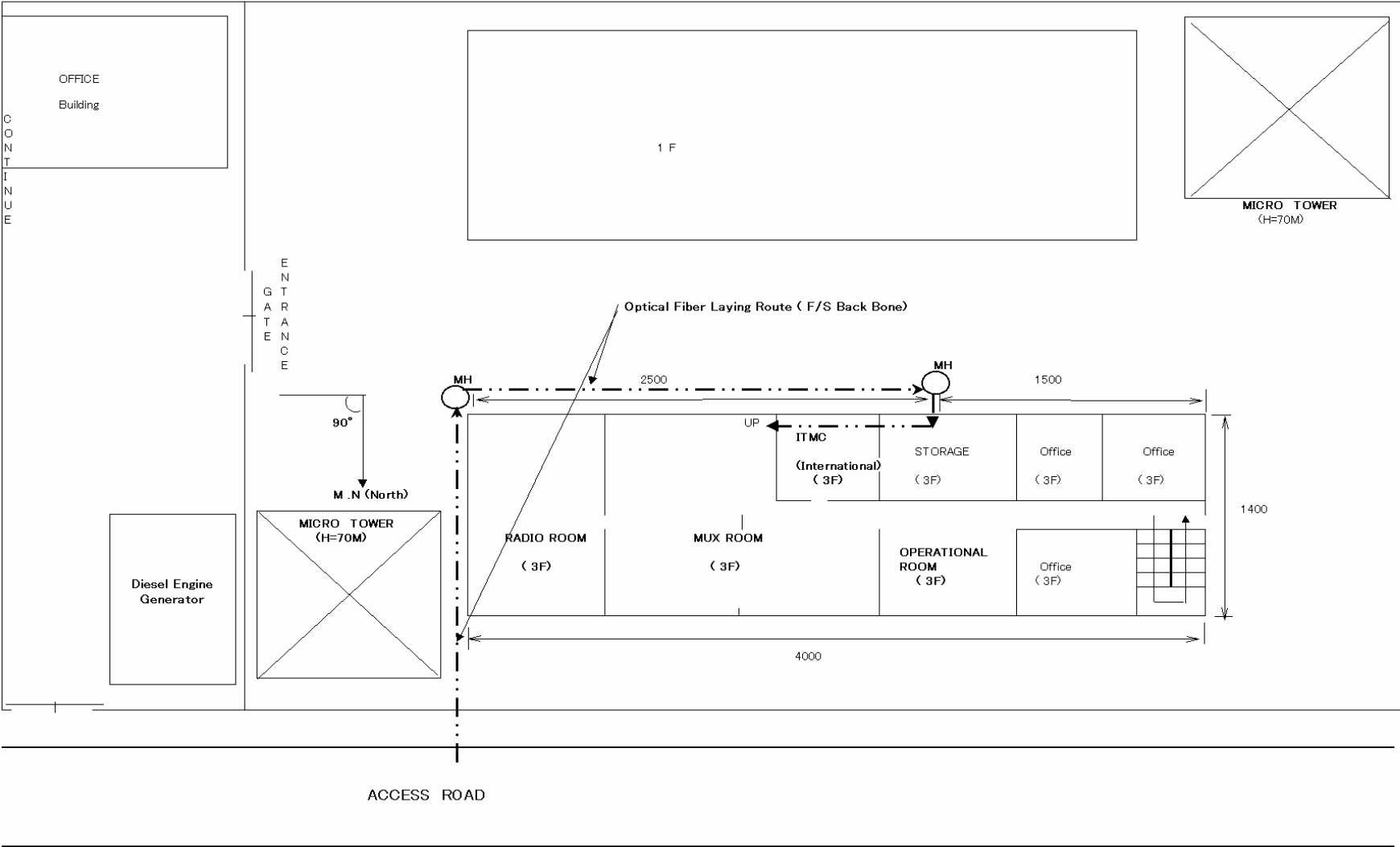


Fig . 6.1-1 Addis Ababa IR/ITE Center Cable Laying Point

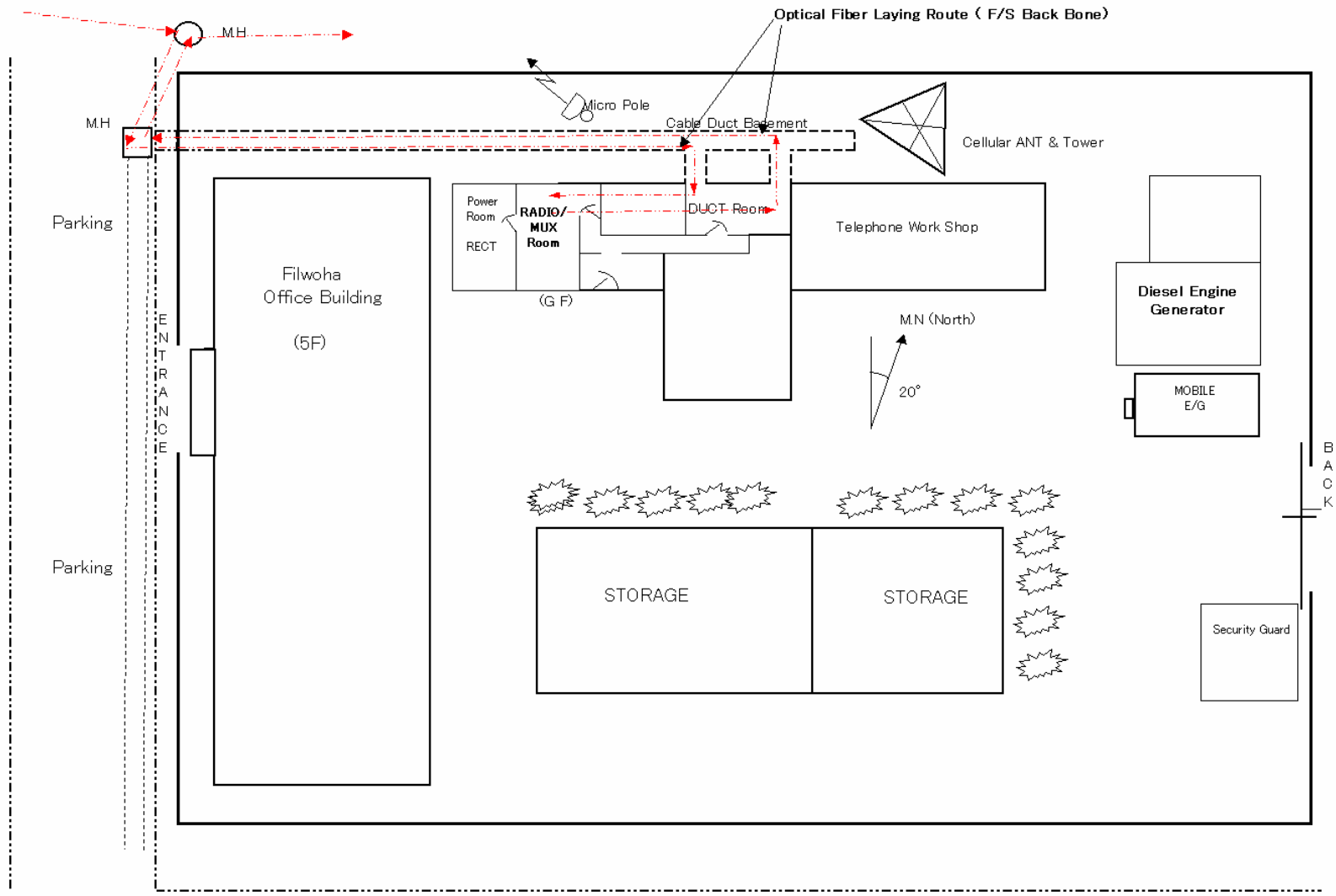


Fig . 6.1-2 AA FILWOHA Center Cable Laying Point

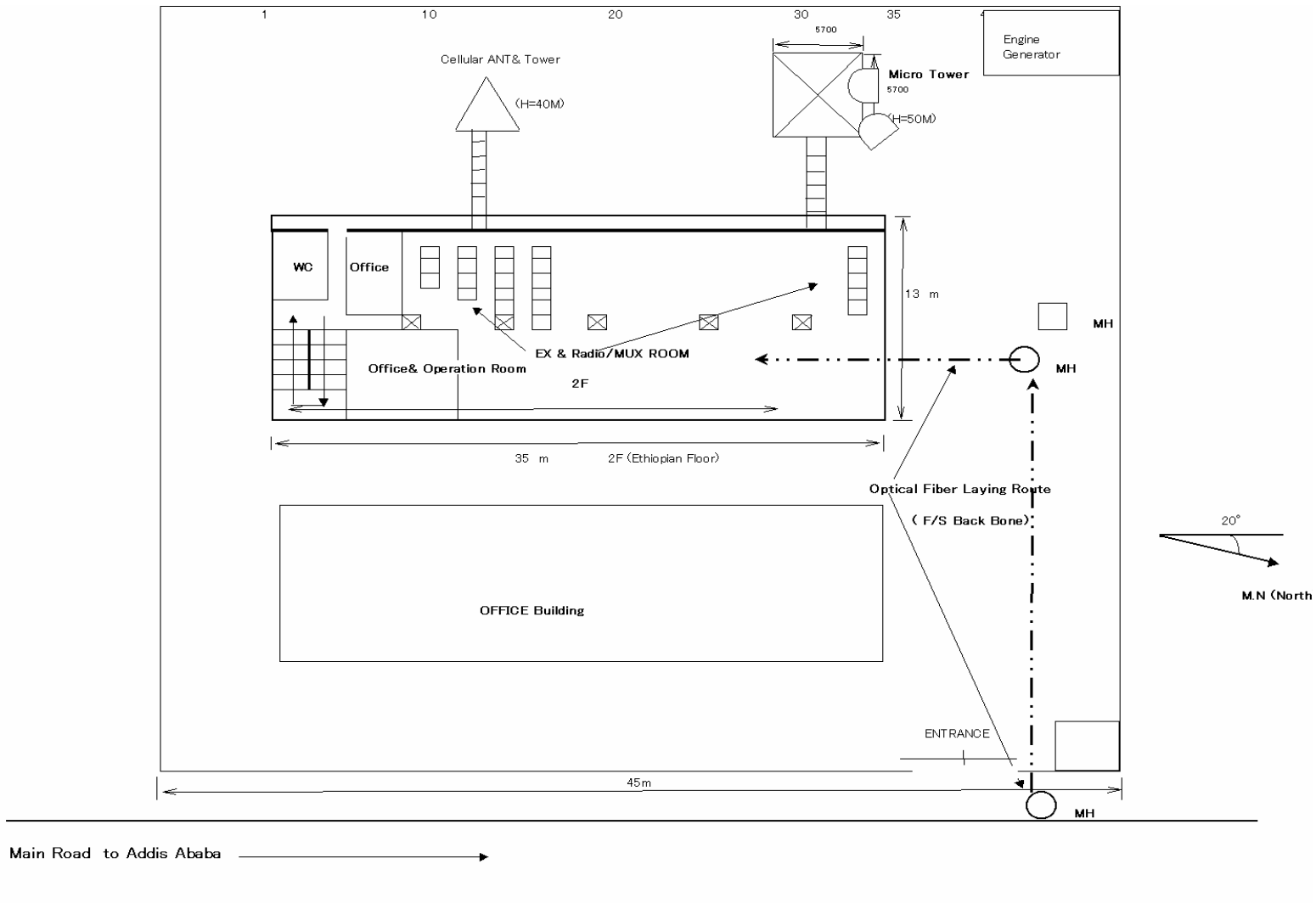


Fig . 6.1-3 AA NEFAS Silk Cable Laying Point

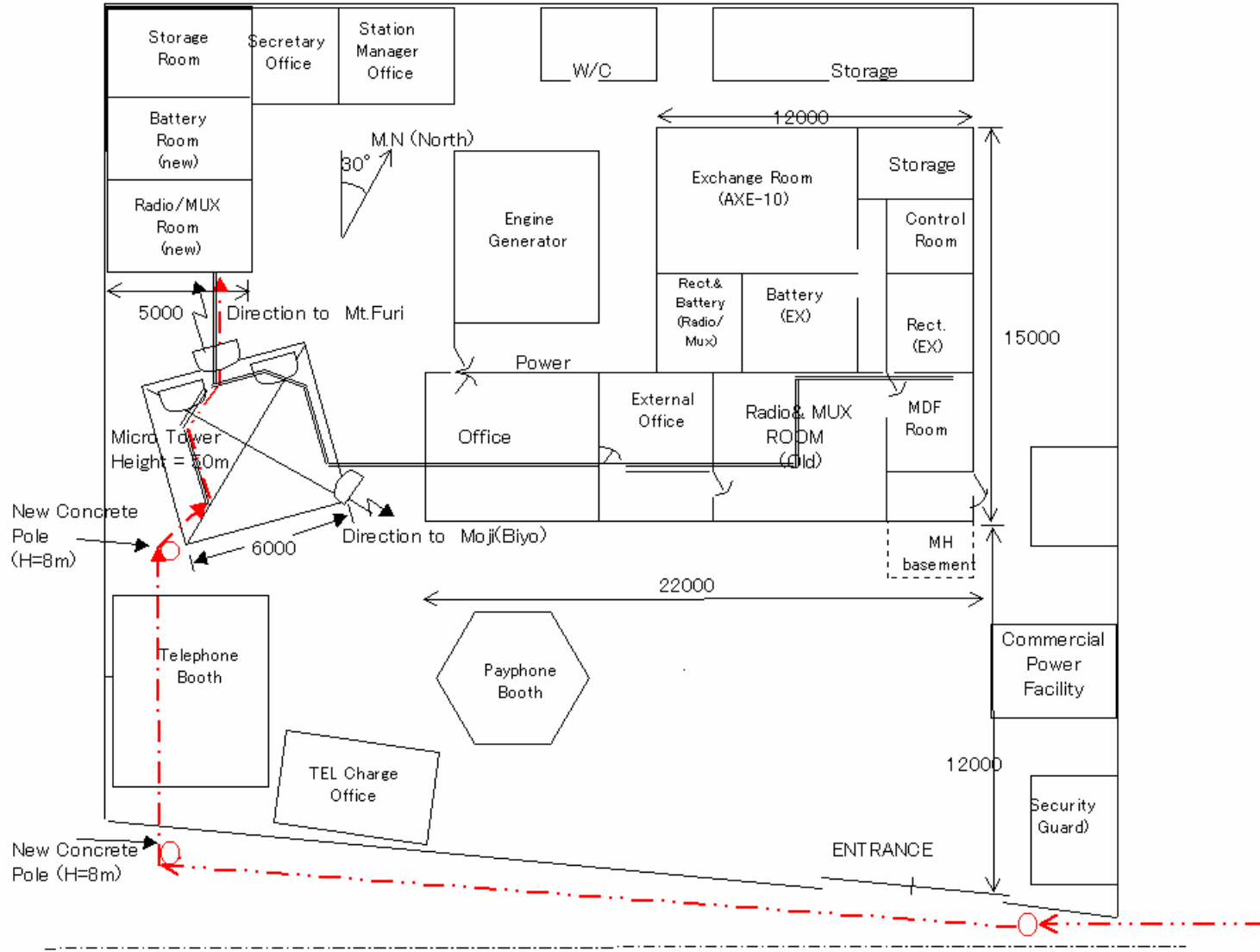


Fig . 6.1-4 Debre Zeit Cable Laying Point

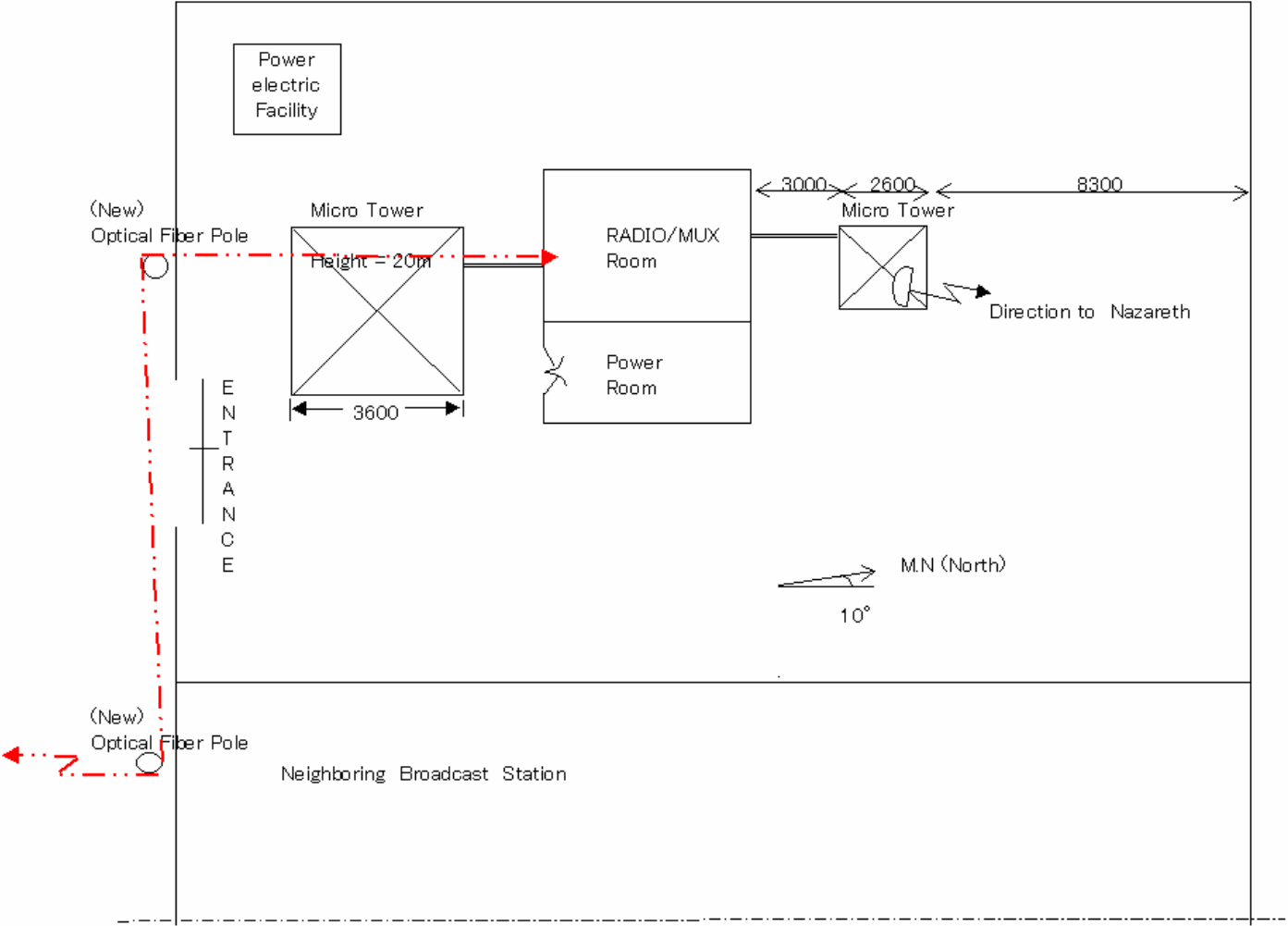


Fig . 6.1-5 ADAMA WEST MW Rep. Cable Laying Point

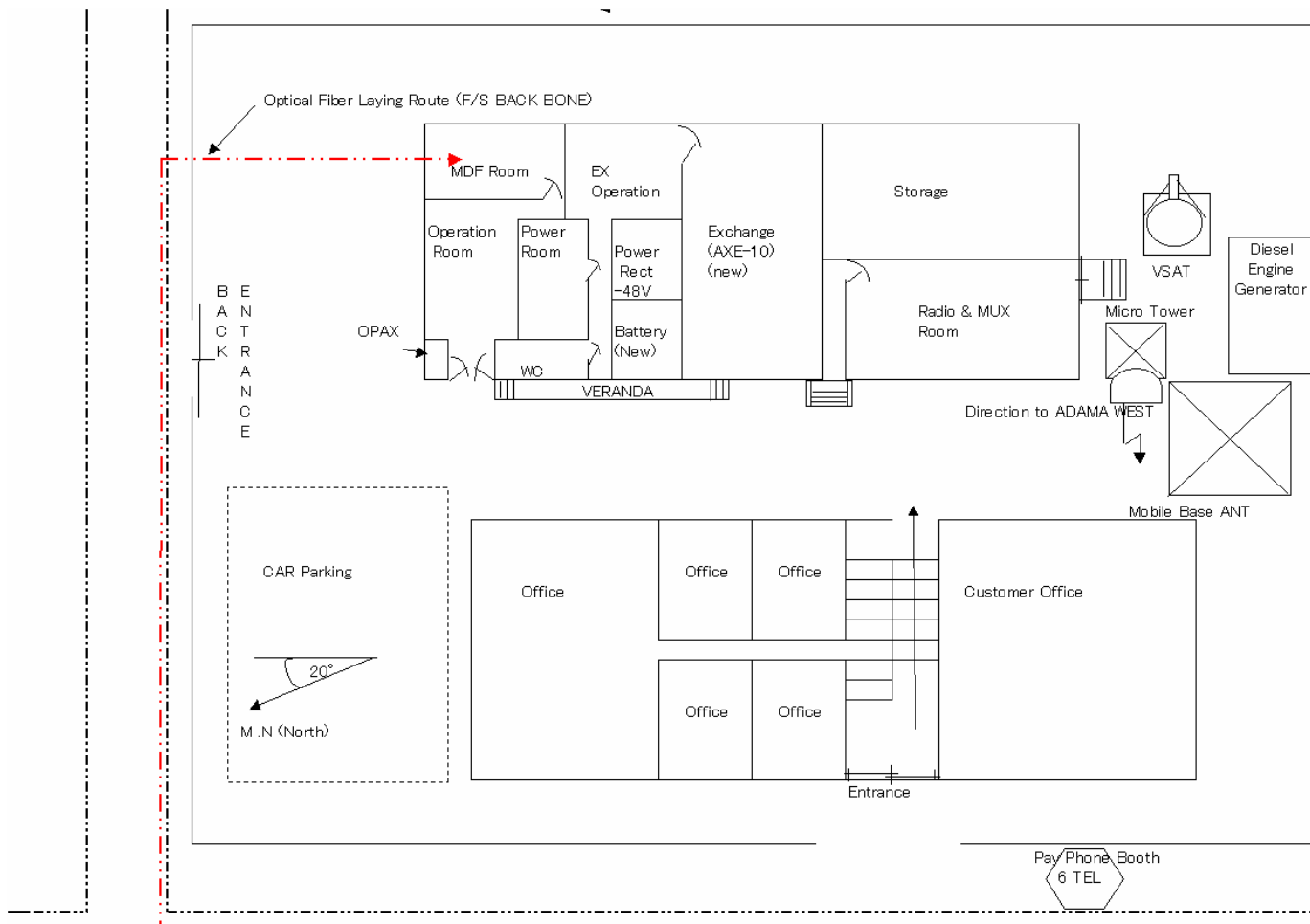


Fig . 6.1-6 Nazareth Primary Center Cable Laying Point

6.2 Equipment Room layout Information

The corresponding The Equipment Room layout information are shown in Fig. 6.2-1, Fig. 6.2-2, Fig. 6.2-3, Fig. 6.2-4, Fig. 6.2-5, Fig.6.2-6. The Following drawing also indicates the planned installation place.

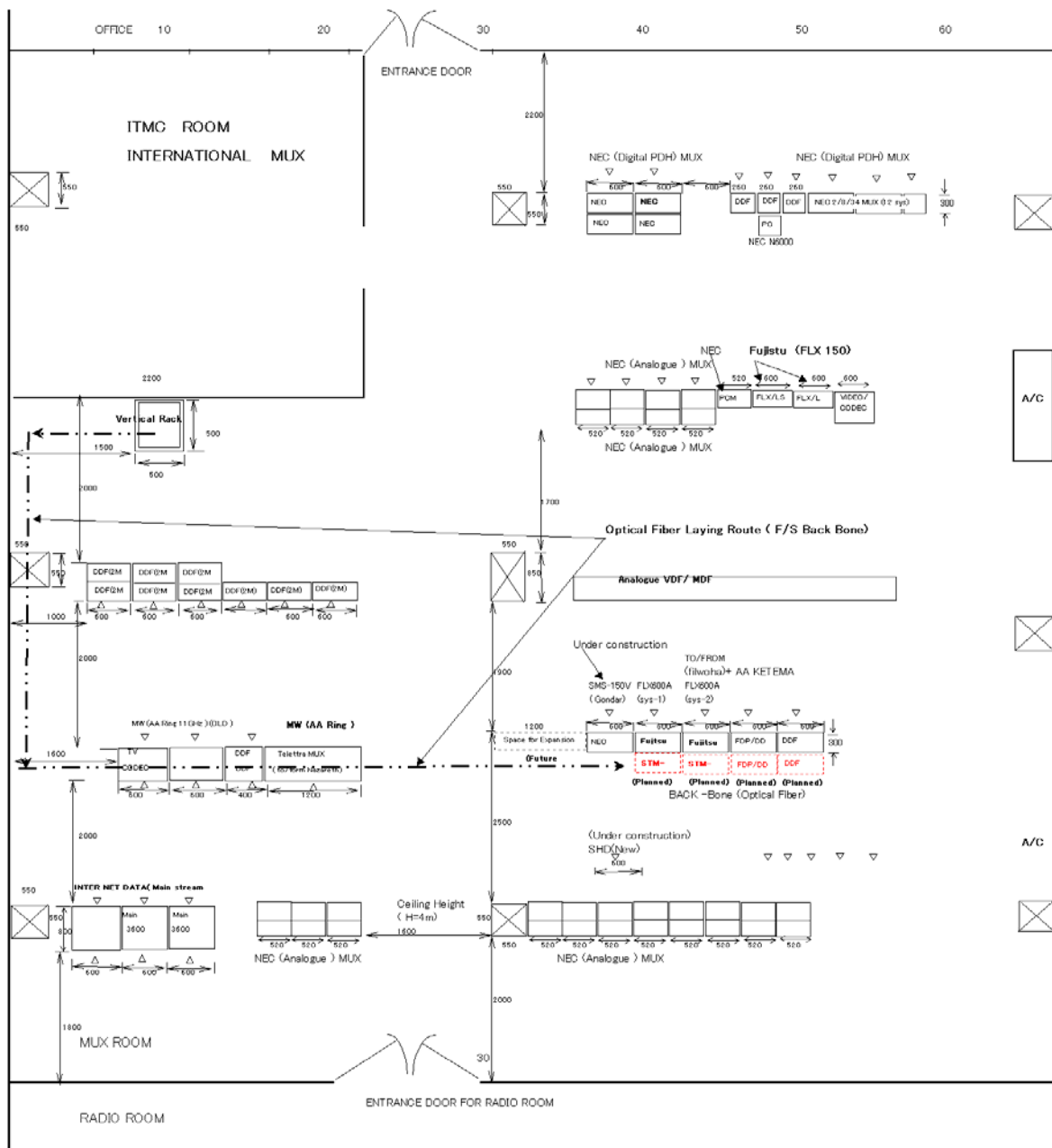


Fig . 6.2-1 RADIO/MUX Room (3F) Planned Installation Place (IR/ITE Center)

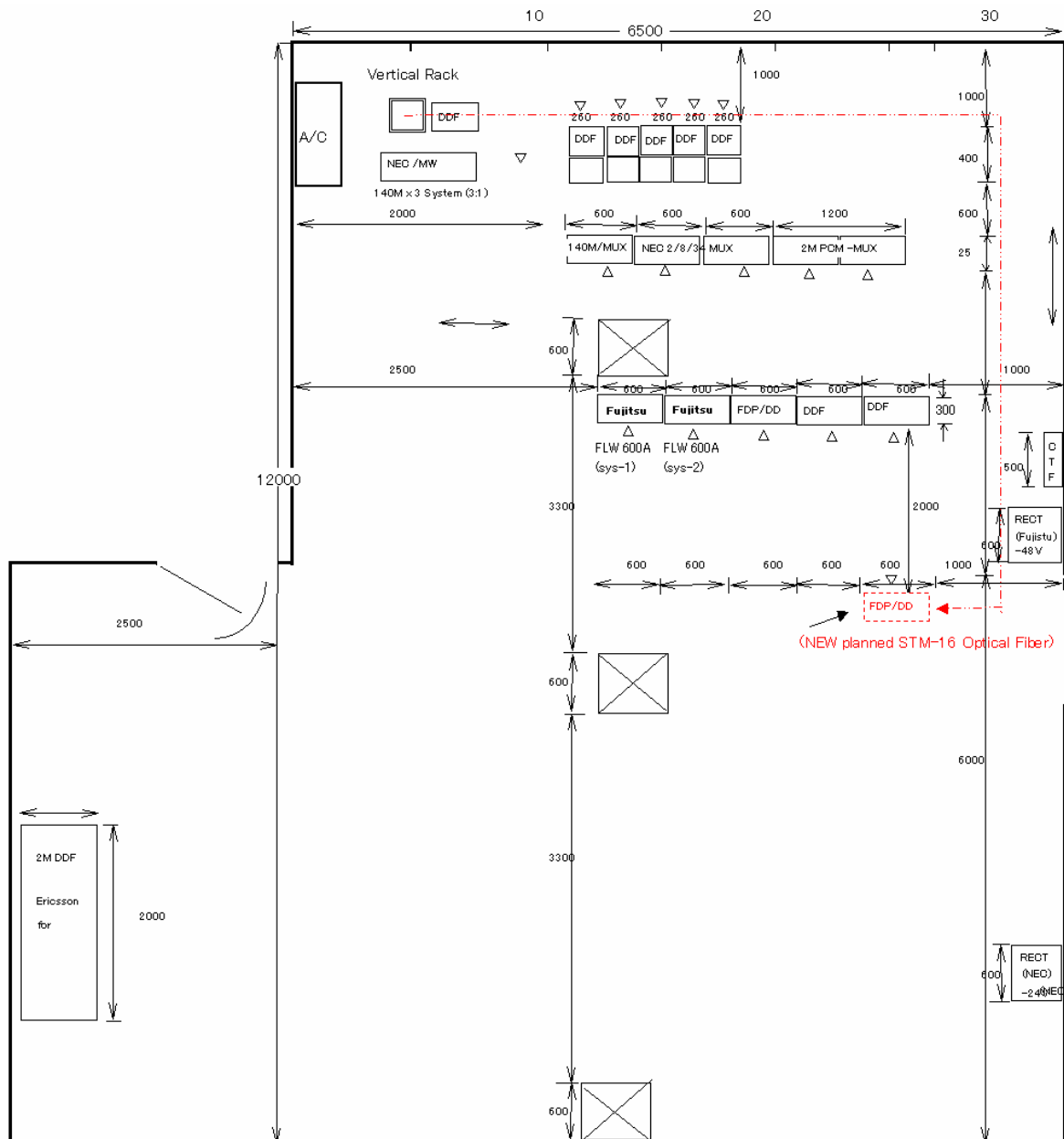


Fig . 6.2-2 RADIO/MUX ROOM Planned Installation Place (FILWOHA Center)

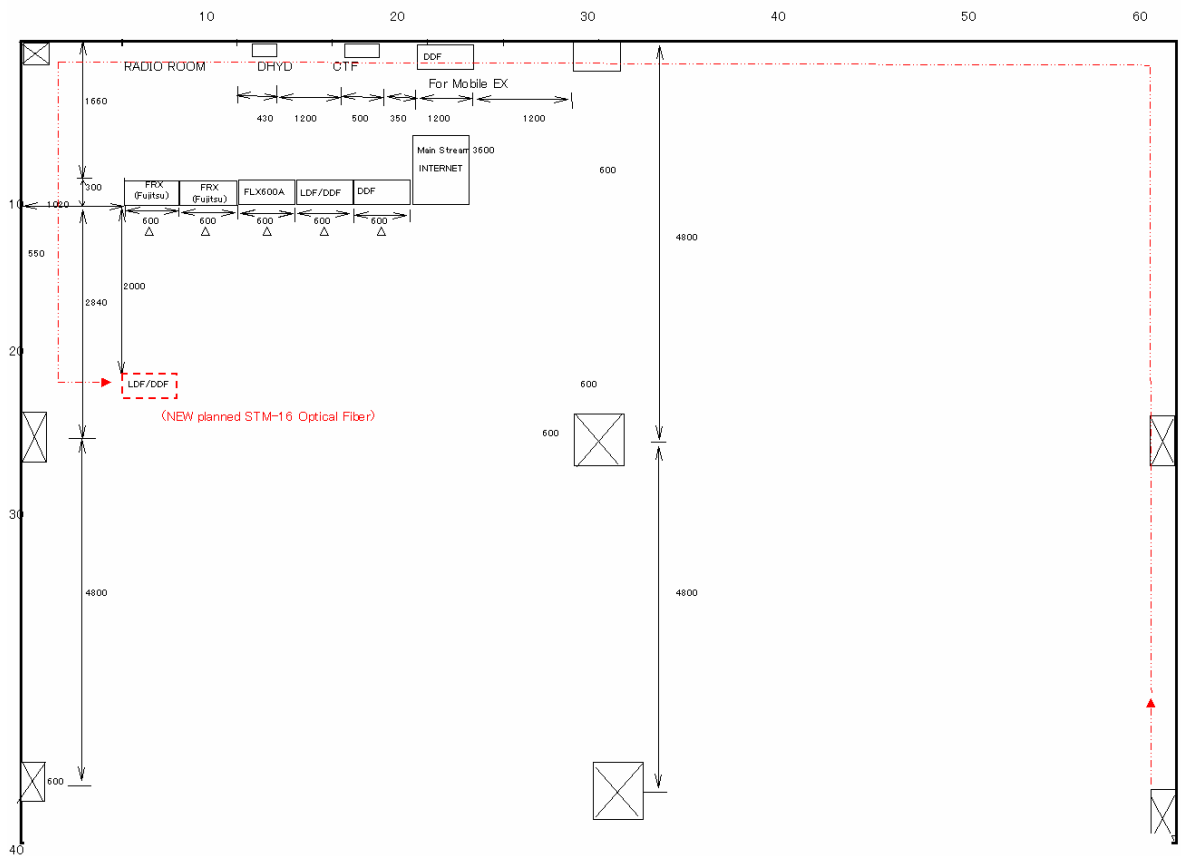


Fig . 6.2-3 RADIO/MUX ROOM (2F) Planned Installation Place (NEFAS SILK)

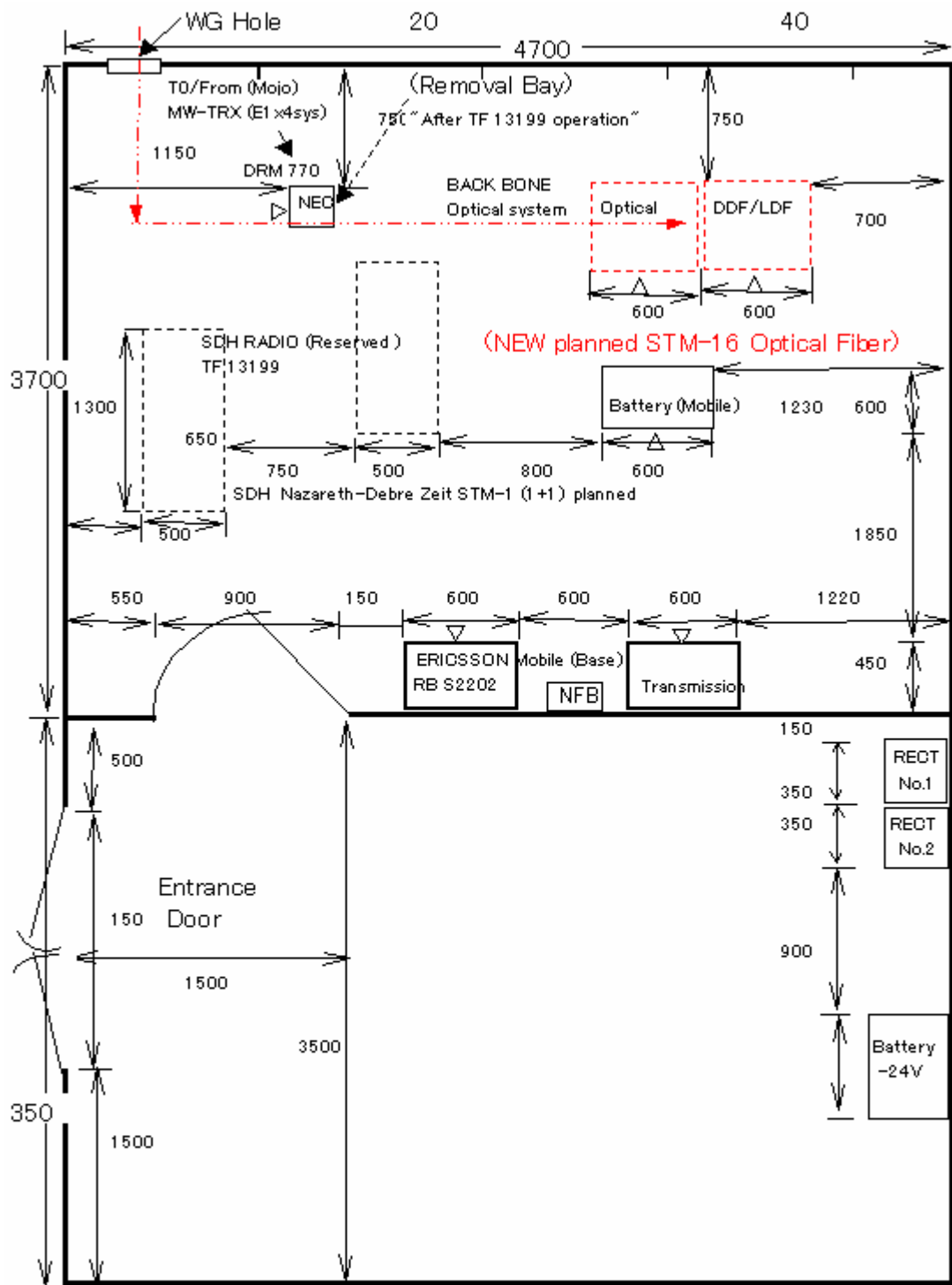


Fig. 6.2-4 RADIO/MUX / POWER ROOM Planned Installation Place (Debre Zeit)

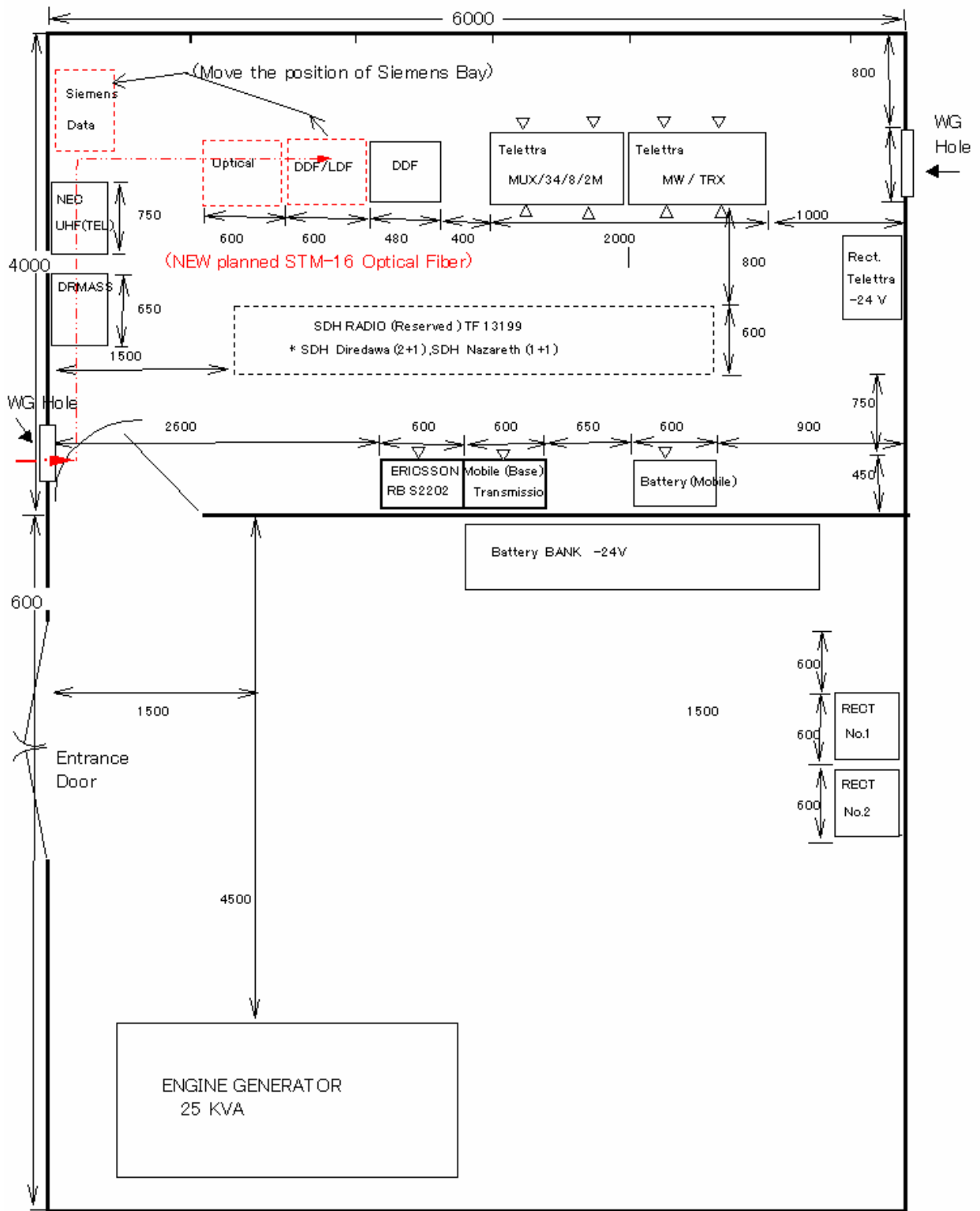


Fig. 6.2-5 RADIO/MUX ROOM Planned Installation Place

(ADAMA WEST NW Rep.)

