

第 3 章 项目妥当性的验证

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3-1 项目的效果

(1) 直接效果

计划实施的直接效果如表 3-1-1 所示。治水关联事业一般是以减轻对设定规模洪水的受灾为目的进行计划的。但是，何时、发生什么规模的洪水无人知晓，洪水按计划规模发生的可能性很低，以数值表现评价所用指标，设定评价的时间都是困难的。

表 3-1-1 计划实施的效果

现状和问题	本计划的对策	计划的效果和改善程度
1.现在的通信系统，是以人手操作的一般电话线为主，从数据采集到处理、传输需要约 6 小时以上。	<ul style="list-style-type: none"> · 观测信息采集的自动化。 · 作为日本国政府的援助，筹措遥测式水文观测器材和信息传输器材。 	<ul style="list-style-type: none"> · 缩短洪水预测必要的时间。(比现状缩短 5 小时以上) · 提高信息采集的确实性和采集数据的可靠性。 · 通过系统自动化、效率化，削减预警报的经费。
2.数据采集需要很长时间，因大雨通信中断等，数据采集的确实性、数据的可靠性很低。因此，不能进行适当的洪水预测。结果对治水设施的运用、防汛活动造成极大的障碍。	<ul style="list-style-type: none"> · 为了提高洪水预测精度，构筑洪水预测程序。 · 作为日本国政府的援助，筹措电脑器材等。 	<ul style="list-style-type: none"> · 缩短洪水预测必要时间。 · 提高洪水预测精度。 · 通过上述各项，促进治水设施的有效运用和防汛活动、避难活动的效率化。以减轻人们的受灾和经济损失等。 · 通过系统的自动化、效率化，削减预警报·防汛的经费（水文局的人员可削减 5%。运营维修管理费从现在的 400 万元（水文局预算的 5%）削减到 275 万元（同上 4%）。 · 通过准确把握浸水状况，预防因长时间浸水造成保健卫生恶化，保持灾民的健康。

(2) 间接效果

- ①通过最新洪水预警报系统的引进，作为试验性事业，有利于向类似流域进行洪水防御技术的普及。
- ②通过因特网等的信息公开，使人们可以取得最新的准确信息，有利于居民对洪水的意识改革，改善合作体制。
- ③通过早期的准确信息，选定需要爆破堤防的蓄洪区等，可以实现最低限度的受灾，取得最大的调节效果。
- ④以本项目为契机，可以与 GIS 为基础的泛滥源管理联系起来。

3-2 课题和建议

为了发挥和持续项目的效果，中方应对应的课题和建议如下所示。

(1) 中方负担事项的实施

需要确实实施成为洪水预警报系统中枢的“洪水预测程序”的开发等中方负担事项。

(2) 确保自立发展性

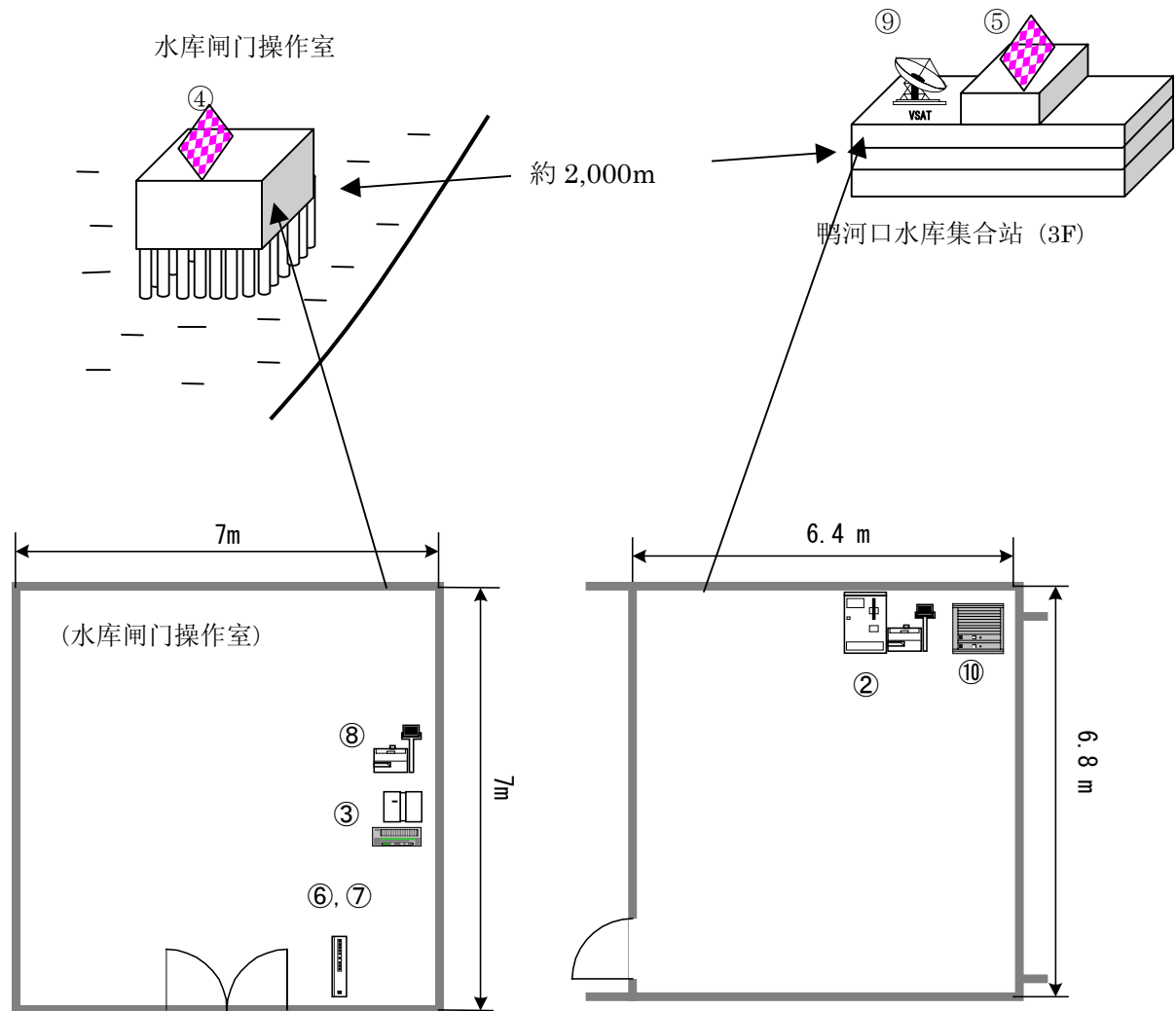
通过本计划实施，为了有效利用装备的设施、资材和器材，应尽快建立必要的实施体制，确保人员及研修。另外，每年还应确保维修管理费，努力维持系统的顺利运营及效果。

(3) 提高洪水预测精度

因为是以自然现象为对象的系统，在初期阶段，不一定能实现高精度的洪水预测。今后，需要通过数据的积蓄，开发可以实现高精度洪水预测的程序。

附件资料 1

1. 鴨河口水库 (No. 6 水文观测站)

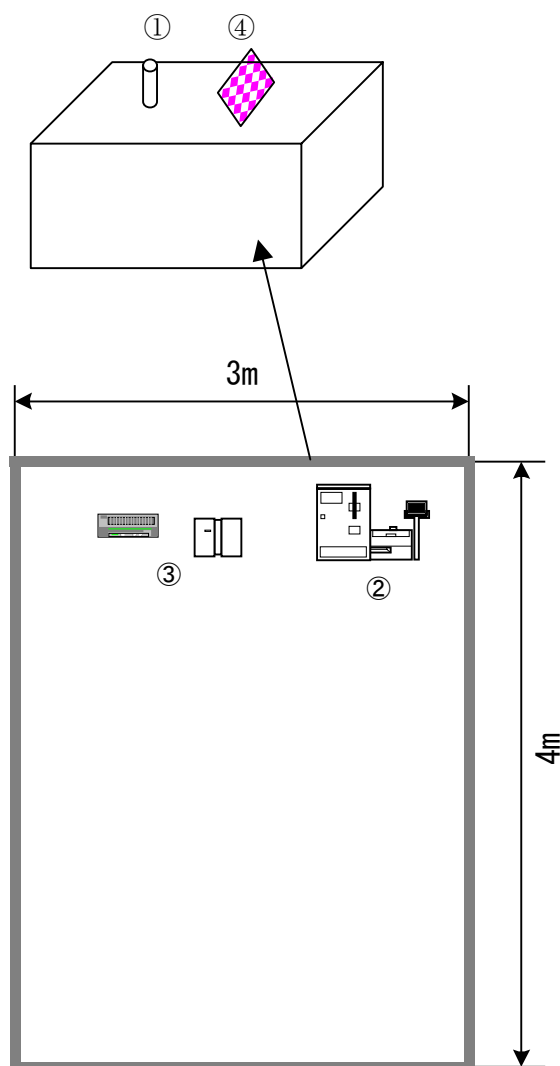


Equipment	Unit	W (mm)	D (mm)	H (mm)	Equipment	Unit	W (mm)	D (mm)	H (mm)
② Monitoring Board		500	140	800	⑦ Water Level Sensor	1	50	50	270
③ Power supply system	1	400	300	200	⑧ Data Logger and VHF Unit	1	500	140	800
④ Solar Panel (A)	1	2,400	652	1,000	⑨ VSAT Antenna	1	2,500	1,800	3,500
⑤ Solar Panel (B)	1	1,615	652	1,000	⑩ VSAT Indoor Unit	1	350	400	70
⑥ Water Level Monitor	1	280	280	1800					

Note • Monitoring Board : Data Logger Unit, Communication Unit and VHF Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

2. 石門 (No.8 雨量观测站)

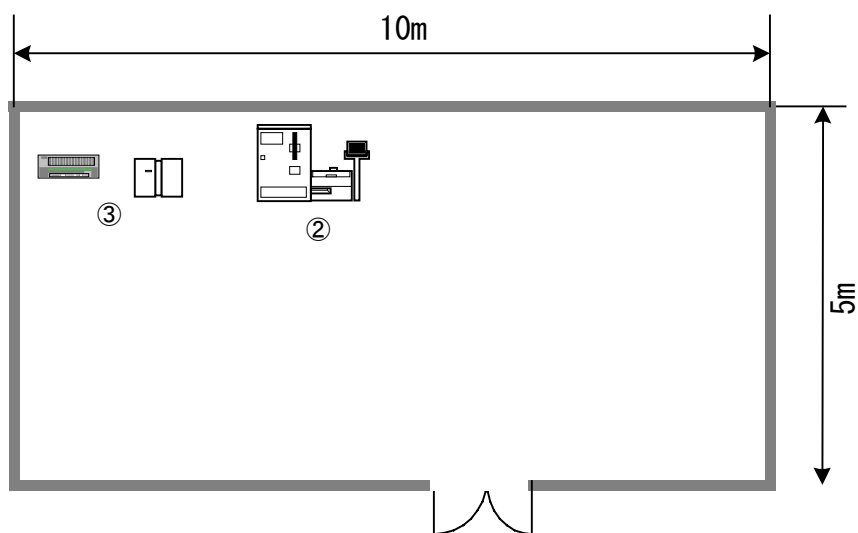
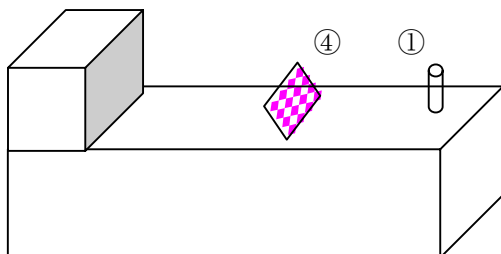


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board: Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

3. 后会 (No.9 雨量观测站)

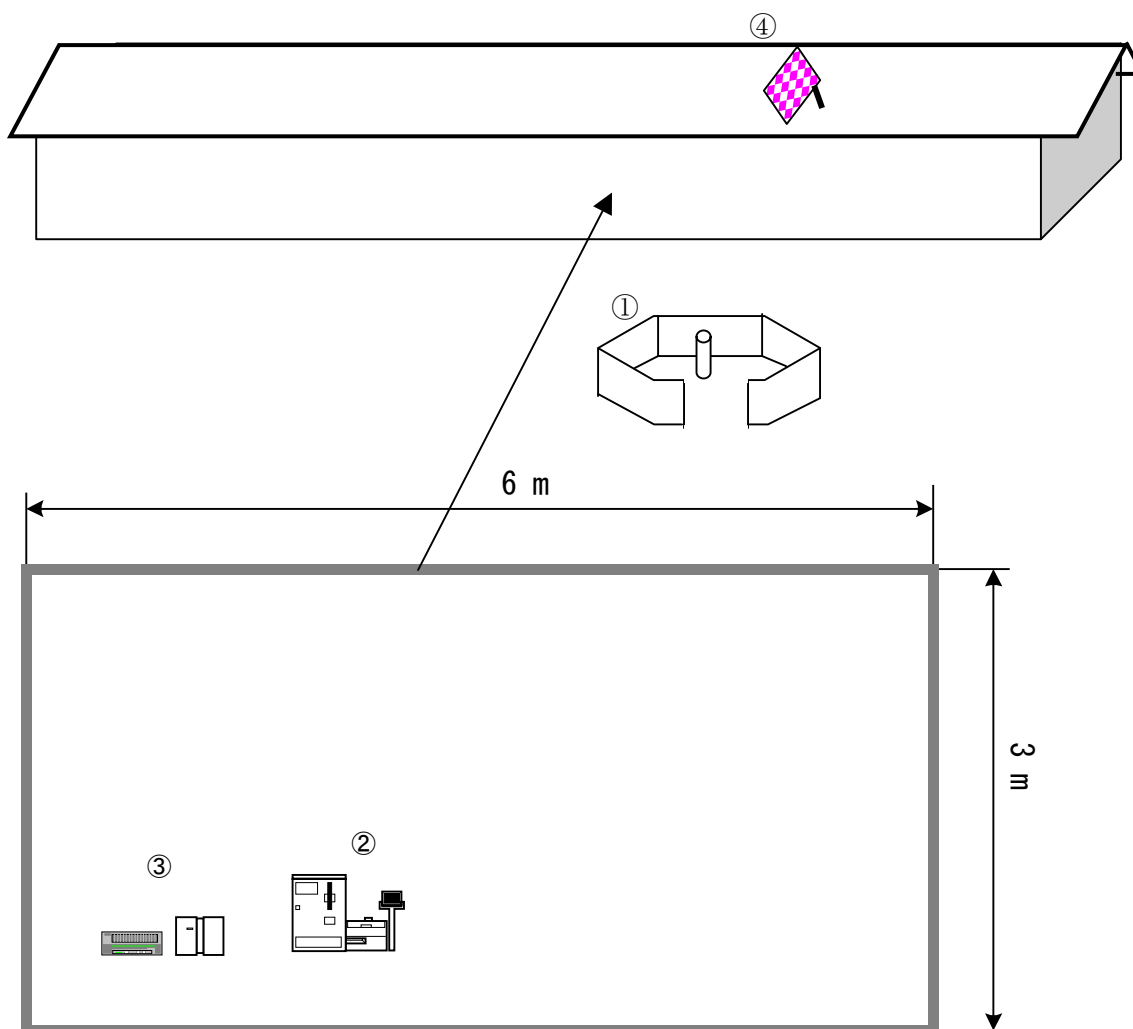


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,278	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and Inmarsat-C Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

4. 趙湾 (No.10 雨量观测站)

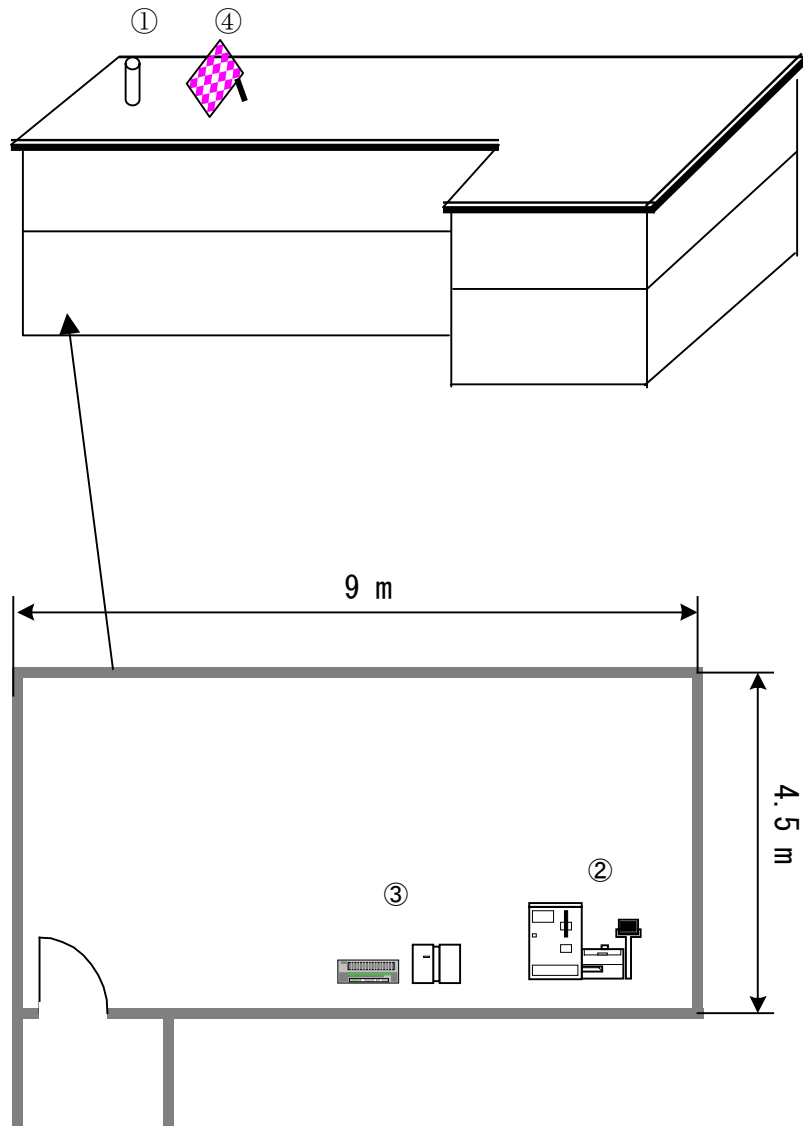


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board	1	500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

5. 方城 (No.11 雨量观测站)

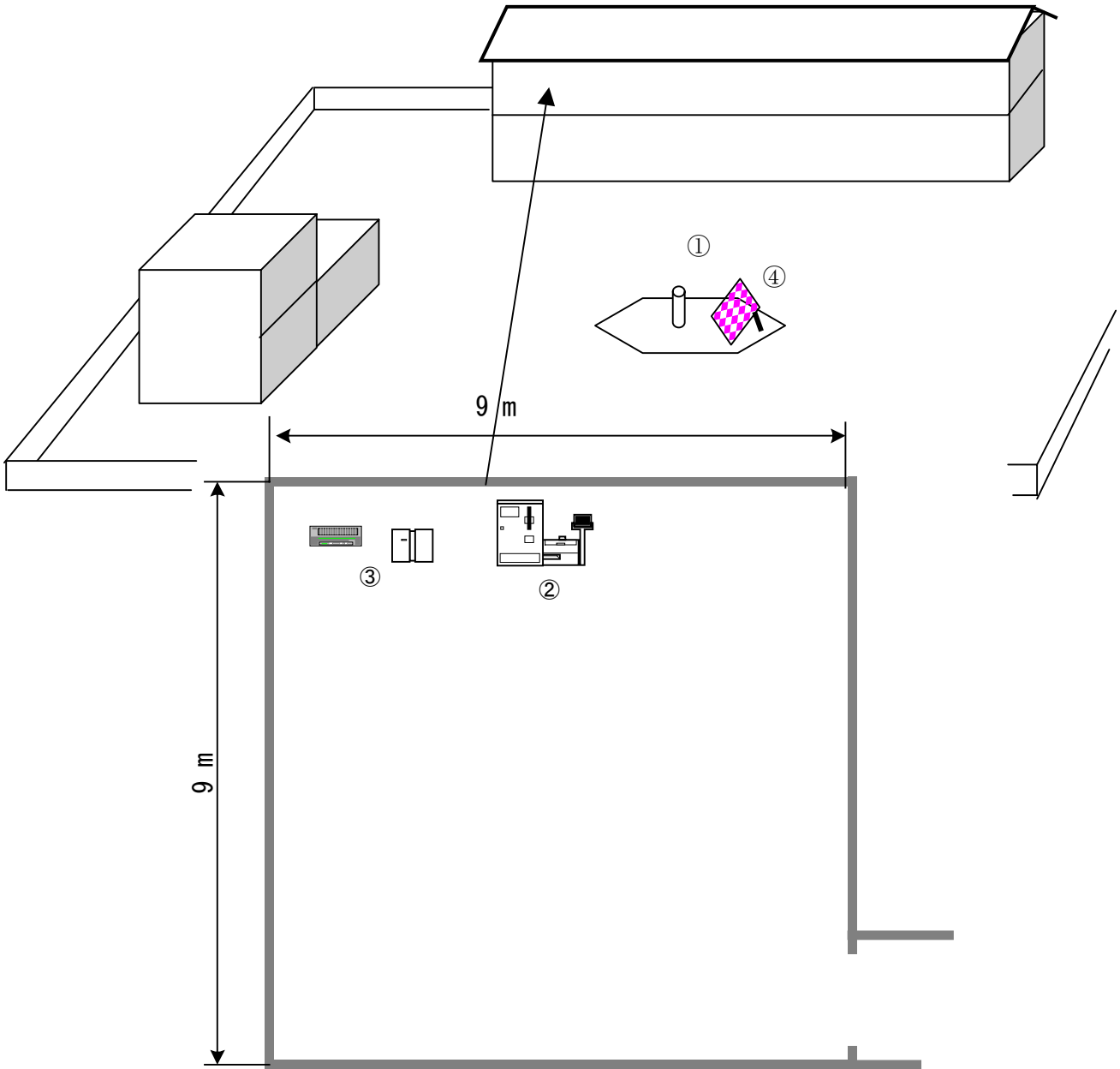


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

6. 社旗 (No.12 雨量观测站)

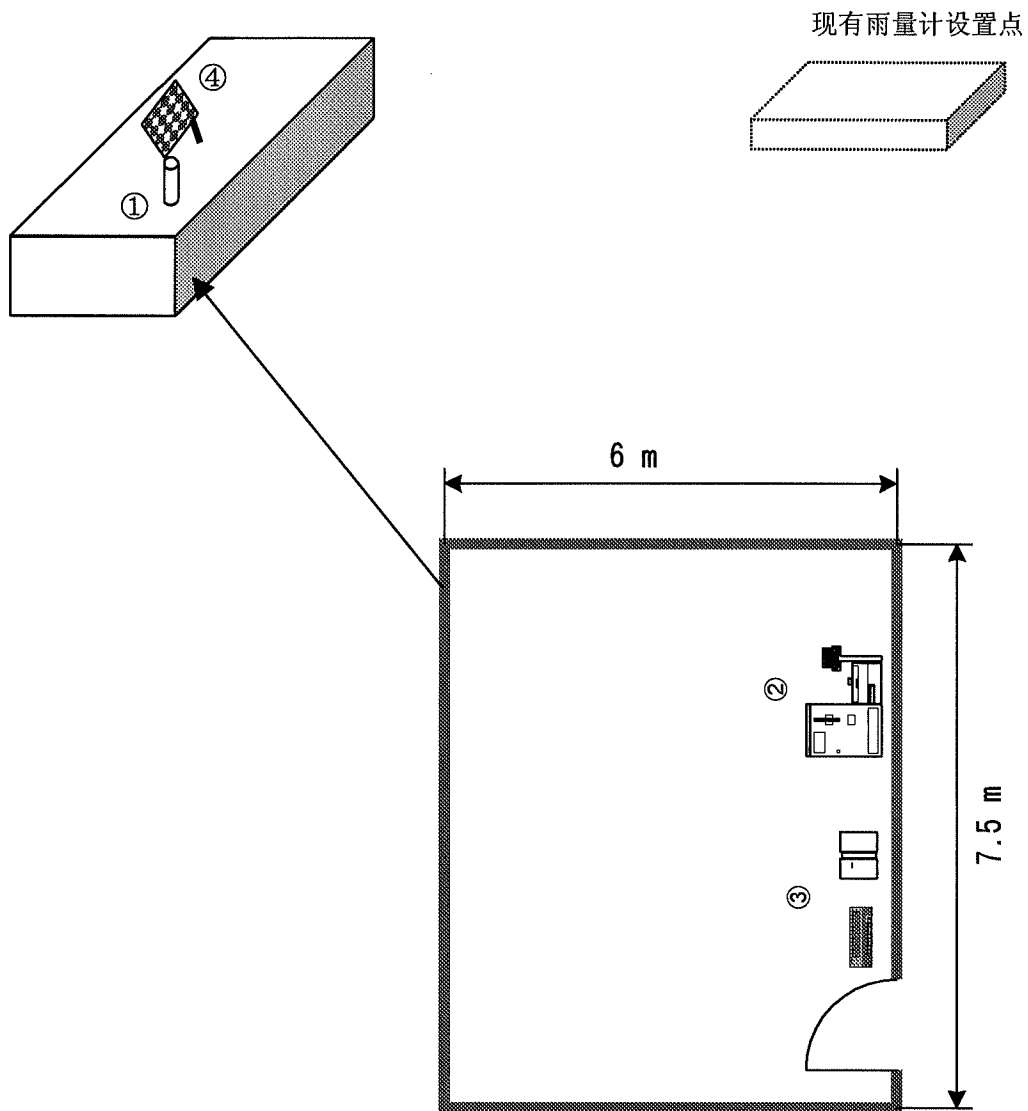


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

7. 南陽 (No.13 雨量观测站)

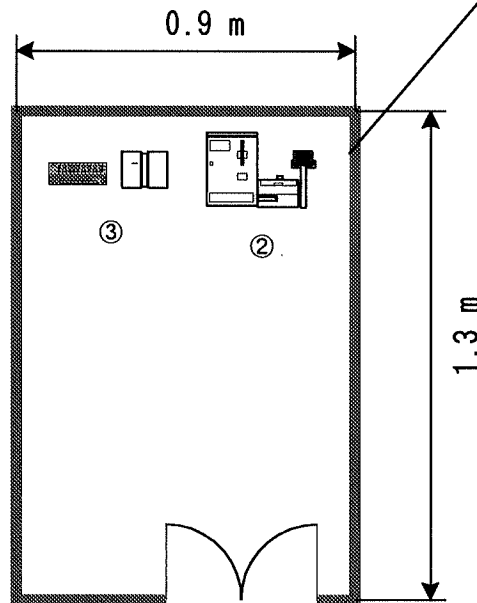
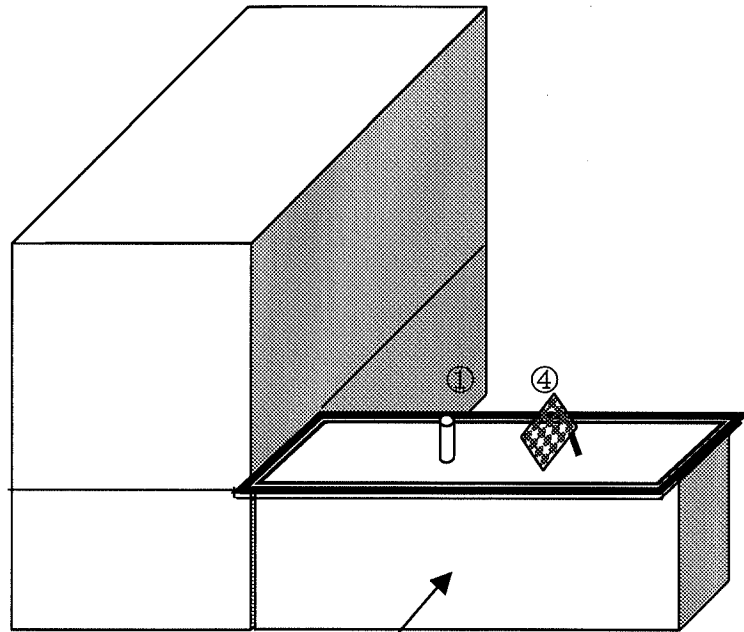


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

8. 饒良 (No.14 雨量观测站)

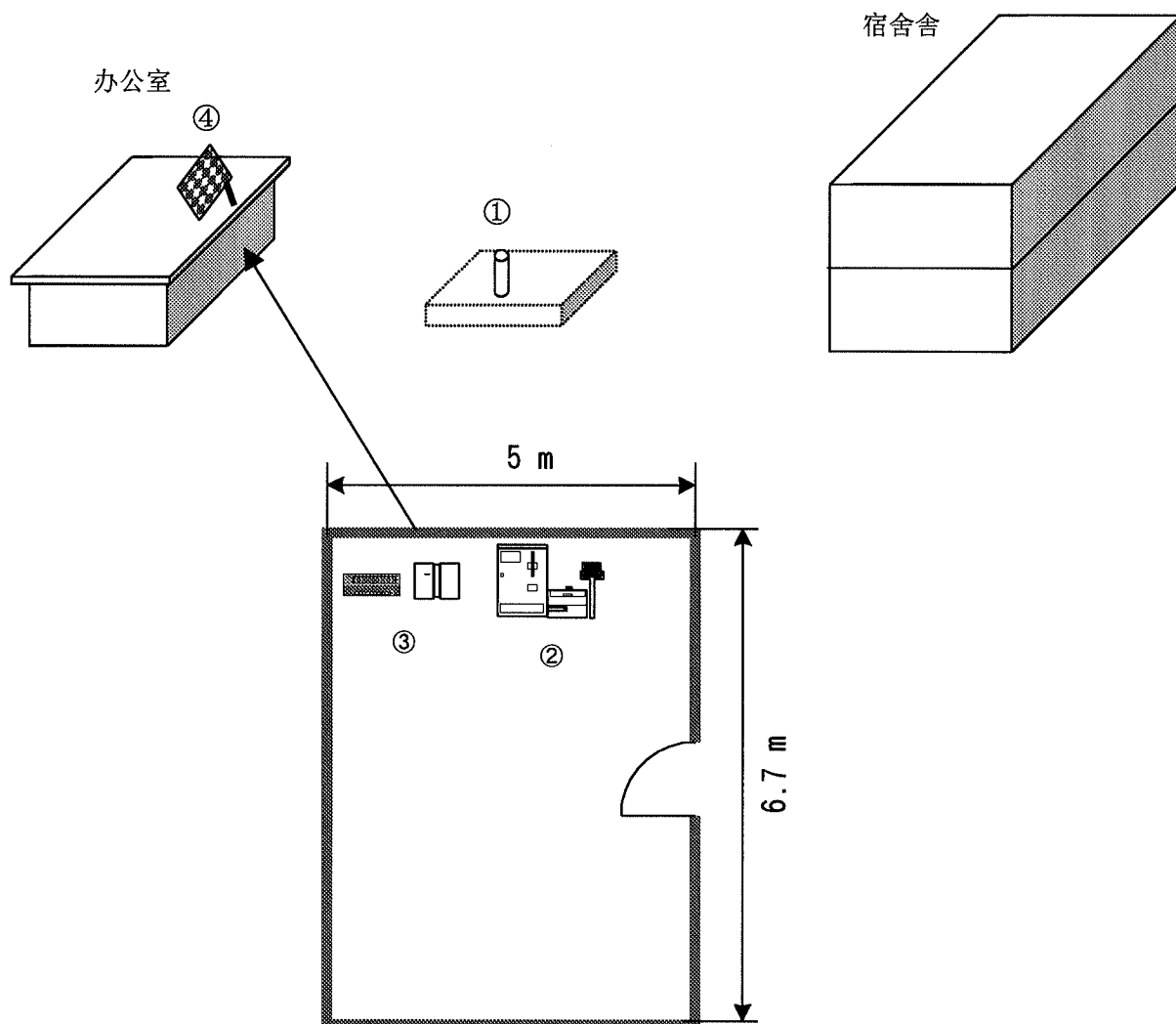


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

9. 泌陽 (No.15 雨量观测站)

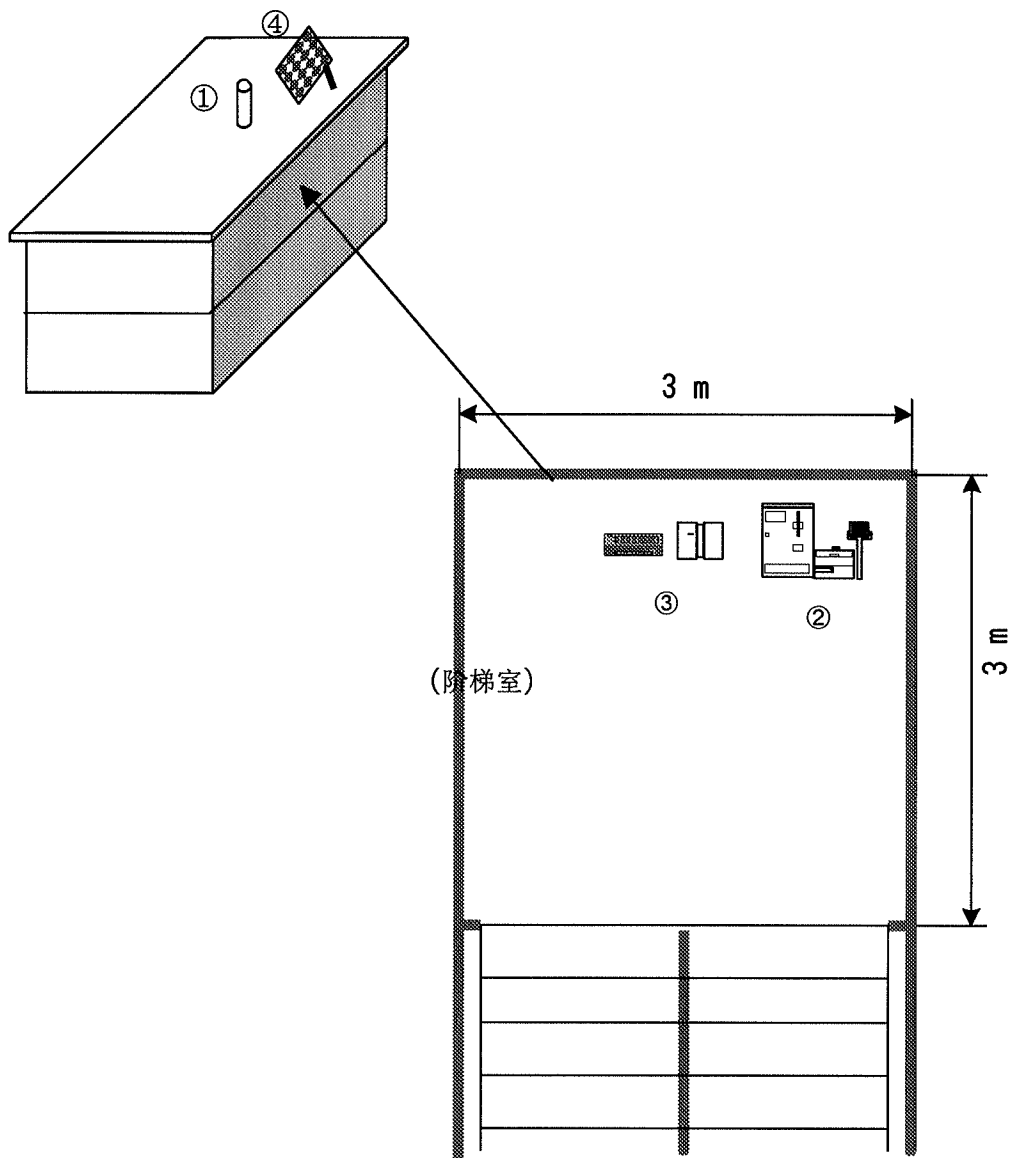


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

10. 唐河 (No.16 雨量观测站)

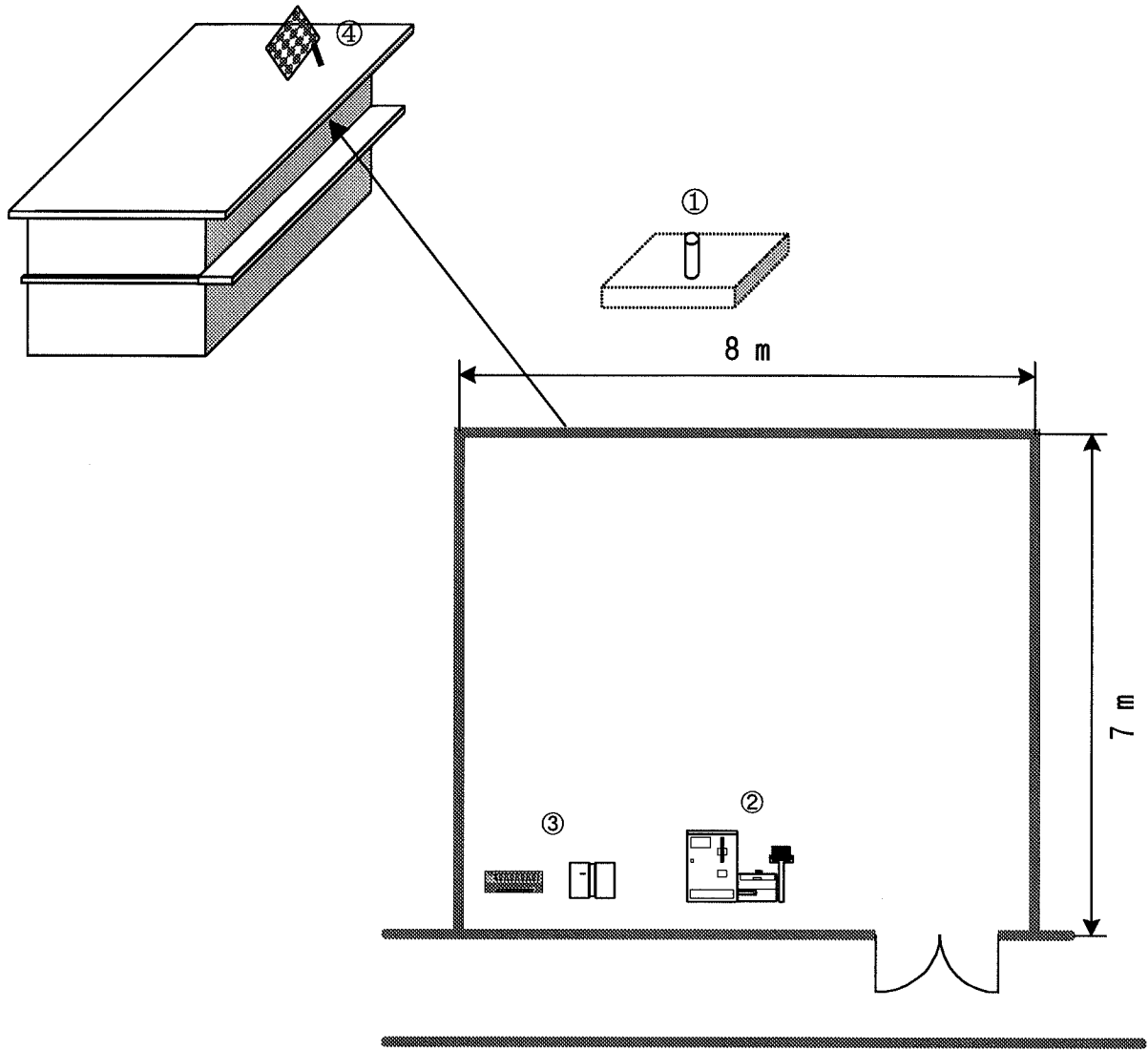


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

1 1 . 急灘 (No.17 雨量观测站)

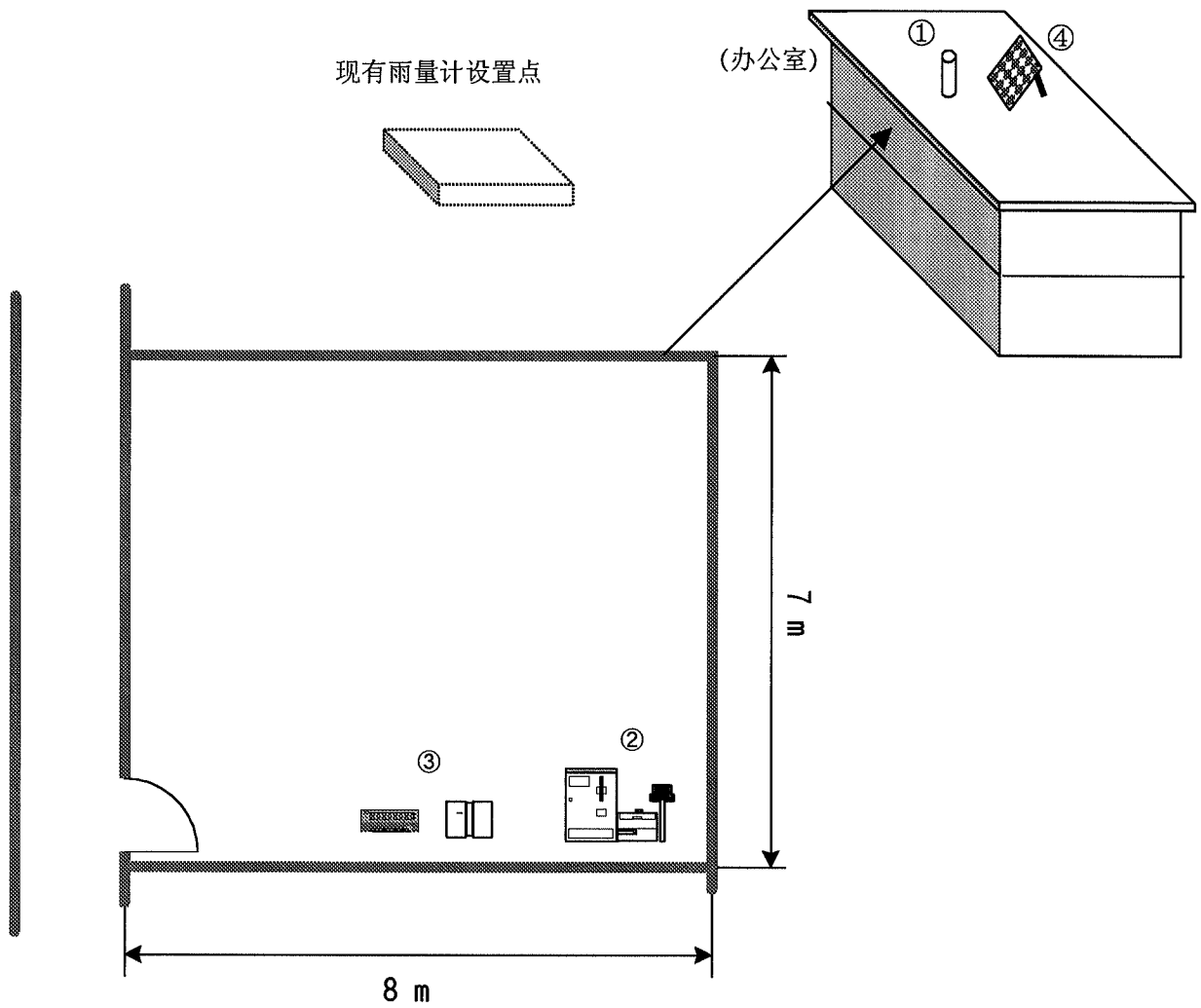


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

1 2 . 平氏 (No.18 雨量观测站)

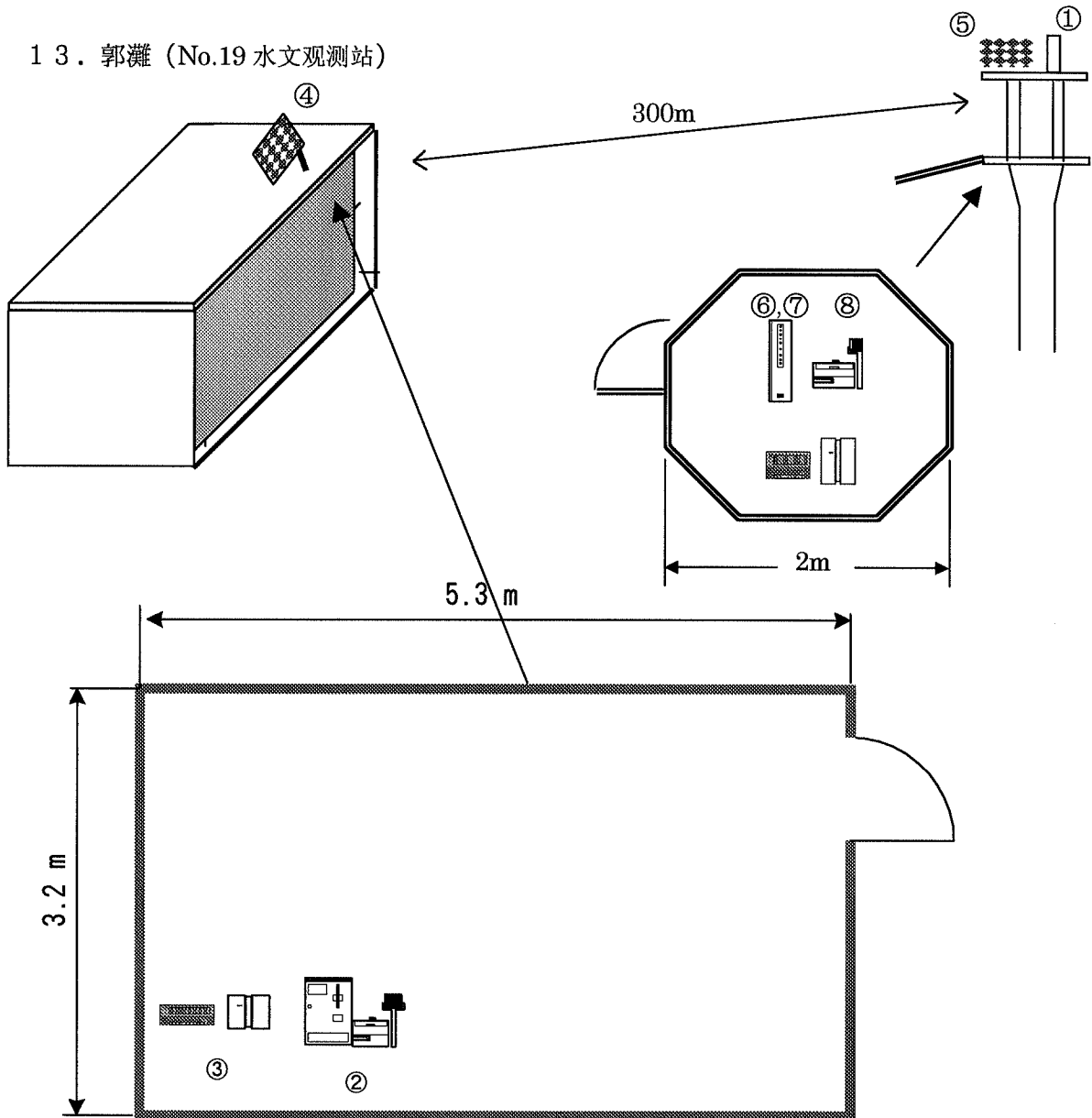


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

1 3 . 郭灘 (No.19 水文观测站)

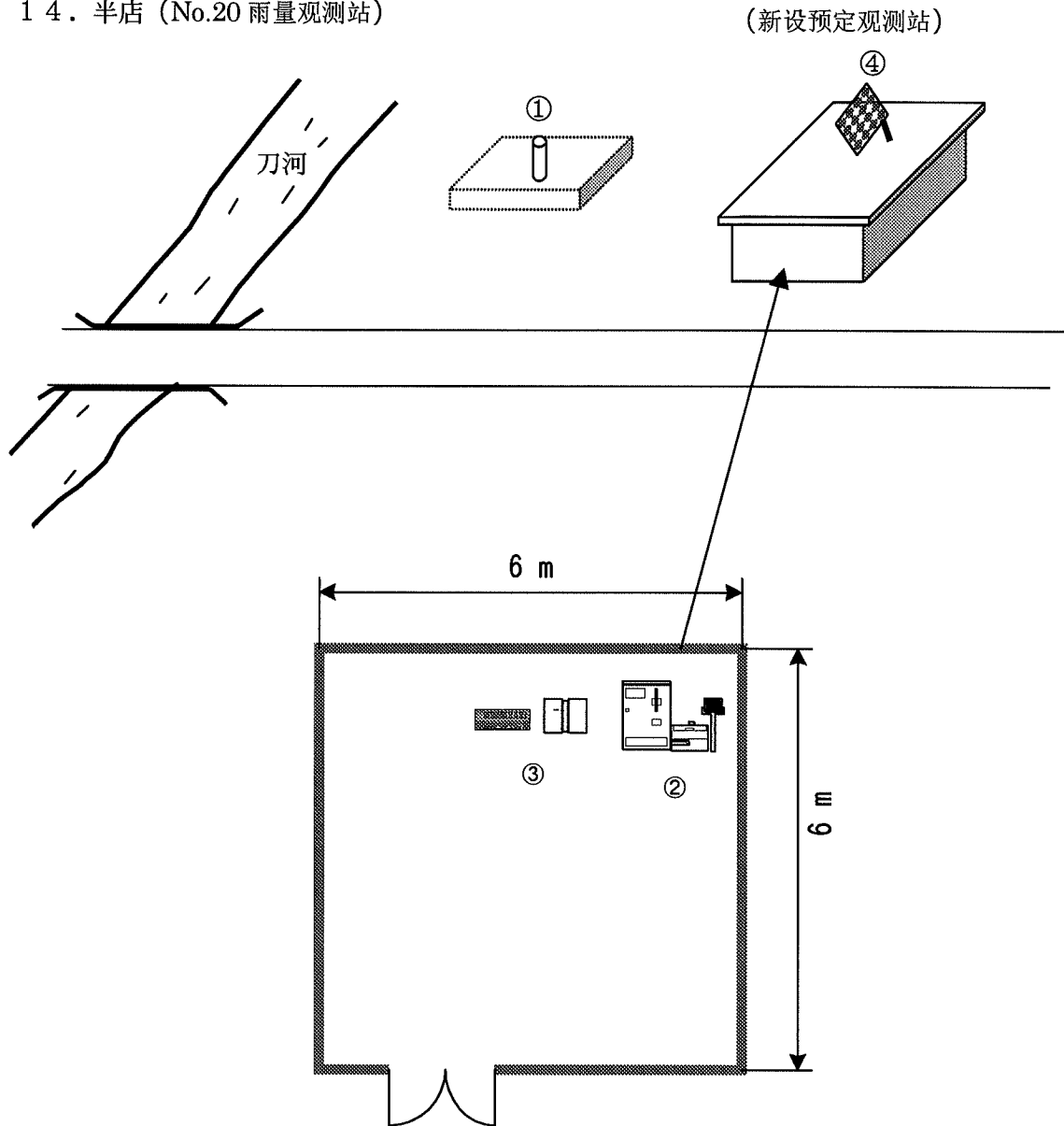


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	⑤	Solar Panel (B)	1	2,401	652	1,000
②	Monitoring Board		500	140	800	⑥	Water Level Monitor	1	280	280	1800
③	Power supply system	1	400	300	200	⑦	Water Level Sensor	1	50	50	270
④	Solar Panel (A)	1	1,841	652	1,000	⑧	Data Logger and VHF Unit	1	500	140	800

Note • Monitoring Board : Data Logger Unit, Communication Unit, GSM Modem Unit and VHF Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

1 4 . 半店 (No.20 雨量观测站)

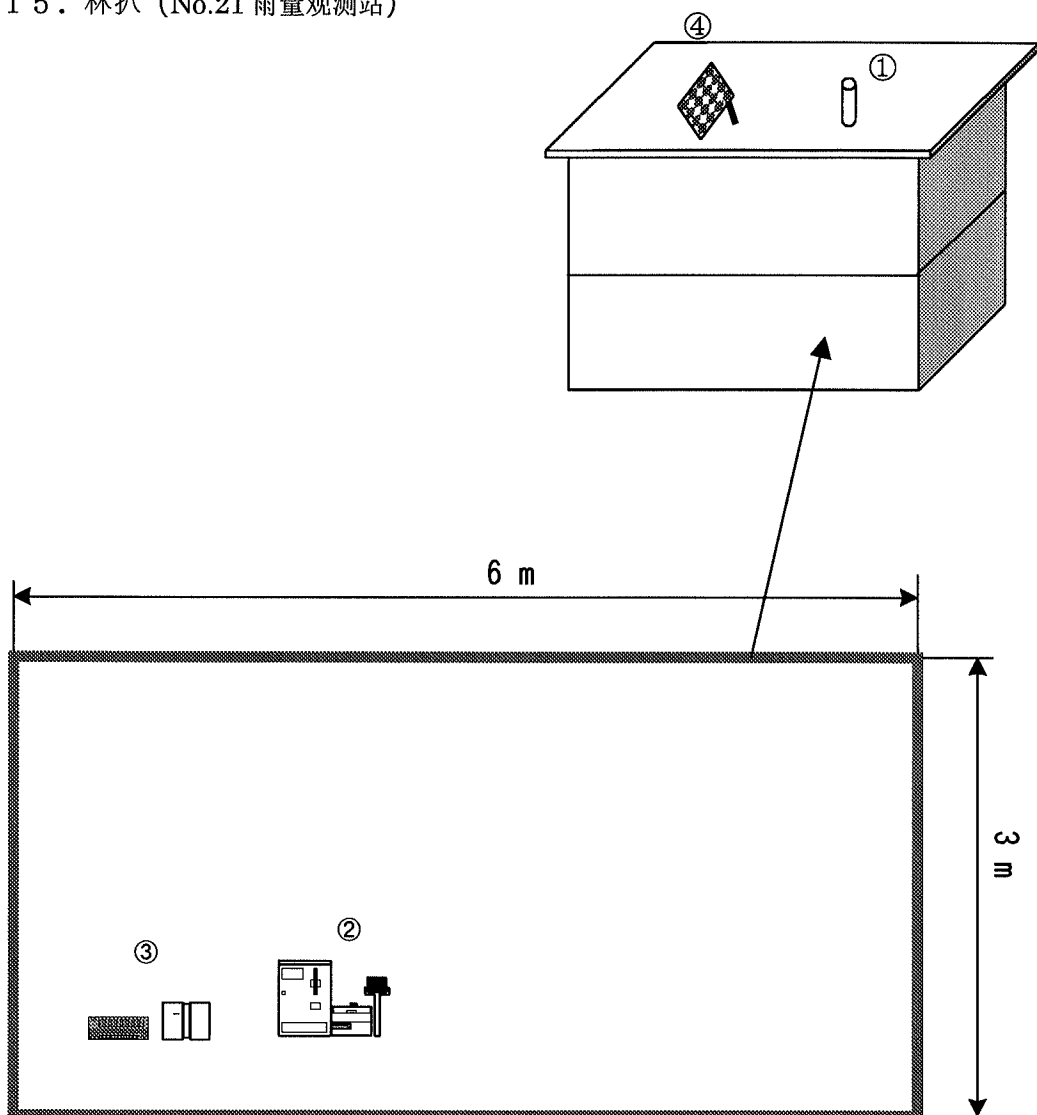


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

15. 林扒 (No.21 雨量观测站)

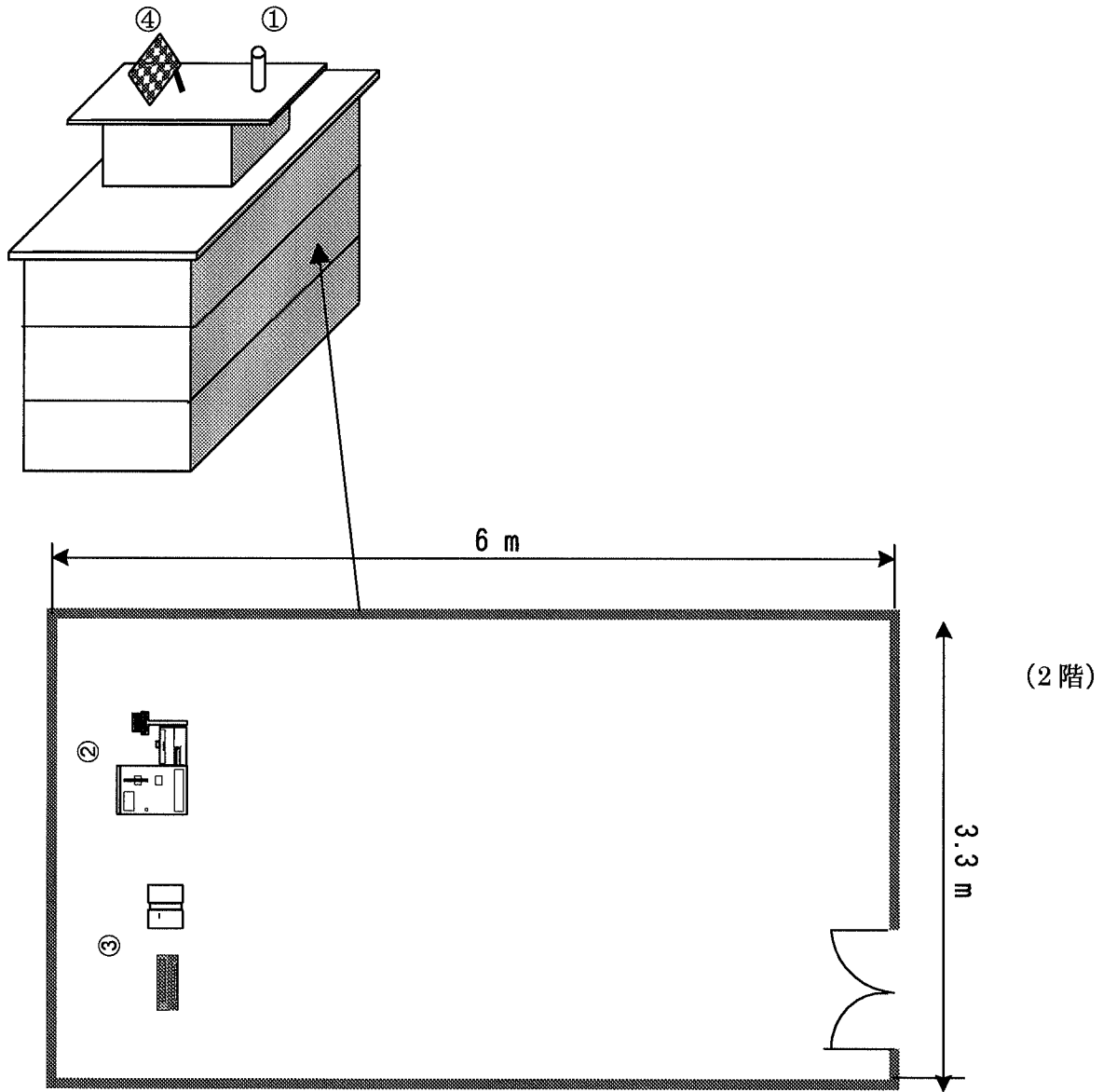


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

16. 西排子河 (No.22 雨量观测站)

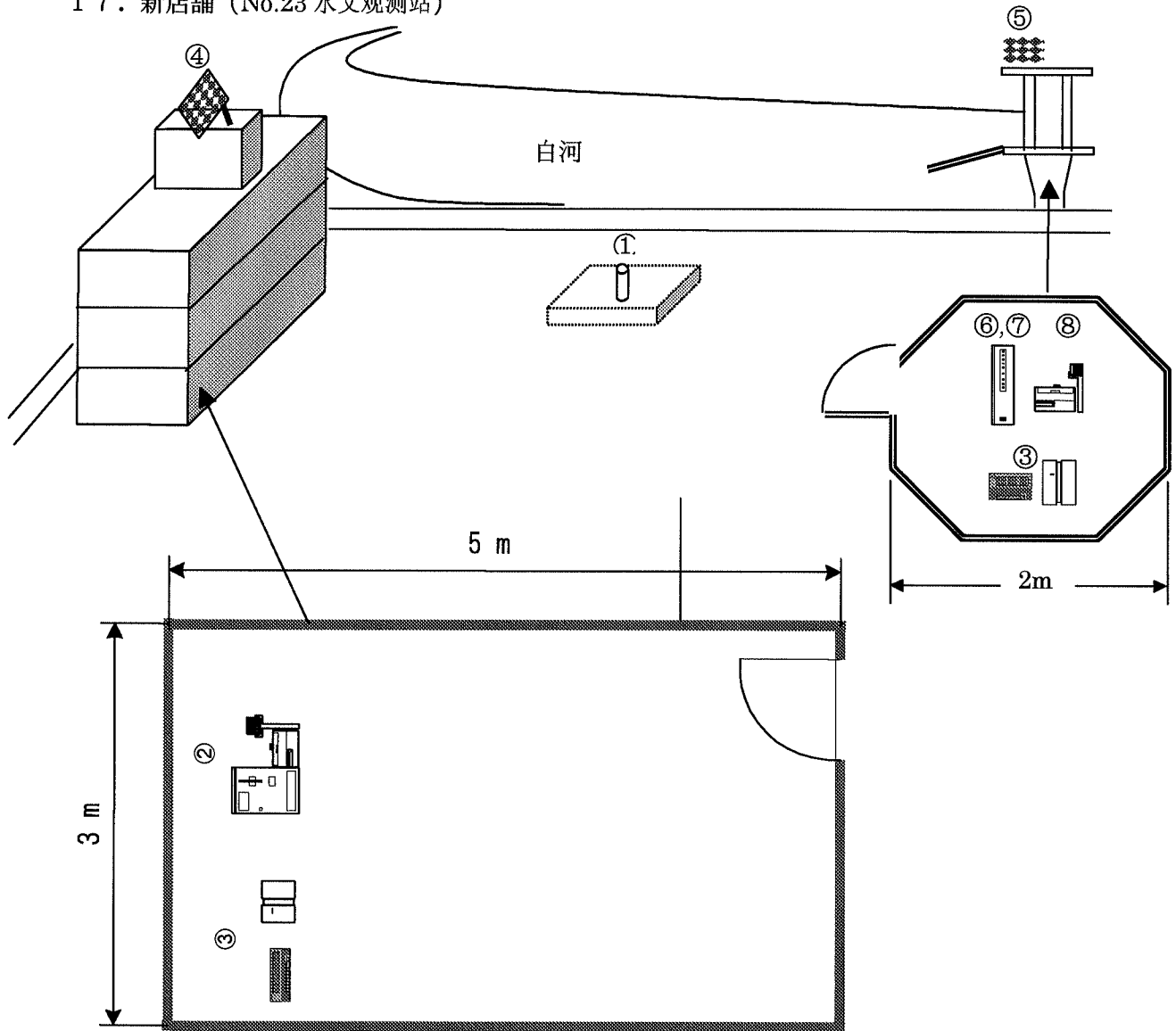


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

17. 新店舗 (No.23 水文观测站)

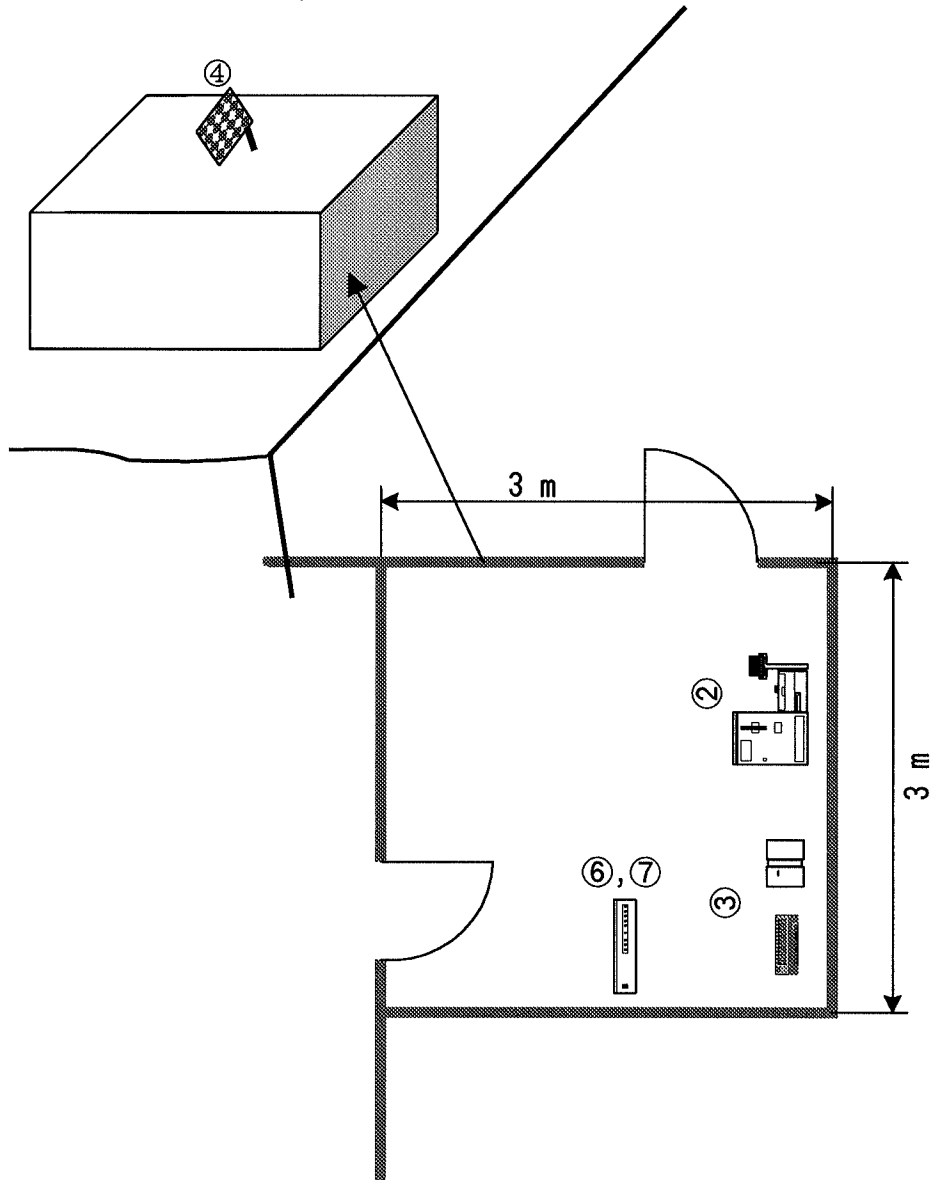


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
②	Monitoring Board		500	140	800	⑥	Water Level Monitor	1	280	280	1800
③	Power supply system	1	400	300	200	⑦	Water Level Sensor	1	50	50	270
④	Solar Panel (A)	1	1,841	652	1,000	⑧	Data Logger and VHF Unit	1	500	140	800
⑤	Solar Panel (B)	1	2,401	652	1,000						

Note • Monitoring Board : Data Logger Unit, Communication Unit, GSM Modem Unit and VHF Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

19. 龍王廟 (No.25 水位观测站)

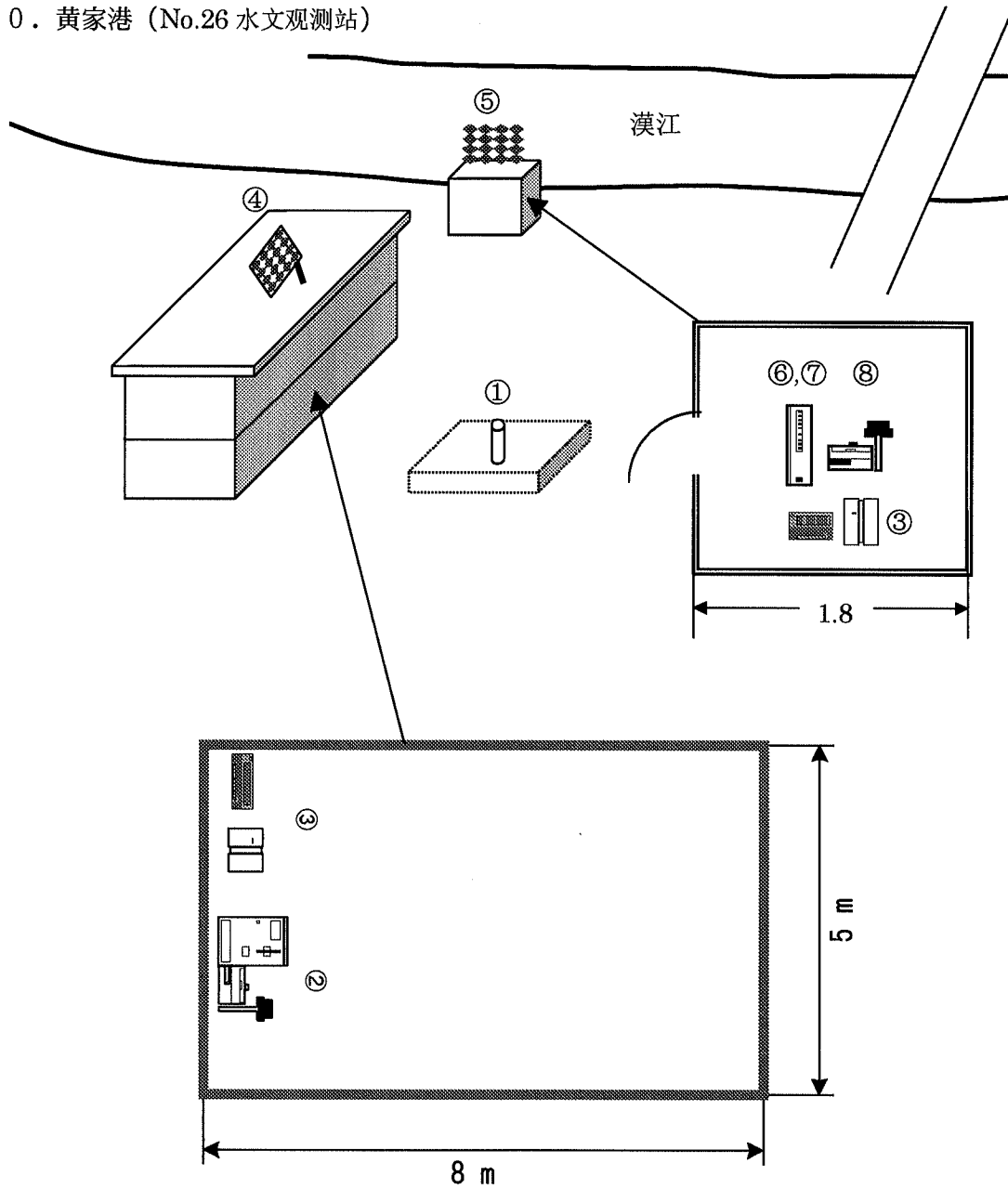


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
②	Monitoring Board		500	140	800	⑥	Water Level Monitor	1	280	280	1800
③	Power supply system	1	400	300	200	⑦	Water Level Sensor	1	50	50	270
④	Solar Panel (A)	1	3,040	652	1,000						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

20. 黄家港 (No.26 水文观测站)

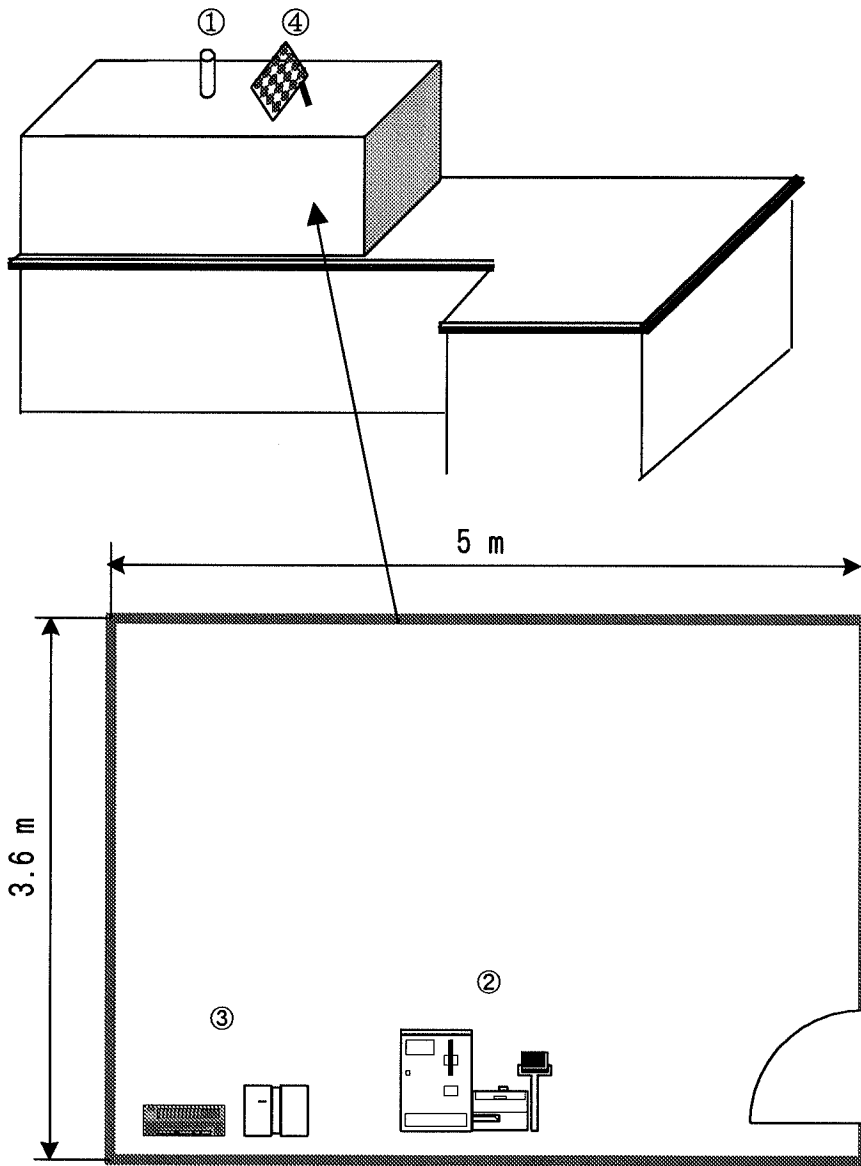


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
②	Monitoring Board		500	140	800	⑥	Water Level Monitor	1	280	280	1800
③	Power supply system	1	400	300	200	⑦	Water Level Sensor	1	50	50	270
④	Solar Panel (A)	1	1,841	652	1,000	⑧	Data Logger and VHF Unit	1	500	140	800
⑤	Solar Panel (B)	1	2,401	652	1,000						

Note • Monitoring Board : Data Logger Unit, Communication Unit, GSM Modem Unit and VHF Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

2 1 . 大張庄 (No.27 雨量观测站)

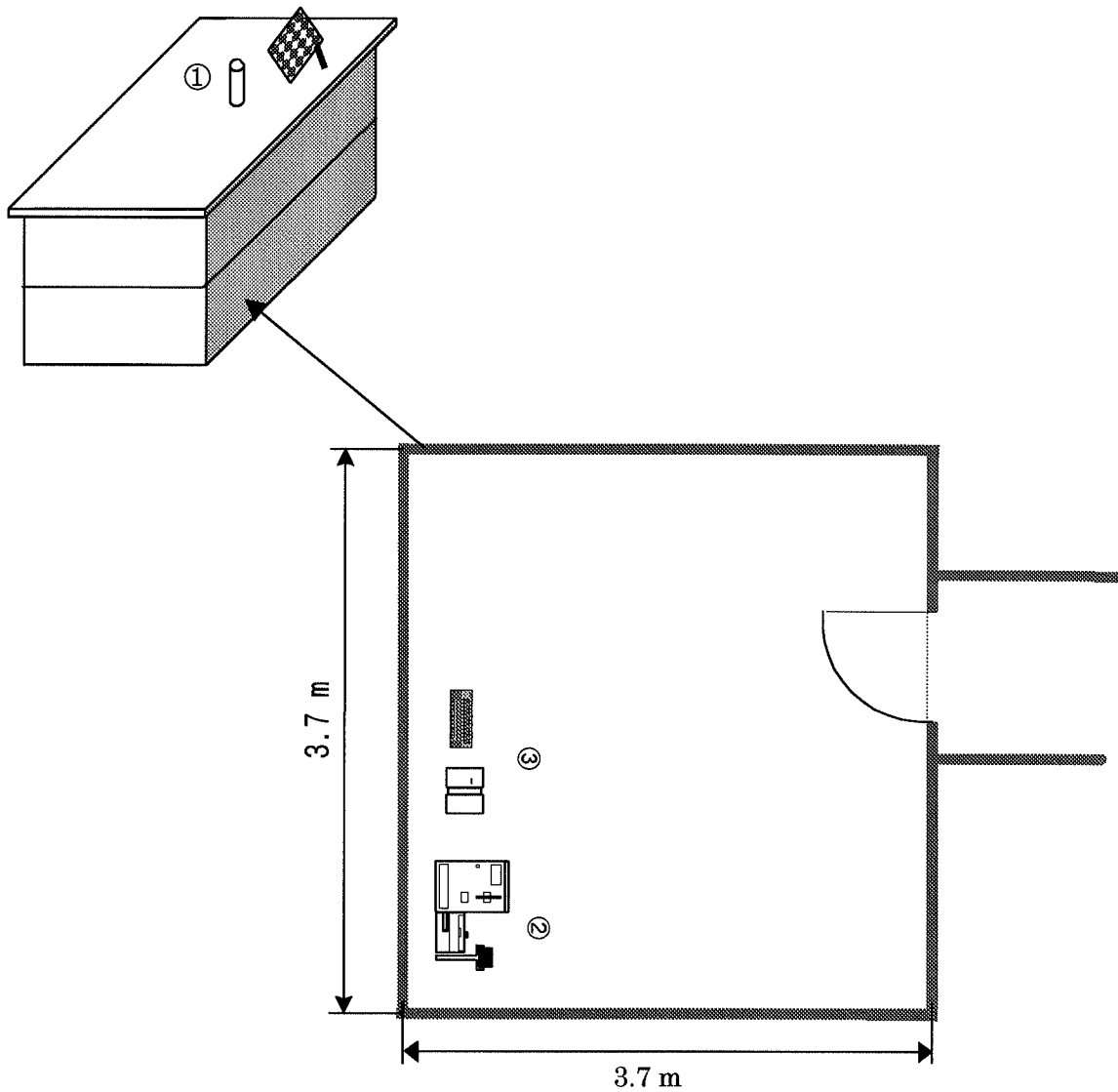


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

2 2 . 石河阪 (No.28 雨量观测站)

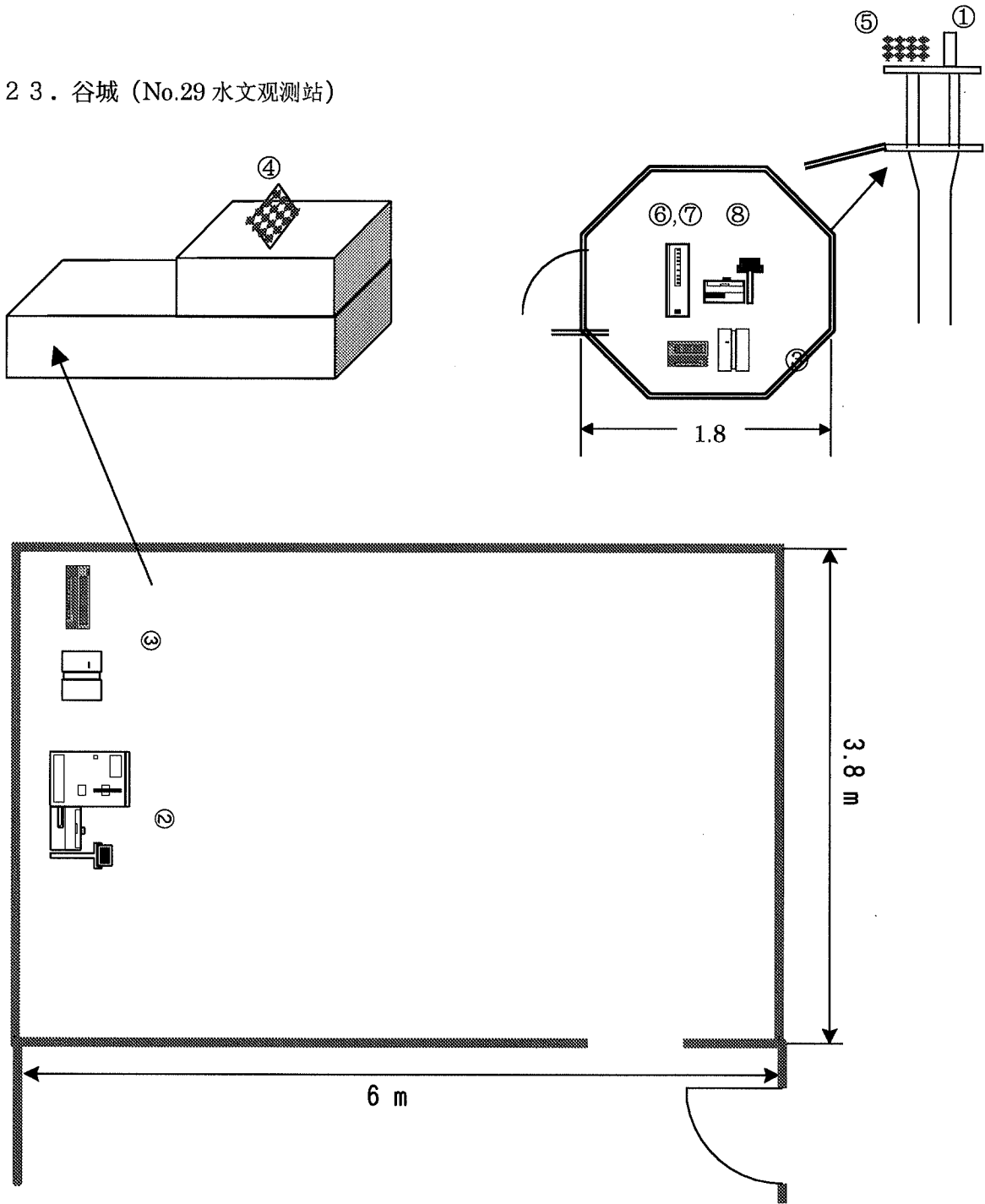


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

2 3 . 谷城 (No.29 水文观测站)

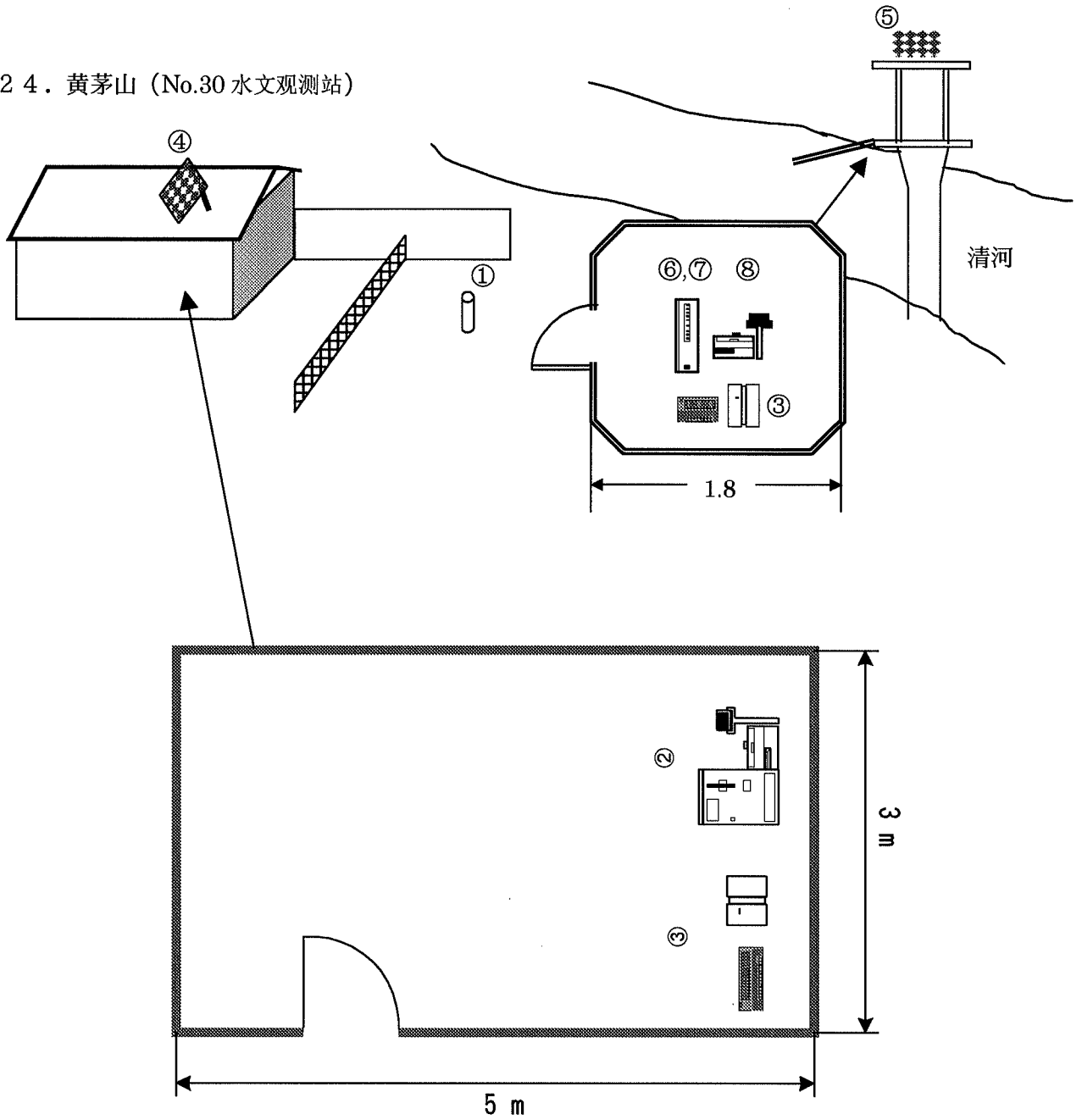


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
②	Monitoring Board		500	140	800	⑥	Water Level Monitor	1	280	280	1800
③	Power supply system	1	400	300	200	⑦	Water Level Sensor	1	50	50	270
④	Solar Panel (A)	1	1,841	652	1,000	⑧	Data Logger and VHF Unit	1	500	140	800
⑤	Solar Panel (B)	1	2,401	652	1,000						

Note • Monitoring Board : Data Logger Unit, Communication Unit, GSM Modem Unit and VHF Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

2 4 . 黄茅山 (No.30 水文观测站)

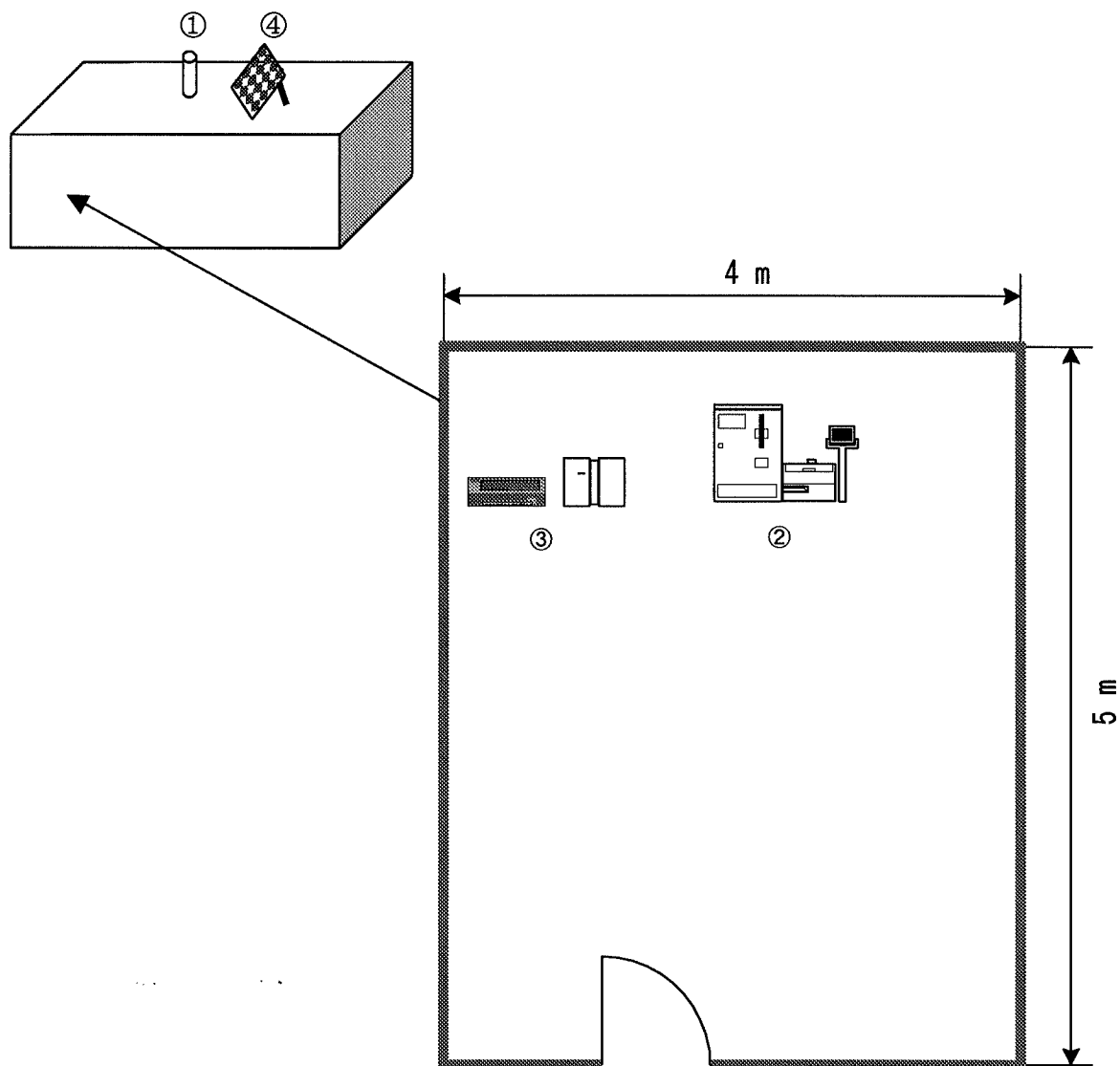


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
②	Monitoring Board		500	140	800	⑥	Water Level Monitor	1	280	280	1800
③	Power supply system	1	400	300	200	⑦	Water Level Sensor	1	50	50	270
④	Solar Panel (A)	1	1,841	652	1,000	⑧	Data Logger and VHF Unit	1	500	140	800
⑤	Solar Panel (B)	1	2,401	652	1,000						

Note • Monitoring Board : Data Logger Unit, Communication, GSM Modem Unit and VHF Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

25. 黒清河 (No.31 雨量观测站)

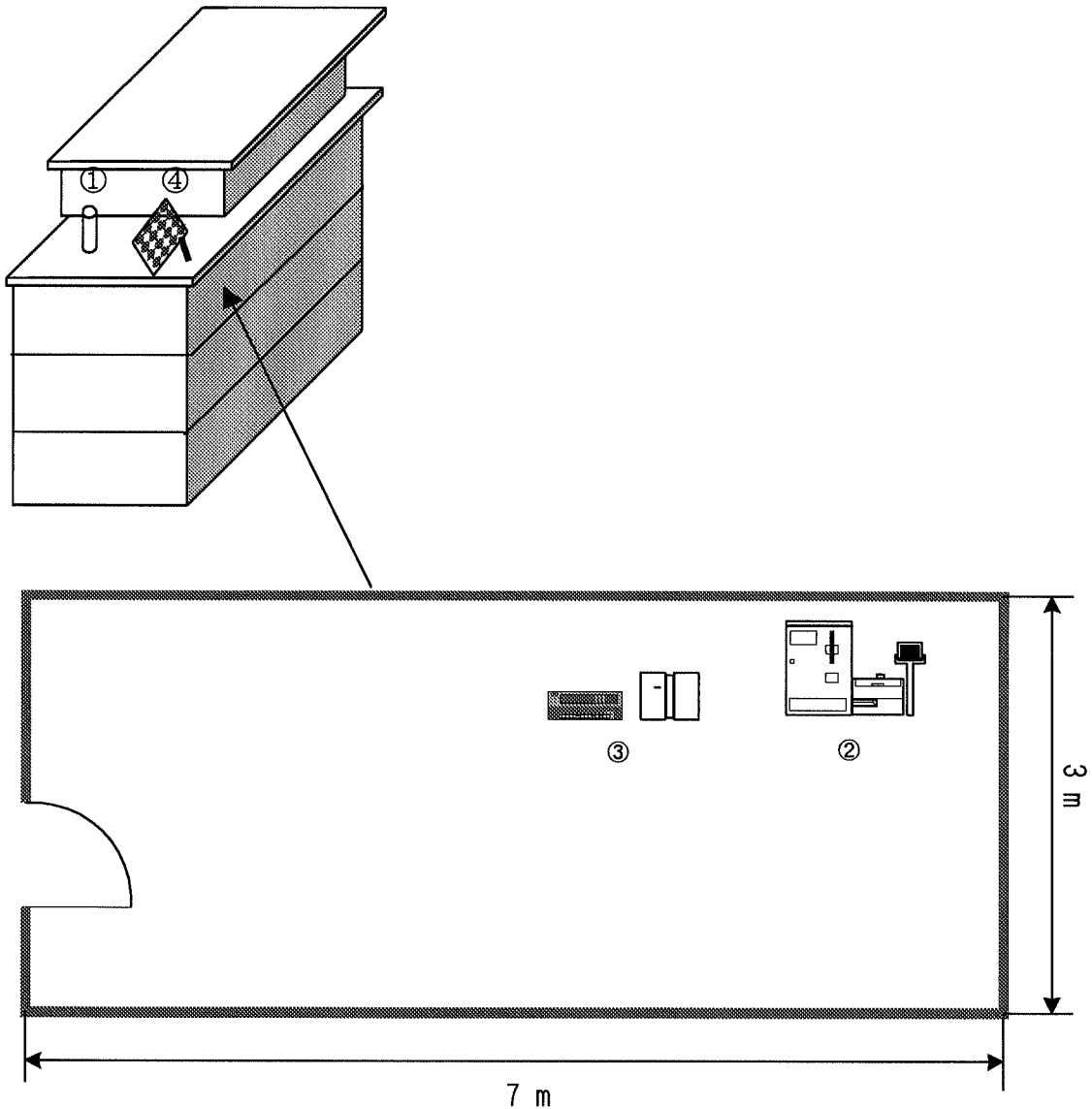


	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter

2 6 . 華陽河 (No.32 雨量观测站)



	Equipment	Unit	W (mm)	D (mm)	H (mm)		Equipment	Unit	W (mm)	D (mm)	H (mm)
①	Rain gauge	1	φ 210	φ 210	500	④	Solar Panel (A)	1	1,425	652	1,000
②	Monitoring Board		500	140	800						
③	Power supply system	1	400	300	200						

Note • Monitoring Board : Data Logger Unit, Communication Unit and GSM Modem Unit

• Power supply system : Electric discharge/charging controller, Battery and DC/DC converter