

B. Security Equipment () Sea Side.

(Sihanoukville Port)

Fig.-1 CCTV Camera Installation Plan for Gate and Yard Surveillance

Fig.-2 Cable Installation Route

Fig.-3 CCTV Camera System Diagram

Fig.-4 CCTV Monitor, Control Desk

Fig.-5 CCTV Equipment Rack

Fig.-6 Concept of ID Pass Card Gate Control System

Fig.-7 Public Address System

(Phnom Penh Port)

Fig.-8 CCTV Camera Installation Plan for Gate and Yard Surveillance

Fig.-9 Cable Installation Route

Fig.-10 CCTV System Diagram

Fig.-11 CCTV Monitor, Control Desk

Fig.-12 CCTV Equipment Rack

Fig.-13 Concept of ID Pass Card Gate Control System

Fig.-14 Public Address System

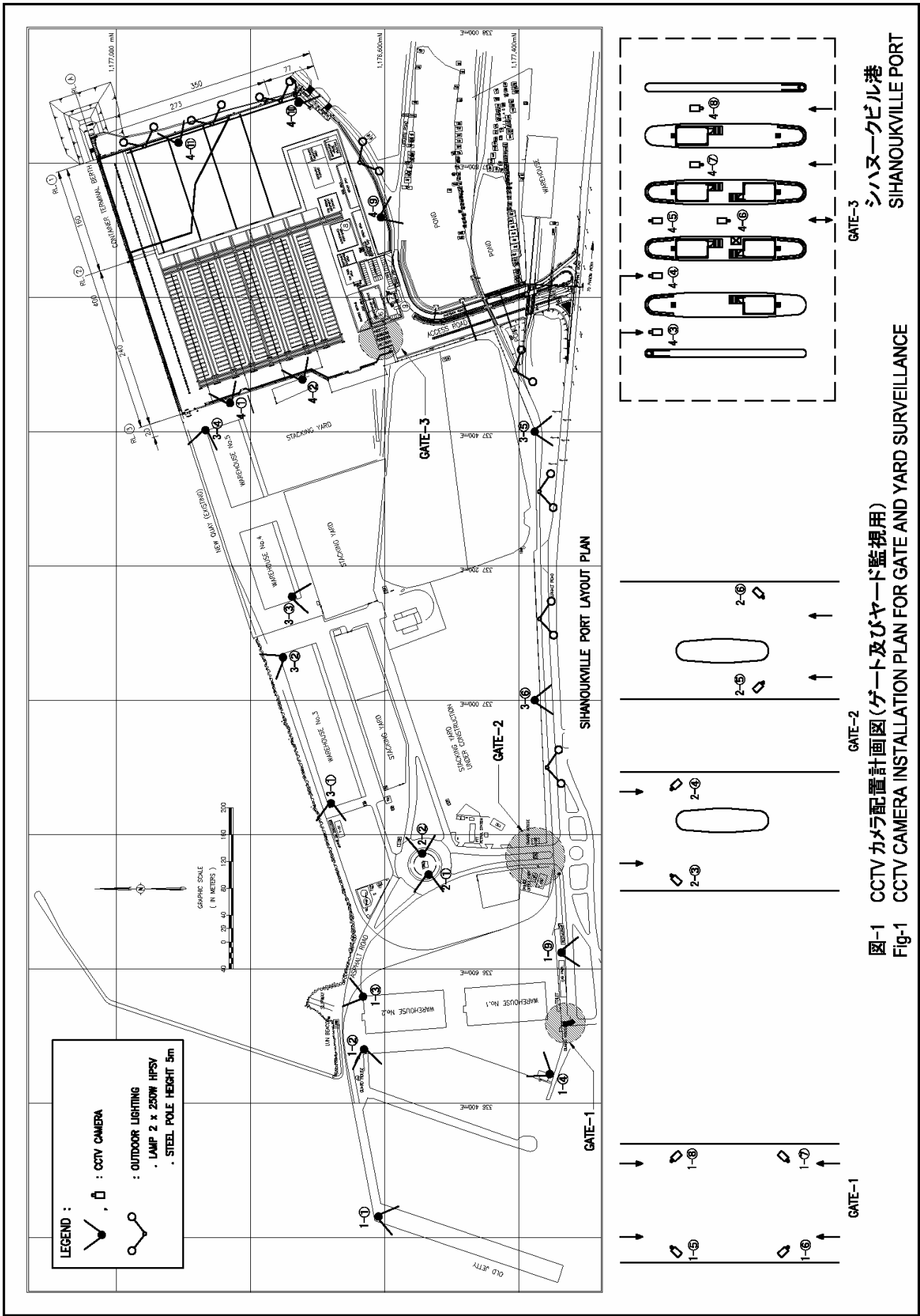
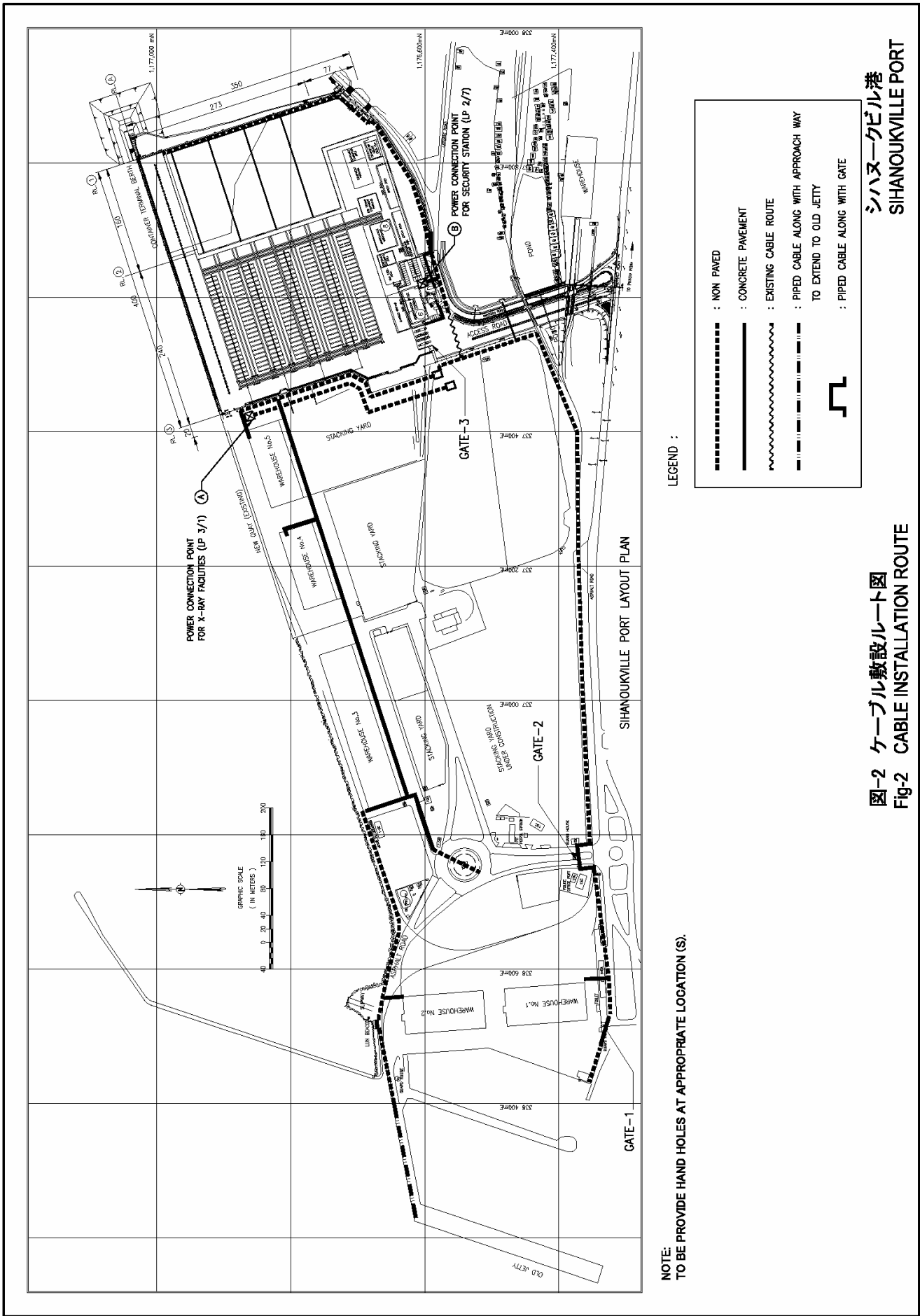


図-1 CCTVカメラ配置計画図(ゲート及びヤード監視用)

Fig-1 CCTV CAMERA INSTALLATION PLAN FOR GATE AND YARD SURVEILLANCE



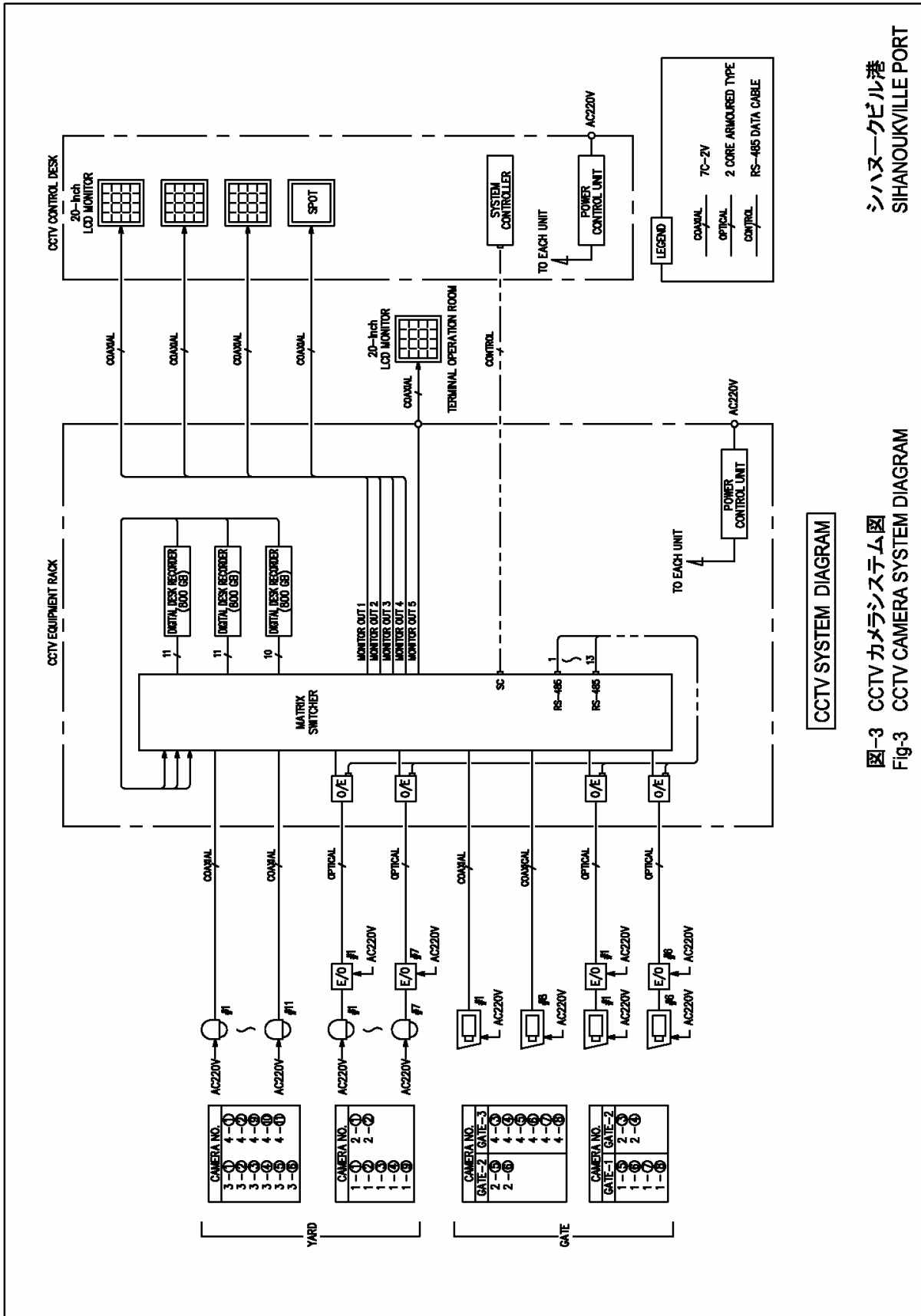
シハヌークビル港
SIHANOUKVILLE PORT

図-2 ケーブル敷設ルート図
Fig-2 CABLE INSTALLATION ROUTE

NOTE:
TO BE PROVIDE HAND HOLES AT APPROPRIATE LOCATION (S).

LEGEND :

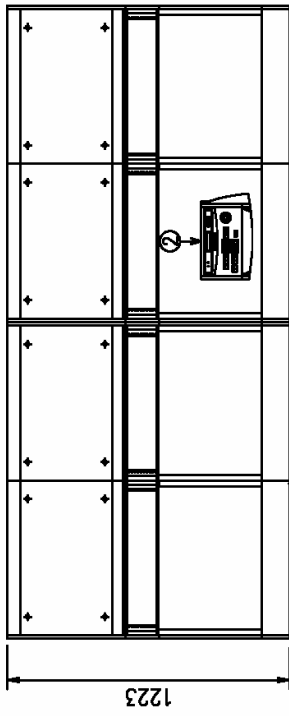
- : NON PAVED
- : CONCRETE PAVEMENT
- ~~~~~ : EXISTING CABLE ROUTE
- - - - - : PIPED CABLE ALONG WITH APPROACH WAY
TO EXTEND TO OLD JETTY
- — — — : PIPED CABLE ALONG WITH GATE



CCTV SYSTEM DIAGRAM

シハヌーケビル港
SIHANOUKVILLE PORT

図-3 CCTV カメラシステム図
Fig-3 CCTV CAMERA SYSTEM DIAGRAM



NO.	DESCRIPTION
①	20-inch LCD MONITOR
②	SYSTEM CONTROLLER

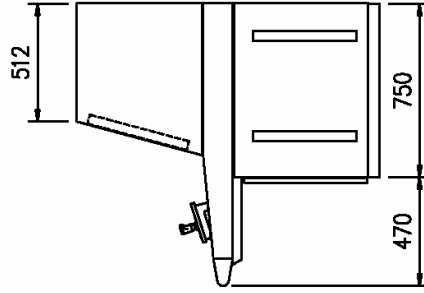
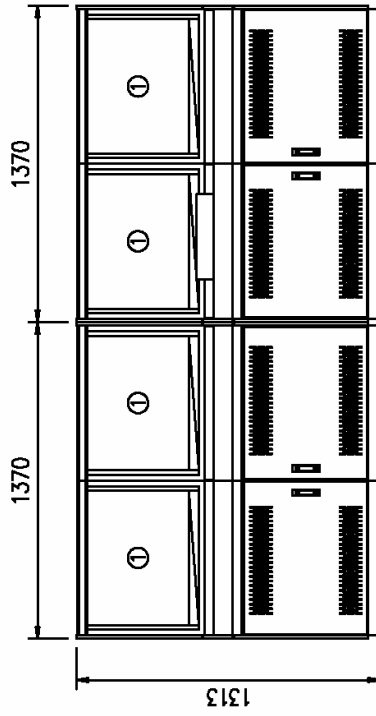
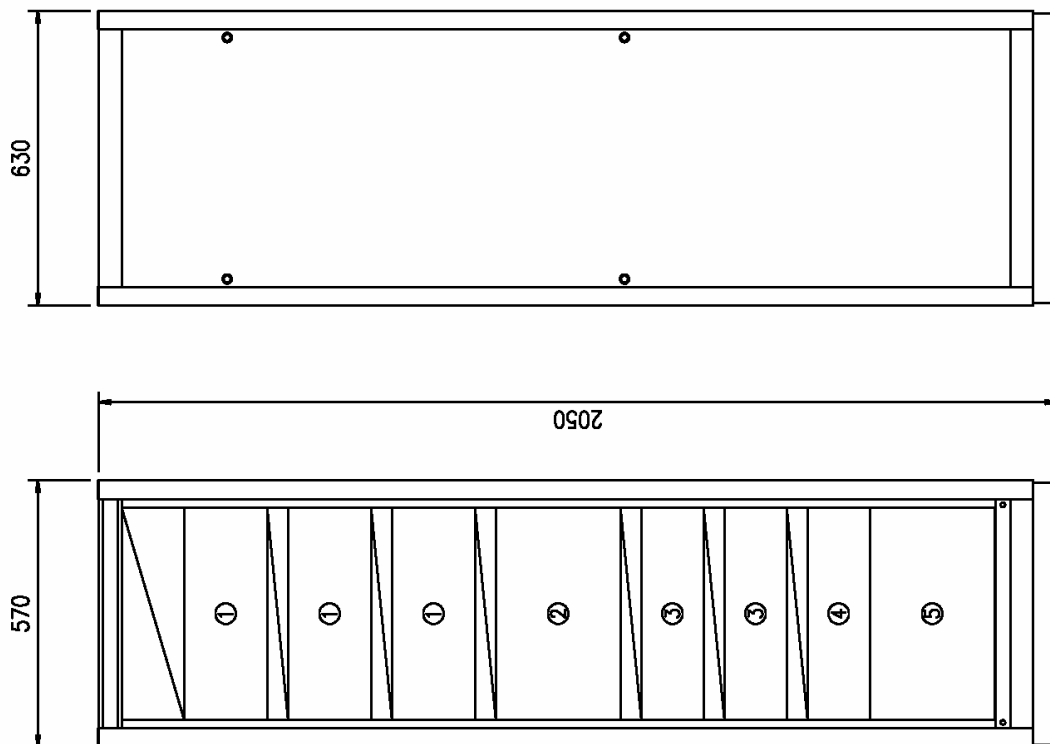


図-4 CCTV 監視、コントロールデスク図
Fig-4 CCTV MONITOR, CONTROL DESK

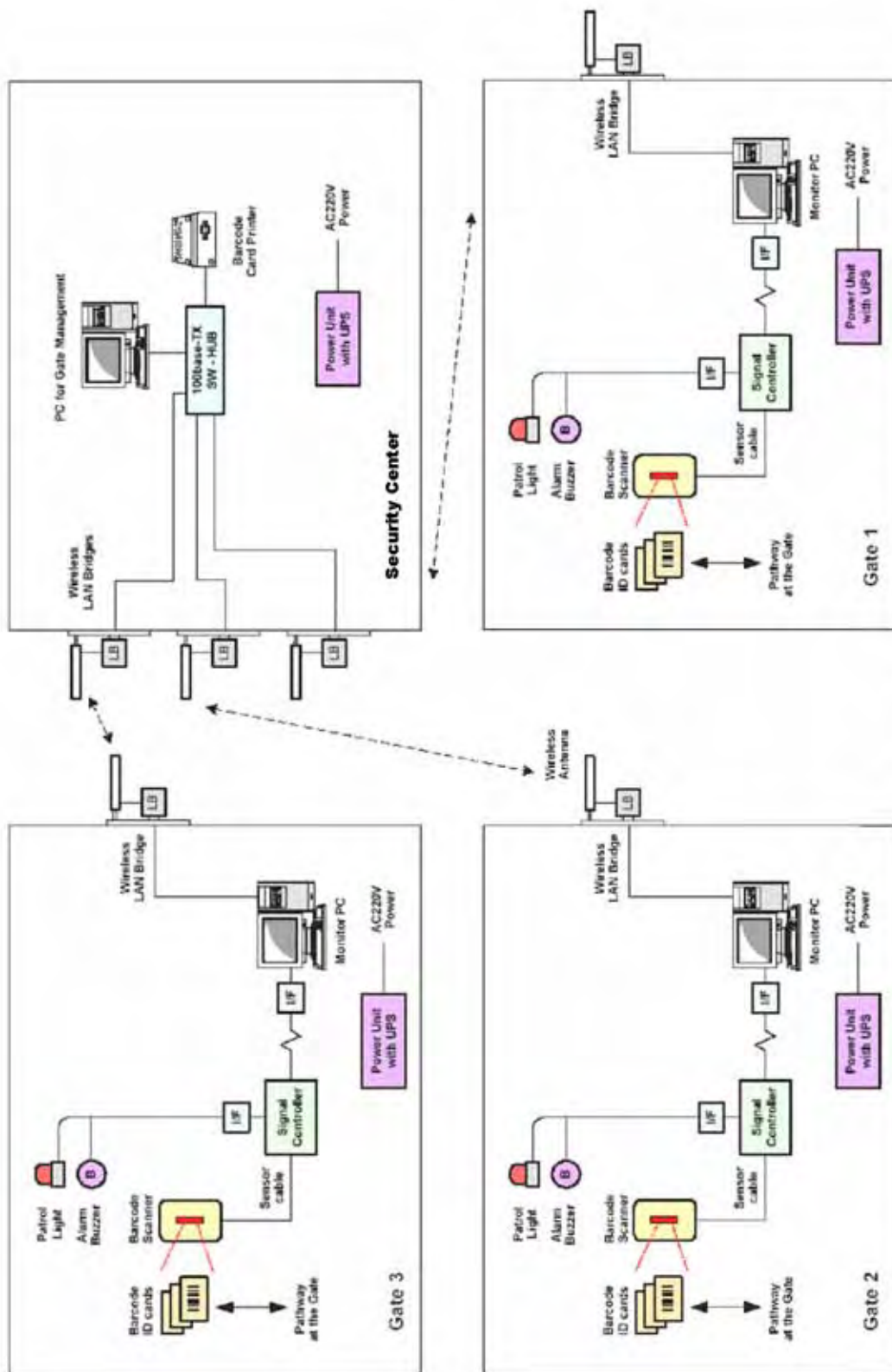
シハヌークビル港
SHANOUKVILLE PORT



NO.	DESCRIPTION
①	DIGITAL DESK RECORDER
②	MATRIX SWITCHER
③	O/E UNIT
④	POWER CONTROL UNIT
⑤	TERMINAL UNIT
	BLANK PANEL

図-5 CCTV 機器用ラック
Fig-5 CCTV EQUIPMENT RACK

シハヌークビル港
SIHANOUKVILLE PORT



シハヌークビル港
SIHANOUKVILLE PORT

図-6 IDパスカードゲート管理システム概念図
Fig-6 CONCEPT OF ID PASS CARD GATE CONTROL SYSTEM

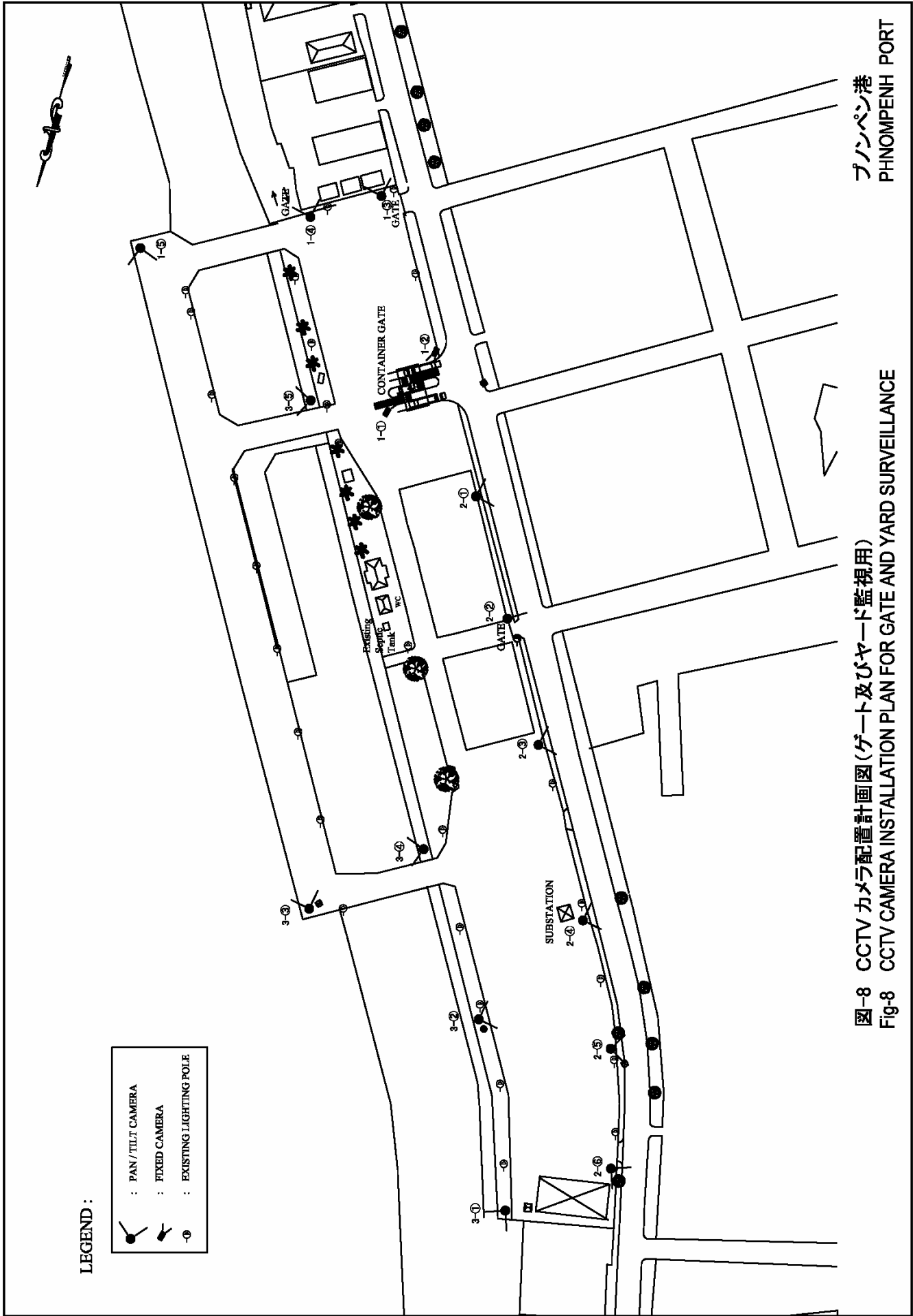
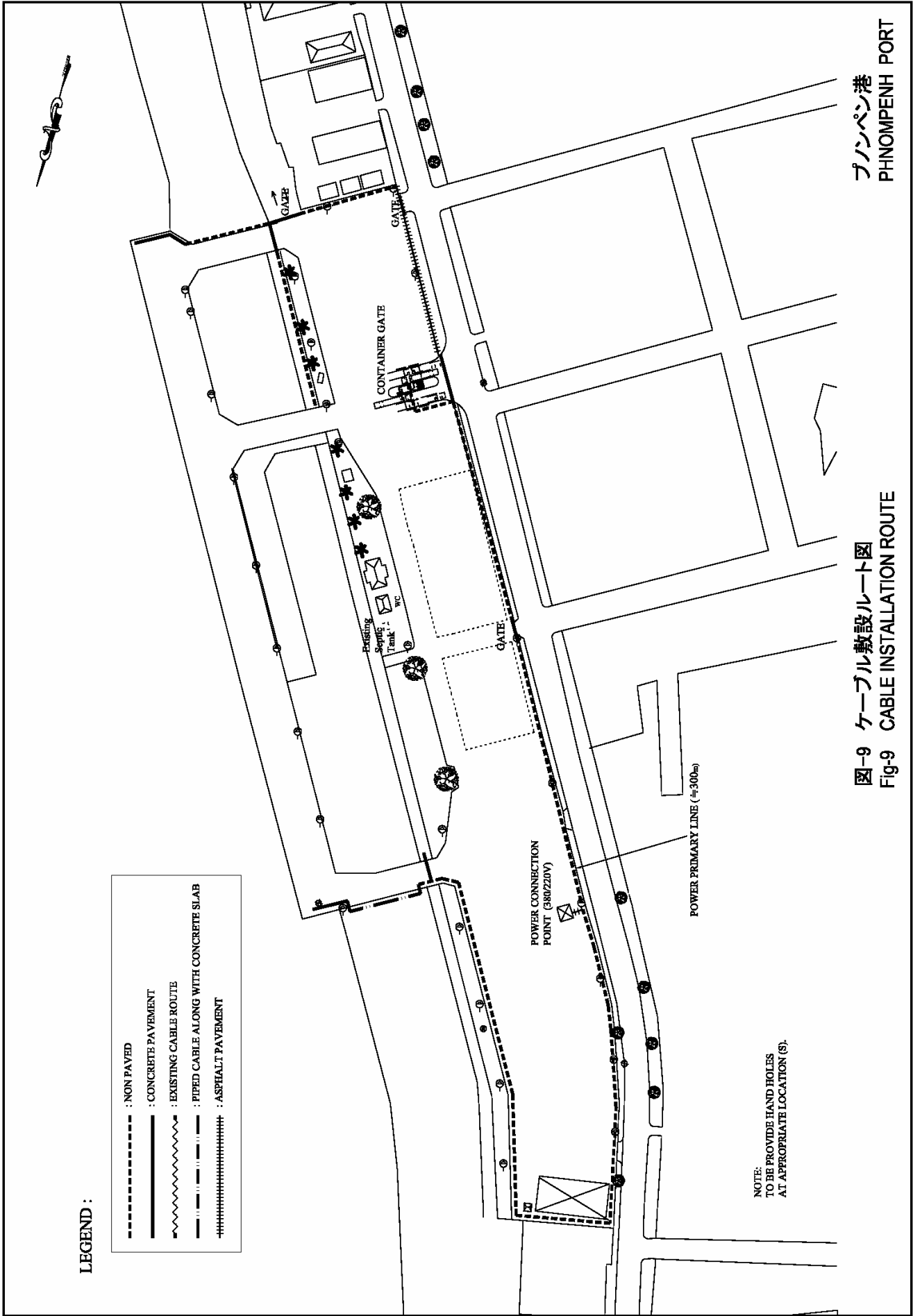
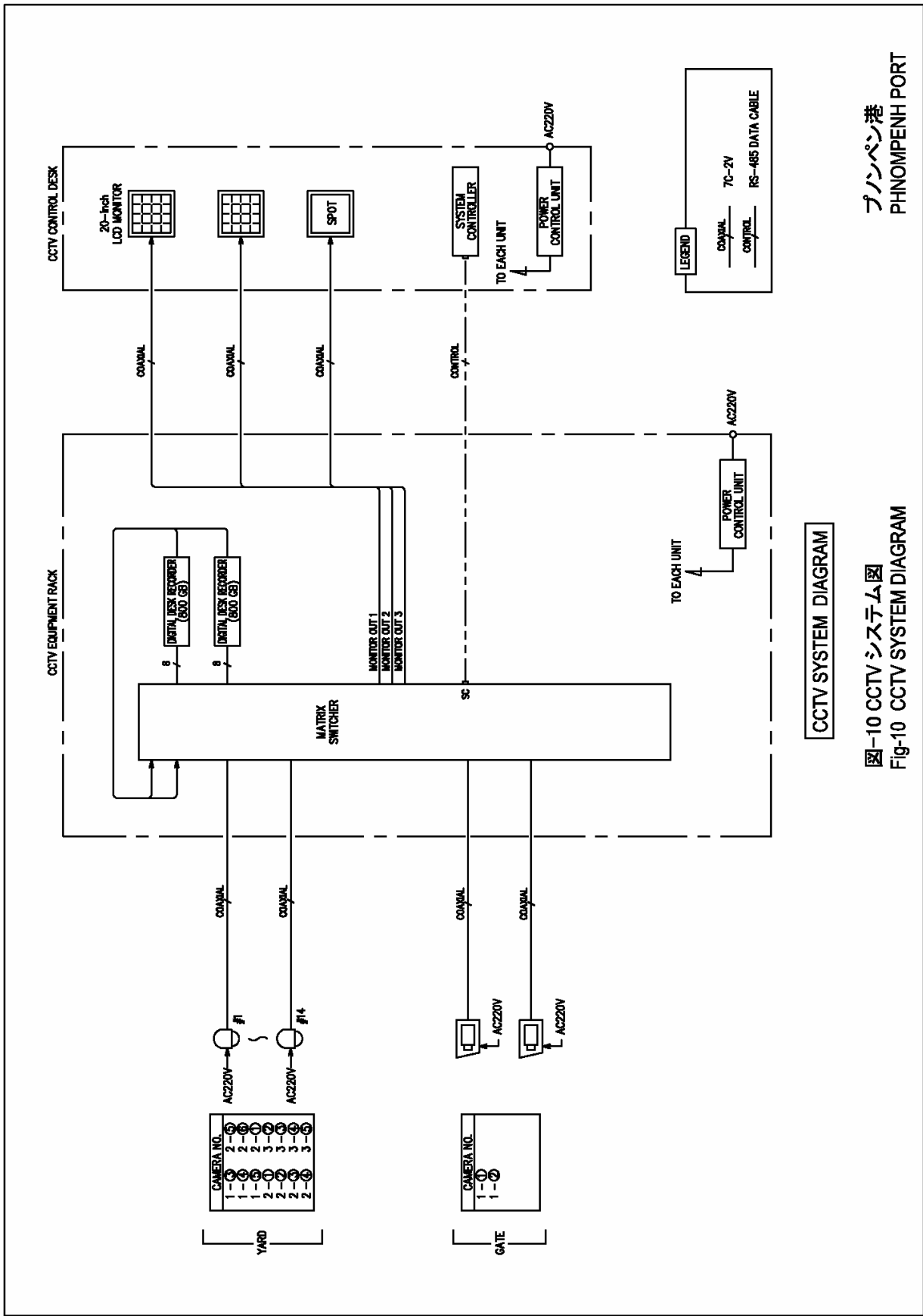


図-8 CCTVカメラ配置計画図(ゲート及びヤード監視用)

Fig-8 CCTV CAMERA INSTALLATION PLAN FOR GATE AND YARD SURVEILLANCE

プノンペン港
PHNOMPENH PORT

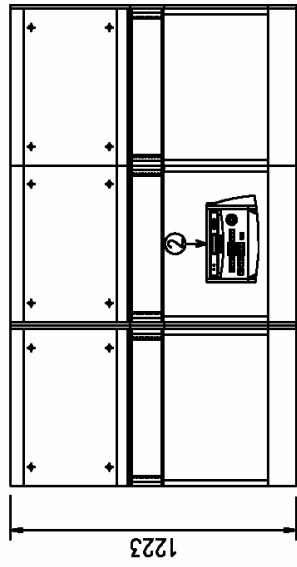




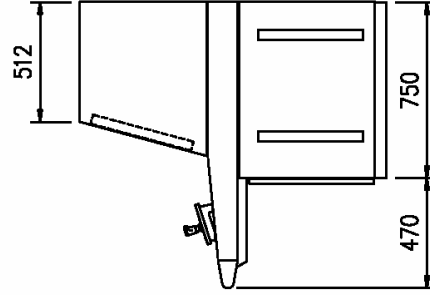
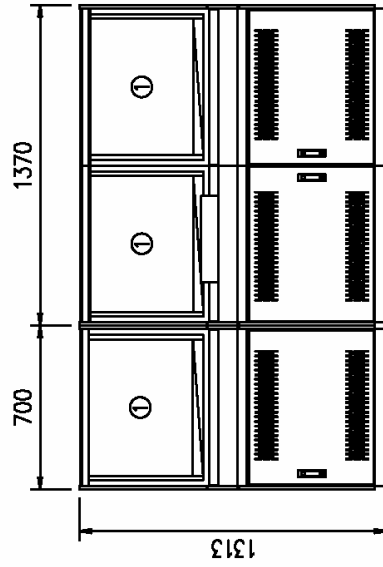
CCTV SYSTEM DIAGRAM

フノンペン港
PHNOMPENH PORT

図-10 CCTV システム図
Fig-10 CCTV SYSTEM DIAGRAM



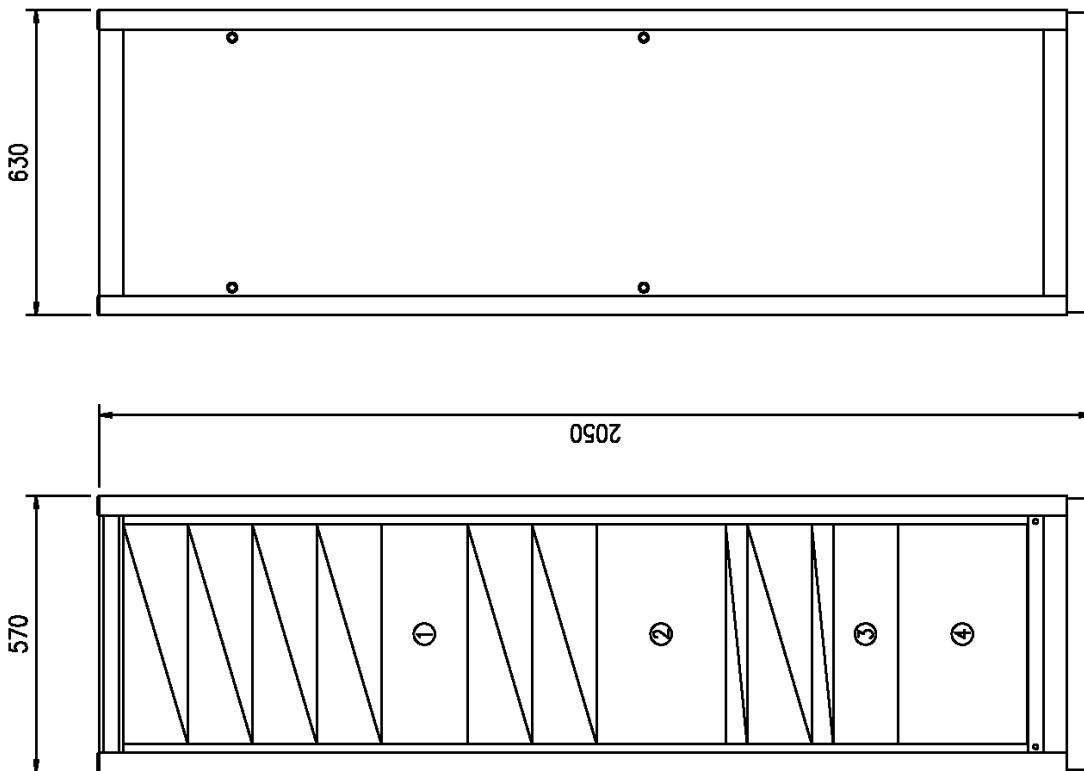
NO.	DESCRIPTION
①	20-inch LCD MONITOR
②	SYSTEM CONTROLLER



CCTV CONTROL DESK

図-11 CCTV 監視、コントロールデスク
Fig-11 CCTV MONITOR, CONTROL DESK

プンペン港
PHINOMPENH PORT

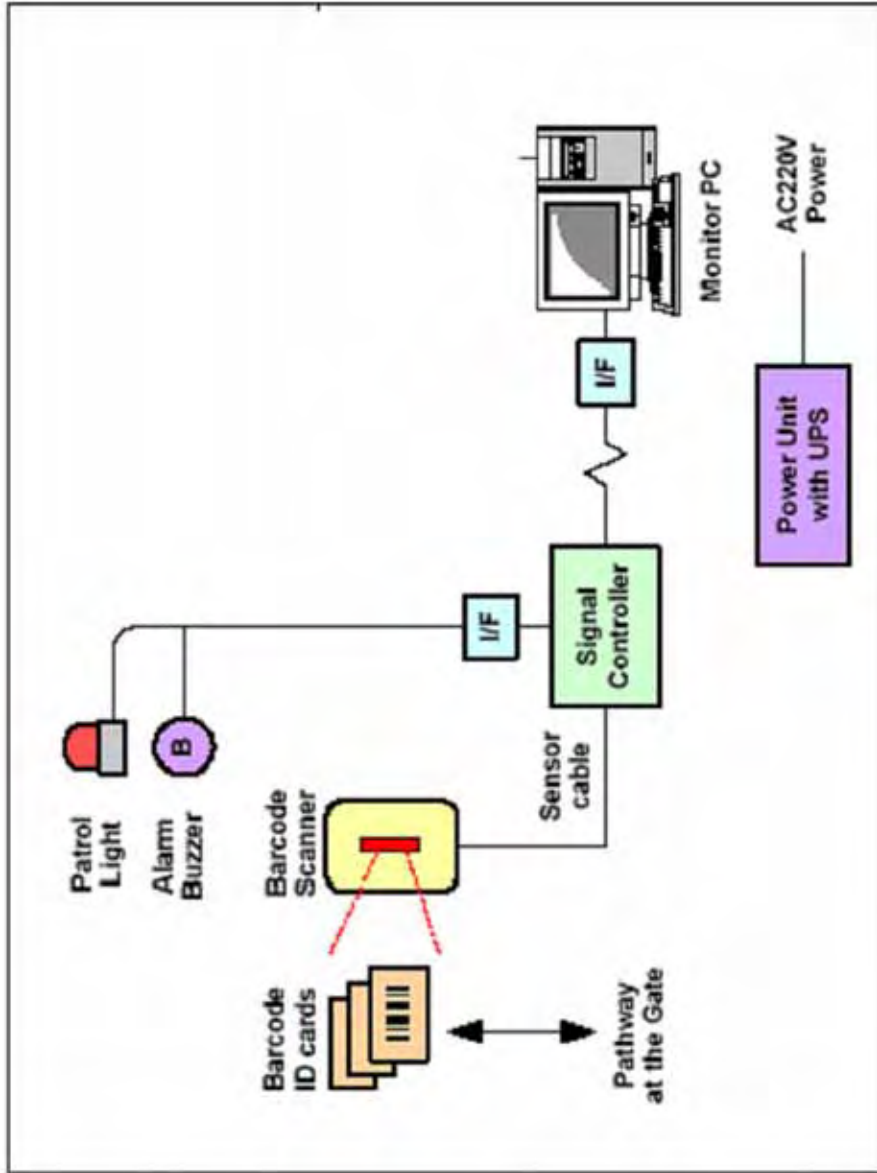


NO.	DESCRIPTION
①	DIGITAL DESK RECORDER
②	MATRIX SWITCHER
③	POWER CONTROL UNIT
④	TERMINAL UNIT
	BLANK PANEL

CCTV EQUIPMENT RACK

図-12 CCTV 機器用ラック
Fig-12 CCTV EQUIPMENT RACK

フアンペン港
PHINOMPENH PORT



プノンペン港
PHNOMPENH PORT

図-13 IDパスカードゲート管理システム概念図
Fig-13 CONCEPT OF ID PASS CARD GATE CONTROL SYSTEM

C. Supplemental Architectural and Structural works

(Sihanoukville Port)

Fig.C-1 Location Map

Fig.C-2 Security Station: Elevation (PAS)

Fig.C-3 Security Station: Structure (PAS)

Fig.C-4 Security Station Layout (PAS)

Fig.C-5 Security Station: Structure-1 (PAS)

Fig.C-6 Security Station: Structure-2 (PAS)

Fig.C-7 Visual Inspection Room: Elevation

Fig.C-8 Visual Inspection Room: Structure-1 (PAS)

Fig.C-9 Visual Inspection Room: Structure-2 (PAS)

(Phnom Penh Port)

Fig.C-10 Security Station: Elevation (PAP)

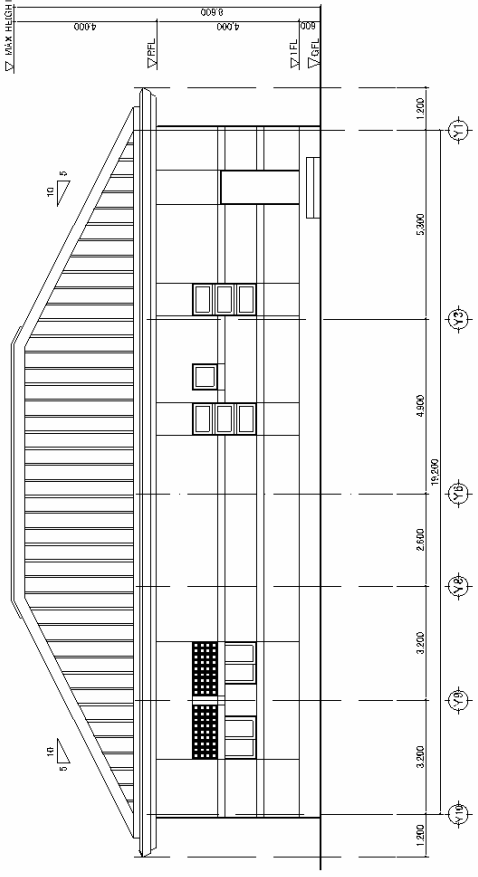
Fig.C-11 Security Station: Structure (PAP)

Fig.C-12 Security Station: Layout (PAP)

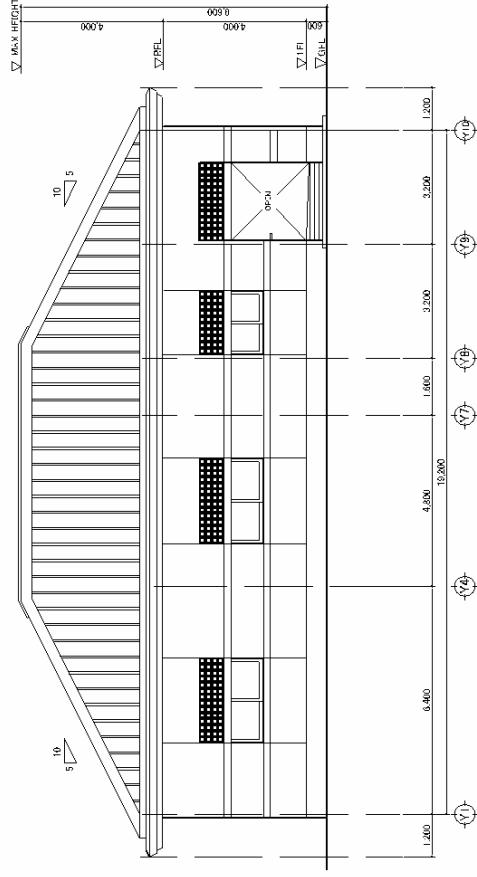
Fig.C-13 Security Station: Structure-1 (PAS)

Fig.C-14 Security Station: Structure-2 (PAS)

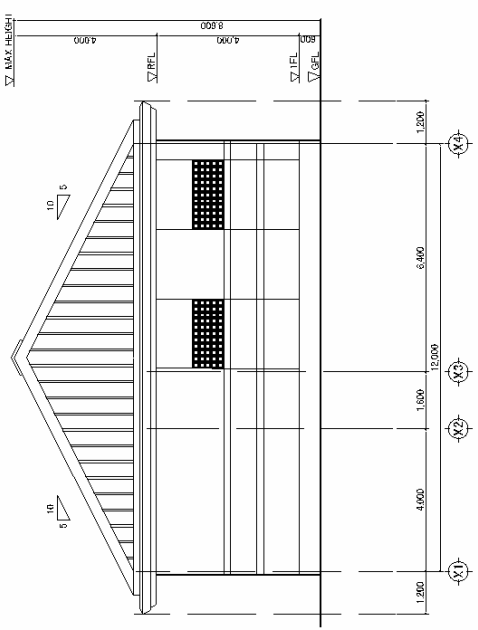
Fig.C-15 Security Station: Structure-3 (PAS)



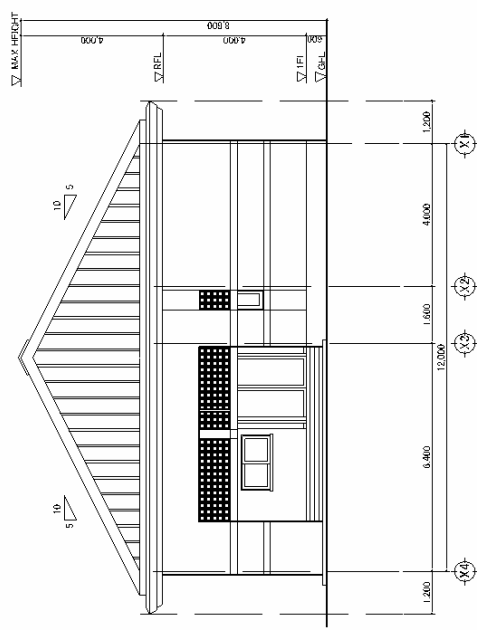
4 WEST ELEV 1/100



2 EAST ELEV 1/100

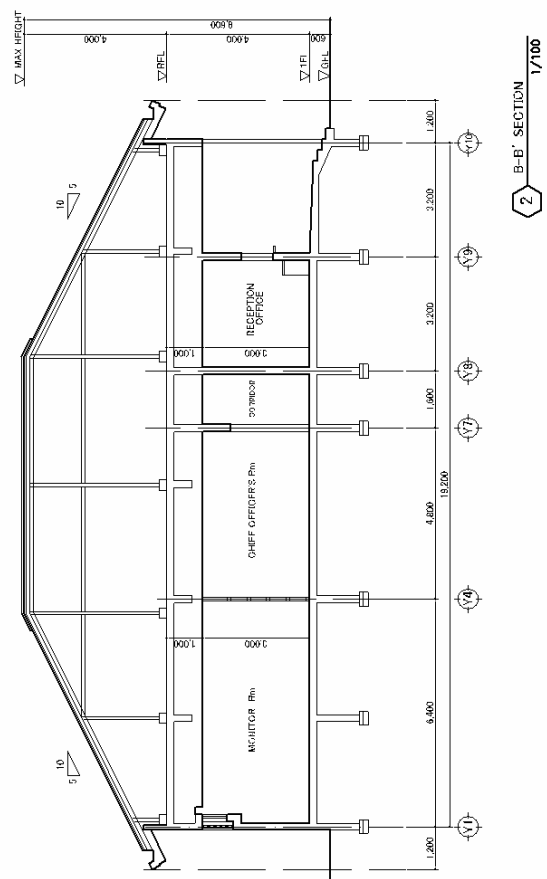
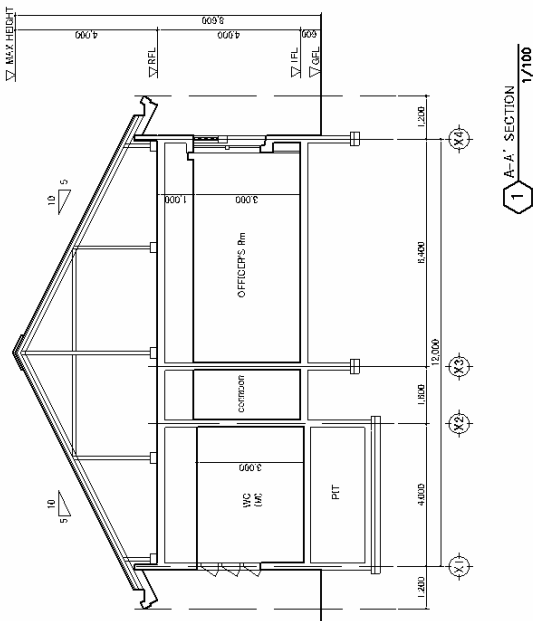


3 SOUTH ELEV 1/100

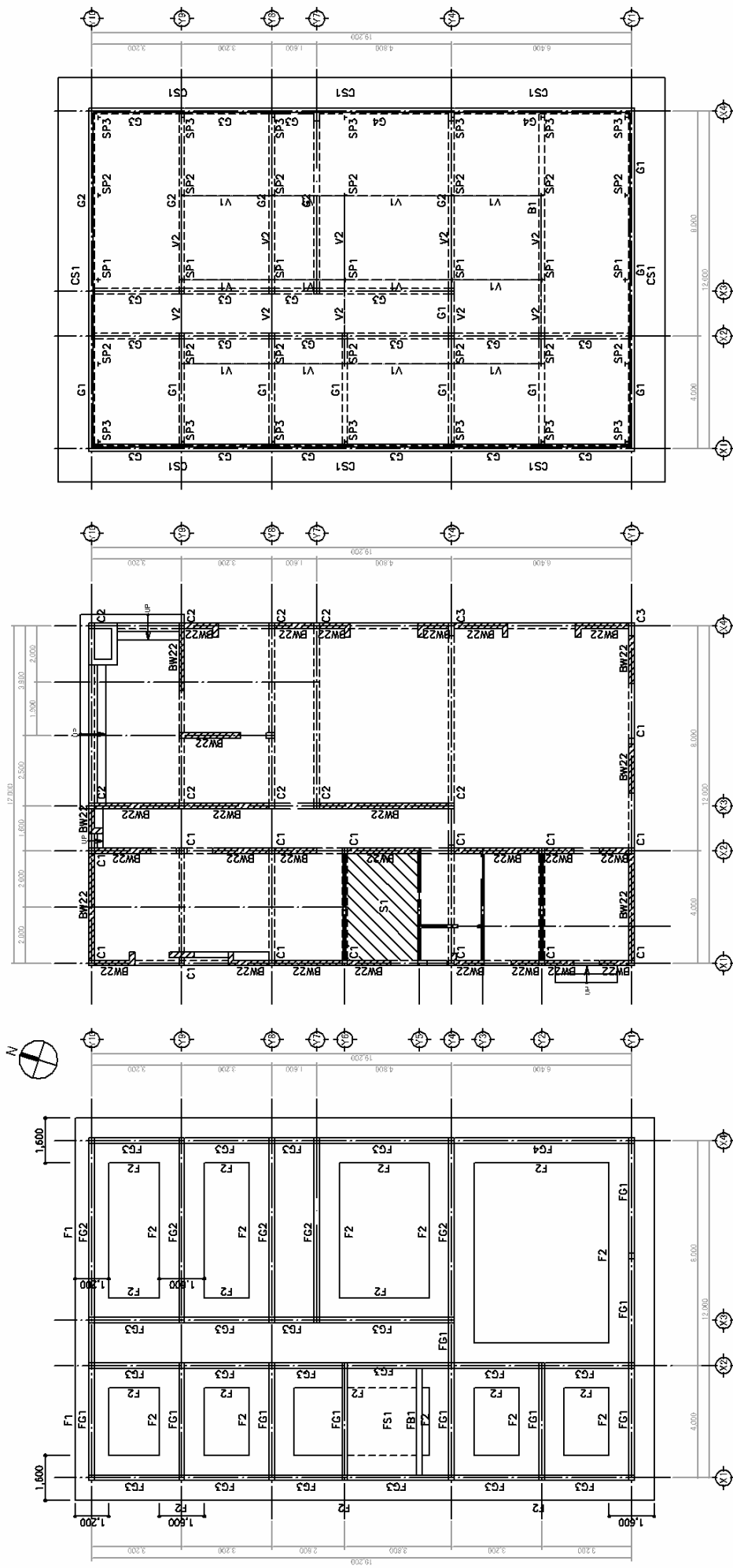


1 NORTH ELEV 1/100

图C-2 保安管理棟立面图 (PAS)
Fig C-2 Security Station: Elevation (PAS)



图C-3 保安管理棟構造断面图
Fig C-3 Security Station: Structure (PAS)



FOUNDATION PLAN 1/100

NOTES:
 UNLESS OTHERWISE INDICATED,
 1.TOP LEVEL OF FOUNDATION BORDER. GL-400
 2.BOTTOM LEVEL OF FOUNDATION. GL-1500

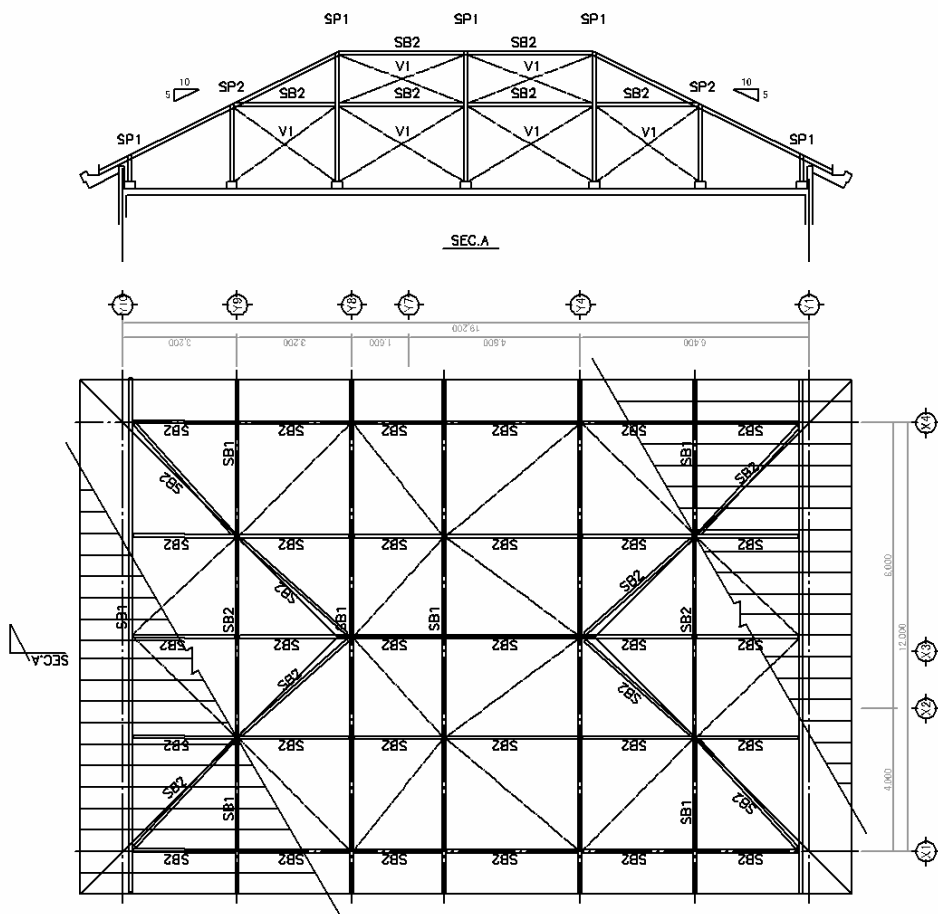
1st FLOOR FRAMING PLAN 1/100

NOTES:
 UNLESS OTHERWISE INDICATED
 1.SLAB
 2.WALL BW11

ROOF FLOOR FRAMING PLAN 1/100

NOTES:
 UNLESS OTHERWISE INDICATED,
 1.SLAB SL

图C-5 保安管理楼结构图-1 (PAS)
 Fig C-5 Security Station: Structure-1 (PAS)



STEEL ROOF PLAN 1/100

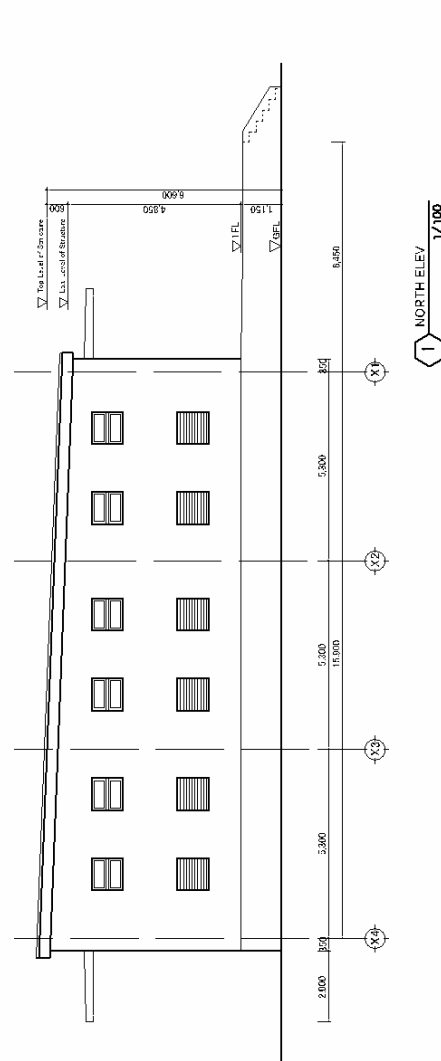
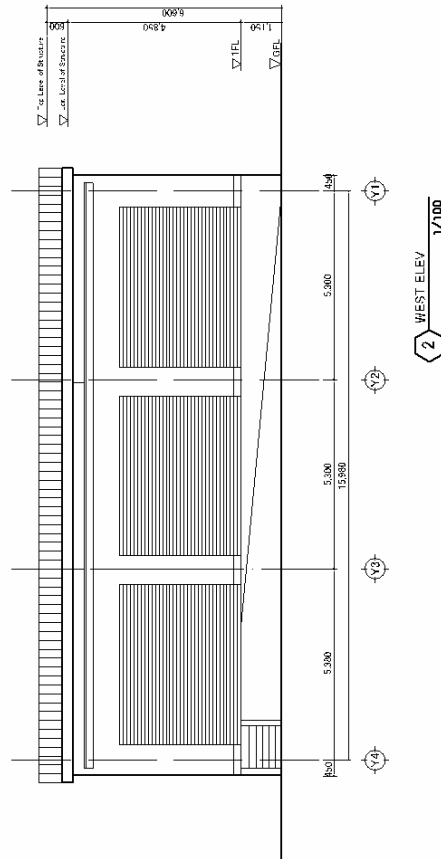
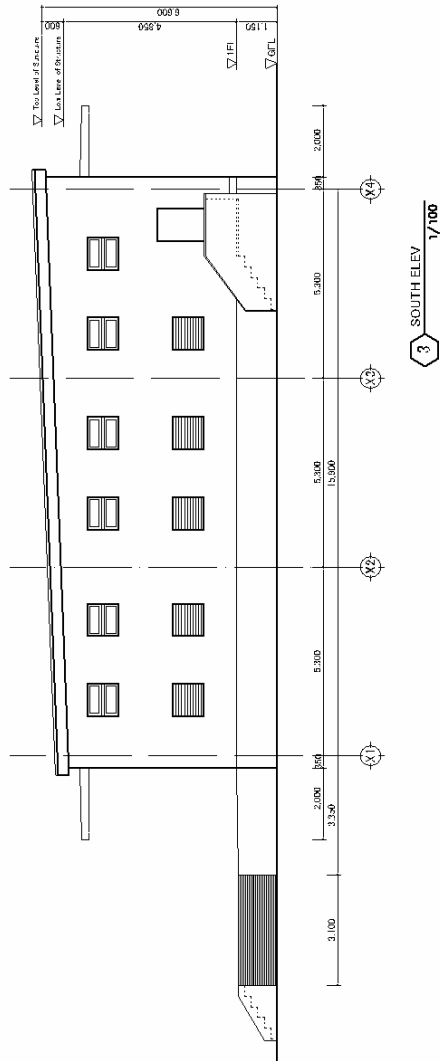
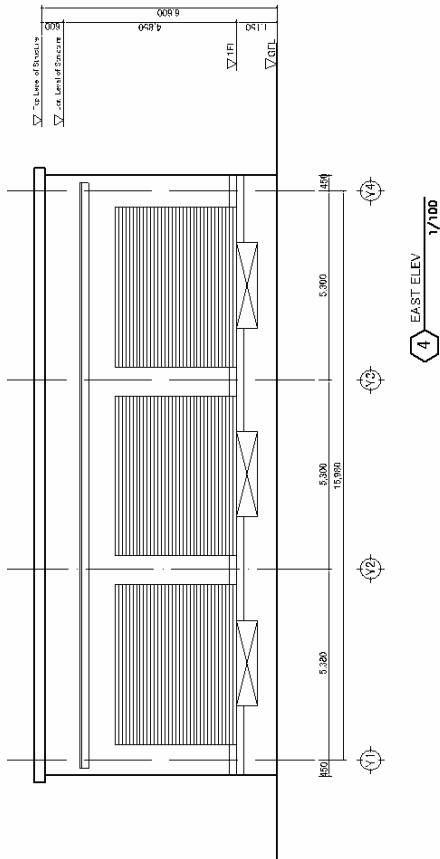
NOTES:

UNLESS OTHERWISE INDICATED

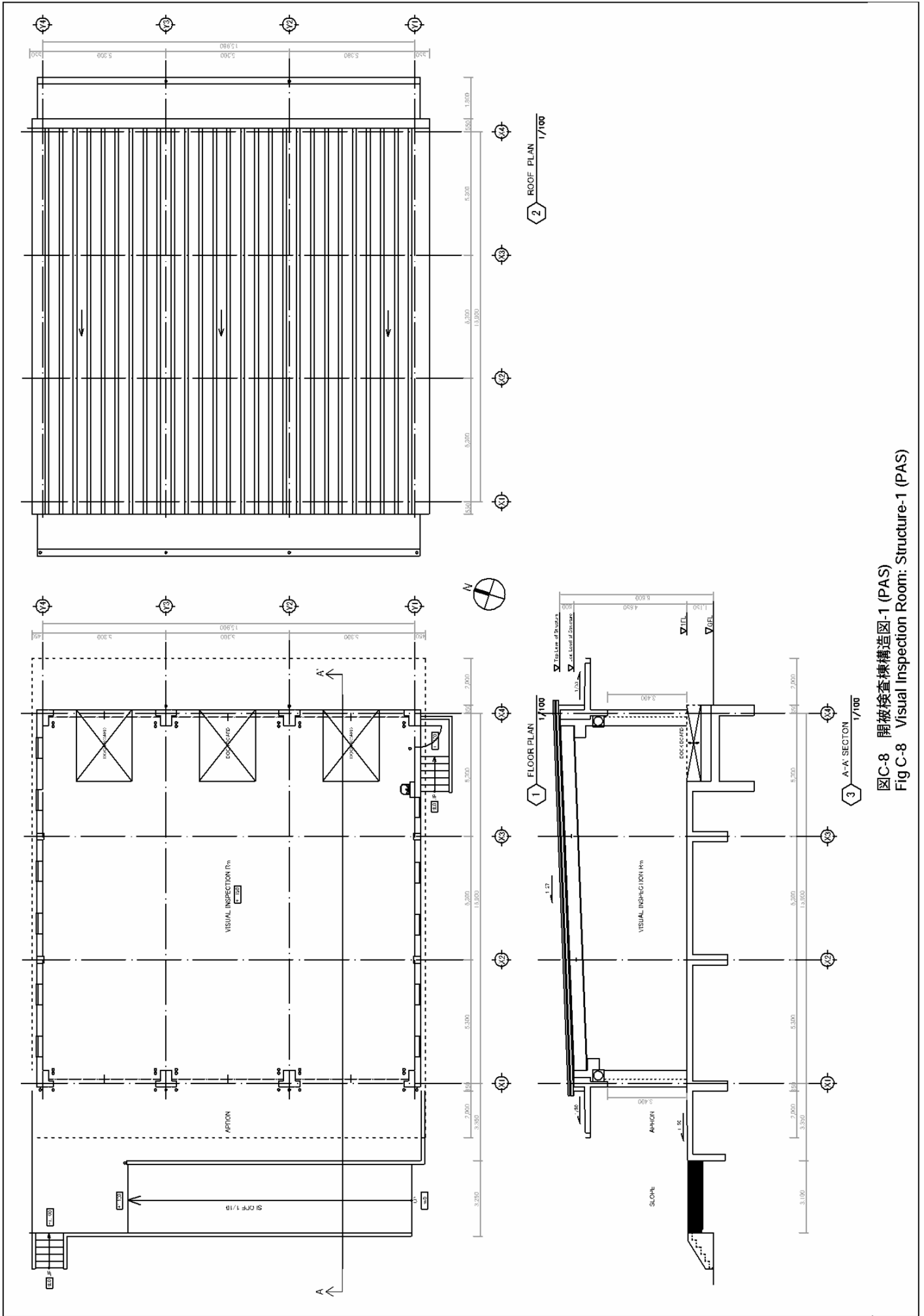
1. PLAN C-100/50/20/2.4-500

ZHHL BRACING 1-012

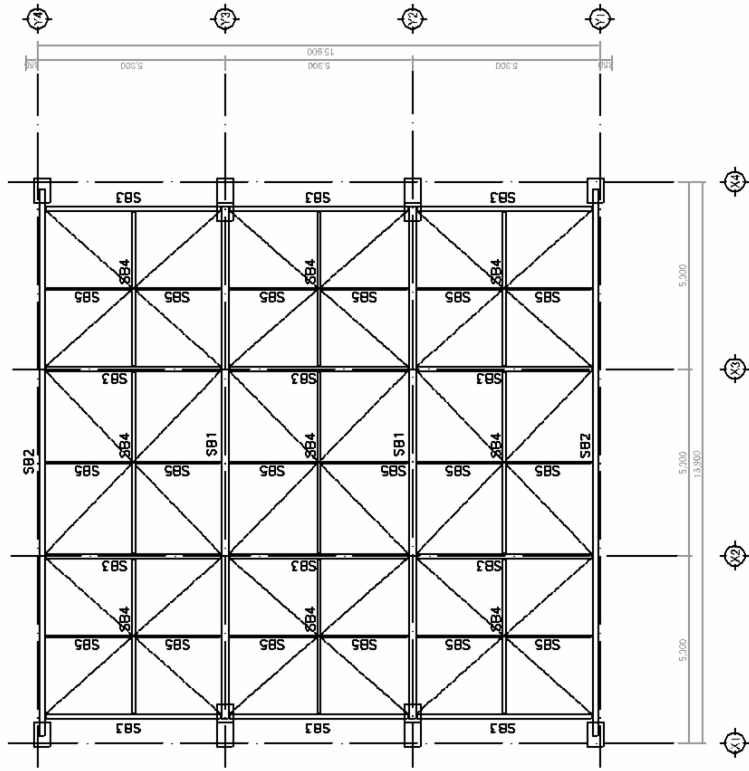
图C-6 保安管理楼结构图-2 (PAS)
Fig C-6 Security Station: Structure-2 (PAS)



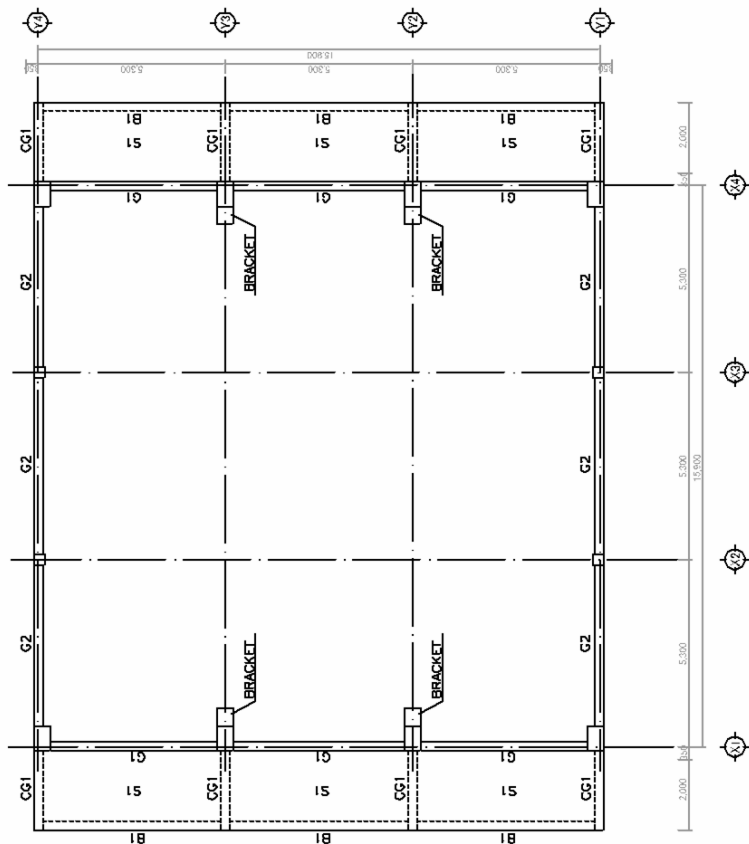
図C-7 開被検査棟側面図-1
Fig C-7 Visual Inspection Room: Elevation (PAS)



図C-8 開被検査構造図-1 (PAS)
Fig C-8 Visual Inspection Room: Structure-1 (PAS)

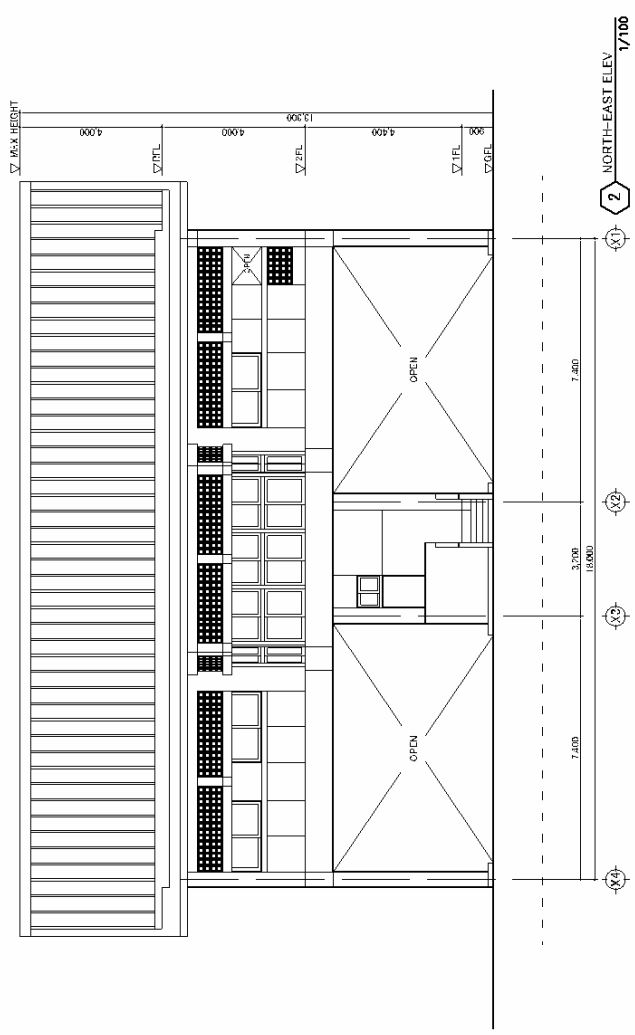
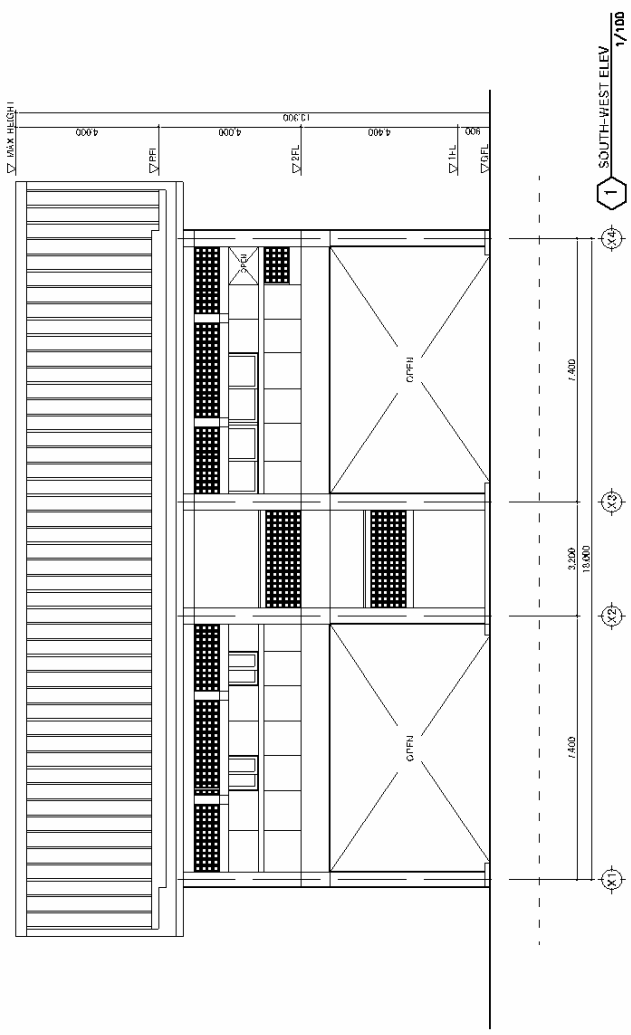
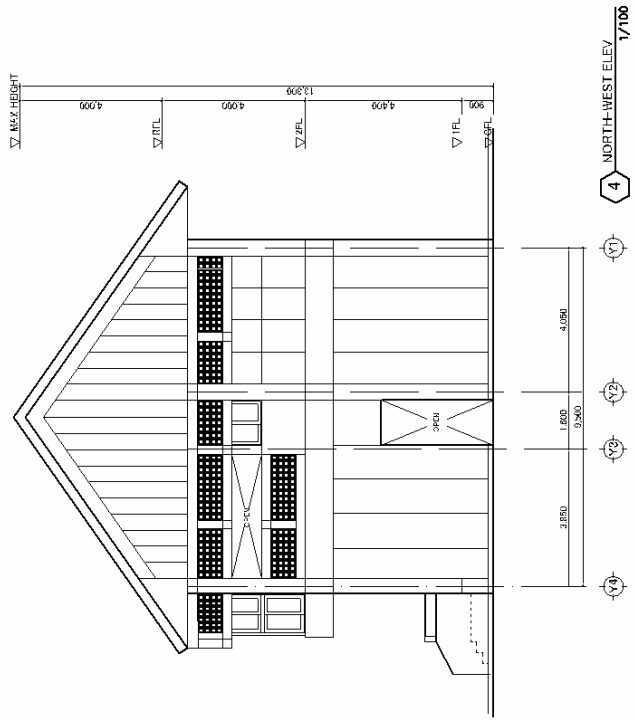
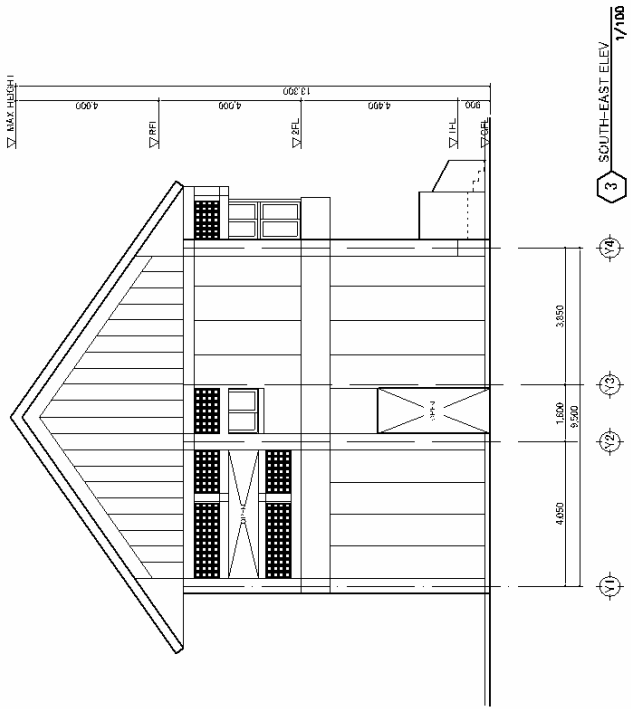


STEEL ROOF PLAN 1/100
 NOTES:
 UNLESS OTHERWISE INDICATED
 1.PURVA C-100x50x2x3600
 2.HEL BRACING 1-41.8

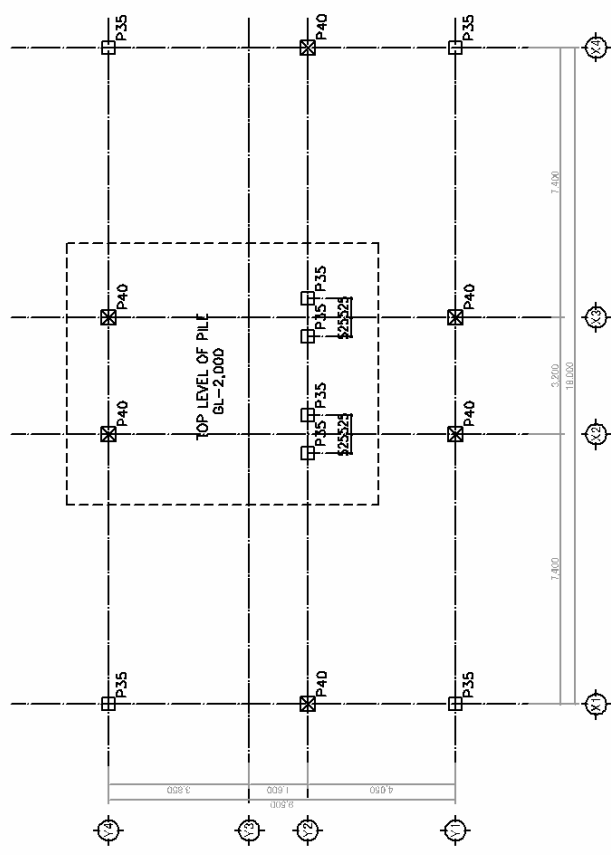


ROOF FLOOR FRAMING PLAN 1/100
 NOTES:
 UNLESS OTHERWISE INDICATED
 1.SLAB S1

圖C-9 開放檢查棟構造圖
 Fig C-9 Visual Inspection Room: Structure



图C-10 保安管理棟側面図 (PAP)
Fig C-10 Security Station: Elevation (PAP)



PILE ARRANGEMENT 1/100

NOTES:

UNLESS OTHERWISE INDICATED

1. CLASSIFICATION OF PILE FOUNDATION: DRIVEN PC SQUARE PILE

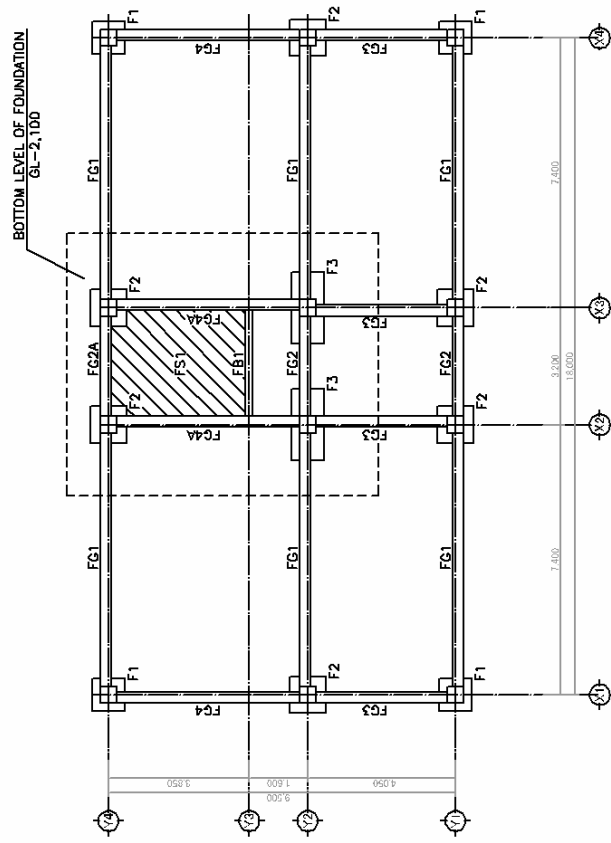
2. TOP LEVEL OF PILE: GL-1,100

3. BOTTOM LEVEL OF PILE: GL-19,000 (= 18,000 (S.D.P.) + 900)

4. ALLOWABLE BEARING CAPACITY OF PILE:

P-35 □ □ = 95M/50 T=250MM/PILE QUANTITY: 68

P-40 □ □ = 100M/40 T=270MM/PILE QUANTITY: 66



FOUNDATION PLAN 1/100

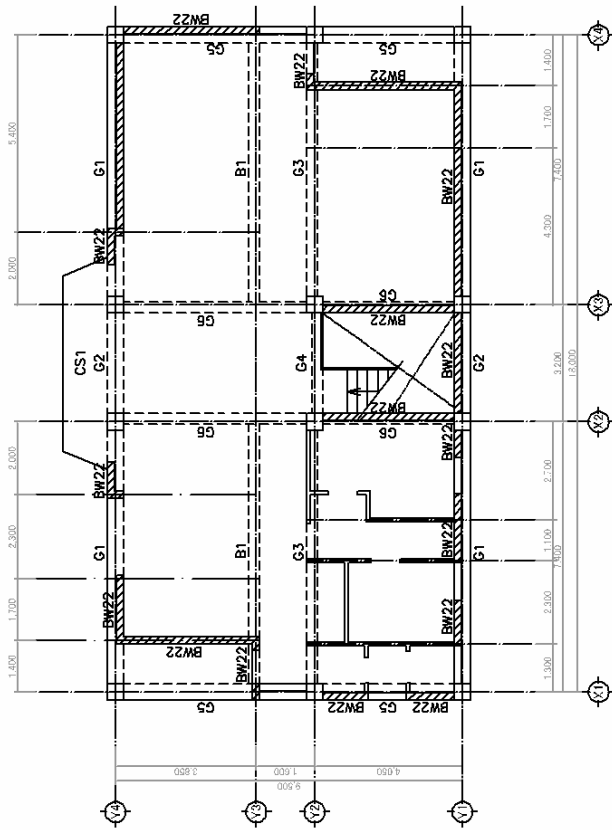
NOTES:

UNLESS OTHERWISE INDICATED

1. TOP LEVEL OF FOUNDATION: GL-1,000

2. BOTTOM LEVEL OF FOUNDATION: GL-1,200

图C-13 保安管理棟構造図1 (PAS)
Fig C-13 Security Station: Structure-1 (PAS)



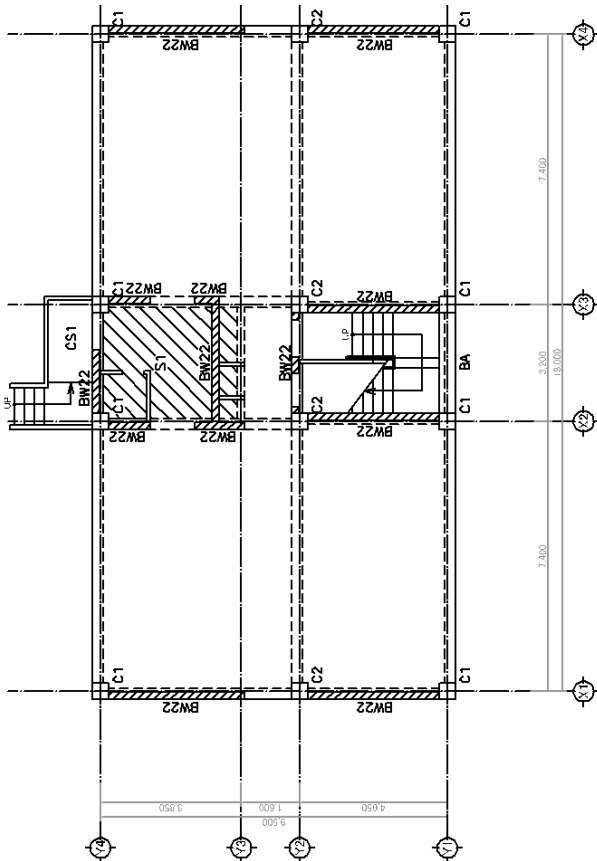
2nd FLOOR FRAMING PLAN 1/100

NOTES:

UNLESS OTHERWISE INDICATED

1. SLAB S1

2. WALL BR11



1st FLOOR FRAMING PLAN 1/100

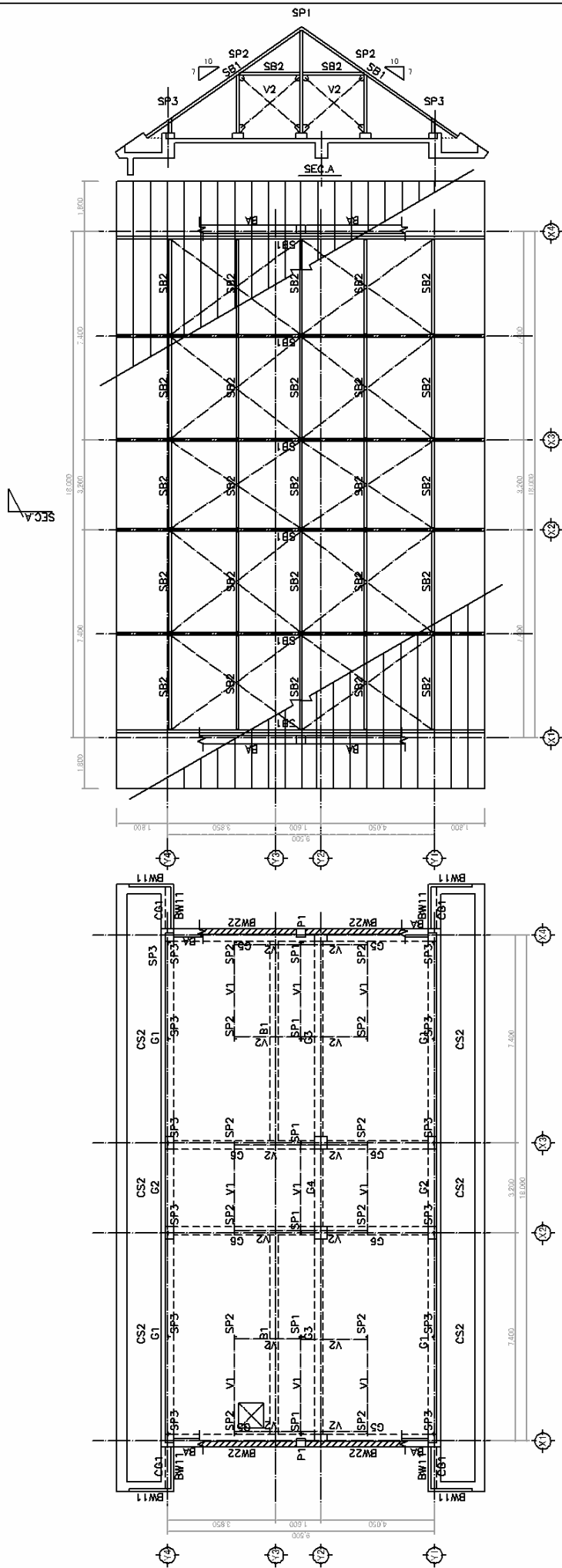
NOTES:

UNLESS OTHERWISE INDICATED

1. SLAB DIET FLOOR SLAB

2. WALL BR11

图C-14 保安管理樓構造圖-2 (PAS)
Fig C-14 Security Station: Structure 2 (PAS)



STEEL ROOF PLAN 1/100

NOTES:
 UNLESS OTHERWISE INDICATED
 1.PURLIN C-100x50x20x2-7600
 2.HRI BRACING 1-Ø12

ROOF FLOOR FRAMING PLAN 1/100

NOTES:
 UNLESS OTHERWISE INDICATED
 1.SLAB S1



图C-15 保安管理樓構造圖-3 (PAS)
 Fig C-15 Security Station: Structure-3 (PAS)

D. Fittings and Utilities of Architectural Works

(Sihanoukville Port)

Fig.D-1 Security Station: Socket Layout (PAS)

Fig.D-2 Security Station: Lighting System (PAS)

Fig.D-3 Security Station: Telephone Outlet & Fire Alarm System (PAS)

Fig.D-4 Security Station: Plumbing System (PAS)

(Phnom Penh Port)

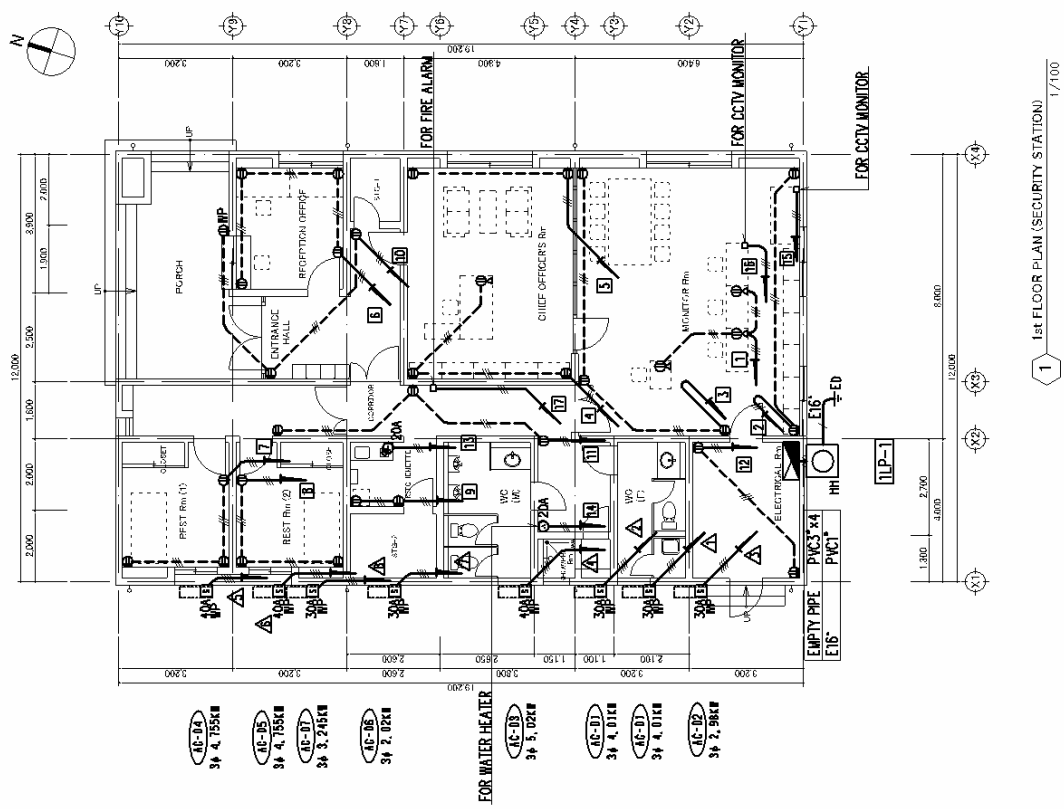
Fig.D-5 Security Station: Socket Layout (PAP)

Fig.D-6 Security Station: Lighting System (PAP)

Fig.D-7 Security Station: Telephone Outlet & Fire Alarm System (PAP)

Fig.D-8 Security Station: Plumbing System (PAP)

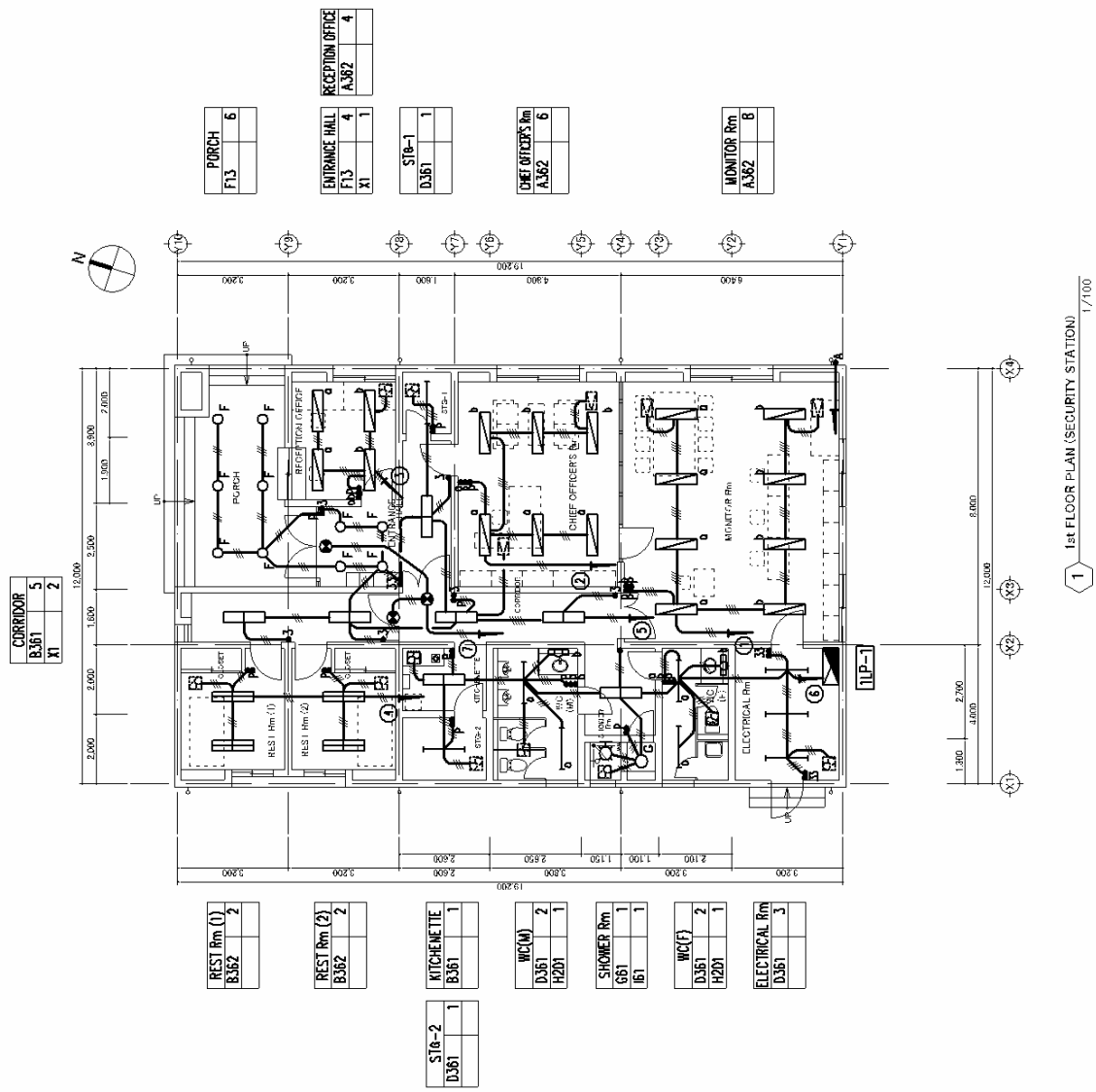
- LEGEND :**
- POWER WIRING FOR UTILITY AND SOCKET OUTLET SYSTEM**
- | SYMBOL | DESCRIPTION |
|--------|---|
| | : DISTRIBUTION BOARD |
| | : SOCKET OUTLET 150W 2P+E 10A 20ANGS (WALL MOUNTED TYPE) |
| | : SOCKET OUTLET 250W 2P+E 10A 20ANGS (WALL MOUNTED WATER PROOF TYPE) |
| | : SOCKET OUTLET 250W 2P+E 10A 20ANGS (POP UP TYPE) |
| | : HIGH TENSION SOCKET OUTLET 250W 2P+E 10A 20ANGS LOCKING TYPE (WALL MOUNTED) |
| | : SOCKET OUTLET 10ANGS 2P+E 250W 15A LOCKING TYPE (WALL MOUNTED) |
| | : SOCKET OUTLET 10ANGS 2P+E 250W 20A LOCKING TYPE (WALL MOUNTED) |
| | : SOCKET OUTLET 10ANGS 2P+E 250W 20A LOCKING TYPE (WATER PROOF) |
| | : SAFETY SWITCH (WEATHER PROOF TYPE) 3P+N |
| | : PULL BOX |
| | : OUTLET BOX |
| | : OUTLET BOX (WEATHER PROOF TYPE) |
| | : HANG HOLE 900x900x1 DOOR C/W COVER 800* |
| | : EARTH ELECTRODE LESS THAN 100 OHM D CLASS |
| | : 2x2.5+2.5(E)9sq (PVC3/A*) |
| | : 0V6sq-4C (PVC1 3/F) |



図D-1 保安管理棟ソケット配置図
Fig D-1 Security Station: Socket Layout (PAS)

LEGEND :
LIGHTING SYSTEM

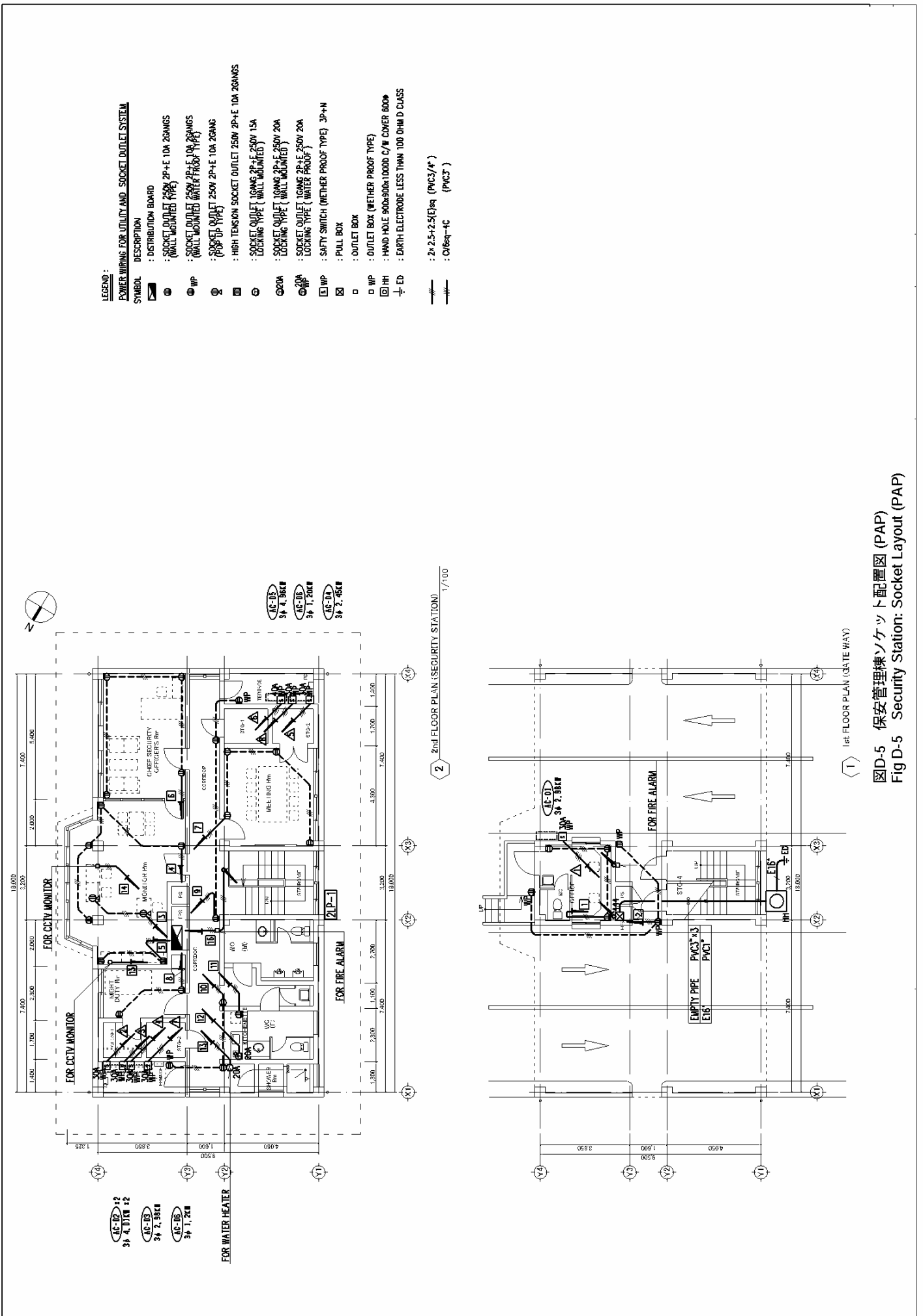
SYMBOL	DESCRIPTION
	: DISTRIBUTION BOARD
	: FL300W*1 V-SHAPE TYPE
	: FL300W*2 REFLECTOR TYPE
	: FL300W*2 RECESS MOUNTED TYPE W/ALL DOWNER
	: FL300W*2 RECESS MOUNTED OPEN TYPE
	: FL300W*1 RECESS MOUNTED OPEN TYPE
	: FL300W*2 WATER PROOF TYPE
	: FL200W*1 MIRROR LIGHT
	: PLC150W*1 DOWN LIGHT
	: IL600W*1 DOWN LIGHT
	: IL600W*1 BRACKET LIGHT
	: FL10W *1 EXT. LIGHT C/W BATT. BACK UP 2 HR.
	: VENTILATION FAN (CEILING TYPE) (BY MECH. WORK)
	: VENTILATION FAN (AXIAL TYPE) (BY MECH. WORK)
	: SINGLE POLE SWITCH AC 300V 1P 15A
	: 3-WAY SWITCH AC 300V 15A
	: 4-WAY SWITCH AC 300V 15A
	: SINGLE POLE SWITCH W/ILLUMINATED LAMP OR GLOW LAMP 1P 4W AC 300V
	: PHOTO SWITCH AC 220V 3A WATER PROOF TYPE
	: 2x2.5sq (PMS/4°)
	: 2x2.5x2.5(E)sq (PMS/4°)
	: 3x2.5x2.5(E)sq (PMS/4°)
	: 4x2.5x2.5(E)sq (PMS/4°)
	: 5x2.5x2.5(E)sq (PMS/4°)



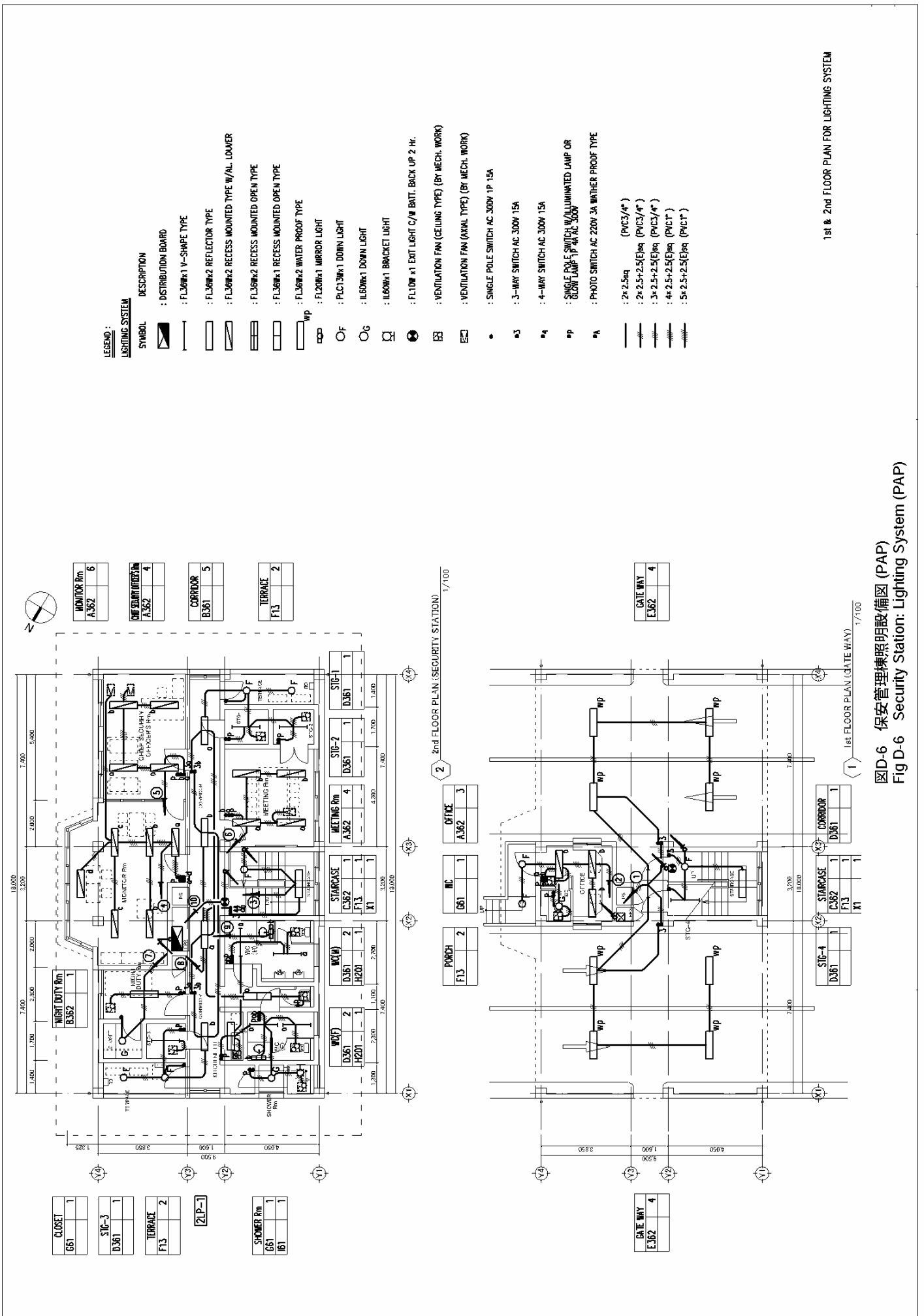
1st FLOOR PLAN (SECURITY STATION) 1/100

1st FLOOR PLAN FOR LIGHTING SYSTEM

図D-2 保安管理棟照明設備図 (PAS)
Fig D-2 Security Station: Lighting System (PAS)

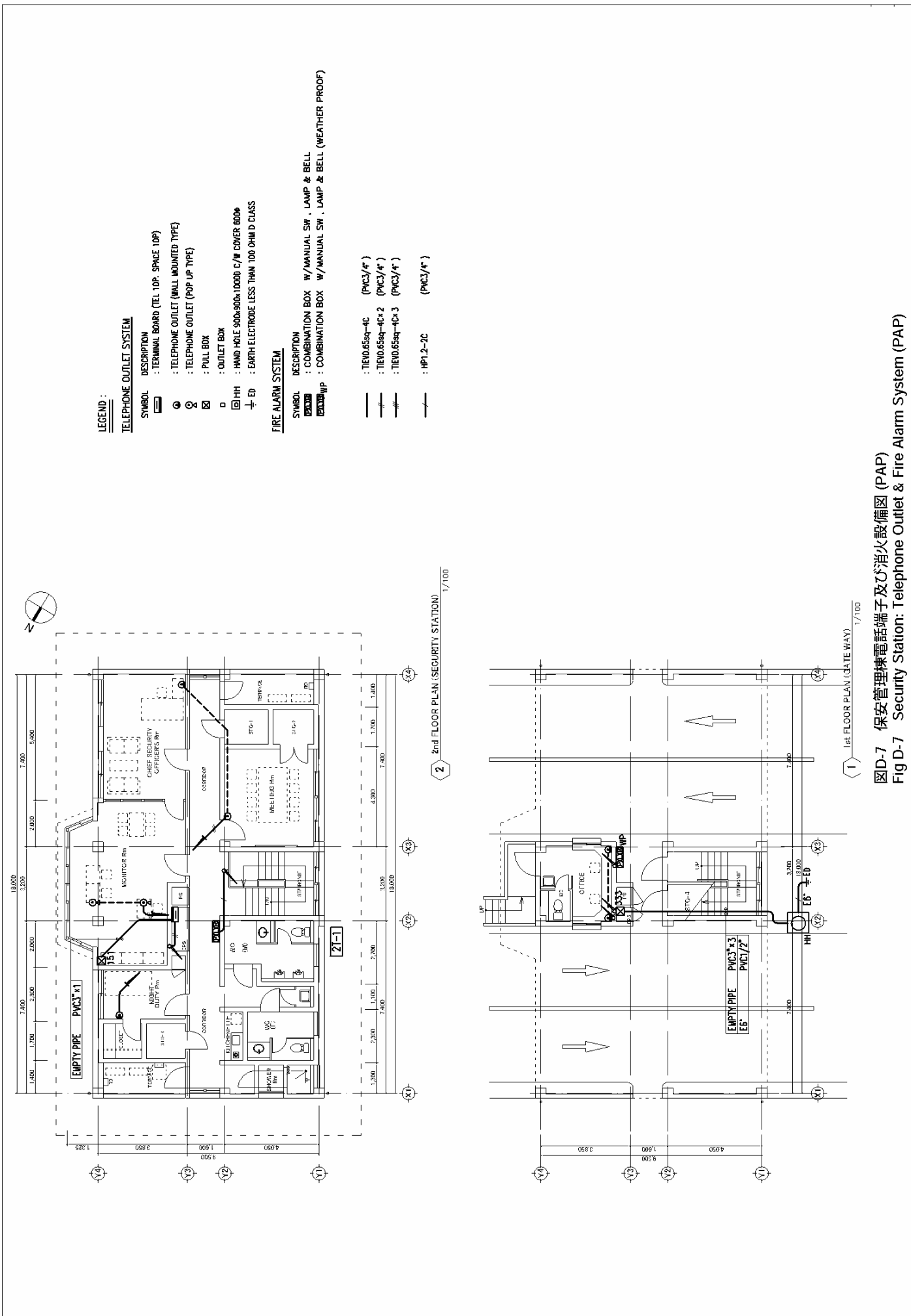


図D-5 保安管理棟ソケット配置図 (PAP)
Fig D-5 Security Station: Socket Layout (PAP)

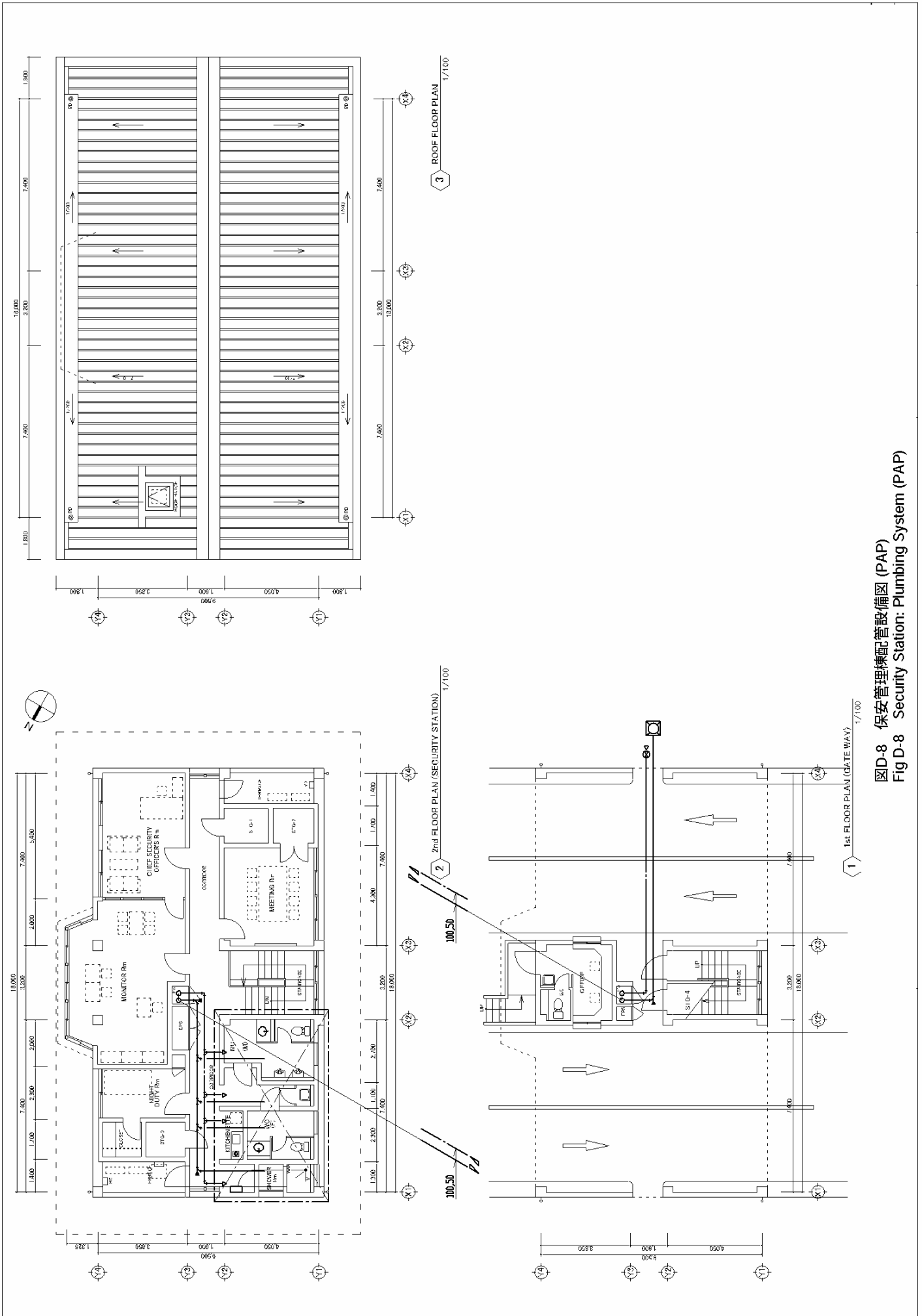


1st & 2nd FLOOR PLAN FOR LIGHTING SYSTEM

図D-6 保安管理棟照明設備図 (PAP)
Fig D-6 Security Station: Lighting System (PAP)



図D-7 保安管理棟電話端子及び消火設備図 (PAP)
Fig D-7 Security Station: Telephone Outlet & Fire Alarm System (PAP)



图D-8 保安管理棟配管設備圖 (PAP)
Fig D-8 Security Station: Plumbing System (PAP)

E. Supplemental Civil Works

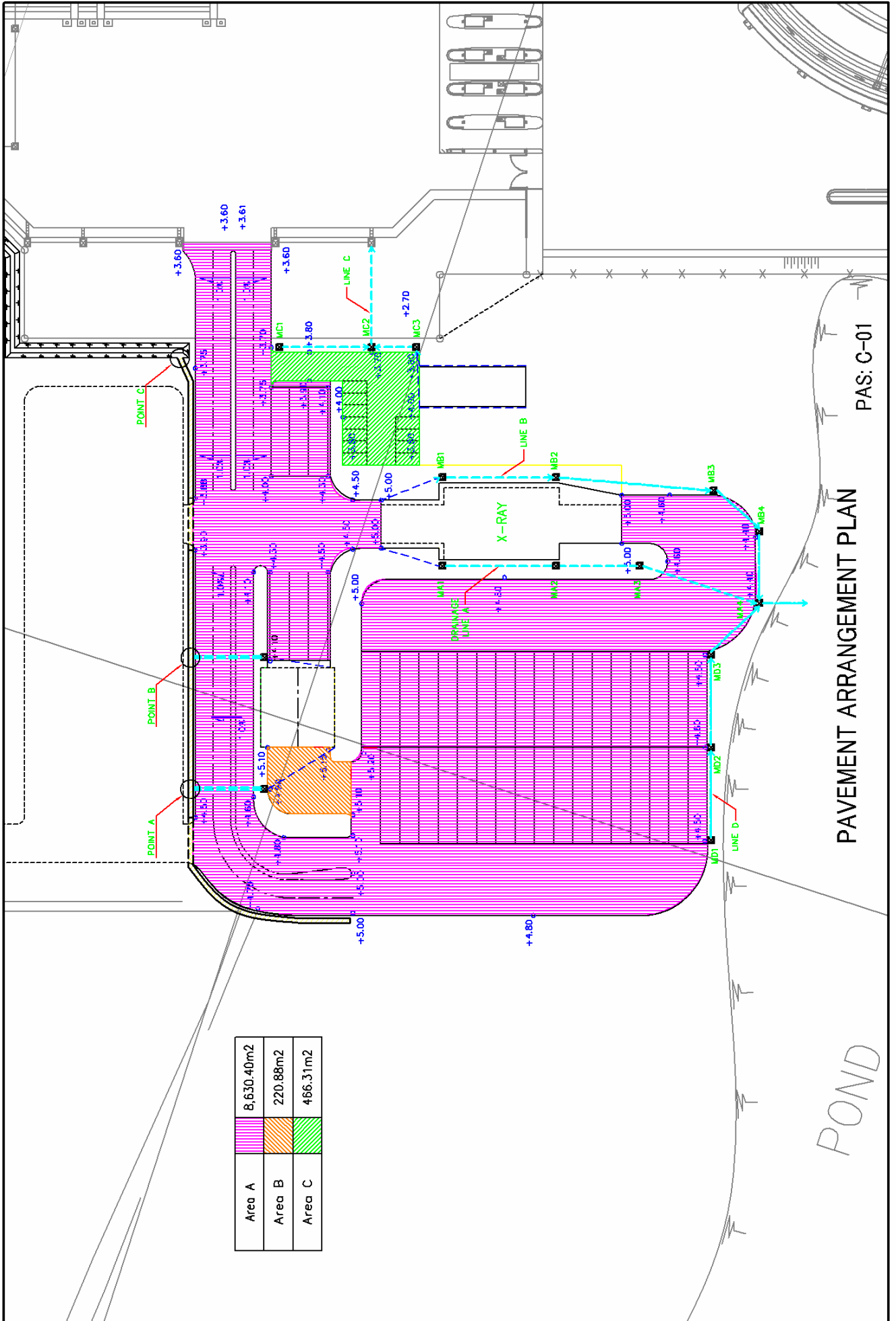
(Sihanoukville Port)

Fig.E-1 Pavement Arrangement Plan

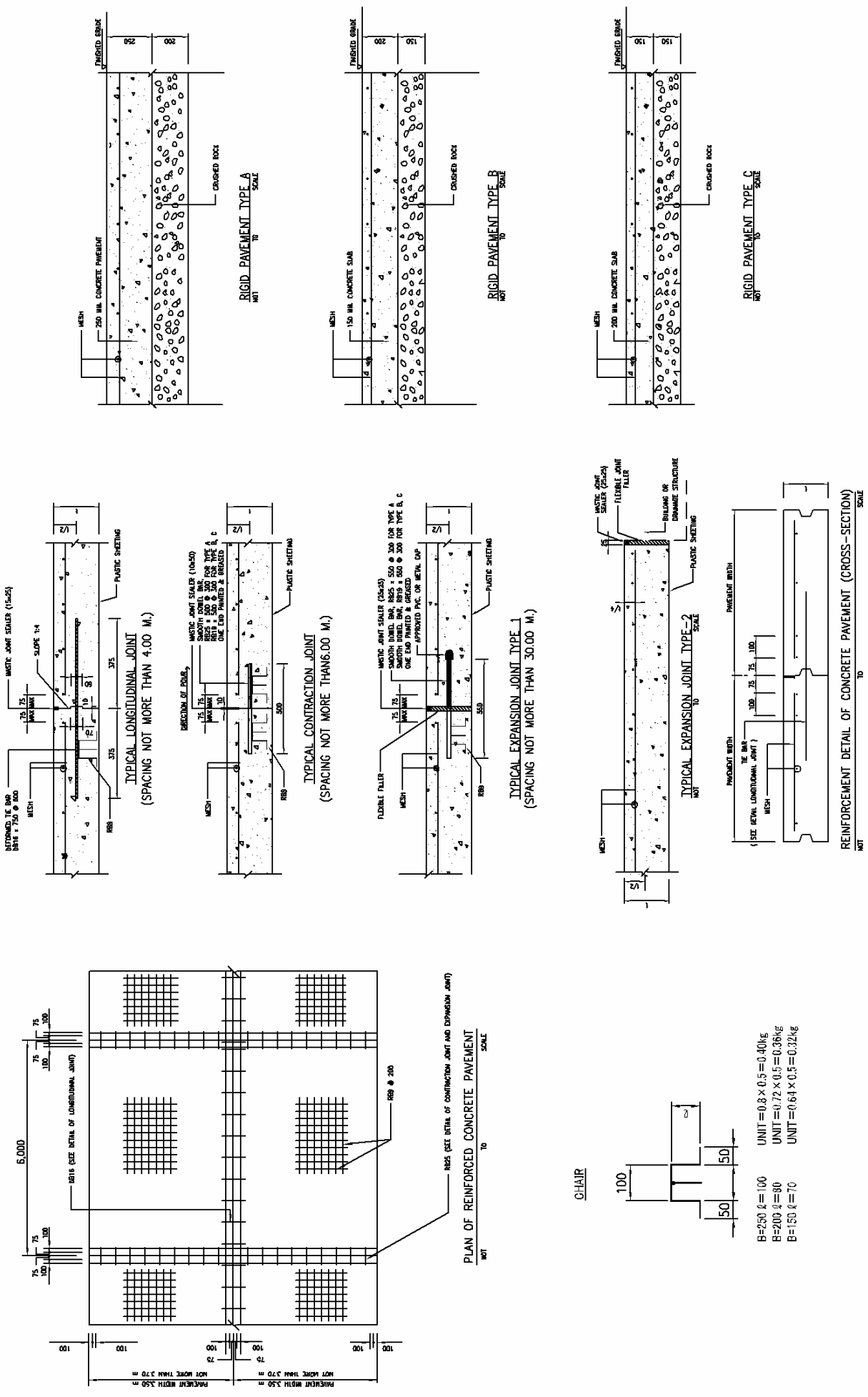
Fig.E-2 Standard Section of Pavement and Joint

Fig.E-3 Storm Drainage System

Fig.E-4 Manholes



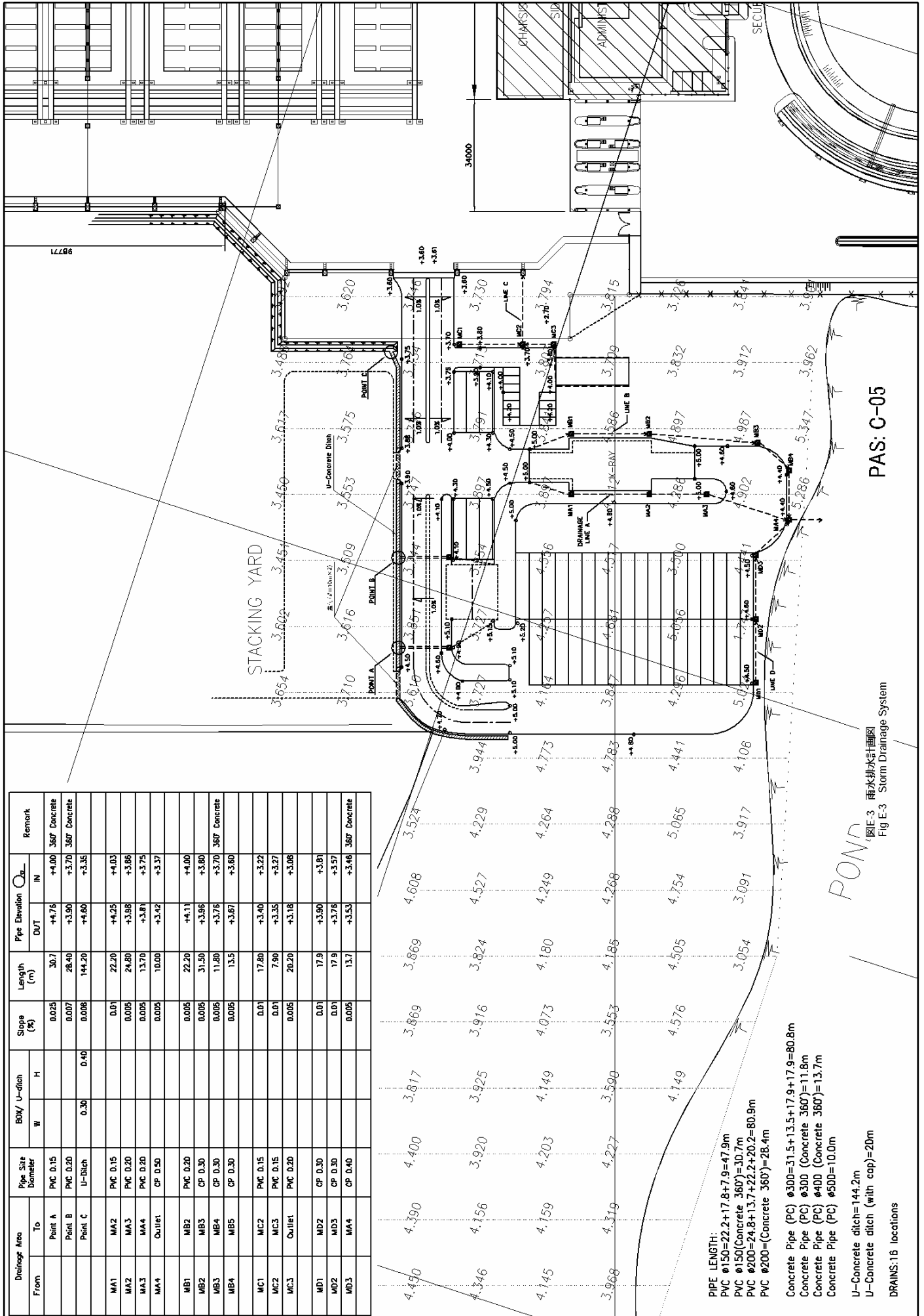
图E-1 鋪裝計画図
Fig E-1 Pavement Arrangement Plan



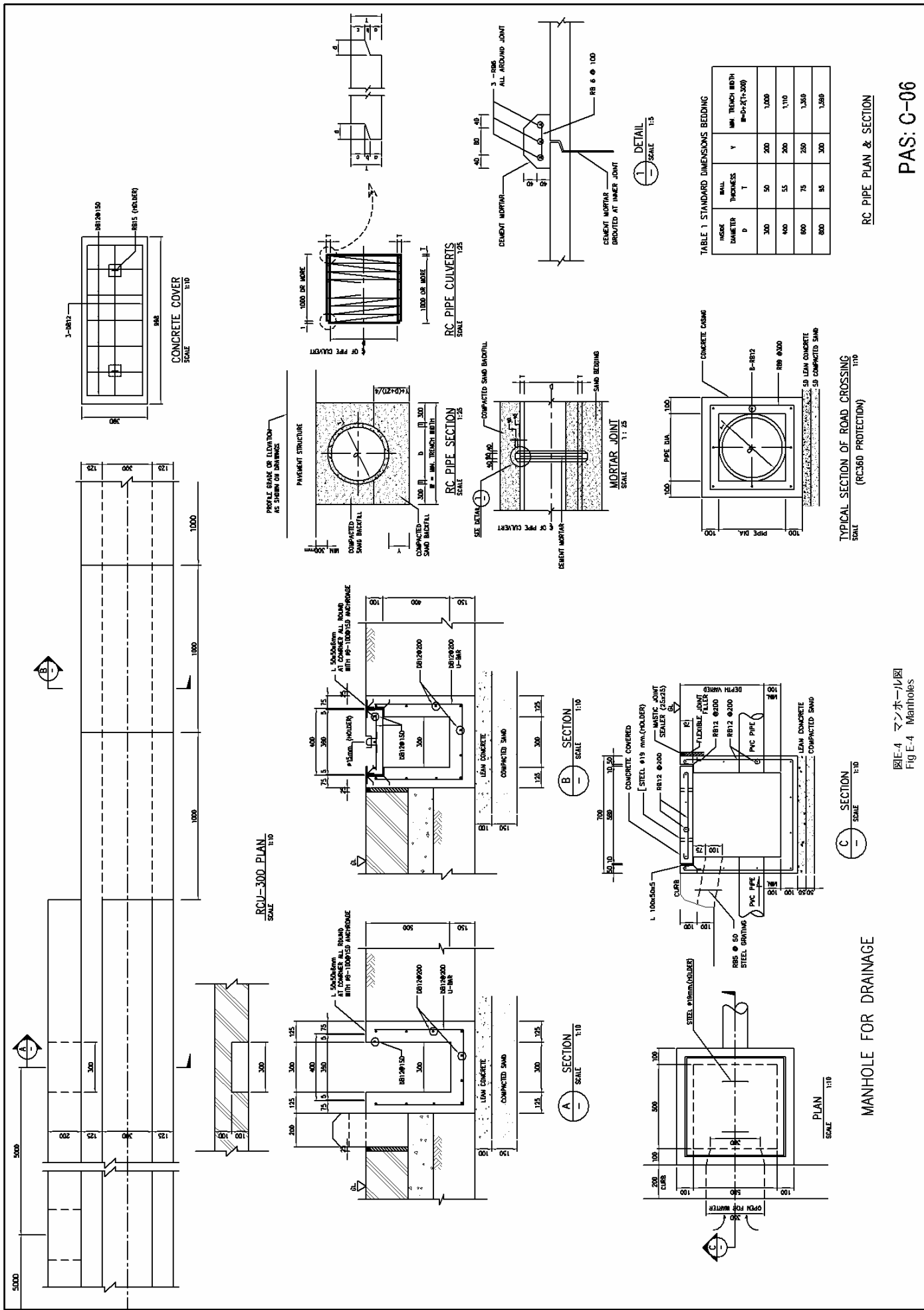
図E-2 舗装断面及びジョイント図
Fig E-2 Standard Section of Pavement and Joint

PAS: C-02

Drainage Item	From	To	Pipe Size Diameter	BOX/ U-ditch		Slope (%)	Length (m)	Pipe Elevation		Remark
				W	H			DUT	IN	
		Point A	PVC 0.15			0.025	30.7	+4.76	+4.06	36Ø Concrete
		Point B	PVC 0.20			0.007	28.40	+3.90	+3.70	36Ø Concrete
		Point C	U-ditch	0.30	0.40	0.008	144.20	+4.60	+3.35	
MA1		MA2	PVC 0.15			0.01	22.20	+4.25	+4.03	
MA2		MA3	PVC 0.20			0.005	24.80	+3.98	+3.86	
MA3		MA4	PVC 0.20			0.005	13.70	+3.81	+3.75	
MA4		Outlet	CP 0.30			0.005	10.00	+3.42	+3.37	
MB1		MB2	PVC 0.20			0.005	22.20	+4.11	+4.00	
MB2		MB3	CP 0.30			0.005	31.50	+3.96	+3.80	
MB3		MB4	CP 0.30			0.005	11.80	+3.76	+3.70	36Ø Concrete
MB4		MB5	CP 0.30			0.005	13.5	+3.67	+3.60	
MC1		MC2	PVC 0.15			0.01	17.80	+3.40	+3.22	
MC2		MC3	PVC 0.15			0.01	7.90	+3.35	+3.27	
MC3		Outlet	PVC 0.20			0.005	20.20	+3.18	+3.08	
MD1		MD2	CP 0.30			0.01	17.9	+3.90	+3.81	
MD2		MD3	CP 0.30			0.01	17.9	+3.78	+3.57	
MD3		MA4	CP 0.40			0.005	13.7	+3.53	+3.46	36Ø Concrete



PIPE LENGTH:
 PVC Ø150=22.2+17.8+7.9=47.9m
 PVC Ø150(Concrete 36Ø)=30.7m
 PVC Ø200=24.8+13.7+22.2+20.2=80.9m
 PVC Ø200(Concrete 36Ø)=28.4m
 Concrete Pipe (PC) Ø300=31.5+13.5+17.9+17.9=80.8m
 Concrete Pipe (PC) Ø300 (Concrete 36Ø)=11.8m
 Concrete Pipe (PC) Ø400 (Concrete 36Ø)=13.7m
 Concrete Pipe (PC) Ø500=10.0m
 U-Concrete ditch=144.2m
 U-Concrete ditch (with cap)=20m
 DRAINS: 16 locations



図E-4 マンホール図
Fig E.4 Manholes

PAS: C-06

2-2-4 Implementation Plan

2-2-4-1 Implementation Policy

The Study Team understands the local conditions in respect to project implementation to be as follows:

- Most of equipment required for the project is not available in Cambodia. Thus such materials should be arranged by contractor (or supplier) to purchase in Japan or eligible third countries.
- General materials for civil work and architectural works are mostly available in Cambodia.
- Capable local contractors are also available.

Basic conditions in selection of contractor (or supplier) and products for the components are given below.

- Considering multipurpose equipment.
- Easy and economical maintenance works
- Equipment should be supported by the contractor (or supplier) to take care of it during trouble and lack of spare parts.

2-2-4-2 Implementation Conditions

(1) Basic Idea

Effective use of security facilities depends on the workable organization structure and technical capability of it to use the equipment. In order to achieve this, harmonization between the equipment procurement and training of operators should be performed. As a result, the provided security equipment will work fully as specified with such training procedure.

(2) Trading Company as Prime Contractor or Supplier

As mentioned in Section 2-2-1(8), the most possible organization of contractor (or supplier) will be composite type that a trading company will lead sub-contractors consisting of general contractor (civil and architectural works) and equipment makers as required. If a separate tender between the general contractor (or supplier) and makers is adopted, coordination between them would be so complicated and it would increase the costs.

Thus trading company system will provide the client (or buyer) with the most economical condition under practical manner, so that this is the base of cost estimation of the project.

As seen in M/D dated June 12, B/A for whole the project will be carried out by MEF, and CED under MEF will issue A/P for X-ray container screening system with its supplemental works and PAS under MPWT will issue A/P for all remaining representing PAP.

(3) Local Materials

Except provision of the equipment, Cambodian local contractor can perform all supplemental work. Basic materials and construction machine and plant for the project are available. Also, wire lying underground work for the CCTV and VTMS can be implemented by local contractor.

This indicates that local contractors can perform all civil works and architectural works under supervision of the prime contractor. Material for Phnom Penh port will be carried by trucks after unloading at Sihanoukville port, due to the physical conditions of river transport through the Mekong.

As mentioned in Section 2-2-1(4), it is important to maintain the equipment and to repair the damaged equipment in operation. To achieve this, tender should submit a certificate indicating the existing maker's agency in the Cambodia.

2-2-4-3 Scope of Works

The contract package of project is studied considering the scale of project, characteristics of components and possibility of third country procurement. Although two package systems could be appropriate since two ministries are concerned with the project, single tender package system is recommended as mentioned in Section 2-2-1(8). Single tender package (single contract package) will have more advantage than plural contract packages in economy and ease in the site management. Table 2-4-14 indicates the contents in this single tender package.

Table 2-2-14 Single Tender Package System

Part	Major Equipment	Implementing Agency
1	X-ray screening system with supplemental works including parking area and visual inspection room	MEF: CED
2	All Equipment and supplemental works except the works allocated to Part-1	MPWT: PAS/PAP (representing by PAS)

For the smooth project implementation and operation for Part-2, the following policy should be considered.

- Agreement between PAS and PAP for smooth project implementation.
- PAS is representing PAS/PAP group

Agreement between two ports authorities should be carried out before the commencement of works and covering the following contents.

- Issuance of A/P
- Assistance to the contractor (or supplier) in handling, customs clearance, and storage of imported materials and equipment.
- Budget allocation for the undertakings and obligations to be followed by Cambodia Side
- Issuance of the completion certificate
- Issuance of the maintenance certificate

For the smooth maintenance works for Part-1, CED should request maintenance assistance by PAS if so required. Agreement between PAS and CED for sufficient maintenance works in supplemental works for X-ray container screening system will be required, if CED is owner of parking pavement and visual inspection room and does not have system and organization for the maintenance work for them in Sihanoukville port.

Obligations of Cambodian Side and Japanese Side in the interface area are shown in Section 2-3.

2-2-4-4 Consultant Supervision

Consultancy agreement will be executed between the representative of executing agencies and the Consultants who will be the same firm carrying out the basic design if it is recommended by GOJ. Consultant services will consist of the detailed design and construction (procurement) supervision. Detailed design will cover the preparation of tender documents and assisting in tender evaluation. Construction supervision will be provided for the entire period of construction. Consulting fee for these services will be a part of Japanese assistance thus will be paid in accordance with the Agreement.

Consultant team at the site will consist of a resident engineer and several engineering experts. Experts will take care of equipment installation works and the supplemental works which are covering pavement works and architectural works.

Basic scope of the detailed design services and construction supervision services are classified as follows.

(1) Detailed Design Services

Detailed design services should cover the following engineering works:

- 1) Finalization of project components (in Cambodia)
- 2) Review of the Technical Specifications of equipment and preparation of detailed design of facilities and the Tender Documents (in Japan)
- 3) Approval of the Tender Documents by the executing agencies (in Cambodia)
- 4) Tender announcement in a Japanese newspaper and delivering the Tender Documents to applicants (in Japan)
- 5) Tender opening and its evaluation (in Cambodia or Japan if so required)

(2) Construction Supervision Services

Construction supervision services should cover the following engineering works:

- 1) To witness the equipment inspection
- 2) To witness the equipment composition before delivery
- 3) To confirm the equipment quantity before loading to vessels
- 4) To carry out construction supervision and the final inspection of the works for delivery to the client (or buyer)

Technical training of operators for equipment use will be carried out in the following situations:

- 1) On the job training (OJT) during the design stage and construction stage by the Consultants.
- 2) Initial Operation Training (IOT) by the contractor (or supplier) after the delivery of equipment to the client (or buyer).

Table 2-2-15 indicates assumed duration of the IOT the required cost for which has been

considered in the project cost estimation.

Table2-2-15 Assumed Duration of Initial Operation Training

No.	Components	Duration* in day
1	X-ray container screening system (CED)	15
2	CCTV camera surveillance system (PAS)	6
3	ID pass card system (PAS)	3
4	CCTV camera surveillance system (PAP)	6
5	ID pass card system (PAP)	3
6	Vessel traffic management system (PAS)	15
7	Patrol boat (PAS)	30
8	Oil skimming system (PAS)	-

Note: Duration shows the consecutive days in Cambodia or the third country.

2-2-4-5 Procurement Plan

Construction and procurement schedule were prepared for each equipment and project components. Outline schedule of the X-ray container screening system, vessel traffic management system and CCTV camera surveillance system is provided hereunder. Cost estimation as shown in Section 2.5 was carried out based on these assumptions.

Assumed schedule for X-ray container screening system:

- Getting approval of design and drawings within 1.5 months after the contract
- Shipment to the site after factory testing within 6.5 months after the contract
- Setting the equipment at the site within 9.0 months after the contract
- Delivery to the implementing agency (CED) after issuing an international safety code certificate by SGS (Satiat General de Surveillance).

The contractor (or supplier) will request SGS for test and submit such certificate to the client (or buyer) through the Consultants. Equipment can be delivered to the client (or buyer) only after this test and other procedures as required in the contract.

Assumed schedule for Vessel Traffic Management System (VTMS):

- Materials for the radar tower and wiring will be procured in Japan.
- Installation of foundation and radar tower structure will start from before four months of completion.
- Underground cable laying work will start from before four months of completion and deliver the system to the client (or buyer) after undertaking of installation of equipment, adjustment of devices and re-delivery test.
- Contractor (or supplier) will provide initial operation training to the client (or buyer) as soon as those deliveries.

Assumed schedule for CCTV camera Surveillance System

- This system for Sihanuokville port will be implemented parallel to those of Phnom Penh port

- Materials for the system will be procured in Japan.
- Installation of cameras with underground cable laying work will start at the same time of VTMS's cable laying work and will be completed within 1.5 months.
- The system will be delivered to the client (or buyer) after required adjustment to devices and pre-delivery test.
- Contractor (or supplier) will provide initial operation training to the client (or buyer) as soon as those deliveries.
- The construction of Security Stations in which CCTV monitor system will be installed will be commenced after basic condition setting up with JICA and completed for seven months.

2-2-4-6 Quality Control Plan

The contractor (or supplier) should undertake necessary actions to maintain quality of works as specified in the contract. Such performance will be verified by the Consultant at the construction stage as follows:

1) To witness the equipment inspection

The Consultant will review the shop design data prepared by the contractor (or supplier) in accordance with the contract documents including technical specifications. Equipment data submitted by the contractor (or supplier) for review will be checked by the published documents such as product catalog.

Addition to this, the Consultant will witness contractor's (or supplier's) test for major part of X-ray container screening system.

2) To witness the equipment before factory delivery

This will be carried out only for X-ray container screening system. After the factory part tests if accepted by the Consultant, they should be temporarily assembled into one unit at the factory by the contractor (or supplier). The Consultant will witness the performance test as a complete set to be conducted by the contractor (or supplier). Quantity of works will be also confirmed.

3) To confirm the equipment quality before loading to vessels

The Consultant will appoint the inspection company for the pre-loading check of equipment and will confirm the inspection method and data to be collected. That company will be carried out the pre-loading inspection of the equipment under witnessing by the Consultant.

4) To carry out Construction Supervision and the final inspection for delivery to the client (or buyer).

The Consultant will appoint a resident engineer who will stay at the site for the supervising the works. After the discussion with the contractor (or supplier), he will supervise the works to be conducted by the contractor (or supplier) covering inspect equipment installation,

inspection works, delivery of works to the client (or buyer) and providing the Initial Operation Training.

2-2-4-7 Implementation Schedule

It is estimated that the total required period to completion is 16.5 months including the preparation stage for the detailed design and the tender processing. The Study Team estimated the basic schedule to be as follows:

- Announcement of tender within 5 months after commencement of the detailed design and preparation of tender documents
- Selection the contractor (or supplier) within 6 months after commencement of the detailed design and preparation of tender documents
- Completion of project by 11.0 months after the construction contract or 16.5 months after commencement of the detailed design and preparation of tender documents by the Consultant.

Within 11 months of construction (procurement) period, all the works covering equipment procurement and installation together with the construction of civil works and architectural works will be completed. This period will cover also the initial operation training. Table2-2-16 indicates the proposed schedule for procurement of equipment, civil works and architectural works. Schedule for equipment procurement is broken down into several stages namely, approval of factory design, fabrication of equipment, inspection for delivery and the initial operation training to be provided to the client or buyer (executing agencies).

2-3 Obligations of Recipient Country

2-3-1 Obligations of Recipient Country

Recipient Country is requested to carry out obligation toward efficient and smooth project implementation. Such obligations are described hereunder covering formality, implementation of “Port Facility Security Plan”, assisting the contractor (or supplier), and contents of obligations.

1) Formality

Recipient country shall promptly undertake following items based on the specified regulations enforced.

- Tax exemption
- Provision of undertakings
- Banking Arrangement by the Ministry of Economy and Finance
- Issuance of Authorization to pay by PAS and CED

2) Early endorsement of the Port Security Plan

3) Construction aspects

Undertakings by Cambodian Side are shown in Table2-3-1. Each implementation agency shall submit a document showing that the agreed undertakings will be prepared and will be completed by the end of the detailed design. Other than this, Cambodian Side shall proceed the preparation works as follows:

- Issuance of permission to commence the works
- Support to contractor (or supplier) for ensuring safety work environment
- Provision of space for material storage and site office during entire construction period
- Obtaining permission of architect works from the Municipality.

4) Undertakings by Recipient Country

Among these, one of important aspect is allocation of utility works along the interface areas. between Cambodian Side and Japanese Side. The following indicates the agreed boundary of two parties in utility covering the power supply, water supply and others.

Obligations of Recipient Country

- To connect utilities to the terminal points. Utility covers water supply, power supply, telecommunication and others.
- To repair the damaged boundary fence along the specified restricted areas.
- To repair the damaged yard lighting
- To arrange the site of VTMS tower ready for the works
- To prepare a temporary gate during the construction of new security station at Phnom Penh Port.

Obligations of Japanese Side

- To connect all utilities to the security station, visual inspection room and VTMS after the specified terminal points in the building of new container terminal by JBIC project at Sihanoukville port.
- To connect utilities to the security station after the specified terminal points at Phnom Penh port.
- To provide a parking space and entryway of security station at Sihanoukville port.
- To provide an access road, parking space and plumbing system for X-ray container screening at Sihanoukville port.

Table 2-3-1 indicates obligations of Cambodian Side as shown in Annex 2 of the M/D dated in June 12, 2006.

And some specified terminal point's locations of utilities is shown in attached document of the M/D dated in February 16, 2006.

Table2-3-1 Obligations of Cambodian Side shown in Annex 2 of M/D dated in June,12, 2006

No.	Port and Components	Obligations of Combodian Side	Executing Agency
	Sihanoukville Port		
1	X-ray container screening system		
1.1		Borrowing area for truck parking	CED
1.2		Utility connection to the terminal points	CED
2	CCTV camera surveillance system		
2.1		Keeping area for underground wiring	PAS
2.2		Repair of damaged fence	PAS
2.3		Repair of damaged yard lighting	PAS
3	Security Station		
3.1		Borrowing area for car parking	PAS
4	Vessel Traffic Management System		
4.1		To arrange a site for VTMS tower	PAS
4.2		Keeping area for underground wiring	PAS
4.3		Keeping a room for operation in the new container terminal administration building	PAS
5	Patrol Boat		
5.1		Keeping berthing space	PAS
6	Oil skimming system		
6.1		Keepinh closed storage	PAS
6.2		Proving supporting tool on the existing tug boat	PAS
7	Temporary construction site		
7.1		Keeping space in 1.0 Ha	PAS
8	For components except X-ray container screening system		
8.1		Utility connection to the terminal points	PAS
	Phnom Penh Port		
1	CCTV camera surveillance system		
1.1		Keeping area for underground wiring	PAP
1.2		Repair of damaged fence and damaged yard lighting	PAP
2	ID pass card system		
2.1		Keeping area for underground wiring	PAP
3	Security Station		
3.1		Removal of the existing gate and provide a temporary gate	PAP
4	Temporary construction site		
4.1		Keepong space in port area	PAP
5	For all component		
5.1		Utility connection to the terminal points	PAP

5) Estimated Cost for Undertakings by Recipient Country

Part of project should be implemented by Cambodian side. However, its scope is rather limited since the site is located within the port areas where the construction site and basic utility are available. Thus the works to be carried out by Cambodian Side is minor.

Study Team estimated a possible amount to be borne by the recipient country. Cost amounting to about 42,000 US\$ covers the obligated works to Cambodian Side which could be performed during the implementation period and before. Required approximate cost for PAS and PAP is estimated of 19,000 US\$ and 23,000 US\$ respectively.

Table 2-3-2 indicates details of required cost for each obligation item.

Table 2-3-2 Assumed Cost of Obligations to be borne by Recipient Country unit :US \$

		Site and Works	Quantity of Works	Approximate Cost
A		Sihanoukville Port		
	A.1	Securing site by fence in the restricted area	LS(25@200)	5,000
	A.2	Repair works of existing yard lighting	LS(10@300)	3,000
	A.3	Securing the site for VTMS tower or similar	LS	2,650
	A.4	Repair works for utility connection to project components	LS(2@3@2000)	8,000
			total	18,650
B		Phnom Penh Port		
	B.1	Securing site by fence in the restricted area	LS(60m@200)	12,000
	B.2	Removal of existing gate and preparation of temporary gate	LS(1@5000)	5,000
	B.3	Repair works for utility connection to project components	LS(3@2000)	6,000
			total	23,000
			Grand Total	41,650

Rate 115 . 9 Yen/US\$

Note; Quantity of works may be changed by the site conditions.

2-3-2 Overburden to Executing Agencies

Required cost of obligation by PAS and PAP showing in the previous section is sharing only 0.1% and 0.6% of annual revenues recorded in 2005. It is believed that these burdens could be borne by PAS and PAP without any serious trouble. Technical department of PAS is currently carrying out the required maintenance tasks and works relating to port facilities and cargo handling equipment based on the service manuals. In the operating project, the department is scheduled also to participate in maintenance services of the project components and will carry out accordingly. Organization of PAS has enough capability to operate and to manage all the components covering ID pass card system, CCTV camera system, Vessel traffic management system and facilities including architectural works, civil works, pavement works and underground wiring works. PAS has sent ten technical staff out of 146 for domestic training and four staff for training in Japan.

Similar to PAS, PAP technical department is also taking care of the routine maintenance services

on the port facilities and cargo handling equipment based on their service manuals. The department is planned to carry out the maintenance services of the project components.

2-4 Project Operation and Management Plan

2-4-1 Operation of Each Project Component

The related ministry and executing agencies for the project are summarized as follows:

- X-ray Container Screening System
Ministry of Economy and Finance
Executing Agency: Customs Excise Department CED
- All Equipment except X-ray Container Screening System
Ministry of Public Works and Transport
Executing Agency; Sihanoukville Autonomous Port (PAS) and Phnom Penh Autonomous Port (PAP)

Notes; It is assumed that PAS will be the leading agency in relation with the contract with contractor (or supplier).

After 2004, Port Security Organization was established based upon Port Security Plan to meet ISPS Code. Port Security Organization of PAP was also established based upon Port Security Plan to meet ISPS Code.

Name of the executing agencies of each project component is scheduled as follows:

- X-ray container screening system: CED in Sihanoukville
- CCTV camera surveillance system & ID-pass-card system: PAS,PAP
- Vessel Traffic Management System (VTMS): PAS
- Oil Skimming System(Oil fence, skimmer and collecting barge): PAS
- Patrol boat: PAS

The management will be by each executing agency: PAS, PAP or CED.

CED is appointed to manage the X-ray container screening system with the supplemental works in Sihanoukville Port. This system includes its shelter which will vary by maker specifications. The supplemental works of the X-ray container screening system cover pavement work at the waiting area and container visual inspection room.

2-4-2 Technical Capability and Financial Overburden in Operation

(1) Technical Capability

As mentioned before, PAS technical Department is currently carry out the port facility maintenance based on their maintenance manuals. It is believed that PAS has enough capability and resources for maintenance of the equipment proposed in the project, subject to receiving necessary training. It is assumed that PAP has also enough capability to maintain the equipment to be installed.

(2) **PAS Balance Sheet and Required Maintenance Cost for the Project**

Annual revenue by PAS is stabilizing, since cargo volume especially container cargo is almost all requirement of the country. Revenue amounted to 21.2 million US\$ in 2005, providing profit steadily after covering the general fees and maintenance cost.

As shown in section 2-5-2, annual maintenance cost for the project will amount to 0.08 million US\$ (9.3 million Yen) which is about 0.4% of the operating revenue. This indicates that PAS has enough financial capability to support the maintenance cost for the project.

(3) **PAP Balance Sheet and Required Maintenance Cost for the Project**

Annual revenue by PAP is about 1/10 of those of PAS, since cargo volume especially container cargo is 1/10 of PAS. Revenue is rather stabilized amounting to 3.7 million US\$ in 2005, providing profit steadily after covering the general fees and maintenance cost.

Annual maintenance cost for the project will amount to 0.015 million US\$ (1.7 million Yen) which is about 0.4% of the operating revenue. This indicates that PAP has enough financial capability to support the maintenance cost for the project.

(4) **Required Maintenance Coat by CED**

Annual maintenance cost of X-Ray Container Screening System will amount to 0.10 million US\$ (11.7 million Yen) to be borne by CED. It is assumed that this amount can be charged on all laden containers; thus there is no burden to CED in respect of maintenance and operation costs.

2-4-3 Importance of Maintenance and Management

In order to work with the project, it is essential to keep the well trained officers, staff and operators for maintenance of equipment. For achieving this target, the following aspects should be always maintained for multiple and synergy operation in maintenance and management of project.

- Well prepared organization of implementing Agency
- Stabilized capability in financial position
- Training of staff in all aspects

It is unlikely to happen that implementation is delayed due to financial aspects or delay of formality. Subject to receiving necessary training, it is assumed that present organizations have enough stature to maintain and manage the project.

2-5 Project Cost

2-5-1 Estimated Project Cost

Preliminary project cost estimation was carried out to cover all components which consist of the necessary security facilities and equipment for the port facility security plans for Sihanoukville Port and Phnom Penh Port. Based on the scope of work of both the Japanese side and the Cambodian side, the cost to be borne by each side is estimated. Since the project cost is now being estimated, the table below shows only the tentative amount at the beginning of June 2006. Total project cost amounts to approximately 930 million Yen consisting of approximately 925 million Yen and approximately 5 million Yen for Japanese Side and Cambodian Side respectively. This cost estimate is thus provisional and will further be examined by the Government of Japan for the approval of the Grant.

2-5-1-1 Cost to be borne by Japan

The cost to be borne by the Japanese side is shown below Table 2-5-1.

Table 2-5-1 Cost Summary to be borne Japanese Side

Items	Amount in million Yen	(Amount in million US\$)
(1) Equipment Procurement	864.7	(7.46)
a. Equipment	(459.2)	(3.96)
b. Transportation and Installation	(405.5)	(3.50)
(2) Detailed Design, Procurement Supervision	59.8	(0.52)
Total	924.5	7.98

2-5-1-2 Cost to be borne by Recipient Country

Project generally consists of procurement of new equipment, thus the recipient country should bear part of the cost for preparation works. Since the works cover mainly provision of the project site preparation and existing utility supply until the specified terminal points. However, the sites are in the existing port areas, so only limited works by the recipient country are required.

The cost to be borne by Cambodian side is shown below.

- | | |
|--------------------------------------|---|
| 1) Sihanoukville Autonomous Port | US\$ 18,650 (approx. 2.16 million Yen) |
| 2) <u>Phnom Penh Autonomous Port</u> | <u>US\$ 24,000 (approx. 2.67 million Yen)</u> |
| Total | US\$ 41,650 (approx. 4.83 million Yen) |

Section 2-3 indicated the breakdown of works to be carried out by the recipient country.

2-5-1-3 Conditions of Cost Estimate

Required project construction cost was estimated based on the following conditions.

- 1) Base point in time: February of 2006

- 2) Exchange rates: US\$ to Japanese yen : 115.90 yen/US\$
 Euro to Japanese yen : 139.96 yen/Euro
- 3) Construction Period: Implementation schedule is shown in section 2-2-4-7.
- 4) Others: This project will be implemented in accordance with the procurement of grant aid projects of the Government of Japan

2-5-1-4 Cost Breakdown of Supplemental Works

Project consists of procurement of security equipment and supplemental facility to support the equipment. Supplemental facility is covering civil works and architectural works as follows.

Civil Works

- 1) Parking space and access to the X-ray container screening system in 9600 m² of concrete pavement.
- 2) Underground wiring for CCTV camera surveillance system and VTMS system. Minor wiring may be required for new yard lighting poles at Sihanoukville Port.

Architectural Works

- 1) Security station each for Sihanoukville port and Phnom Penh port.
- 2) Visual inspection room for suspicious containers after the initial X-ray inspection test and its evaluation.
- 3) Shelter for X-ray container screening system

Basic design of all supplemental facilities is carried out by the Study Team in Japan except a shelter for X-ray container screening system. Tenderer could offer his own shelter based on the specifications specified by the Consultants since each tenderer may have each specialty and know-how to fix the size and quality of shelter.

Table2-5-2 shows the basic contents of these supplemental works.

Table2-5-2 Supplemental Facility and its Direct Construction Cost

Name of Facility	Outline Specifications	Direct construction Cost (Million Yen)
Parking space for trailers for X-ray container screening system	Concrete pavement	40.8
Visual inspection room for X-ray container screening system	Space for three containers	21.1
Shelter for X-ray testing devices	Flat shed in approx.6 b00 m ²	73.8
Security station	Flat shed in 230 m ²	26.6
Security station	Two stories shed in 207 m ²	27.1
Underground wiring	Wiring for CCTV camera and VTNS for approx. 5 km	34.4
Total		223.8

2-5-2 Operation and Maintenance Cost

(1) Estimation of Operation and Maintenance Costs

Annual maintenance cost by each executing agency was assumed applying annual operation and maintenance rate (%) to the estimated initial cost. Cost of operation is assumed of the minimum requirements.

Annual operation and maintenance rate is assumed as follows based on the past experience.

- Equipment 5.0% of Initial Cost
- Equipment (X-ray inspection system, VTMS and patrol boat) 3.0%
- Supplemental works 0.5%
- Weighted Average rate (Table 2-5-3) 2.62%

Estimated annual operation and maintenance cost by executing agency is as follows;

- DEC 11.7 million yen
- PAS 9.3 million yen
- PAP 1.7 million yen
- Total 22.7 million yen

Refer to Table 2-5-3 for more details.

It is assumed that these amounts can be acceptable to each executing agency. Refer to section 2-4-2.

Table 2-5-3 Assumed Annual Operation and Maintenance Cost of each component unit ; million Yen

Site and Equipment	Initial Cost	*Rate%	Maintenance Cost	CED	PAS	PAP
Sihanoukville Port						
X-ray container screening system						
● Main body	397.7	3.0	11.4	11.4		
● Parking Area	42.1	0.5	0.2	0.2		
● Visual Inspection R.	21.8	0.5	0.1	0.1		
CCTV system and ID-pass-card system						
● Main body	78.0	5.0	3.7		3.7	
● Security Station	33.8	0.5	0.2		0.2	
● Wiring	18.3	5.0	0.1		0.1	
VTMS; Vessel Traffic management System						
● Main body	113.8	3.0	3.4		3.4	
● Wiring	24.6	0.5	0.1		0.1	
Patrol boat	57.3	3.0	1.7		1.7	
Oil Skimming System	19.0	0.5	0.1		0.1	
Total	783.4	2.67	21.0	11.7	9.3	0

Phnom Penh Port						
CCTV system and ID-pass-card system						
● Main body	28.2	5.0	1.4			1.4
● Wiring	18.7	0.5	0.1			0.1
● Security station	34.4	0.5	0.2			0.2
Total	81.3	2.08	1.7			1.7
Grand Total	864.7	2.62	22.7	11.7	9.3	1.7

Note; Rate means operation and maintenance rate to the initial cost.

(2) Recovery of Operation and Maintenance Cost and Charging Policy

Only X-ray container screening system can directly collect charge. It is proposed that charge should cover mainly on the operation and maintenance cost, not the cost for replacement, for achieving a lower unit charge. Recovery of operation and maintenance cost and charging policy to the X-ray container screening system is studied accordingly. For trade promotion, it is considered that the new price should be below enough the present level (approximately 50 US\$/box). Alternative charging study concerning to charging objective was carried out. It is proposed to charge new rate of two US\$ a container to all laden containers.

Estimated Initial Cost:	0.445 billion Yen (0.38+0.043+0.022)
Annual Operation and Maintenance Cost:	11.7million yen (101,000US\$)
Annual chargeable laden containers:	70,000 boxes/year
Unit charge:	1.44 US\$/ box 2 US\$

Assumed conditions for above is given hereunder.

Estimation of number of annual chargeable containers

- Average laden containers (2005/2015) = 140,000 boxes/year
- All laden container is not always chargeable by customs. CED Sihanoukville data indicates chargeable rate is 50% to all the laden containers.
- Annual chargeable containers, thus;

$$140,000 \times 50\% = 70,000 \text{ boxes/year}$$

Estimation of number of laden containers to be tested (2005/2015). Refer to Table 2-2-8

$$(63,371+36,950) \times 1/2 = 50,161 \text{ boxes/year}$$

Testing speed of X-ray container screening system

- 3 minutes a box or 20 boxes a hour

Estimation of Operation and maintenance cost

- Personnel expenses

$$\text{Director} \quad \text{one person} \times \text{three shifts} = 3$$

Operators	four persons x three shifts = 12
Total	15 persons
Director	3x 600,000 = Yen 1,800,000
Operators	12x 450,000 = Yen 5,400,000
Total	Yen 7,200,000

➤ Power charge

Average applying hour a day;

$$= 1.2 \times 50,161 / (365 \times 20) = 8.2 \text{ hours / day}$$

Charge

$$= 0.8 \times 70\text{KVA} \times 365\text{days} \times 8.2 \text{ hours/day} \times 0.17\text{US\$/Kw}$$

$$= 28,500 \text{ US\$} = \text{Yen } 3,303,000$$

➤ Other maintenance costs Yen 1,197,000

➤ Total Cost Yen 11,700,000

2.6 Other Relevant Issues

It is so important to implement the project on schedule due to urgent requirement to set up the basic safety requirements for two major Cambodian ports. In order to ensure this, it is also important that the recipient country to carry out the specified undertakings and obligations. The followings will be taken into account accordingly.

- 1) To provide the restricted area with full fence works including repairing the damaged existing one and to improve visual condition for CCTV cameras at night in the restricted areas by means of repairing damaged existing yard lighting facilities.
- 2) Collaboration between the CED Sihanoukville Office and PAS for exchanging data and information on the container cargoes through the Custom Processing System which will be developed by CED.
- 3) CED to introduce the risk management in the container inspection system for effective application of X-ray Container Screening System.
- 4) To ensure the cooperation on written documents among three parties concern for smooth project implementation.

CHAPTER 3
PROJECT EVALUATION AND RECOMMENDATIONS

CHAPTER 3 PROJECT EVALUATION AND RECOMMENDATIONS

3-1 Project Effect

3-1-1 Project Achievement Indicators

Effects of the project could be verified through development of the selected project achievement indicators, which can demonstrate quantitative or qualitative port security improvement by the project within one year after the date of project completion.

- 1) Speedy container screening inspection by new X-ray Container Screening System in Sihanoukville Port.

It is expected for new system to test one container every three minutes (or 20 containers an hour) instead of five minutes by the existing system. This could be reviewed in 2009 immediately one year after the introduction of the new system.

- 2) Precise detection of suspicious vehicles, vessels and persons through the new access management and surveillance system.

Precise detection of vehicles, vessels and persons will extensively improve to save such data in digital form and media and to analyze them for future surveillance.

- 3) Introduction of high speed patrol boat will improve the forced inspection reducing the access time to a suspicious vessel or the like.
- 4) Maintaining the required security level will overcome the possible trade barriers that may arise for Cambodian exports due to lack of security facility.

3-1-2 Project Benefits

Project will completely improve the existing situation of security facilities and equipment by means of introduction of a scheduled set of integrated port facility security plan to Sihanoukville Port and Phnom Penh Port. New system will also assist to establish a firm security structure to meet the ISPS requirements for surveillance of vessels, persons, vehicles and cargoes in the port restricted area.

Application of the access detecting system, deterring suspicious vessels, persons, vehicles and cargoes will be conducted more precisely compared to the existing situation. Once a suspicious matter happens in the restricted area, the introduced surveillance system will follow up the situation and tracing it until it is confirmed that such invader is not dangerous. If it is believed dangerous, the system will report it to the security officer to take necessary actions.

It is assumed that the import countries of Cambodian products such as America and EU will accept import if it follows security confirmed the ISPS Codes. If products are shipped for exporting at the port without security measures, such cargoes may be refused to enter the import countries or may be requested to receive a test and inspection to satisfy its safety. This means

that the security improved port will have advantage in exports comparing to exports from other countries which have no security improvement in port facilities. Thus security improvement of port facility is a must for exporting countries. Finally port security will provide industries with benefits through exports and maintaining employment opportunity. Addition to above, security system will protect the port from smuggling and resulting in decreasing income to terrorists, thus social security may be improved.

3-2 Recommendations

It is recommended to the recipient country to carry out the following for smooth project implementation and securing effective security system operation.

- 1) Undertakings and obligations should be carried out by the recipient country for construction of security facility.
 - To provide fence or like along the boundary of restricted areas including repairing the existing ones.
 - To repair the damaged yard lighting in restricted areas for improving surveillance visibility during the night.
 - To clarify the detailed contents of coordination between PAS and PAP for smooth project implementation.
- 2) Undertakings and obligation should be carried out by the recipient country for appropriate operation of the security facility provided.
 - To watch the impact of project in operation and take necessary actions to minimize adverse effects of the project against the routine port operation.
 - To prepare and carry out the IT integration between CED and Ports for improving data availability and higher security conditions by data exchanges.
 - To reduce the rate of container screening testing for lightening the burden on the port users by means of introduction of risk management.
- 3) Upgrading technical capability of security officers and operators
- 4) Receiving the Official Assistance
 - Receiving the Official Technical Assistance in responding to ISPS Codes
- 5) Reviewing the port facility security plan
 - To review periodically the present port security plan by development of cargo increase like containers and change of trade conditions.
 - To review the plan for updating by the new surveillance method and revised Codes

3-3 Adequacy of Project

Project is verified and confirmed to meet the requirements in validity to receive Japan Grant Aid as follows:

1) Expected Beneficiary of Project

Direct beneficiaries of project at two ports are the port employees and workers totaling to 880,000 persons a year. They can work in the port area with better security than before. In addition to this, provision of the security facilities will provide the Cambodian export products with ordinary qualification in terms of security. This will avoid disturbing export chance by the refusal by the import countries of such export products due to lack of security qualification.

Thus provision of security facility results in paving the way for Cambodian product export to the countries which follow strictly to ISPS. This means that provision of security facilities is maintaining the industries activity and employment opportunity.

2) Project Objective

Project objective is to provide the port security conditions for CED, PAS and PAP to improve the present conditions.

3) Operation and maintenance by the Executing Agencies

There is no doubt that the executing agencies, PAS and PAP, can manage the project implementation under supervision by MPWT. It is also confirmed that these agencies will operate and maintain the facilities and equipment to be provided, subject to receiving necessary training.

It is assumed that the existing CED Sihanoukville office will be modified to allow operation of the new X-ray container screening system. It is also assumed that CED can manage the new system applying experience in the management in out-sourcing of the existing X-ray container screening system.

Thus, operation and maintenance of provided port security facilities and equipment could be carried out accordingly.

4) Port Facility Security plan

Without the project, it is vary difficult to improve the present security conditions of the two ports.

5) Non-profitability

Project is vital to Cambodia and it will provide very little financial revenue by itself. Thus this project does not meet with loan conditions, but meets with the requirement of grant aid. X-ray container screening system will, however, collect revenues mainly to cover its operation and maintenance costs.

6) Environmental Aspects

There is no indication that any adverse environmental impact will be given by the project.

7) Consideration to the Existing X-ray Container screening system

CED will utilize new X-ray Container screening system to inspect not only export containers

but also import containers. CED will take care of the existing X-ray Container screening system.

For the above reasons consisting from Item 1 to Item 3, it is concluded that the project is justified to be implemented under the Japan Grant Aid Program.

3-4 Conclusions

It is concluded that the project should be implemented through the Japan Grant Aid Program since the project will provide security conditions to port employees and workers and provide the Cambodian exports without causing trade barriers in terms of lack of security inspection.

It is assumed that three executing agencies, namely CED, PAS and PAP, have enough capability to manage the project in terms of organization and financial conditions.

It is recommended to follow up the issues mentioned in Section 3-2 “Recommendations” for smooth management of security facility.