

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	10 of 29

Appendix A: Terms and Definitions

These terms and definitions apply to any System/Equipment requiring access to the HA IT network. Additional terms and definitions appear below “Connectivity Vendor Managed Network to HA” (A.19) for System/Equipments operated by the Tenderer on a separate self-contained “vendor” network.

Note:

- i) An alternative security solution able to achieve the same or better security protection, shall be proposed where any System/Equipment security requirements are unable to be fulfilled due to product design limitations;*
- ii) where an alternative security solution is being proposed details shall be included which describe the alternative security solution*

A.1 Safety

- A.1.1** Tenderer shall ensure the System/Equipment remains secure and malicious code free in accordance with the terms and conditions of the relevant contract.
- A.1.2** Tenderer shall ensure the System/Equipment when being used for healthcare related patient outcomes does not cause danger, risk, harm, injury, or loss to the safety of an individual.
- A.1.3** Tenderer shall ensure the System/Equipment is protected from being used in a manner relied upon by other System/Equipment that could result in danger, risk, harm, injury, or loss to the safety of an individual.
- A.1.4** Tenderer shall ensure the System/Equipment does not create any non-compliance with regulatory or legal frameworks.

A.2 Confidentiality and Privacy

- A.2.1** Tenderer shall ensure the System/Equipment does not capture, store or process sensitive data and/or any data related to any individual, including personal health information, in a manner that allows the data to be made available or disclosed in an unauthorised manner.
- A.2.2** Tenderer shall ensure the System/Equipment provides appropriate authentication controls on privacy control when allowing any user, protocol or other form of connection.

A.3 Integrity

- A.3.1** Tenderer shall ensure the System/Equipment preserves the accuracy and completeness (i.e. integrity) of data and the methods used to process and manage this data.

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	11 of 29

A.3.2 Tenderer shall ensure the System/Equipment minimises any potential to cause business disruption if the System/Equipment does not operate as expected/planned.

A.3.3 Tenderer shall ensure the System/Equipment can be accurately relied upon as a result of its function.

A.3.4 Tenderer shall provide evidence to HA that any source code associated with the System/Equipment is free of common "OWASP Top Vulnerabilities" [Reference Document (e)].

A.4 Availability

A.4.1 Tenderer shall ensure the System/Equipment will be accessible and usable when needed.

Tenderer shall ensure the System/Equipment achieves an overall level of availability with reference to the requirement of Uptime under warranty and maintenance support related clause in the Tender Specifications.

A.4.2 Tenderer shall ensure any System/Equipment interruption with reference to the requirement of Corrective Maintenance under warranty and maintenance support related clause in the Tender Specifications.

A.4.3 Tenderer shall ensure the System/Equipment provides adequate System/Equipment resilience facilities, including and not limited to redundant hardware components, enabling any faulty components to be switched over to redundant components if applicable.

A.4.4 Tenderer shall ensure the System/Equipment is supported by uninterruptable power supply (UPS) for maintaining the committed level of System/Equipment availability if applicable.

A.4.5 Tenderer shall ensure the System/Equipment minimises any disruption if not performing as expected/planned.

A.5 Compatibility

A.5.1 Tenderer shall ensure the System/Equipment is able to effectively function together with other System/Equipments.

A.5.2 Tenderer shall ensure the System/Equipment does not adversely interfere with the effective operation of any other System/Equipment.

A.5.3 Tenderer shall ensure the System/Equipment continues to function correctly following any System hardening and security specification requirements imposed by HA.

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	12 of 29

A.6 Longevity

- A.6.1** Tenderer shall ensure the length of effective service of the System/Equipment (i.e. many years) and all of its components will be sufficient to meet the needs of HA.
- A.6.2** Tenderer shall ensure the System/Equipment continues to operate beyond the period of time expected by HA.
- A.6.3** Tenderer shall ensure updates for patching of vulnerabilities are maintained throughout the System/Equipment's lifetime expected by HA.

A.7 Technological Substitution

- A.7.1** Tenderer shall ensure that within the warranty period / maintenance service contract period (if applicable), System/Equipment upgrades are performed, if there is any, without any charge within the contract period.

A.8 Data Sovereignty

- A.8.1** Tenderer shall ensure the data processed or stored by the System/Equipment resides in Hong Kong.
- A.8.2** Tenderer shall ensure the System/Equipment does not process or store data outside of Hong Kong.
- A.8.3** Tenderer shall ensure the System/Equipment is governed by the laws of Hong Kong.

A.9 System Hardening

- A.9.1** Tenderer shall ensure the System/Equipment, where using the Microsoft Windows Operating System, hardens all its components and functionality in accordance with the prevalent "Guidelines for Windows Server Hardening" provided by HA [Reference document (a)], which is available for viewing by appointment at hospital venue after signing a non-disclosure agreement with hospital.
- A.9.2** Tenderer shall ensure the System/Equipment where using the non-Windows solutions are secured according to "Guidelines for Host Security Hardening" [Reference document (d)], which is available for viewing by appointment at hospital venue after signing a non-disclosure agreement with hospital.
- A.9.3** Tenderer shall ensure the System/Equipment avoids the presence of hard-coded authentication credentials.

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	13 of 29

A.10 Data Security

A.10.1 Tenderer shall ensure sensitive data downloaded from the System/Equipment to end-user devices is protected by a reasonable level of encryption.

Note: Sensitive data refers to data including but not limited to identifiable patient information.

A.10.2 Tenderer shall ensure sensitive data stored within the System/Equipment is preferably encrypted.

A.10.3 Tenderer shall ensure sensitive data stored in backup storage is encrypted.

A.10.4 Tenderer shall ensure all important data (knowledge, System/Equipment configuration parameters) stored in the System/Equipment is safeguarded and preserved through an effective backup mechanism.

A.10.5 Tenderer shall ensure sensitive data shall NOT be exported for any usage unless prior authorisation has been obtained from HA.

A.10.6 Tenderer shall ensure where there is a requirement to copy or move data from the System/Equipment to the HA network using portable media (i.e. USB Drive or CD), then this media is scanned for malicious code on a HA PC before being uploaded to the HA network.

A.11 Application Security

A.11.1 Tenderer shall ensure the System/Equipment employs prevalent authentication and authorisation mechanisms at reasonable safety level.

A.11.2 Tenderer shall ensure the System/Equipment supports role-based access control.

A.11.3 Tenderer shall ensure the System/Equipment applies network level encryption.

A.11.4 Tenderer shall ensure the System/Equipment provides comprehensive version control and configuration management mechanisms.

A.11.5 Tenderer shall ensure the System/Equipment conforms to “Guideline for Application Security” [Reference document (g)].

A.12 Malicious Code Protection

A.12.1 Tenderer shall ensure the System/Equipment is protected with the installation of a reputable Anti-Virus program in all servers, PC and Workstation components.

A.12.2 Tenderer shall ensure the System/Equipment is protected with regular updates of the latest virus definitions.

Note: It is highly preferred that Tenderer shall use the same product as HA to have virus

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	14 of 29

definition update automatically.

- A.12.3** Tenderer shall be responsible for the on-going support and for keeping the virus definitions and related software up-to-date in all Servers, PCs and workstations.
- A.12.4** Tenderer shall ensure virus definitions are updated within 24 hours from the date of release.
- A.12.5** Tenderer shall be responsible for the regular scanning of all Servers and PCs in the System/Equipment every three months to ensure that they are not infected by virus, worms and spyware including the on-going support of scheduling and verifying the results of the virus scan.

A.13 Vulnerability / Patch Management

- A.13.1** Tenderer shall maintain ongoing System/Equipment support, including the installation of the latest security patches for the Operating Systems and related software in all System servers, PCs and workstations.
- A.13.2** Tenderer shall ensure security patches are updated within three months from the date of release.

A.14 Restricted External Access

- A.14.1** Tenderer shall ensure that there are no non-HA (external) network connections to the System/Equipment unless supported by prior authorisation and knowledge of HA.
- A.14.2** Tenderer shall ensure that the System/Equipment does not automatically establish any wireless connections without prior authorisation and knowledge of HA.
- A.14.3** Tenderer shall ensure that the System/Equipment does not establish any wired connections without prior authorisation and knowledge of HA.

A.15 HA Network Connectivity

Note:

- A.15.1** Tenderer shall be responsible, where operational reasons exist, for a System/Equipment residing within HA premises to connect to the HA network for information exchange with HA IT systems, for implementing such network connection in accordance with HA requirements and to ensure all security requirements are strictly adhered to.
- A.15.2** Tenderer shall ensure any network connection for a System/Equipment to the HA network is endorsed by HA and implemented and operated according to HA policies, procedures and guidelines.
- A.15.3** Tenderer shall ensure connectivity of the System/Equipment to the HA network adheres to the network diagram as depicted in **Appendix B**.

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	15 of 29

A.16 Maintenance Support

- A.16.1** Tenderer shall ensure that when maintenance is performed on the System/Equipment or when accessing the System/Equipment in any remote manner that the tools and software have been confirmed to be free of malicious code.
- A.16.2** Tenderer shall ensure that where maintenance on the System/Equipment needs to be performed, that HA is provided with a level of assurance that the vendor has undertaken proactive actions to ensure their connecting media or device (USB stick, portable media, laptops, iPads, etc.) has been scanned for malicious code before and after every time that portable media is used to apply changes/updates to the System/Equipment.
- A.16.3** Tenderer shall bring with them a mobile computer (i.e. laptop) which contains the latest version of anti-virus software, complete with up to date virus signatures to confirm onsite within HA premises that their media to be connected (i.e. USB) is free of malicious code.
- A.16.4** Tenderer shall ensure portable media (USB stick, CD/DVD, etc.) is scanned (in addition to clause A.16.3) on a HA PC to ensure that the media is not infected by virus, worms and spyware before being used to apply changes/updates to the System/Equipment.
- A.16.5** Tenderer shall ensure the vendor provides HA a completed attestation of compliance to confirm the media or device to be connected to the System/Equipment has been scanned for viruses and found to be free of malicious code.
- A.16.6** Tenderer shall perform technical support on-site unless appropriate remote support arrangement is endorsed.
- A.16.7** Tenderer shall erase the sensitive data in the storage devices of the System/Equipment before taking away the equipment for repairing or disposal.
- A.16.8** Tenderer shall sign and fully comply with a non-disclosure confidentiality agreement during on-site and remote support.
- A.16.9** Tenderer should use different portable media (i.e. USB sticks), which have been scanned for malicious code, for each item of medical equipment they need to apply an update to.
- A.16.10** Tenderer shall where not able to use different individual portable media (i.e. USB sticks) for applying changes/updates to multiple items of medical equipment (see clause A.16.10), repeat Clauses A.16.3 and A.16.4 before proceeding to attach/apply the portable media to the second and subsequent items of medical equipment.

A.17 Decommissioning Support

- A.17.1** Tenderer shall ensure that upon decommissioning of the System/Equipment, data exports and data definitions (sometimes known as data dictionary) are provided for all clinical data,

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	16 of 29

and other data as appropriate, in a data structure and format as required by Hospital Authority.

A.17.2 Tenderer shall provide assistance, as required, for the successful migration of any data to a new replacement System/Equipment(s) as adopted by Hospital Authority.

A.18 Security Incident Reporting and Compliance

A.18.1 Tenderer shall ensure the System/Equipment provides health-checking and audit logging capabilities.

A.18.2 Tenderer shall immediately report to the Hospital management and the HA ITS Call Centre any security incident relating to the System/Equipment.

A.18.3 Tenderer shall submit security compliance reports to HA's IT representatives every six months with respect to the requirements stipulated in this document. **Appendix D** provides a sample of a "Medical Network Security Compliance Report" which should be used.

A.19 Connectivity of Vendor Managed Network to HA

A.19.1 For Medical Systems, the HA will install External Network data ports next to the equipment for connection with the HA Network or HA will install External Network Wireless LAN for those equipment support WiFi for connection with the HA Network.

(Note: Tenderers shall confirm with HA if External Network data ports / Wireless LAN can be provided)

A.19.2 The External Network data ports are based on the Institute of Electrical and Electronics Engineers (IEEE) 802.3 standards and support 10BASE-T at 10 Mbit/s (IEEE 802.3i), 100BASE-TX Fast Ethernet at 100 Mbit/s (IEEE 802.3u) and 1000BASE-T Ethernet at 1 Gbit/s (IEEE 802.3ab) connections.

A.19.3 The External Network is an Internet Protocol (IPv4) routable network and support the following communications protocols including Internet Protocol (IP), Address Resolution Protocol (ARP), Internet Control Message Protocol (ICMP), Transmission Control Protocol (TCP) and User Datagram Protocol (UDP). The IP address will be assigned by HA.

A.19.4 In case Tenderer cannot use HA provided External Network data ports, tenderer shall set up the network and implement the cabling system according to "Guidelines for Cabling System and Network Setup in External Network" [Reference Document (k)].

A.19.5 Other than the basic provision by HA IT&HI as specified in the tender document, if the tenderer considered the HA IT&HI provision not sufficient/applicable to your proprietary Medical Systems, the tenderer may propose additional installation (in such case the additional installation works shall be carried out by the tenderer according to the

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	17 of 29

“Guidelines for Cabling System and Network Setup in External Network” at its own cost). HA will not bear any additional charge and all such related cost shall be borne by the tenderer and shall have been included in the tender price submitted by the tenderer.

A.19.6 Tenderer shall put their servers in Hospital Data Center as far as possible.

A.19.7 Tenderer shall provide the network diagram to illustrate the network architecture if Tenderer follows A19.4. **Appendix B1** illustrates the architecture of External Network for Medical Systems.

A.19.8 Tenderer shall ensure the System/Equipment connecting to the External Network Wireless LAN comply to the following requirements and specifications:

- (a) Tenderer shall comply to the HA WiFi infrastructure and standard guidelines
- (b) The end devices provided by the tenderer shall support IEEE 802.11a/g/n/ac/ax. For the end devices which support IEEE 802.11ax, they shall be compatible with IEEE 802.11a/g/n/ac
- (c) The end devices provided by the tenderer shall support 2.4GHz channel 1-13 and/or 5GHz channel under U-NII-1, U-NII-2A, U-NII-2C and U-NII-3
- (d) The end devices provided by the tenderer shall support WPA2 with AES encryption and PSK authentication
- (e) The end devices provided by the tenderer shall support DHCP/static IP configuration
- (f) The end devices provided by the tenderer shall support Roaming across access points without session drop
- (g) The tenderer shall provide MAC addresses of the end devices for registration and PSK authentication in order to access WiFi network
- (h) The tenderer shall arrange WiFi connectivity test with users and Hospital/HA IT&HI before production rollout
- (i) Only 1 common SSID will be provided by HA for all non-IT systems
- (j) Non-IT systems should use IP addresses as assigned by HA
- (k) IP routable network will be provided for WiFi and wired equipment

A.19.9 For Non-Medical Systems such as Operational Technology (OT), tenderer shall:

- (a) Setup the network and implement the cabling system according to the industrial standards, guidelines and best practices. Moreover, tenderer can also implement the cabling system by referencing to the HA’s “Guidelines for Cabling System and Network Setup in External Network” Section 8 - Network Cabling in External

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	18 of 29

Network.

- (b) Install at least a Layer 3 switch or with resilient when HA requires at tenderer's cabinet
- (c) The Layer 3 switch shall have at least two 1000Base-LX port for connection to the fiber patch panel.
- (d) The Layer 3 switch shall support user-defined IP static routes and default routes protocol and shall cater for different auto network failover and recovery scenarios according to the network diagrams illustrated in **Appendix C**
- (e) Tenderer shall provide the network diagram to illustrate the network architecture. **Appendix B2** illustrates the architecture of External Network for Non-Medical Systems
- (f) HA shall arrange HA Authorized Cabling Contractor to install the backbone cablings and HA Equipment Vendor to install the Gigabit Interface Converters (GBICS) at HA Layer 3 Switch in Building Closets for the network connection to tenderer's Layer 3 switch
- (g) HA will not bear any installation and maintenance related charges (except for backbone cabling i.e. B.4 in Appendix B) and all such related cost shall be borne by the tenderer and shall have been included in the tender price submitted by the tenderer

A.20 Clinical Data Exchange

A.20.1 Tenderer shall ensure seamless electronic data exchange with Hospital Authority corporate systems complies with Health Level Seven (HL7) version 2.3.1 and above (with data transfer protocol including MLLP with native HL7, SOAP or RESTful based web services with HL7XML), and the file server storing clinical report files to be downloaded by HA system supports SFTP protocol.

A.20.2 Tenderer shall ensure the implementation of electronic data exchange with Hospital Authority corporate systems complies Hospital Authority HL7 Guidelines.

A.20.3 Tenderer shall ensure any electronic message exchange with the Hospital Authority includes reference keys supplied by Hospital Authority corporate systems such as:

- (l) HKID
- (m) Name
- (n) Date of birth
- (o) Sex
- (p) HA case number
- (q) HA system unique patient key

Note: Electronic message exchange is important to ensure high integrity associated with

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	19 of 29

patient identification and automatic mapping to patient records within the Hospital Authority.

A.20.4 Tenderer shall ensure the System/Equipment maintains the existing exchange of patient data with Hospital Authority corporate systems and provides exchange for other data including but not limited to:

- (a) Admit, discharge & transfer, and patient demographics
- (b) Allergy, Adverse Drug Reaction and Alert information
- (c) Clinical order, observations and results
- (d) Multimedia and imagery data

A.20.5 Tenderer shall ensure the System/Equipment automatically updates patient's demographic data upon reception of ADT message.

A.20.6 Tenderer shall ensure ADT information exchanged is in compliance with the latest Hospital Authority HL7 Implementation Guidance.

A.20.7 Tenderer shall ensure audit logging is provided for all ADT (Admit, Discharge and Transfer) interactions.

A.20.8 Tenderer shall ensure the System/Equipment adopts the preferred Hospital Authority date format.

- (a) For the display of date in frontend screen: DD-MMM-YYYY (e.g. 01-JAN-2014)
- (b) For the display of date-time in frontend screen: DD-MMM-YYYY hh:mm:ss in either 12hr/24hr mode (e.g. 01-Jan-2014 15:30:45)
- (c) For the transfer of date information to HA system: YYYYMMDD (e.g. 20140101)
- (d) For the transfer of date-time information to HA system: YYYYMMDDhhmmss in 24hr mode (e.g. 20140101153045).

Note: This enables user friendliness and system interoperability to be achieved.

A.20.9 Tenderer shall ensure the System/Equipment sends update or delete messages, if necessary, to perform corresponding actions with Hospital Authority corporate systems, with proper authorization mechanism from supervisor and audit trail.

A.20.10 Tenderer shall ensure the System/Equipment provides appropriate feedback to users to indicate the successfulness of message exchange with Hospital Authority corporate systems. (e.g. dashboard system, system alert to users).



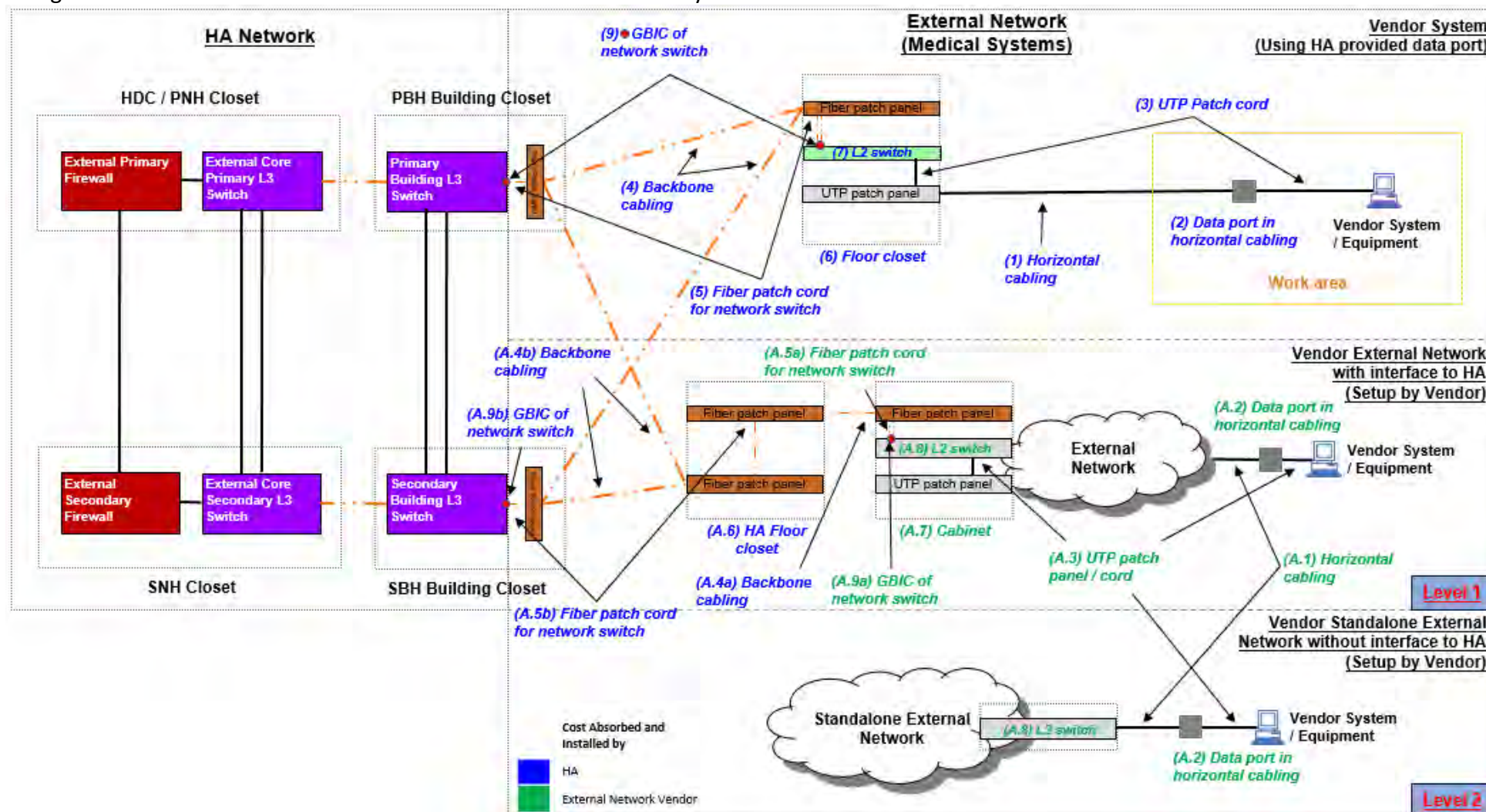
Hospital Authority Head Office

IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment

Document No.	HAHO-ITD-PD-ISP-007-v14
Issue Date	18/11/2022
Review Date	17/11/2023
Appendix Page	20 of 29

Appendix B: External Network Architecture

1) Below diagram illustrates the External Network Architecture for Medical Systems





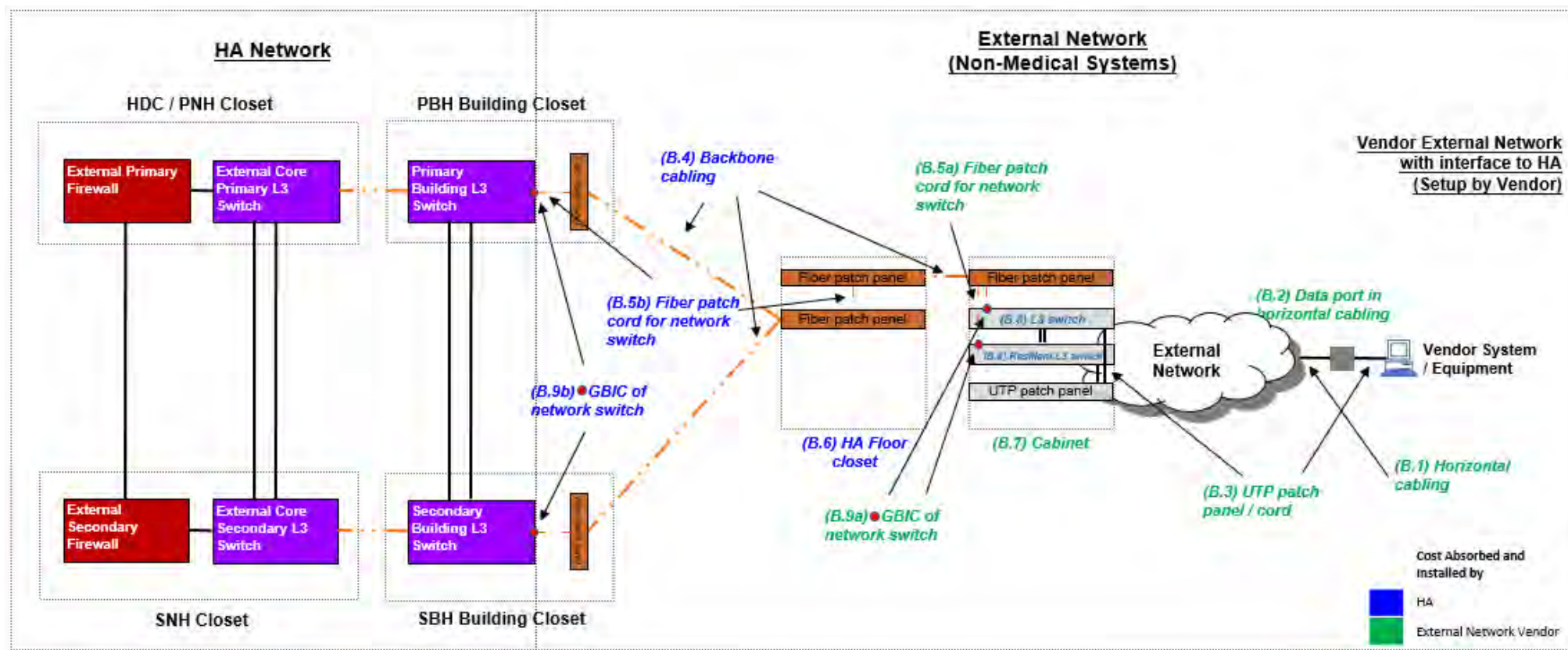
醫院管理局
HOSPITAL
AUTHORITY

Hospital Authority Head Office

IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment

Document No.	HAHO-ITD-PD-ISP-007-v14
Issue Date	18/11/2022
Review Date	17/11/2023
Appendix Page	21 of 29

2) Below diagram illustrates the External Network Architecture for Non-Medical Systems

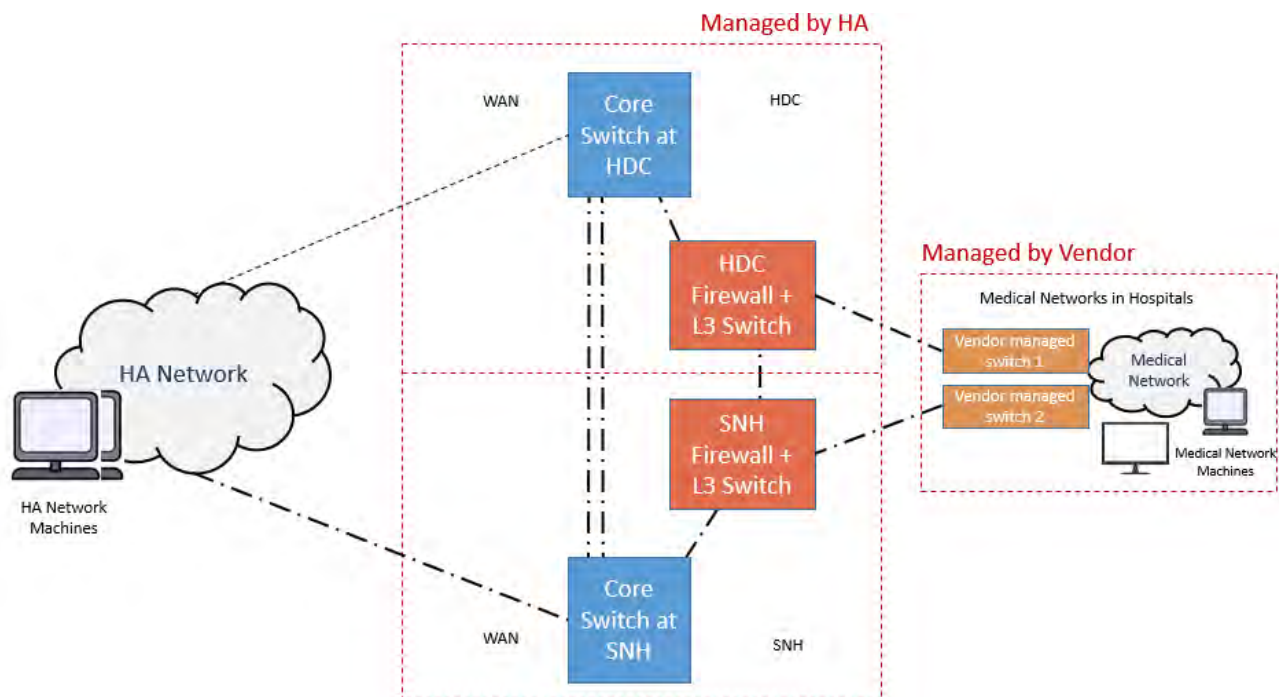


 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	22 of 29

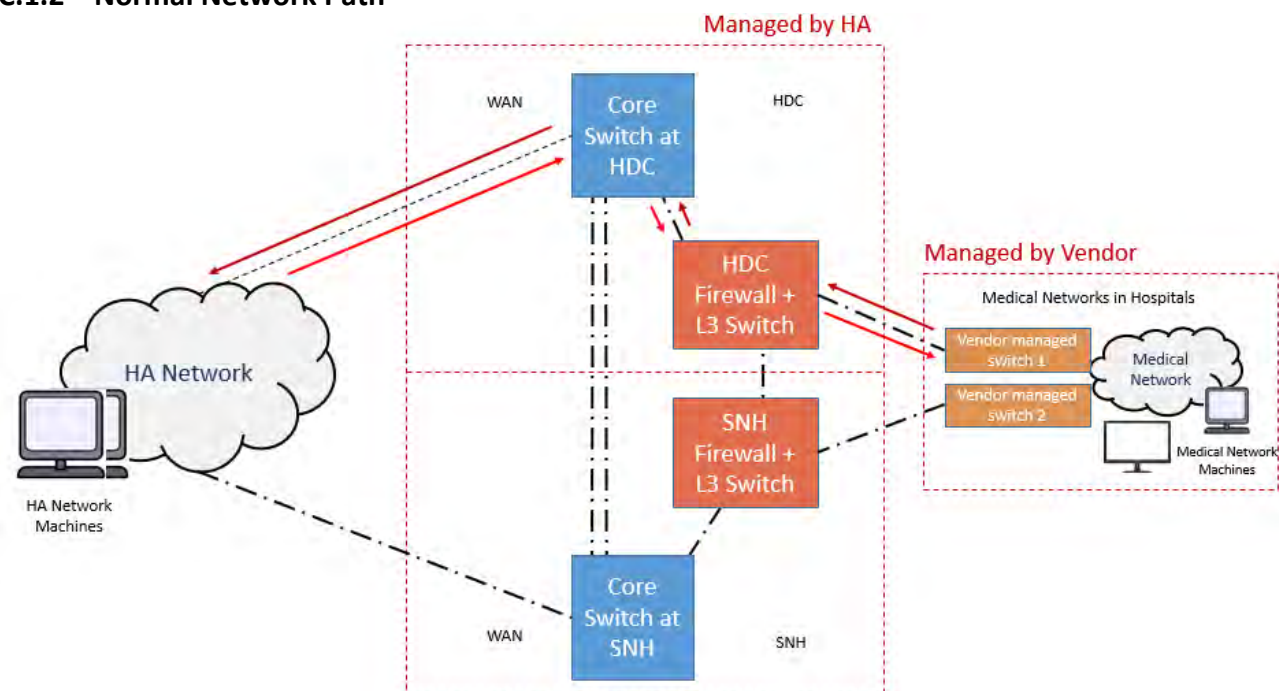
Appendix C Failure and Recovery Scenarios in Hospitals for vendor managed L3 network switches

C.1 Model A (Resilience vendor managed switches)

C.1.1 Network Diagram

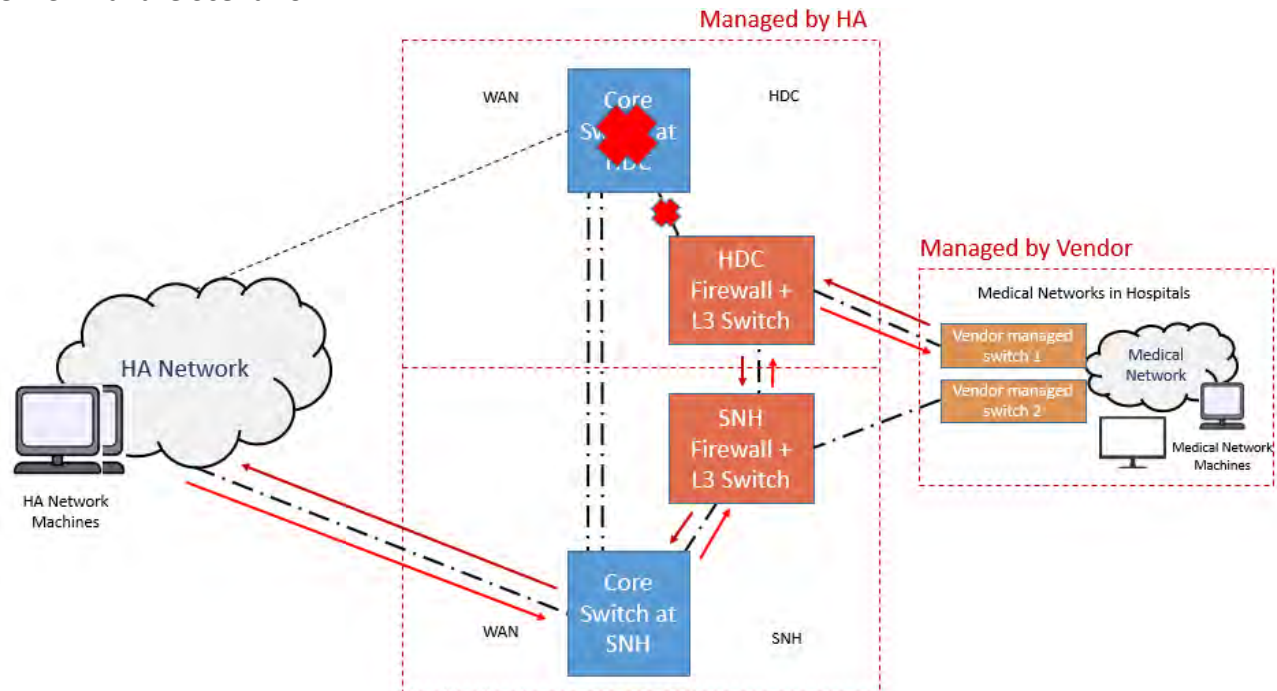


C.1.2 Normal Network Path

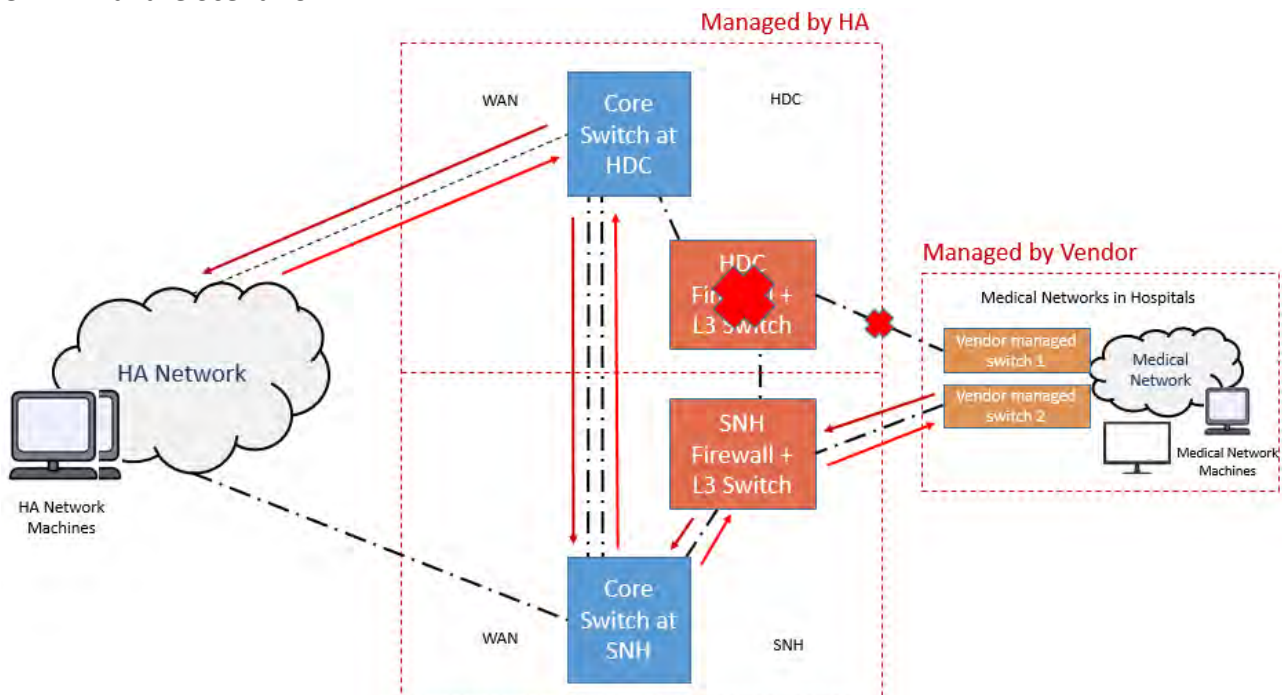


 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
		Review Date	17/11/2023
		Appendix Page	23 of 29

C.1.3 Failure Scenario A1

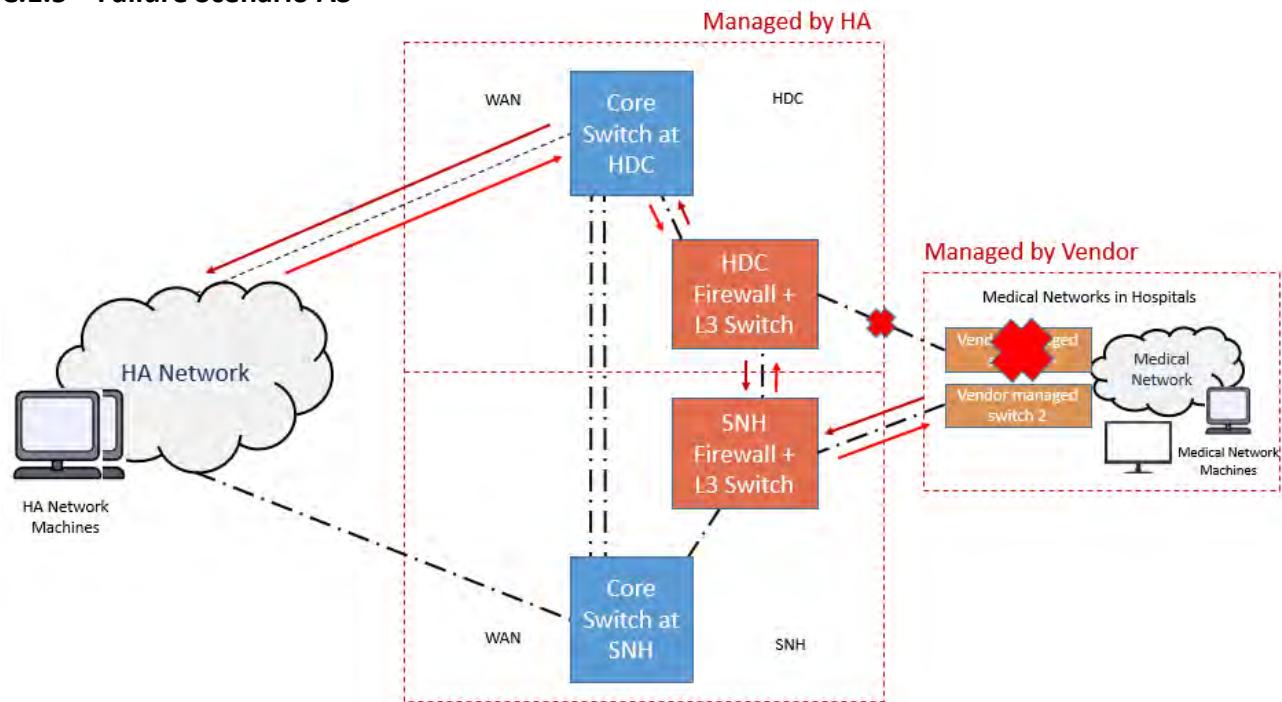


C.1.4 Failure Scenario A2



 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	24 of 29

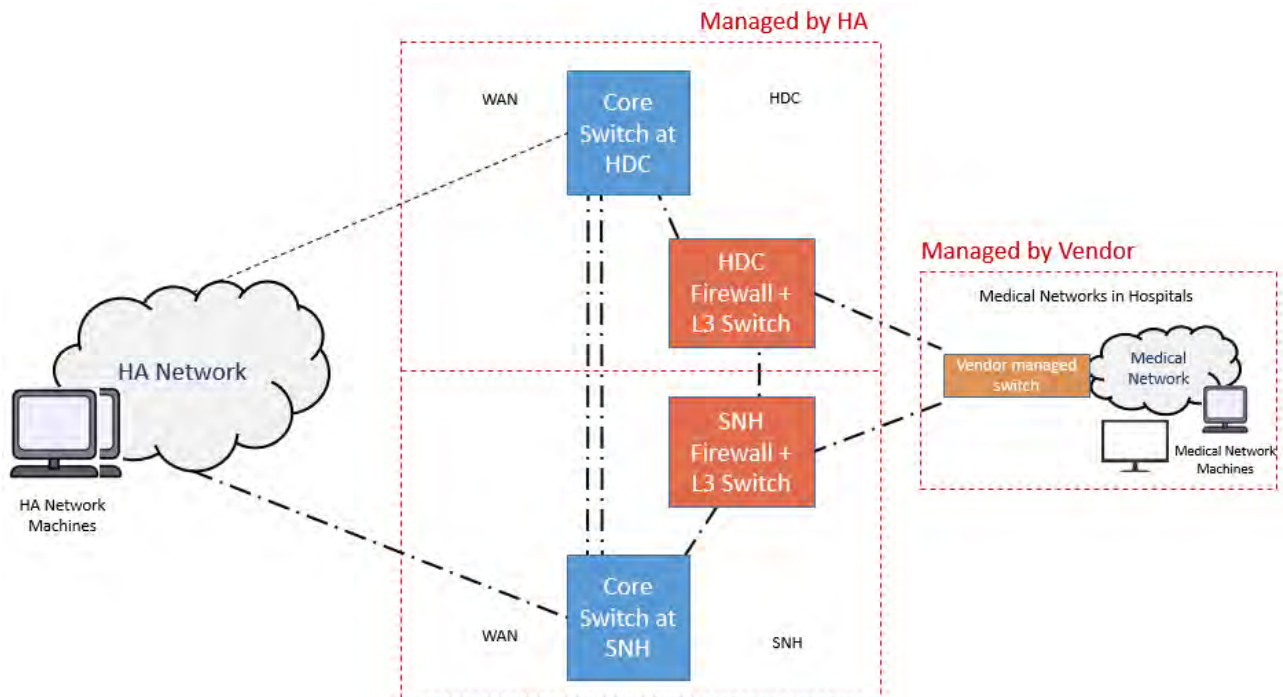
C.1.5 Failure Scenario A3



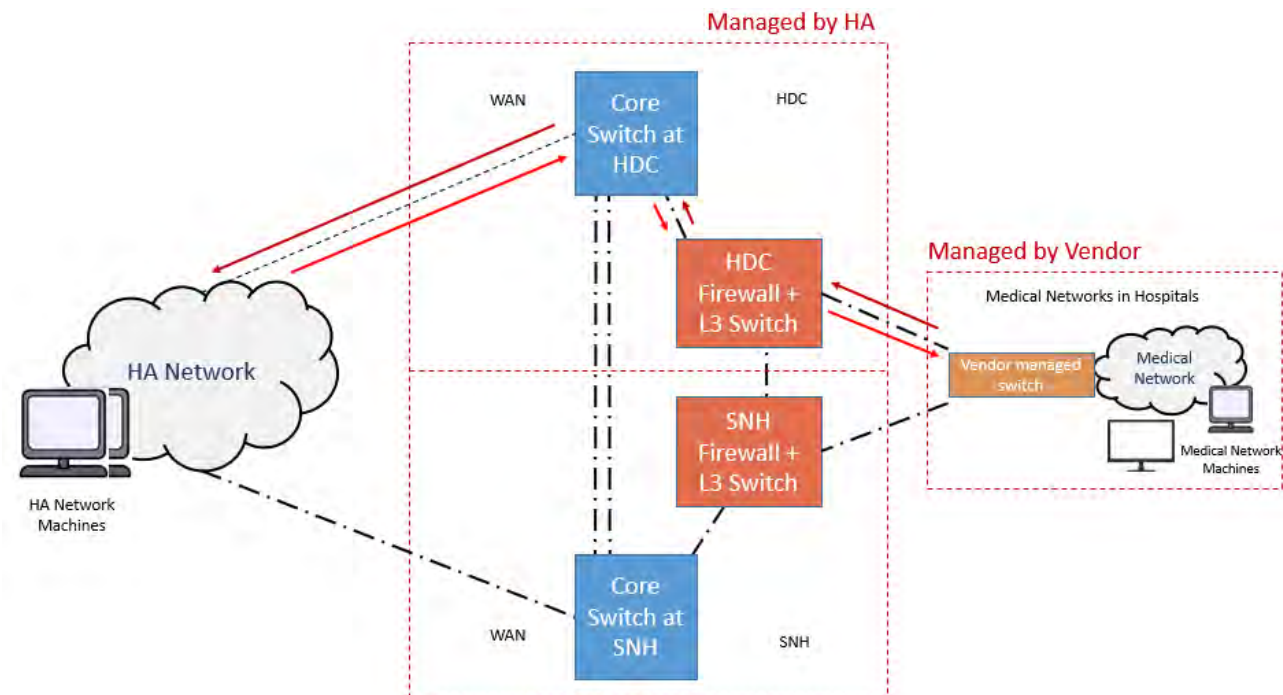
 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	25 of 29

C.2 Model B (Single vendor managed switch)

C.2.1 Network Diagram

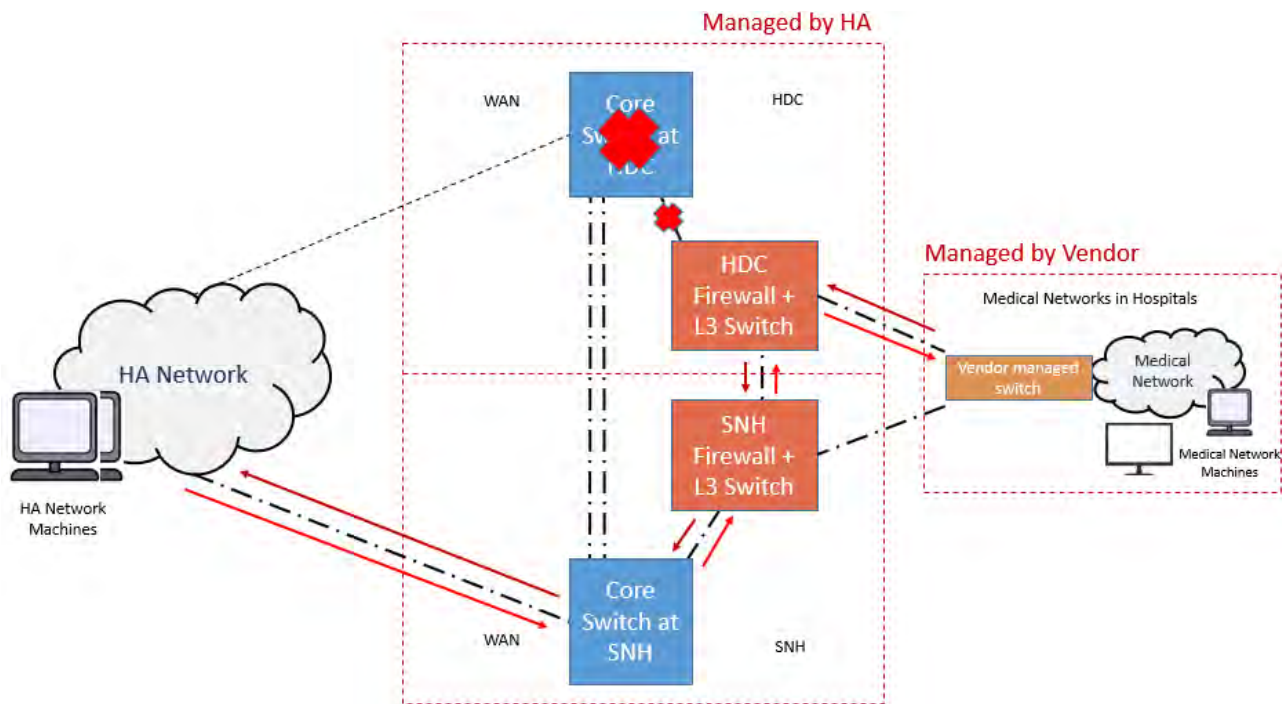


C.2.2 Normal Network Path

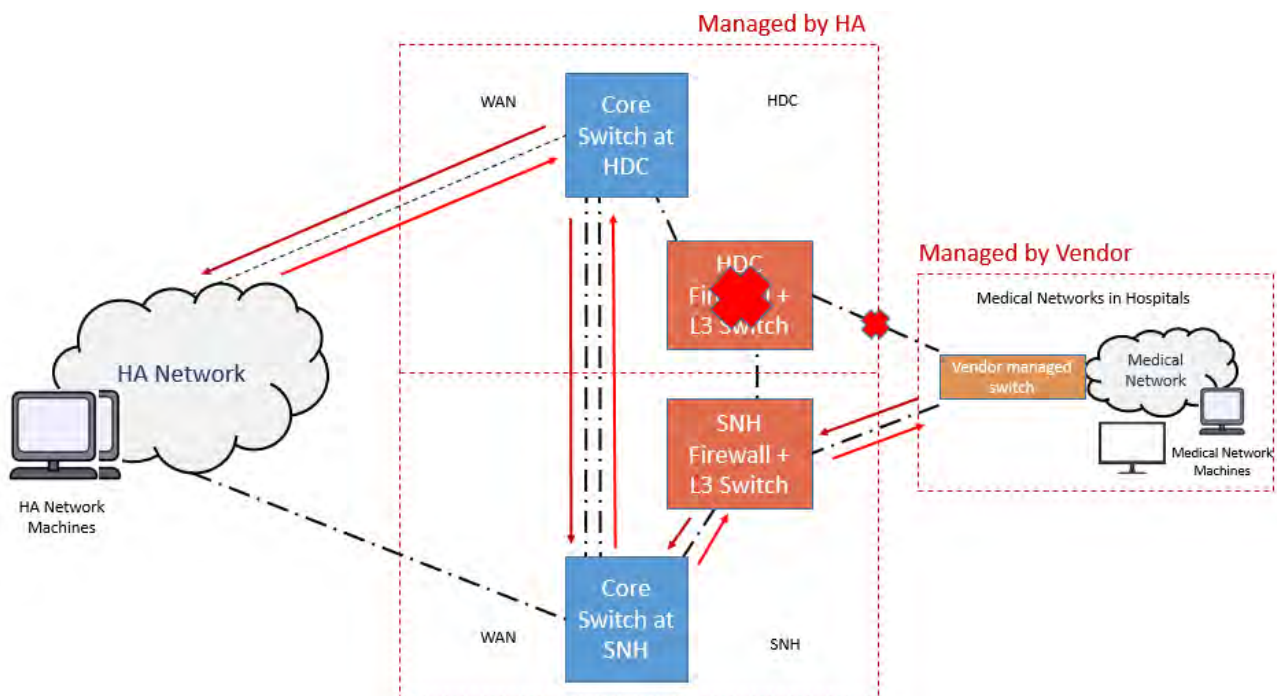


 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	26 of 29

C.2.3 Failure Scenario B1



C.2.4 Failure Scenario B2



 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	27 of 29

Appendix D Medical Network Security Compliance Report (Sample)

Hospital: _____ Name of Medical Network: _____
 Location: _____ IP Subnet: _____
 Reviewer: _____ Post of Reviewer: _____
 Date: _____

Security Requirements for Medical System/Equipments Installed in HA

Items for Verification with Vendor		Comply (Y/N)	Remark
A. Data Security (Review in regular basis)			
A1	Confidential data downloaded from the medical System/Equipment to end-user devices should be encrypted		
A2	Confidential data transferring between the medical System/Equipment and other HA IT systems should "preferably" be encrypted		
A3	Confidential data stored within the medical System/Equipment should "preferably" be encrypted		
A4	Confidential data stored in backup storage should be encrypted		
A5	Confidential data must not be exported for any usage other than clinical care in HA		
A6	Is the confidential data in System/Equipment and backup being protected from unauthorized access / leakage, including physical security controls? Please specify the controls in "Remark"		
B. Application Security (Review in regular basis)			
B1	The application should support role-based access control		
B2	The application should employ prevalent authentication mechanism at reasonable safety level		
B3	The application should apply network level encryption		
B4	The application should provide health-checking information		
B5	The application should keep audit logs		
B6	Conformance to HA's Application Security Guidelines		
B7	Conformance to HA's Web Application Security Design Guidelines		
C. Network Security (Review in regular basis)			
C1	The medical systems network should not have any network connection to external parties and should not have any unauthorized network connections		

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	28 of 29

Items for Verification with Vendor		Comply (Y/N)	Remark
C2	The medical systems network should connect to the network port provided by HA		
C3	The medical system network should use IP addresses as assigned by HA		
C4	Only the authorised network traffic is permitted between the medical system network and HA network		
C5	Formal change request and endorsement process for defining and implementing the network firewall policies		
D. Server Security (Review in regular basis)			
D1	Vendor should implement the server security as described in the HA Windows Server Hardening Guide and the Host security hardening policy guide		
D2	Vendor should install into the servers an anti-virus program running with the latest virus definitions		
D3	Vendor should install the latest security patches in the servers		
D4	Vendor should perform a regular scanning in the servers		
E. Client / Desktop Security (Review in regular basis)			
E1	Vendor should implement the security controls at the PCs of the medical systems as described in the Security Guidelines for Remote Client PC (External Business Partner)		
F. Security Incident Reporting (On-going exercise)			
F1	Vendor should immediately report security incidents to Cluster/Hospital management		
G. Vendor Maintenance (Review in regular basis)			
G1	Vendor should erase the data in storage devices before taking away the equipment for repair		
G2	Vendor should perform technical support on-site unless appropriate remote support arrangement is endorsed		
G3	Vendor support staff should sign the non-disclosure confidentiality agreement		
G4	When equipment is required to be taken away for offsite repair, are there ways to remove / erase / protect the confidential data in the equipment from leakage? Please specify the controls in "Remark"		

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-PD-ISP-007-v14
		Issue Date	18/11/2022
	IT Security Requirements for Quotation / Tender - Procurement of "non-IT" System/Equipment	Review Date	17/11/2023
		Appendix Page	29 of 29

Items for Verification with Vendor		Comply (Y/N)	Remark
H. Privacy Control (Review in regular basis)			
H1	Are there any user authentication controls present in the System/Equipment?		
H2	Is unique user ID being assigned to every user?		
H3	Does the System/Equipment allow setting of complex password such as upper / lower case, alpha, numeric and special characters?		
H4	Does the System/Equipment provide audit trails of user accesses? Please specify the controls in "Remark".		
H5	Is there any means to synchronize System/Equipment time with a trustworthy time server such as HA time server for accurate system record?		

Assumptions

1. all data transfer between medical and HA network should via EAI
2. in-direct offline storage should not be used

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Page	1 of 24

Guidelines for Cabling System and Network Setup in External Network

Version	Effective Date
5.0	29/11/2022

Document Number	HAHO-ITD-GL-N05-001-v05
Author	Will NG, HOIT&HI SA(N5)3
Custodian	C K HUNG, HOIT&HI SSM(N)
Approved/ Endorsed By	ITD
Approval Date	29/11/2022
Distribution List	All HA HOIT&HI Staff / Cluster IT Staff

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Page	2 of 24

Amendment History

Version No.	Date of Amendment	Prepared by	Description
1.0	09/10/2020	John Tse	First version
2.0	09/12/2020	John Tse	Update the External Network Architecture Diagram in section 4 to indicate the building switch is a L3 switch
3.0	20/07/2021	John Tse	Update the cabling system and L2 switch guidelines and specifications
4.0	15/8/2022	John Tse	Update Section: 4. Guidelines to Setup External Network 5. External Network Architecture 6. Roles & Responsibilities 7. Network Cabling System & Network Equipment 8. Network Cabling in External Network 9. External Network Setup by Vendor 10. L2 Switch Specification Requirements 11. L2 Switch Configuration 12. Acceptance to Checklist 13. Appendix A and Appendix B
5.0	25/11/2022	Will Ng	Update words in section 7

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Page	3 of 24

Table of Contents

1. Purpose	4
2. Reference	4
3. Overview	4
3.1 Objectives	4
3.2 Scope	4
3.3 Background	4
4. Guidelines to Setup External Network	5
5. External Network Architecture	6
6. Roles & Responsibilities	8
7. Network Cabling System & Network Equipment	9
8. Network Cabling In External Network	11
8.1 Cabling System Structure In Hospital	11
8.2 Backbone Cabling	11
8.3 Horizontal Cabling	12
8.4 Data Port (In Horizontal Cabling)	13
8.5 Floor Closet Setup	15
9. External Network Setup by Vendor	16
10. L2 Switch Specification Requirements	18
11. L2 Switch Configuration	19
12. Checklist	20
13. Further Information	21
Appendix A: List of Hospital Adopting Cat. 6a cable	22
Appendix B: Cabling System and Network Setup Checklist	23

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Page	4 of 24

1. Purpose

The purpose of this document is to provide guidelines for External Network Vendor to perform cabling work and network setup for External Network System.

2. Reference

N/A

3. Overview

3.1 Objectives

The objectives of this Guidelines includes:

- (a) To provide the External Network architecture for Vendors to follow;
- (b) To provide the cabling / network equipment specification requirements for Vendors to follow;
- (c) To provide the guideline for network cabling in External Network;
- (d) To provide the guideline for network switch configuration.

3.2 Scope

The scope of this IT guidelines is applicable to all External Network systems.

3.3 Background

- (a) Previously there is no standard for External Network Vendors to implement cabling system and network;
- (b) Cabling system and/or network equipment cannot be reused when the External Network end of support;
- (c) A guideline shall be developed to maintain the standards of cabling system implementation and network setup in External Network.

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Page	5 of 24

4. Guidelines to Setup External Network

Level	Type	Standards and Guidelines	Cabling	Network Equipment	Criteria
1	Vendor External Network with interface to HA	Follow: 1. IT Security Requirements for Quotation / Tender – Procurement of “non-IT” System/Equipment	Vendor can use their own cabling contractor (Except backbone cabling to be done by HA cabling contractor)	Vendor can use their own L2 switch that meet the specification in this guideline	Vendor shall provide the Cabling System and Network Setup Checklist for record purpose
2	Vendor Standalone External Network without interface to HA	2. This guideline for cabling system and network setup	Vendor can use their own cabling contractor	Vendor can use their own L2 switch	



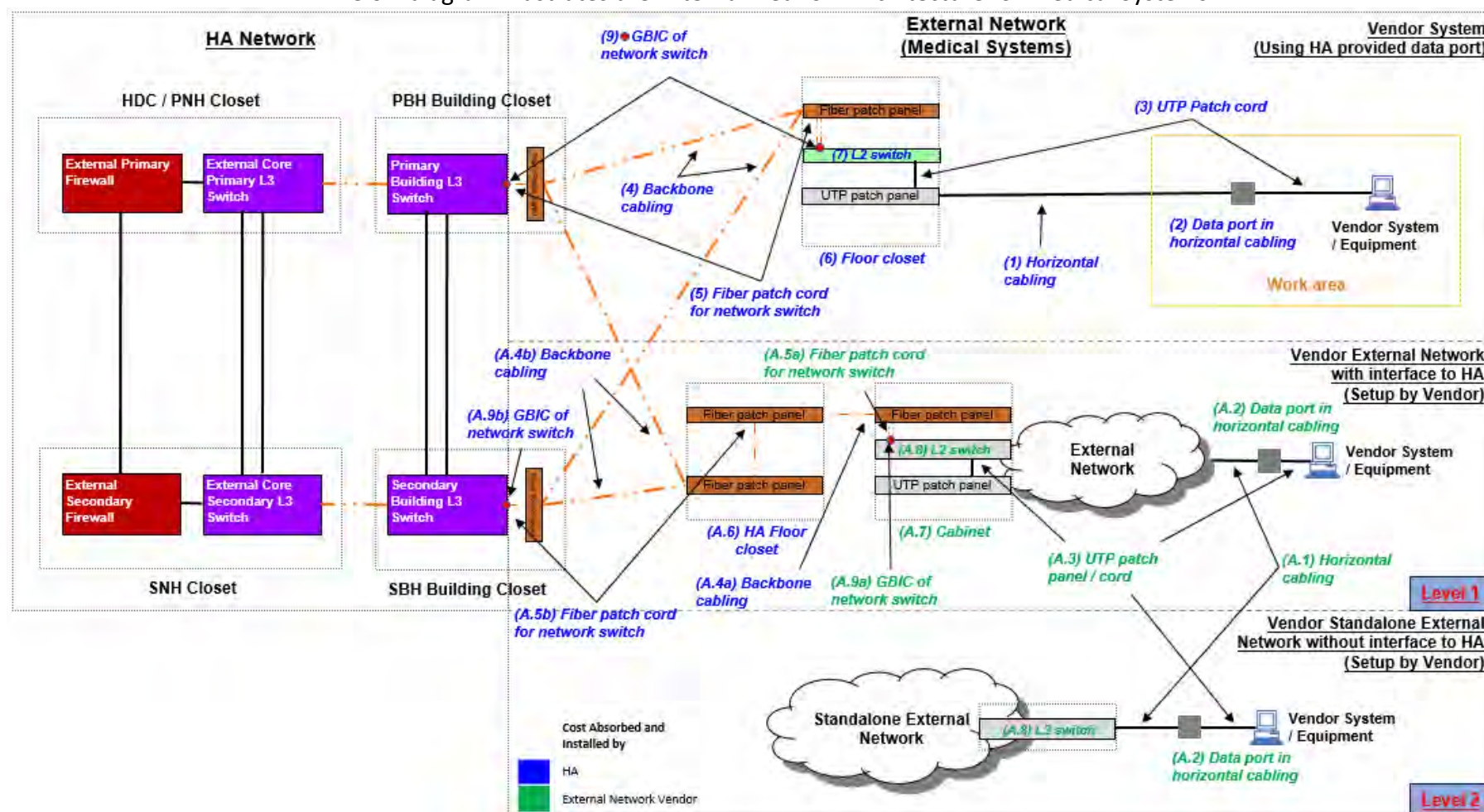
Hospital Authority Head Office

Guidelines for Cabling System and Network Setup in External Network

Document No.	HAHO-ITD-GL-N05-001-v05
Issue Date	29/11/2022
Review Date	28/11/2025
Page	6 of 24

5. External Network Architecture

Below diagram illustrates the External Network Architecture for Medical Systems



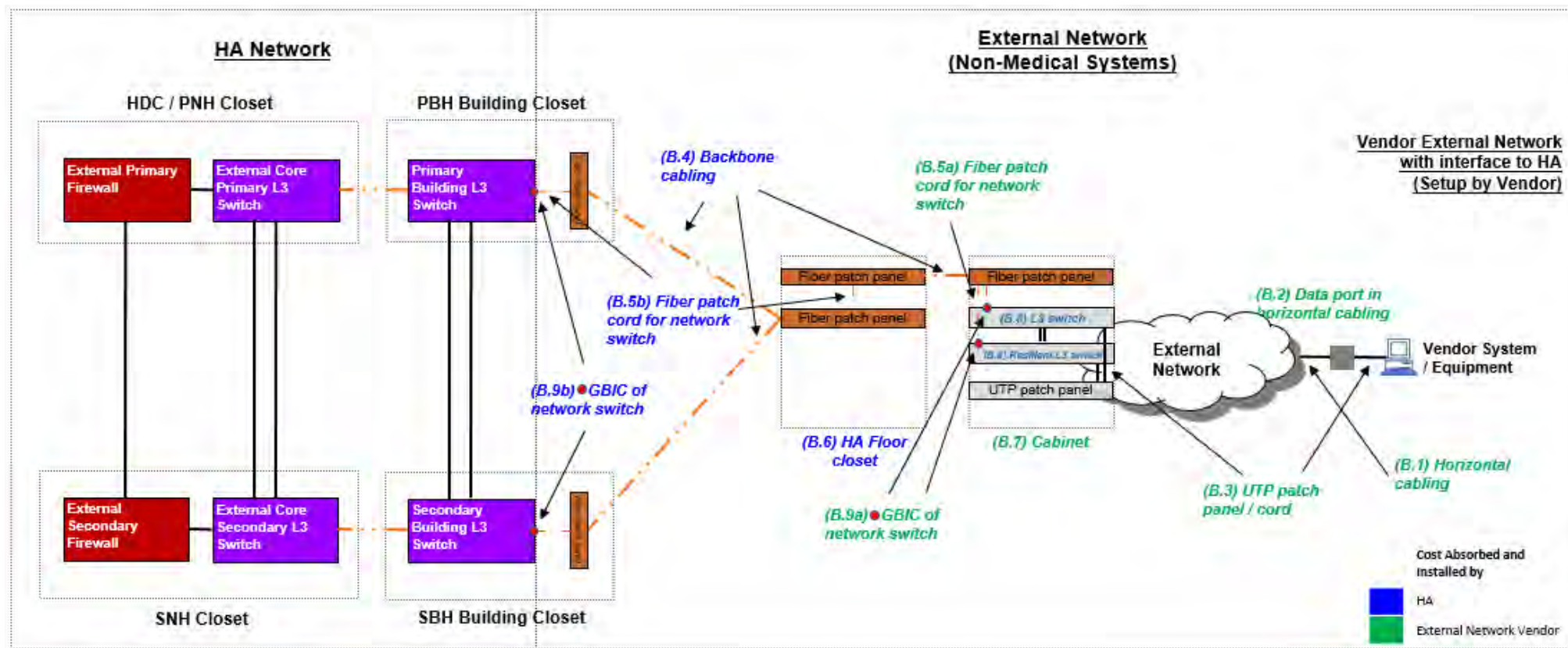


Hospital Authority Head Office

Guidelines for Cabling System and Network Setup in External Network

Document No.	HAHO-ITD-GL-N05-001-v05
Issue Date	29/11/2022
Review Date	28/11/2025
Page	7 of 24

Below diagram illustrates the External Network Architecture for Non-Medical Systems



 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Page	8 of 24

6. Roles & Responsibilities

Level	External Network	Component	Cost Absorbed and Installed by
1	Vendor External Network with interface to HA	(A.1) Horizontal cabling (Between Data port and vendor cabinet)	External Network Vendor
		(A.2) Data port (in horizontal cabling)	
		(A.3) UTP patch panel / cord for data port and in vendor cabinet	
		(A.4a) Horizontal Backbone cabling	HA
		(A.4b) Vertical Backbone cabling	
		(A.5b) Fiber patch cord for network switch	
		(A.6) HA Floor closet	
		(A.7) Cabinet	External Network Vendor
		(A.8) L2 Switch	
		(A.9a) GBIC of Network switch at vendor cabinet	
		(A.9b) GBIC of Network switch at PBH / SBH building closets	HA Network Equipment Vendor
2	Vendor Standalone External Network without interface to HA	(A.1) Horizontal cabling (Between Data port and vendor cabinet)	External Network Vendor
		(A.2) Data port (in horizontal cabling)	
		(A.3) UTP patch cord for data port and in vendor cabinet	
		(A.5a) Fiber patch cord for network switch	
		(A.8) L2 Switch	

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Page	9 of 24

7. Network Cabling System & Network Equipment

External Network	Usage	Product Description
Network cabling system	(A.1) Horizontal cabling (A.2) Data port (in Horizontal cabling)	Cat6 / Cat6A cable, LSZH rated Faceplate with modular Jack, angled outlet with shutter/latch or rack-mounted RJ45 patch panel with modular jacks, 24-port, 1U, straight, each modular jack shall be separately replaceable
	(A.3) UTP Patch panel / cord for Data port and in vendor cabinet	1-metre Cat6 / Cat6A slim patch cord with RJ45 connectors at both ends, straight, LSZH rated, factory-terminated
		2-metre Cat6 / Cat6A slim patch cord with RJ45 connectors at both ends, straight, LSZH rated, factory-terminated
		3-metre Cat6 / Cat6A patch cord with RJ45 connectors at both ends, straight, LSZH rated, factory-terminated
		Rack-mounted RJ45 patch panel with modular jacks, 24-port, 1U, straight, each modular jack shall be separately replaceable
	(A.4a) Horizontal Backbone cabling (A.4b) Vertical Backbone cabling	Indoor / outdoor 12-core, 9/125mm OS2 single-mode optical fiber, LSZH rated, with duplex LC connector at both ends
		Rack-mounted single-mode fiber patch panel with 24 duplex LC couplers/adapters, 48 cores, 1U
	(A.5a) Fiber patch cord for network switch (A.5b) Fiber patch cord for network switch	2-metre / 3-metre, single-mode OS2 fiber patch cord, LSZH rated, with duplex LC connector at both ends, factory terminated
	(A.6) Cabinet	Communication equipment cabinet (Floor-standing, steel, at least 1000kg load capacity, fully perforated front door, fully perforated middle-split rear door, all doors equipped with key locks, heavy duty casters with feet):
		1. 42U racking space (Dimension: height 2050mm x width 800mm x depth 1100mm) or 2. 42U racking space (Dimension: height 2050mm x width 800mm x depth 870mm) or 3. 42U racking space (Dimension: height 2050mm x width 600mm x depth 1100mm) or 4. 42U racking space (Dimension: height 2050mm x width 600mm x depth 870mm) or

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Page	10 of 24

		5. 37U racking space (Dimension: height 1800mm x width 600mm x depth 870mm) or 6. 27U racking space (Dimension: height 1400mm x width 600mm x depth 870mm) In Hospital Data Centre (HDC): Communication equipment cabinet (Same as the above requirements): 1. 42U racking space (Dimension: height 2050mm x width 600mm x depth 1200mm) Server cabinet (Same as the above requirements except the load capacity is 1500kg): 1. 42U racking space (Dimension: height 2050mm x width 600mm x depth 1200mm) or 2. 47U racking space (Dimension: height 2250mm x width 600mm x depth 1200mm) The cabinet size is subject to actual site environment.
Network equipment	(A.8) L2 switch	1. For Vendor External Network with interface to HA (Level 1): - Vendor can use other L2 switch according to the L2 Switch Specification Requirements and L2 Switch Configuration specified in section 10 and 11 respectively 2. For Vendor Standalone External Network without interface to HA (Level 2): - Vendor can use their own L2 switch
	(A.9a) GBIC of network switch at Building closet	1000BASE-LX/LH SFP transceiver module MMF/SMF 1310nm.
	(A.9b) GBIC of network switch at vendor cabinet	1000BASE-LX/LH SFP transceiver module MMF/SMF 1310nm

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Appendix Page	11 of 24

8. Network Cabling In External Network

8.1 Cabling System Structure In Hospital

The elements of the cabling system structure in hospital are:

- Backbone cabling;
- Horizontal cabling;
- Data port (in Horizontal cabling);
- Floor closet.

8.2 Backbone Cabling

- The function of the backbone cabling is to provide interconnections between Floor closet of External Network and Building closets of HA Network.
- Backbone cabling consists of the backbone cables, intermediate and main cross-connects mechanical terminations, and patch cords or jumpers used for backbone-to-backbone cross-connection. Backbone cabling also includes cabling between buildings.
- For fiber backbone cable, fiber patch cord, the fiber polarity shall be pair-flipped (A-to-B and B-to-A connection) to ensure transmit-to-receive connectivity.



- Recognized cables

Below type of cable is recognized and recommended for use in the backbone cabling system in HA network:

- 9/125 μ m OS2 single mode optical fiber.

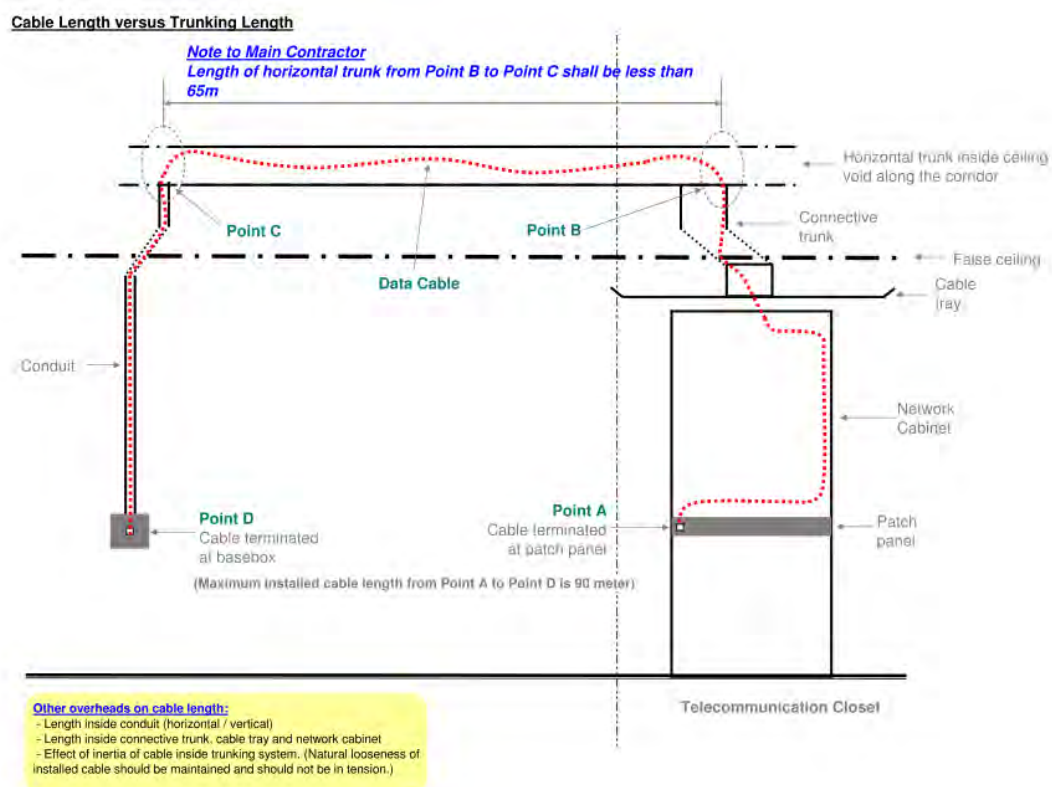
Recognized cables, associated connecting hardware, patch cords and equipment cords shall meet all applicable requirements specified in ANSI/TIA/EIA-568-B.3.

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Appendix Page	12 of 24

8.3 Horizontal Cabling

- The horizontal cabling is the portion of the telecommunication cabling system that extends from the Data port in work area to the Floor closet. In HA environment, that also means the linkage between user Data port and patch panel in network closet;
- The horizontal cabling includes horizontal cables, Data port in the work area, mechanical terminations and patch cords or jumpers located in the Floor closet;
- The term “horizontal” is used since typically the cable in this part of the cabling system runs horizontally along the floor of a building;
- Horizontal distances:

The horizontal distance is the cable length from the mechanical termination of the media at the horizontal cross-connect in the Floor closet to the Data port in the work area. The maximum horizontal distance for copper cabling shall be 90m and the cable inside ceiling trunking shall not exceed 65m length;



For each horizontal channel, the total length allowed for cords in the work area plus patch cords or jumpers plus equipment cables or cords in the Floor closet shall not exceed 10 m (33 ft). An allowance was made for 5 m (16 ft) from the telecommunications outlet to the work station.

- Recognized cables

Two types of cables are recommended for use in the horizontal cabling system in HA network, as designated by HA:

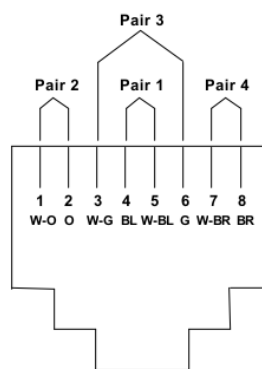
- Four-pair 100-ohm foiled/unshielded twisted-pair (F/UTP). Cat.6a cable or;
- Four-pair 100-ohm unshielded twisted-pair (UTP). Cat.6 cable.

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Appendix Page	13 of 24

Recognized cables, associated connecting hardware, jumpers, patch cords, equipment cords, and work area cords shall meet all applicable requirements specified in ANSI/TIA/EIA-568-B.2.

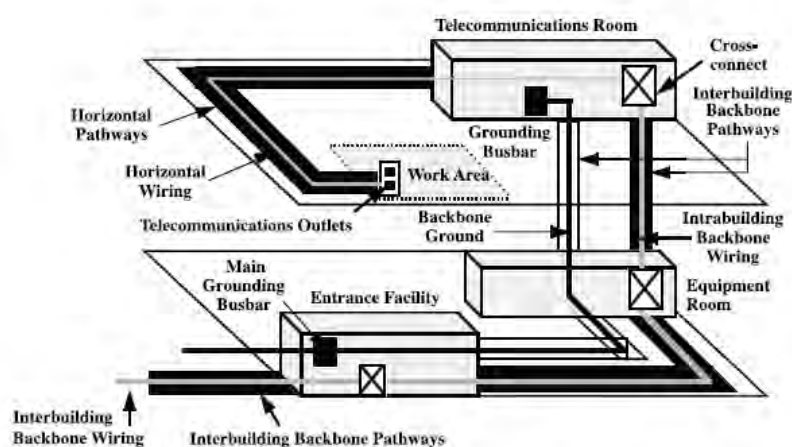
8.4 Data Port (In Horizontal Cabling)

- The work area components extend from the Data port to the Medical work station;
- The Data port for 100-ohm UTP cable shall meet the requirements of ANSI/TIA/EIA-568-B.2;
- T568B wiring scheme shall be used for termination of copper cabling system in HA;



Eight-position jack pin/pair assignment (T568B)

- Patch cords used in the work area shall meet or exceed the performance requirements in ANSI/TIA/EIA-568-B.2. Therefore, allowed maximum length of work area cord is 5m and 3m cord is for generic used;
- Labelling of Data port:
HA follows ANSI/TIA/EIA-606-A for labelling of Data ports;



Scope of ANSI/TIA/EIA-606-A

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Appendix Page	14 of 24

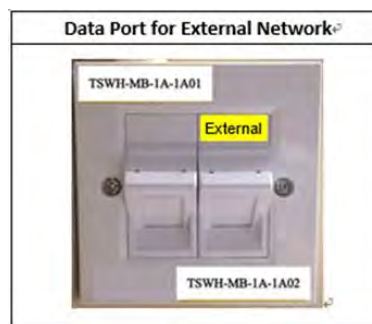
Data port's ID shall be printed on white label with black ink. The ID of left-hand side outlet shall be affixed on the upper left-hand corner and the right-hand side outlet shall be on the lower right-hand corner of the faceplate as below:



Labelling of Data port's usage:

- Labels shall be printed in black word on yellow label in 2cm x 1cm size as below:

External Network Data port: Yellow label

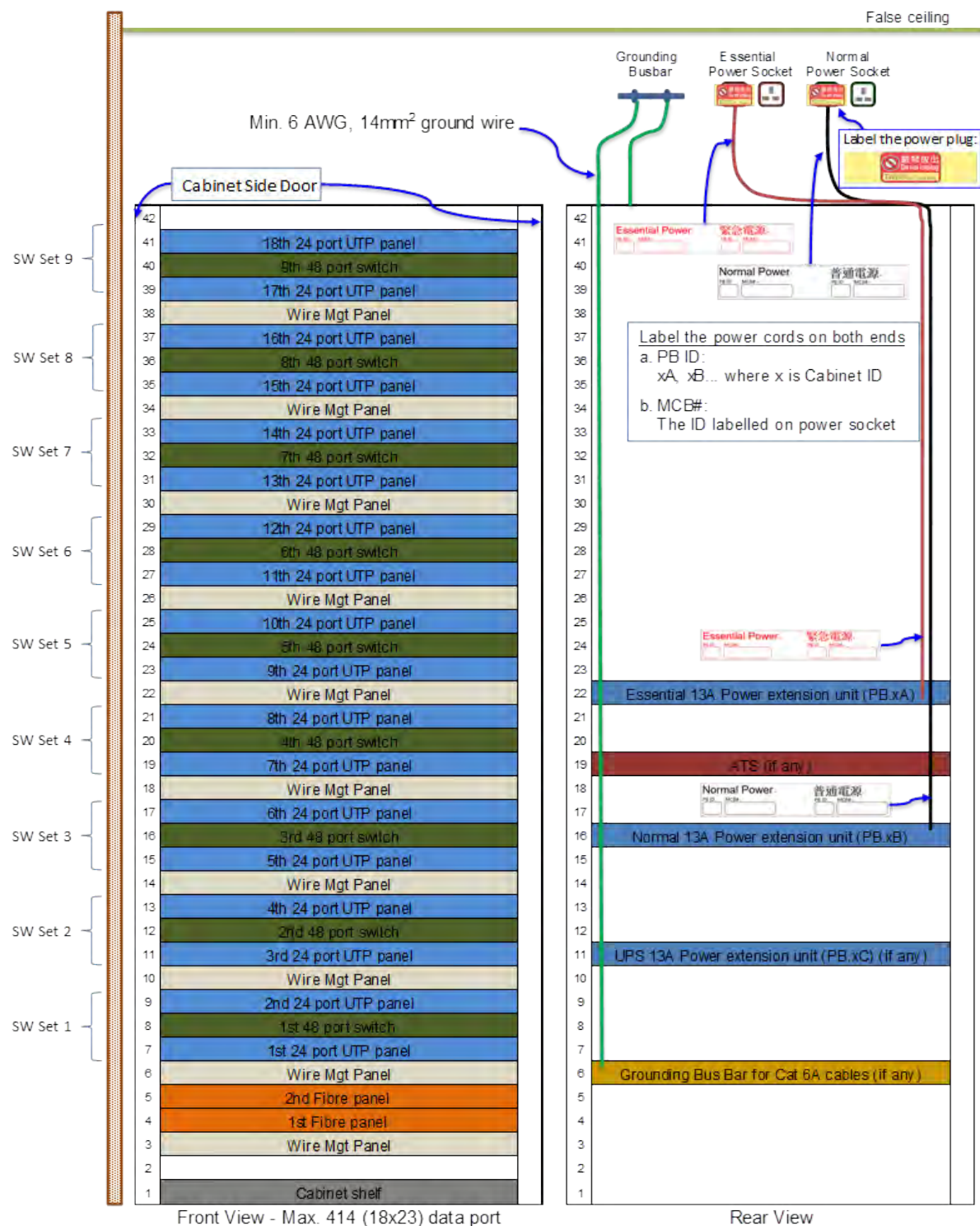


 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Appendix Page	15 of 24

8.5 Floor Closet Setup

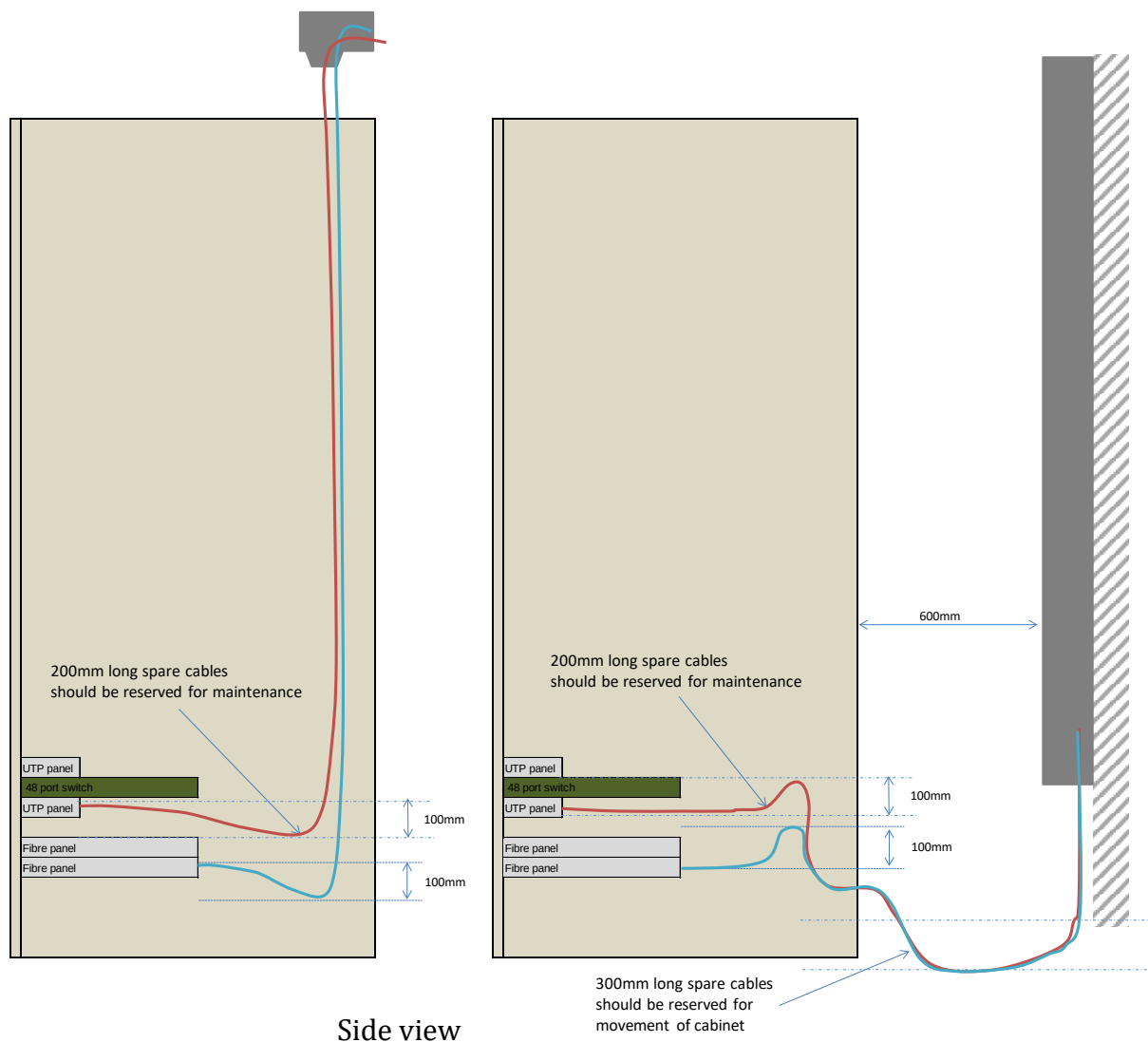
a. Floor-stand cabinet:

Cabinet space assignment:



 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Appendix Page	16 of 24

Termination of network cables for floor-stand cabinet:



9. External Network Setup by Vendor

For Vendor External Network with interface to HA (Level 1) and Vendor Standalone External Network without interface to HA (Level 2), External Network Vendor shall follow below guidelines to setup the External Network:

- 9.1 Shall setup the Local Area Network (LAN) of Vendor External Network (Level 1) and (Level 2) regarding the roles and responsibilities in section 6.
- 9.2 Horizontal cabling for Vendor External Network (Level 1) and (Level 2):
 - a. Recognized cables:

Two types of cables are recommended for use in the horizontal cabling system in HA network, as designated by HA:

- Four-pair 100-ohm foiled/unshielded twisted-pair (F/UTP). Cat.6a cable or;

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Appendix Page	17 of 24

- Four-pair 100-ohm unshielded twisted-pair (UTP). Cat.6 cable;

Recognized cables, associated connecting hardware, jumpers, patch cords, equipment cords, and work area cords shall meet all applicable requirements specified in ANSI/TIA/EIA-568-B.2.

- b. Most of hospitals have been adopted Cat. 6 cable that the External Network Vendor shall use Cat.6 cable by default.
 - c. The External Network Vendor shall install Cat.6a cabling standard in those hospital buildings that Cat.6a cabling systems are installed. (Please refer to Appendix A for the list of new hospital or building).
 - d. The type of horizontal cabling to be adopted is subject to the confirmation by HA.
- 9.3 For Vendor External Network (Level 1) setup, the backbone cables (Two orange long dash dotted lines from Building closets to HA Floor closet and one orange long dash dotted lines from vendor cabinet to HA Floor closet) and GBICs at Building closets (the red dots at Primary & Secondary Building L3 switches of HA Network) in the diagram of section 5 “External Network Architecture” shall be installed by HA.
- 9.4 Backbone cable of Vendor External Network (Level 1) to HA Network:
- a. Backbone cabling consists of the backbone cables, intermediate and main cross-connects mechanical terminations, and patch cords or jumpers used for backbone-to-backbone cross-connection. Backbone cabling also includes cabling between buildings;
 - b. Recognized cables:

Below type of cable is recognized and recommended for use in the backbone cabling system in HA network:
 - 9/125 µm OS2 single mode optical fiber.

Recognized cables, associated connecting hardware, patch cords and equipment cords shall meet all applicable requirements specified in ANSI/TIA/EIA-568-B.3.
- 9.5 HA shall arrange HA Authorized Cabling Contractor to install these backbone cablings and HA Equipment Vendor to install the GBICs at Building closets.
- 9.6 External Network Vendor shall install the GBICs in the switch at vendor cabinet.
- 9.7 At least one L2 switch or with resilient when HA requires and shall cater for different auto network failover and recovery scenarios.
- 9.8 The External Network Vendor shall coordinate with hospital end user to install floor-standing cabinet for accommodation of network and cabling equipment. Detail of floor-standing cabinet could be referred to section 8.5 “Floor closet setup”.
- 9.9 All network connections and corresponding network diagrams shall be well documented.

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Appendix Page	18 of 24

10. L2 Switch Specification Requirements

- 10.1 For Vendor External Network with interface to HA (Level 1) setup, External Network Vendor is required to supply, deliver, install and maintain the Layer-2 Ethernet switch and related hardware, software and services to support the network requirements of the External Network.
- 10.2 The configuration of the proposed switch shall support:
- 10.2.1 24 numbers or above of wire-speed full duplex auto-sensing 100/1000Base-T Ethernet ports plus at least 4 numbers of wire-speed full duplex auto-sensing pluggable transceiver Ethernet ports support 1Gbps and 10Gbps;
 - 10.2.2 Shall support bridging and at least 16,000 MAC address table size;
 - 10.2.3 Shall provide Layer-2 switching capacity of at least 64Gbps bandwidth in full duplex (that is, 128Gbps bandwidth for transmit and receive simultaneously);
 - 10.2.4 Shall support Resilience link assigned to any pair of ports without using Spanning Tree Protocol (STP). Only one link is in transmission mode and the other one is in standby/backup mode;
 - 10.2.5 Shall support Link Aggregation Control Protocol (LACP);
 - 10.2.6 Shall support IEEE 802.1Q VLANs. The VLANs shall be grouped by ports within a single switch;
 - 10.2.7 All ports shall be able to be assigned to both tagged and untagged VLANs at the same time;
 - 10.2.8 Shall support packet classification and filtering by user-defined criteria based on TCP/UDP ports and/or Source/Destination IP addresses without Layer-3 routing protocol enabled;
 - 10.2.9 Shall support IPv4 and IPv6 protocols;
 - 10.2.10 Shall support IGMP V1/v2 and Snooping;
 - 10.2.11 Shall support RFC 2138 RADIUS Authentication;
 - 10.2.12 Shall support RFC 2139 RADIUS Accounting;
 - 10.2.13 Shall support the authentication through the RADIUS. At least two RADIUS servers (Primary and Backup/Secondary) can be defined;
 - 10.2.14 Shall support NTP or SNTP with at least two time servers;
 - 10.2.15 Shall support IEEE802.1x EAP Authentication;
 - 10.2.16 Shall support 802.1x MAC-based mechanisms network login;
 - 10.2.17 Shall support syslog remote logging to at least two servers;
 - 10.2.18 Shall support the following network management features:
 - 10.2.19 local and remote management including but not limited to changing configuration, upload/download configuration files to management server, download firmware from management server, resetting switch port and reboot with following connectivity:
 - (i) at least one out-of-band 100-BaseT or 1000-BaseT management port for remote management over SSHv2 (RFC4251 and associated RFCs);

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Appendix Page	19 of 24

(ii) REST based or equivalent API for remote management;

(iii) Console port for local management.

10.2.20 Mirror port for attachment of network analyzer;

10.2.21 SNMP V2c/V3 and RFC1213 MIBII;

10.2.22 Shall support Access Control Lists (ACLs);

10.2.23 Shall support not be greater than 1U (45mm);

10.2.24 Shall come with power cord meeting the following specifications subject to HA instruction:

(i) 2 meter IEC320 C14 to IEC320 C13 or IEC320 C15 (10A / 15A rating, straight / L-Shape as per request) power cord with both side lockable; or

(ii) 2 meter BS1363 plug to IEC320 C13 or IEC320 C15 lockable connector (10A / 15A rating, straight / L-Shape as per request) power cord.

10.2.25 Shall support dual hot-swappable power supply;

10.2.26 The depth of the Layer-2 switch shall not be greater than 420mm; and

10.2.27 To ensure the compatibility with HA network, the vendor L2 switch shall compatible with the following HA network switch at Building including but not limited to:

(i) Cisco Nexus Series Layer-3 switches;

(ii) Extreme Networks Layer-3 switches; and

(iii) Huawei CloudEngine Layer-3 switches.

11. L2 Switch Configuration

11.1 For Vendor External Network with interface to HA (Level 1) setup, Vendor is required to configuration the Layer-2 Ethernet switch to support the network requirements of the External Network.

11.2 The L2 switch shall have two 1000BASE-LX SFP uplink port such as:

a. Port 51 is Primary uplink to Primary Building Switch in HA Network.

b. Port 52 is Resilience uplink to Secondary Building Switch in HA Network.

11.3 The switch port status shall be shutdown if NO connection. The switch is required to be enabled when the Vendor system / equipment to be connected to the switch.

11.4 VLANs are required to be created for Vendor system / equipment in configuration:

a. VLAN ID to be provided by Hospital Authority when project to be implemented.

11.5 For switch port of Primary uplink and Resilience uplink such as:

a. The port status of Port 51 (Primary uplink) is required to be enabled. The port mode is "mode trunk". Backup port is Port 52 (Resilience uplink).

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Appendix Page	20 of 24

- b. The port status of Port 52 (Resilience uplink) is required to be enabled. The port mode is “mode trunk”. No backup port is needed.

11.6 For other configuration of switch port such as 1 to 48, Port mode is “mode access”. Port security shall be enabled. Port security violation mode to be restricted. Port logging to be enabled. No MDIX is required.

11.7 The network switches shall connect to the end device directly.

11.8 No daisy-chaining or cascading of network switches are allowed.

11.9 Additional configuration according to HA request.

Below is the Cisco Catalyst L2 switch basic configuration. The proposed L2 switch shall implement the same or equivalent feature / status and shall be fully compatible with the existing HA environment:

Switch Port	Feature / Status	Switch Configuration
Port 1 - 48	Port Status	shutdown (refer to 11.3)
	Port Mode	mode access
	Port VLAN ID	VLAN xxx (refer to 11.4)
	Port security	Enable
	Port security violation mode	restrict
	Port logging	disable
	MDIX	No
Port 51 (Primary Uplink)	Port Status	no shutdown
	Port Mode	mode trunk
	Active Port	rep segment xxx edge no-neighbor primary
Port 52 (Resilience Uplink)	Port Status	no shutdown
	Port Mode	mode trunk
	Backup Port	rep segment xxx edge no-neighbor preferred

12. Checklist

- 12.1 External Network Vendor shall submit the “Cabling System and Network Setup Checklist” with respective to the requirements stipulated in this guideline for record purpose. (Please refer to Appendix B for the sample checklist)
- 12.2 The completed “Cabling System and Network Setup Checklist” shall return to Head Office Information Technology (HOIT) by email to “n5.extnet@ha.org.hk” within 3 months after the installation / network setup.

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Appendix Page	21 of 24

12.3 For any general enquiries relating to Cabling System and Network Setup, please contact HOIT by email to "n5.extnet@ha.org.hk".

13. Further Information

Further information and details can be obtained by contacting:

- Will Ng, HO IT&HI SA(N5)3, 35426027, nwt404@ha.org.hk
- HO IT&HI N5 External Network, n5.extnet@ha.org.hk
- C K HUNG, HO IT&HI SSM(N), 2300 6602, ck.hung@ha.org.hk

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Appendix Page	22 of 24

Appendix A: List of Hospital Adopting Cat. 6a cable

List of new hospital buildings installed with Cat.6a cabling systems

No.	Hospital Name
1	H K Red Cross Blood Transfusion Service (BTS) - New Annex Building
2	Haven of Hope Hospital (HHH) - Trinity Block
3	Hong Kong Children's Hospital (HKCH) – all blocks
4	Multi-service Centre (MSC) – all blocks
5	Shatin Hospital (SH) - Block D
6	Tuen Mun Hospital (TMH) – OT Block Extension
7	Kwong Wah Hospital – New Block

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Appendix Page	23 of 24

Appendix B: Cabling System and Network Setup Checklist

Hospital: _____ Name of External Network: _____
 Location: _____ IP Subnet: _____
 Reviewer: _____ Post Reviewer: _____
 Date: _____

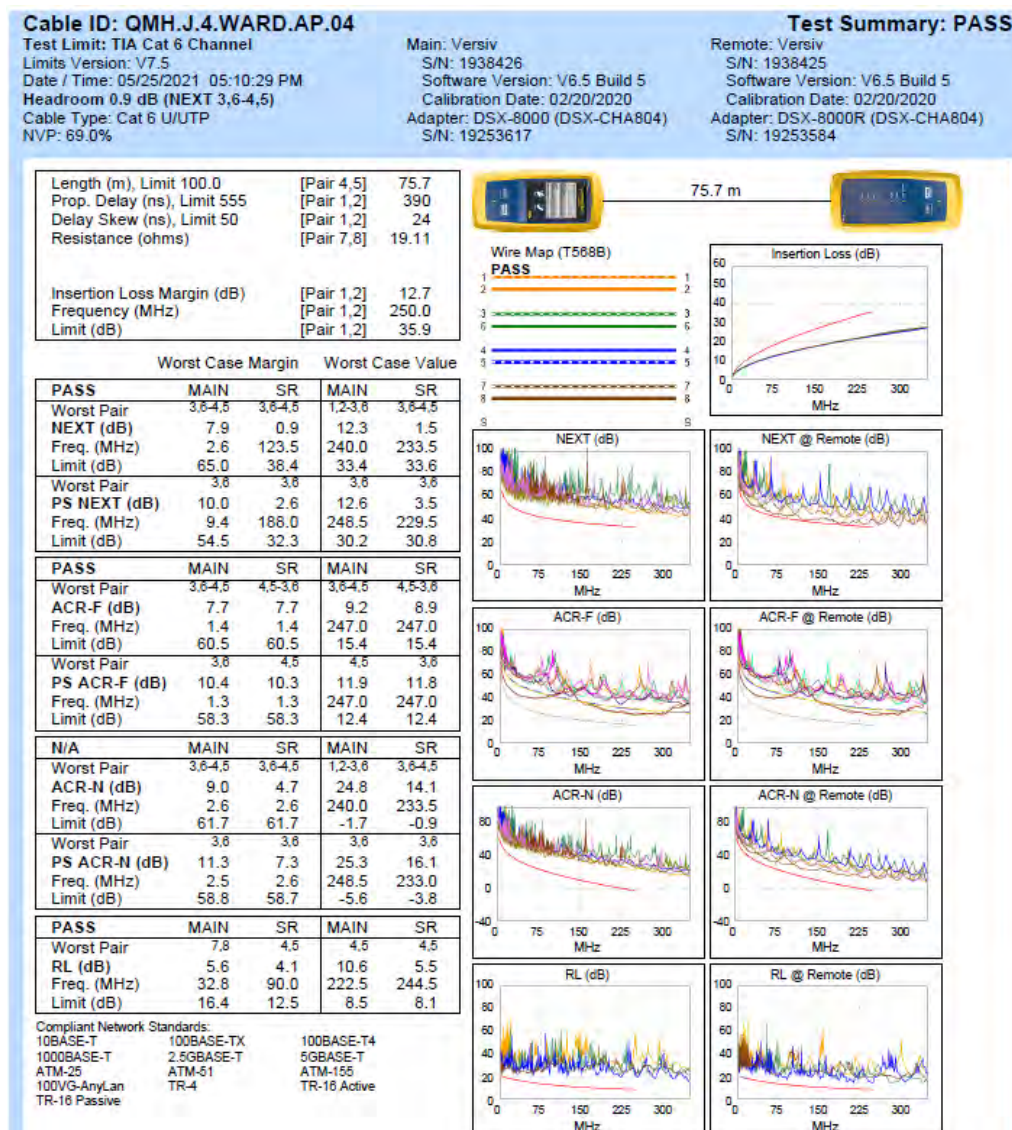
Cabling System and Network Setup Checklist

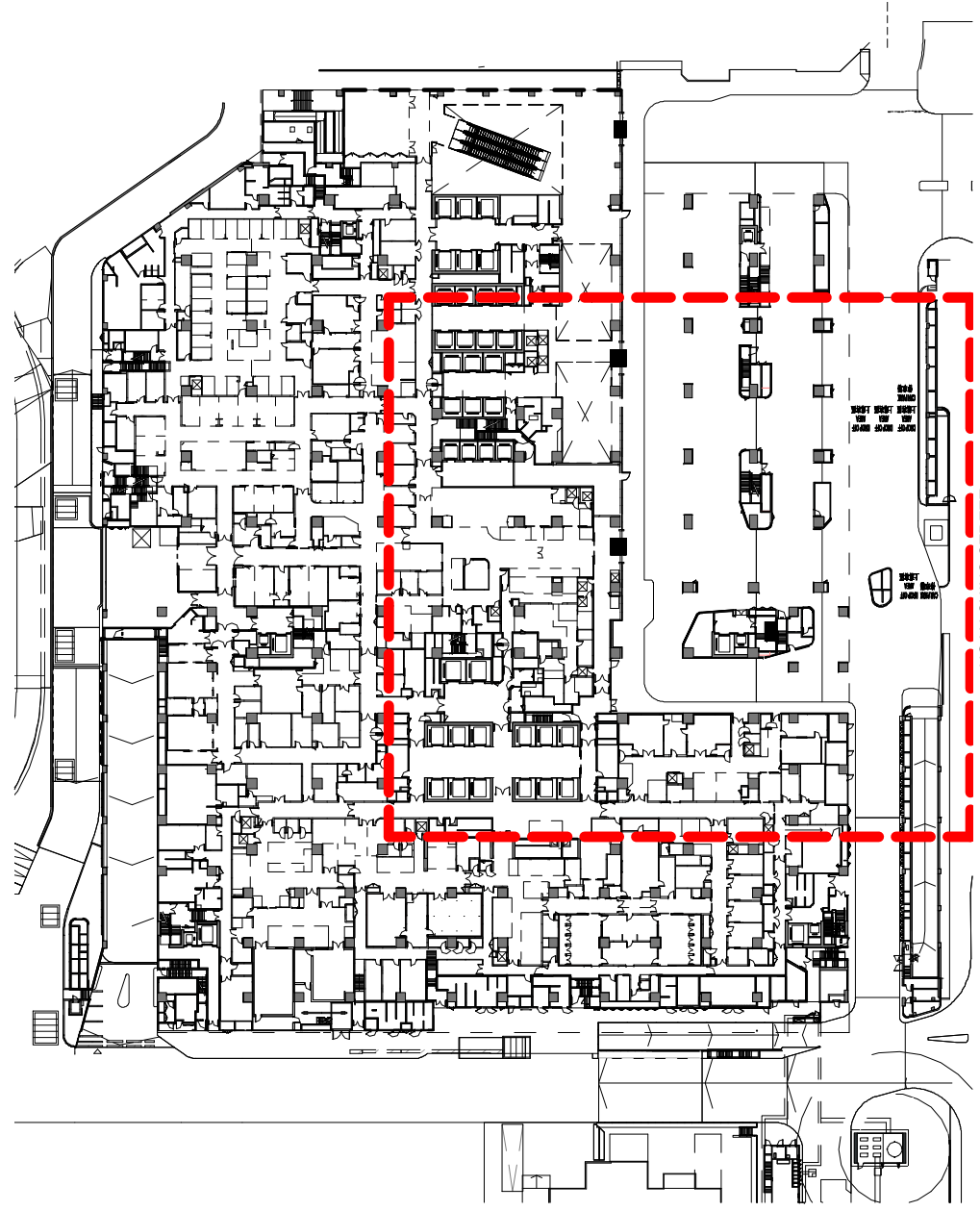
No.	Description	(Y/N)	Remark
A Cabling System			
A1	All cables passed with soft copy of test report submitted		
A2	All cables for use in the horizontal cabling system are: - Four-pair 100-ohm unshielded twisted-pair (UTP). Cat.6 cable or; - Four-pair 100-ohm foiled/unshielded twisted-pair (F/UTP). Cat.6a for using in new building / hospital		
A3	All cables, associated connecting hardware, jumpers, patch cords, equipment cords, and work area cords shall meet all applicable requirements specified in ANSI/TIA/EIA-568-B.2		
A4	The data ports for 100-ohm UTP cable shall meet the requirements of ANSI/TIA/EIA-568-B.2 and T568B wiring scheme shall be used for termination of copper cabling system		
A5	Patch cords used in the work area shall meet or exceed the performance requirements in ANSI/TIA/EIA-568-B.2		
A6	All fiber cables, associated connecting hardware, jumpers, patch cords, equipment cords shall meet all applicable requirements specified in ANSI/TIA/EIA-568-B.3		
A7	Follow HA standards in the labelling of data ports		
A8	Follow HA standards to install floor-stand cabinet and cabinet space assignment		
B Network Switch			
B1	Provide the brand and model of the network switch: _____		
B2	Provide the configuration of the network switch		
B3	The network switch port shall be shutdown if NO connection		
B4	There is no daisy-chaining or cascading of network switches		
B5	The network switch port to connect end device shall enable with port security and port security violation mode restrict.		
B6	All network connections and corresponding network diagram shall be well documented		
B7	Drill test shall be performed regularly to ensure the entire application / system and network failover is working as expected		
C Network Switch Interface to HA Network			
C1	The network switch shall have two uplink ports connect to Primary and Secondary building switches in HA Network respectively		
C2	The uplink ports shall have two 1000BASE-LX Small form-factor pluggable (SFP) transceiver		
C3	The resilience link assigned to any pair of uplink ports without using spanning tree protocol (STP) and only one link is in transmission mode and the other one is in standby/backup mode		

 醫院管理局 HOSPITAL AUTHORITY	Hospital Authority Head Office	Document No.	HAHO-ITD-GL-N05-001-v05
		Issue Date	29/11/2022
	Guidelines for Cabling System and Network Setup in External Network	Review Date	28/11/2025
		Appendix Page	24 of 24

C4	The port mode has been configured as "mode trunk" in the primary and resilience uplinks of the network switch		
C5	The VLAN ID provided by HA has been created in the network switch		

"Passed" Cabling Test Report Sample





KEY PLAN - L00

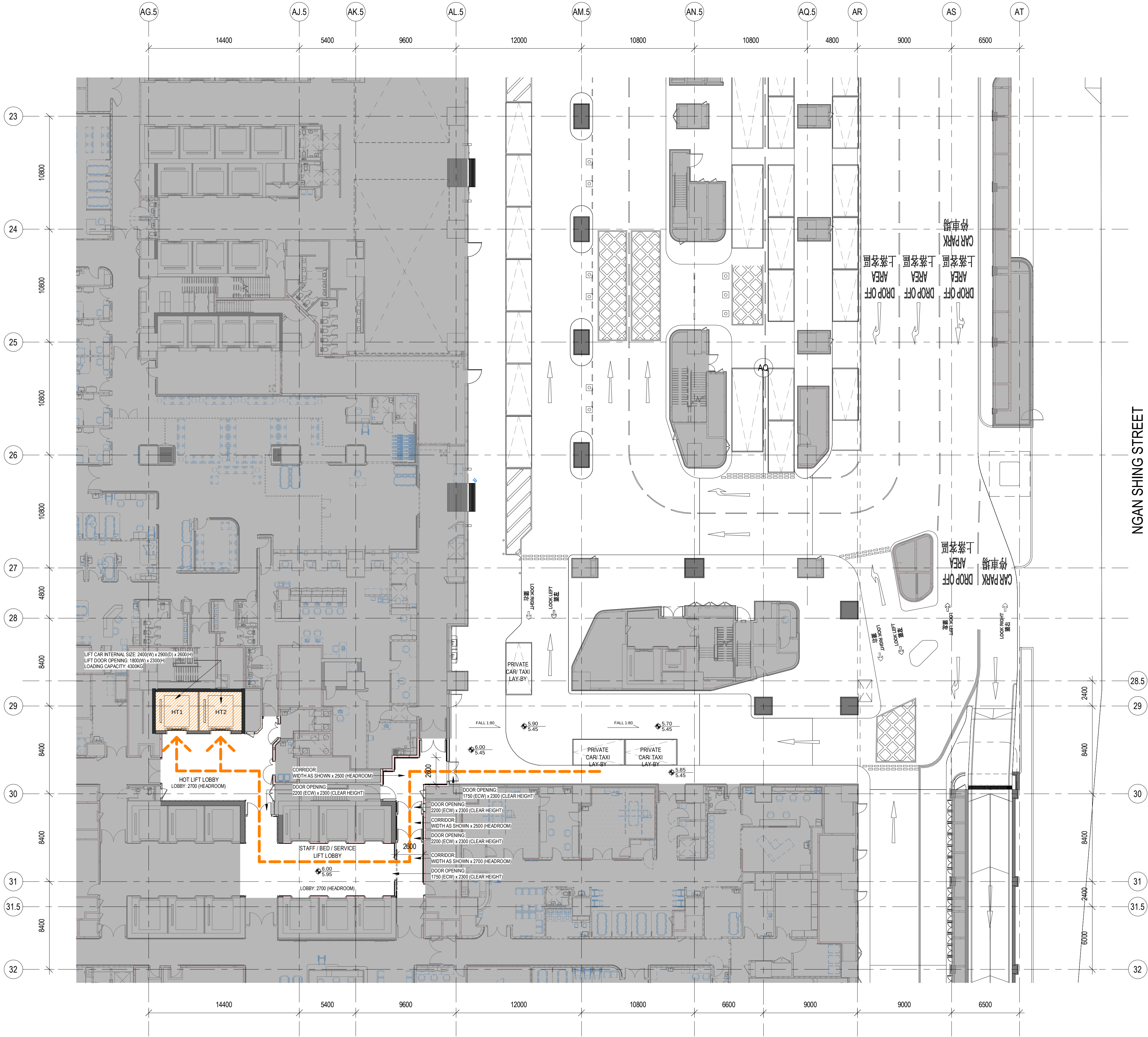
NOTES:

PROVISIONAL ARRANGEMENT FOR EQUIPMENT OF DELIVERY SIZE BIGGER THAN 1600(W) x 2600 (D) x 2300(H) BUT SMALLER THAN 1800(W) x 2900 (D) x 2300(H)

CONSENT OF EQUIPMENT DELIVERY (OR REPLACEMENT) SCHEDULE AFTER HOSPITAL HANDOVER TO USERS FROM DROP-OFF & HOT LIFT LOBBY AT L00 TO BE AGREED WITH THE HOSPITAL TO AVOID DISRUPTION TO CLINICAL OPERATIONS.

LEGEND

- EQUIPMENT DELIVERY ROUTE
- NON-APPLICABLE AREA



1

PROVISIONAL DELIVERY ROUTE FROM L00 DROP-OFF VIA HOT LIFTS

1:200

F.S.D. REF. : —			
D.L.O. REF. : —			
Client :  醫院管理局 HOSPITAL AUTHORITY			
Project Management Consultant : ARUP			
NOTE : DO NOT SCALE DRAWINGS.			
00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED
Architect :  WONG TUNG & PARTNERS LIMITED ARCHITECTS & PLANNERS			
Structural, Civil & Geotechnical Engineering Consultant :  MEIN-HARDT			
Building Services Engineering Consultant :  wsp			
Quantity Surveying Consultant :  RLB 利比 Rider Levett Bucknall			
Project :  Redevelopment of Prince of Wales Hospital, Phase 2 (Stage 1) at Ngan Shing Street, Shatin			
Location : IPEB		Stage : DETAILED DESIGN	
Drawing Title : PROVISIONAL DELIVERY ROUTE FROM L00 DROP-OFF VIA HOT LIFTS			
DATE: 04/2023		SCALE: As indicated	
DRAFTED BY: WHK	CHECKED BY: DFC	DESIGNED BY: APK	REVIEWED BY: PYC
JOB NO. 32110	DRAWING NO. IPB/WTP/LFPE/GN07		REV.NO. 00

TENDER

PARTICULAR NOTES FOR CATEGORY B2 EQUIPMENT

THE "PARTICULAR NOTES" SHOULD BE READ IN CONJUNCTION WITH "GENERAL NOTES" AND REQUIREMENT SPECIFIED IN THE TENDER DOCUMENT.

TESTING & COMMISSIONING

1. UPON COMPLETION OF INSTALLATION AND T&C BY THE EQUIPMENT VENDOR, MAIN CONTRACTOR SHALL, JOINTLY WITH THE EQUIPMENT VENDOR, REPORT COMPLETION OF THE RESPECTIVE FPE. THE REPORT SHALL IDENTIFY THE DATE OF COMPLETION OF THE INSTALLATION WITH RECORD PHOTOS, T&C REPORT ACCEPTABLE TO THE EMPLOYER, CONFIRMATION FROM THE EQUIPMENT VENDOR THAT THE FPE HAS BEEN INSTALLED AND OPERATE AND FUNCTION TO ITS PURPOSE AS INTENDED TO.
2. UNLESS OTHERWISE STATED, ALL FPE SHALL BE INSTALLED AND T&C BY EQUIPMENT VENDOR. MAIN CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY AND/OR PERMANENT BUILDING SERVICES PROVISIONS/CONNECTIONS AND ANY OTHER TOOLS, EQUIPMENT AND/OR ACCESSORIES, AS APPROPRIATE AND REQUIRED, TO FACILITATE THE REQUIRED T&C WORKS.
3. THE MAIN CONTRACTOR AND EQUIPMENT VENDOR SHALL JOINTLY ATTEND ALL TESTING AND COMMISSIONING WORKS TO ENSURE THE FUNCTIONING THE EQUIPMENT AND THE PERFORMANCE OF RELATED MEP SYSTEMS.
4. FOR PASS-THROUGH EQUIPMENT LOCATED IN AIR-TIGHT ROOMS/ CLEANROOMS (INCLUDING BUT NOT LIMITED TO THE STEAM STERILIZER/ WASHER DISINFECTOR CHAMBER/ HYDROGEN PEROXIDE STERILIZER/ RETURN CONVEYOR IN THE IAP AREA)

• THE MAIN CONTRACTOR SHALL CARRY OUT ROOM AIR LEAKAGE TEST TO ENSURE ROOM INTEGRITY AND AIR TIGHTNESS OF ALL PRESSURIZED ROOMS AS SPECIFIED IN THE DRAWINGS. REFERENCE SHALL BE MADE TO AIR TIGHTNESS TEST PARTICULAR SPECIFICATION. REFER TO BS DRAWINGS FOR PRESSURE REQUIREMENTS OF THE PRESSURIZED ROOMS. THE MAIN CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING THE AIR TIGHTNESS TESTING FOR THE PERMANENT PRIMARY ENCLOSURE OF ALL AIR-TIGHT ROOMS.

• FOR LOCATIONS WHERE WALL OPENINGS HAVE BEEN RESERVED FOR INSTALLATION OF PASS-THROUGH EQUIPMENT TO BE PROVIDED BY THE HOSPITAL, THE MAIN CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTING TEMPORARY PARTITION TO SEAL UP THE WALL OPENINGS AND CARRY OUT THE AIR TIGHTNESS TEST. THE AIR TIGHTNESS TEST MAY BE WITNESSED BY THE HOSPITAL APPOINTED PERSONNEL AND THE EQUIPMENT VENDOR. UNTIL THE AIR TIGHTNESS TEST HAS BEEN CONDUCTED SUCCESSFULLY, THE MAIN CONTRACTOR CAN THEN DEMOLISH THE TEMPORARY PARTITION AND PREPARE THE SITE FOR THE PASS-THROUGH EQUIPMENT INSTALLATION.

• AFTER INSTALLATION OF EQUIPMENT BY SUPPLIER, THE MAIN CONTRACTOR WILL CARRY OUT A SUBSEQUENT AIR PARTICLE TEST TO SHOW COMPLIANCE OF AIR TIGHTNESS. IF THIS SUBSEQUENT TEST FAILED TO COMPLY WITH THE REQUIRED TEST STANDARDS, IT WOULD DEEM TO BE THE AIR LEAKAGE CAUSED BY WORKMANSHIP OF THE EQUIPMENT VENDOR. BOTH THE MAIN CONTRACTOR AND EQUIPMENT VENDOR ARE RESPONSIBLE TO IDENTIFY THE SOURCE OF AIR LEAKAGE AND RECTIFICATION WORKS BY EQUIPMENT VENDOR TO BE CARRIED OUT FOR FURTHER TESTING(S) UNTIL COMPLIANCE OF THE TEST STANDARDS. THE EQUIPMENT VENDOR SHALL BEAR THE COST FOR RECTIFICATION WORKS AND THE ASSOCIATED COST OF RE-TESTING (S) BY CERTIFIED PERSONNEL UNDER LABORATORY ACCREDITATION SCHEME IN HONG KONG. PLEASE REFER TO THE FINISHES CODE OF THE ROOM, THE LEGEND 'AT' DENOTES LOCATION WHERE AIR PARTICLE TEST IS REQUIRED.

• AIR-TIGHT ACCESS PANEL SHALL BE USED IF NECESSARY TO ACHIEVE AIR-TIGHTNESS AND NOT TO ALLOW AIR LEAKAGE. NEVERTHELESS, THE AIR-TIGHTNESS OF ALL AIR-TIGHT ROOMS SHALL BE TESTED AND VERIFIED AFTER COMPLETION OF THE WORKS SPECIFIED.

FOR EQUIPMENT WHERE SUNKEN FLOOR SLABS/ PITS IS NECESSARY FOR INSTALLATION

1. AT LOCATION WHERE BACKFILLING OF THE SUNKEN FLOOR/ SUNKEN PIT IS REQUIRED, THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR THE COST & THE WORKS. THE EQUIPMENT VENDOR SHALL COORDINATE WITH THE MAIN CONTRACTOR FOR SITE PROGRESS TO COMPLETE THE LIGHT-WEIGHT CONCRETE POURING WORKS BEFORE OP INSPECTION. IF BACKFILL OF SLAB IS NOT REQUIRED, AT LOCATION WHERE EQUIPMENT VENDOR PROPOSE ANY WORKS WHICH MAY AFFECT THE EXISTING WATERPROOFING LAYER, SHOP DRAWINGS MUST BE SUBMITTED TO HIGHLIGHT LOCATION OF PENETRATION & REMEDIAL PROPOSAL AT WATERPROOFING LAYER PRIOR TO INSTALLATION ON SITE.
2. ANY DAMAGES INCURRED TO THE EXISTING WALL, SKIRTING & FLOOR FINISHES UNDER THE MAIN CONTRACT, THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR THE COST OF REMEDIAL WORKS AND SUCH WORKS SHALL BE UNDERTAKEN THE MAIN CONTRACTOR TO MAINTAIN THE WARRANTY UNDER MAIN CONTRACT.

FOR EQUIPMENT WHERE HANGER WALLS ARE NECESSARY FOR INSTALLATION

1. AT LOCATIONS WHERE MORE THAN ONE SET OF HANGER WALLS ARE REQUIRED ABOVE THE EQUIPMENT, DRY WALL CONSTRUCTION HAD BEEN SPECIFIED IN ORDER TO ALLOW FLEXIBILITY FOR CONSTRUCTION SUBJECT TO THE PROPOSED DIMENSION OF THE EQUIPMENT UNLESS OTHERWISE SPECIFIED. THE EQUIPMENT VENDOR SHALL CONFIRM WITH THE MAIN CONTRACTOR FOR LOCATION OF THE HANGER WALL TO SUIT THE PROPOSED EQUIPMENT. THE EQUIPMENT VENDOR SHALL ALSO BE RESPONSIBLE FOR THE SELF STRUCTURAL SUPPORT AND STABILITY OF THE PROPOSED FPE EQUIPMENT & PANEL SYSTEM WITHOUT IMPOSING ADDITIONAL LOADING / TRANSFER FORCE ONTO THE EXISTING HANGER WALL SYSTEM. THE INDEPENDENT STRUCTURE OF THE HANGER WALL & THE SELF SUPPORTING FPE EQUIPMENT SHALL ALLOW MAX. 10MM GAP & BE FILLED WITH SEALANT JOINT; HENCE DIRECT FIXING CONNECTION TO THE EXISTING HANGER WALLS STRUCTURE IS PROHIBITED.

FOR EQUIPMENT WHERE CEILING SUPPORTING SYSTEM ON STRUCTURAL SOFFIT IS NECESSARY FOR INSTALLATION

1. THERE IS PROVISION UNDER THE MAIN CONTRACT FOR THE CEILING METAL STRUCTURAL SUPPORTING SYSTEM OR PROPRIETARY METAL STRUT CHANNEL CEILING-MOUNTED SUPPORT STRUCTURE SYSTEM AT STRUCTURAL CEILING SOFFIT WHICH SHALL BE DESIGNED AND INSTALLED BY THE MAIN CONTRACTOR IN ROOMS WHERE INSTALLATION OF FIXED CEILING-HUNG EQUIPMENT INCLUDING BUT NOT LIMITED TO EXAMINATION LAMPS, OPERATING LAMPS, PENDANTS, OVERHEAD HEATER, X-RAY IMAGING EQUIPMENT, ETC IS REQUIRED. THE FPE EQUIPMENT VENDOR SHALL PROVIDE SETTING OUT LOCATION, LOADING & OPERATIONAL FORCE REQUIREMENTS OF THE PROPOSED FPE ITEMS FOR THE MAIN CONTRACTOR TO VERIFY COMPATIBILITY OF THE CEILING SUPPORTING SYSTEM INSTALLED UNDER MAIN CONTRACT.
2. THE EQUIPMENT VENDOR SHALL PROVIDE THE LOWER TIER OF CEILING METAL SUPPORTING SYSTEM UNDER THE FALSE CEILING FOR THE MOUNTING OF FPE EQUIPMENT. THIS PROPOSED MOUNTING SYSTEM SHALL BE DESIGNED WITH STRUCTURAL CALCULATIONS FOR SHOP DRAWINGS SUBMISSION. ALL SYSTEMS SHALL BE ADEQUATELY BRACED IN ALL FOUR DIRECTIONS FOR LATERAL LOADING AS SPECIFIED BY THE EQUIPMENT VENDOR'S SPECIFICATIONS. MOVEMENT SHALL NOT EXCEED THE TOTAL FOR THAT ALLOWED ON THE SYSTEM AT THE WORST-CASE LOADING CONDITION. THE PROPOSED FRAMING SYSTEM SHALL BE FLEXIBLE FOR ADJUSTMENT OF FIXING CONNECTION TO SUIT SITE CONDITION AND AVOIDANCE OF INTERFERENCES.
3. ALL MATERIALS USED SHOULD CONFORM TO THE APPROPRIATE SPECIFICATIONS FROM ASTM, AISI, AISC, AND / OR AWS. SUBMIT CERTIFICATION THAT PRODUCTS COMPLY WITH SPECIFIED REQUIREMENTS AND ARE SUITABLE FOR INTENDED APPLICATION.
4. FOR EQUIPMENT MOUNTING ON STRUCTURAL SOFFIT (SUCH AS PENDANT SYSTEM)

• THERE ARE BUILDER'S WORK PROVISION OF PENDANT MOUNTING IN THE MAIN CONTRACT, PLEASE REFER TO THE AS-BUILT DRAWINGS FOR PROVISION. ANY OTHER FIXING REQUIREMENT SHALL BE POST-DRILLED OR BOLT CONNECTION BY THE EQUIPMENT VENDOR AND STRUCTURAL CALCULATION FOR FIXING DETAILS SHALL BE SUBMITTED BY EQUIPMENT VENDOR FOR STATUTORY SUBMISSION & APPROVAL PRIOR TO COMMENCEMENT OF WORKS.
5. FOR UNISTRUT FIXING ON STRUCTURAL SOFFIT (SUCH AS X-RAY IMAGING EQUIPMENT)

• THERE ARE BUILDER'S WORK PROVISION OF UNISTRUT IN THE MAIN CONTRACT, PLEASE REFER TO THE AS-BUILT DRAWINGS FOR PROVISION. ANY OTHER FIXING REQUIREMENT SHALL BE POST-DRILLED OR BOLT CONNECTION BY THE EQUIPMENT VENDOR AND STRUCTURAL CALCULATION FOR FIXING DETAILS SHALL BE SUBMITTED BY EQUIPMENT VENDOR FOR STATUTORY SUBMISSION & APPROVAL PRIOR TO COMMENCEMENT OF WORKS.

• THE PROPRIETARY METAL STRUT CHANNEL CEILING-MOUNTED SUPPORT STRUCTURE SYSTEM SHALL BE DESIGNED AND INSTALLED BY THE MAIN CONTRACTOR FOR THE INSTALLATION OF OVERHEAD MOVABLE CEILING-HUNG EQUIPMENT INCLUDING BUT NOT LIMITED TO X-RAY IMAGING EQUIPMENT, CT SCANNER, C-ARM OR BI-PLANE SYSTEM, ETC AS REQUIRED. THE PROPOSED FPE EQUIPMENT IS EXPECTED TO BE COMPATIBLE FOR FIXING & TAKING LOAD OF THE FPE EQUIPMENT BY THIS CEILING-MOUNTED SUPPORT STRUCTURE SYSTEM. ANY ADDITIONAL LOAD BEARING OR STRENGTHENING SHALL BE AT THE COST OF THE EQUIPMENT VENDOR. PLEASE REFER TO THE FOLLOWING SPECIFICATIONS OF PROPRIETARY METAL STRUT CHANNEL CEILING-MOUNTED SUPPORT STRUCTURE SYSTEM FOR REFERENCE: -

a. CEILING CHANNEL GRIDS SHALL BE OF A UNIVERSAL GRID OR PER MANUFACTURER'S SPECIFICATION TO SUIT THE MEDICAL EQUIPMENT, CONSISTING OF 12 GAUGE 1-5/8" (41MM X 41MM X 2.5MMTK) COLD-FORMED STEEL CHANNEL RAILS FLUSH WITH THE FINISHED CEILING AND EXTENDING WALL TO WALL UNLESS OTHERWISE NOTED AND SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL OF THE EQUIPMENT OR AS DIRECTED BY THE EQUIPMENT VENDOR.

b. CEILING DIRECT MOUNTING CHANNEL SYSTEMS SHALL BE SINGLE CHANNELS OR PER MANUFACTURER'S SPECIFICATION TO SUIT THE MEDICAL EQUIPMENT, CONSISTING OF 12 GAUGE 1-5/8" (41MM X 41MM X 2.5MMTK) COLD-FORMED STEEL CHANNEL RAILS FLUSH WITH THE FINISHED CEILING AND EXTENDING WALL TO WALL UNLESS OTHERWISE NOTED AND SHALL BE PARALLEL TO THE PATH OF TRAVEL OF THE EQUIPMENT OR AS DIRECTED BY THE EQUIPMENT VENDOR. TAKE-UP RAILS FINISH PAINTED WHITE WITH TROLLEYS SHALL BE PROVIDED AND INSTALLED WITH THESE SYSTEMS.

c. ALL NECESSARY SYSTEM ACCESSORIES INCLUDING RAILS, BOLTS & NUTS, STRUTS, FASTENERS ETC. FOR THE COMPLETE INSTALLATION OF THE CEILING HUNG MEDICAL EQUIPMENT.

d. FOR CEILING CHANNEL, RAILS SHALL BE DESIGNED FOR NO MORE THAN 1/720TH OF THE SPAN MAXIMUM DEFLECTION IN EITHER PLANE WHEN MAXIMUM LOADING CONDITIONS ARE APPLIED DUE TO EQUIPMENT OPERATION.

e. CEILING CHANNEL SHALL BE INSTALLED HORIZONTAL IN PLANE AND PARALLEL TO EACH OTHER WITHIN 1/32ND OF AN INCH.

f. FOR CEILING CHANNEL, RAILS SHALL BE ON CENTRES AS REQUIRED BY EQUIPMENT VENDOR AND ALLOW CONTINUOUS ATTACHMENT ALONG ANY POINT ON THE RAIL. SYSTEM SHALL BE TRUE, PLUMB, AND LEVEL TO THE TOLERANCES SPECIFIED.

g. SUPPLY AND INSTALL WHITE SNAP-IN CLOSURE STRIPS INTO THE OPEN CEILING CHANNEL AS REQUIRED AFTER THE EQUIPMENT HAS BEEN INSTALLED UNLESS OTHERWISE NOTED.

FOR EQUIPMENT WHERE EQUIPMENT MOUNTING ON TRACK AT STRUCTURAL SLAB IS NECESSARY FOR INSTALLATION

1. FOR EQUIPMENT MOUNTING ON TRACK AT STRUCTURAL SLAB (SUCH AS MOBILE SHELFING), THE EQUIPMENT VENDOR SHALL SUPPLY THE TRACKS AND COORDINATE WITH THE MAIN CONTRACTOR FOR INSTALLATION OF THE TRACKS PRIOR TO APPLICATION OF FLOOR SCREEDING AND FINISHES IN ORDER TO PROVIDE AN EMBEDDED TRACKING SYSTEM WITH FLUSH LEVEL FLOOR FINISH.

F.S.D. REF. :
—

D.L.O. REF. :
—

Client :



醫院管理局
HOSPITAL
AUTHORITY

Project Management Consultant :



NOTE :
DO NOT SCALE DRAWINGS.

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :



WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :



Building Services Engineering Consultant :



Quantity Surveying Consultant :



Rider
Levett
Bucknall

Project :



Redevelopment of Prince
of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin

Location :
IPEB

Stage :
DETAILED DESIGN

Drawing Title :
FPE CATEGORY B2 - COMPOSITE
DRAWINGS - PARTICULAR NOTES

DATE: 04/2023SCALE: 1 : 50

DRAFTED BY: VHK

CHECKED BY: DFC

DESIGNED BY: APK

REVIEWED BY: PYC

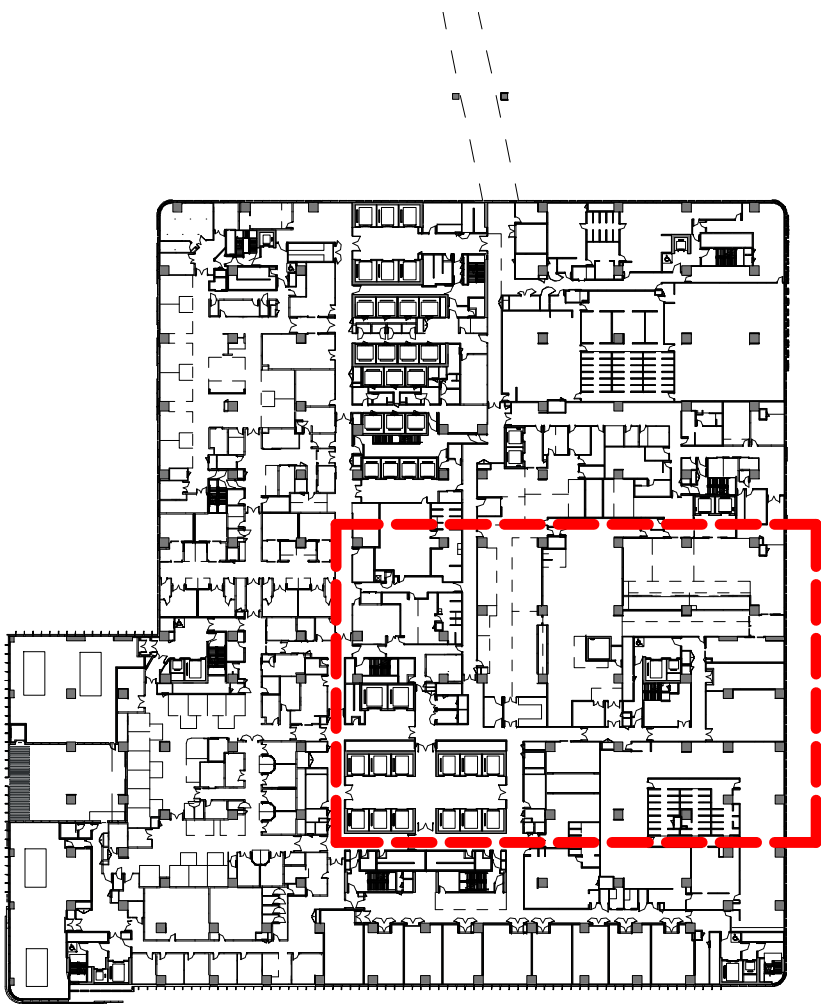
JOB NO. 32110

DRAWING NO. IPB/WTPL/FPE/PN-B2

REV NO. 00

TENDER

EQUIPMENT: STERILIZING UNITS, STEAM, BULK
CATEGORY: B2



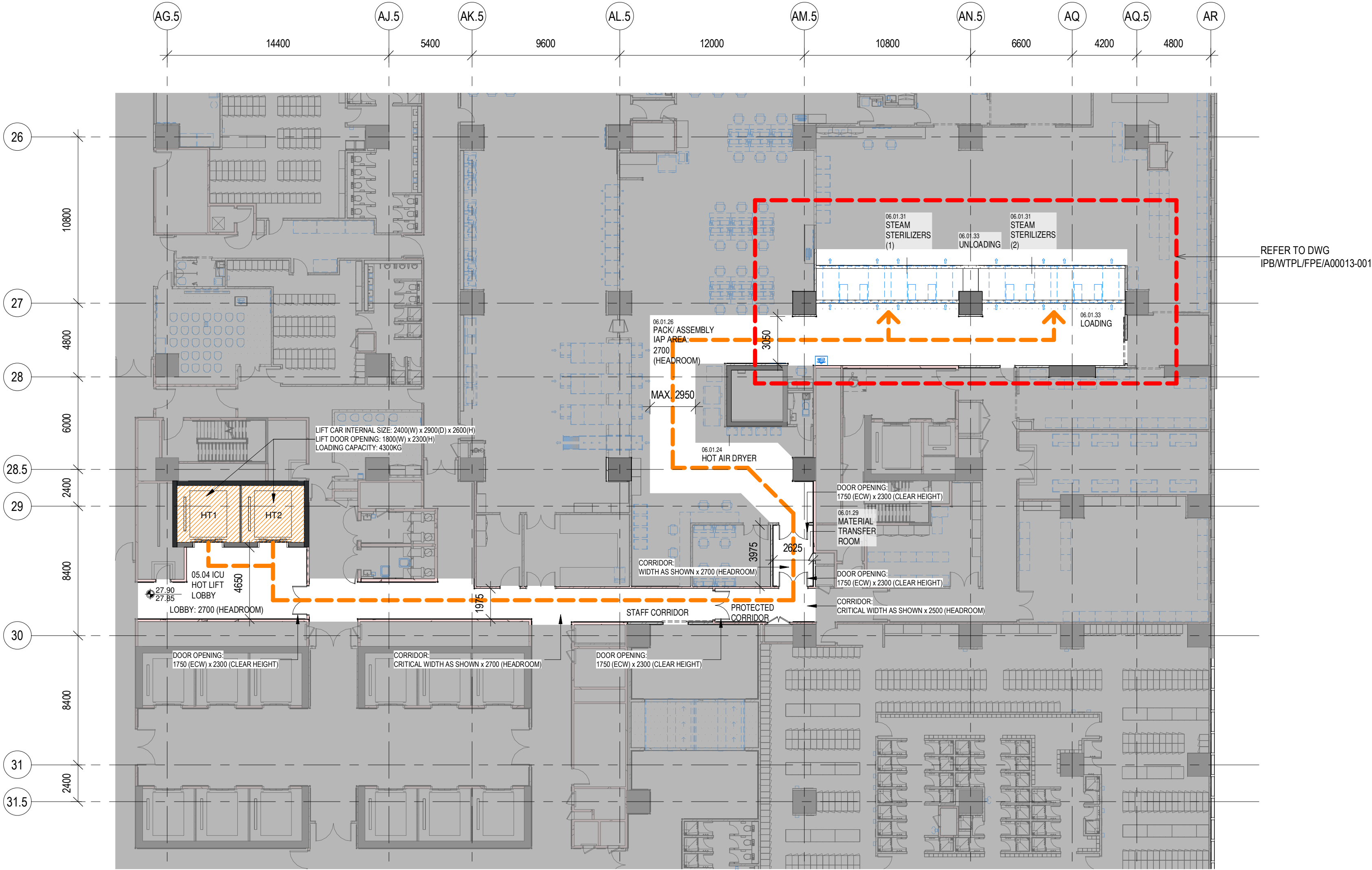
KEY PLAN - L04

NOTES:

CONSENT OF EQUIPMENT DELIVERY (OR REPLACEMENT) SCHEDULE AFTER HOSPITAL HANDOVER TO USERS FROM HOT LIFT LOBBY AT L04 TO BE AGREED WITH THE HOSPITAL TO AVOID DISRUPTION TO CLINICAL OPERATIONS.

LEGEND

- EQUIPMENT DELIVERY ROUTE
- NON-APPLICABLE AREA



06.01.31 STEAM STERILIZERS –
LOCATION PLAN & EQUIPMENT DELIVERY ROUTE - L04

1 : 200

F.S.D. REF. :
D.L.O. REF. :
Client :
Project Management Consultant :
HOSPITAL AUTHORITY
ARUP
NOTE :
DO NOT SCALE DRAWINGS.

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :
WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :
MEIN-HARDT

Building Services Engineering Consultant :
wsp

Quantity Surveying Consultant :
RLB Rider
利比 Levett
Bucknall

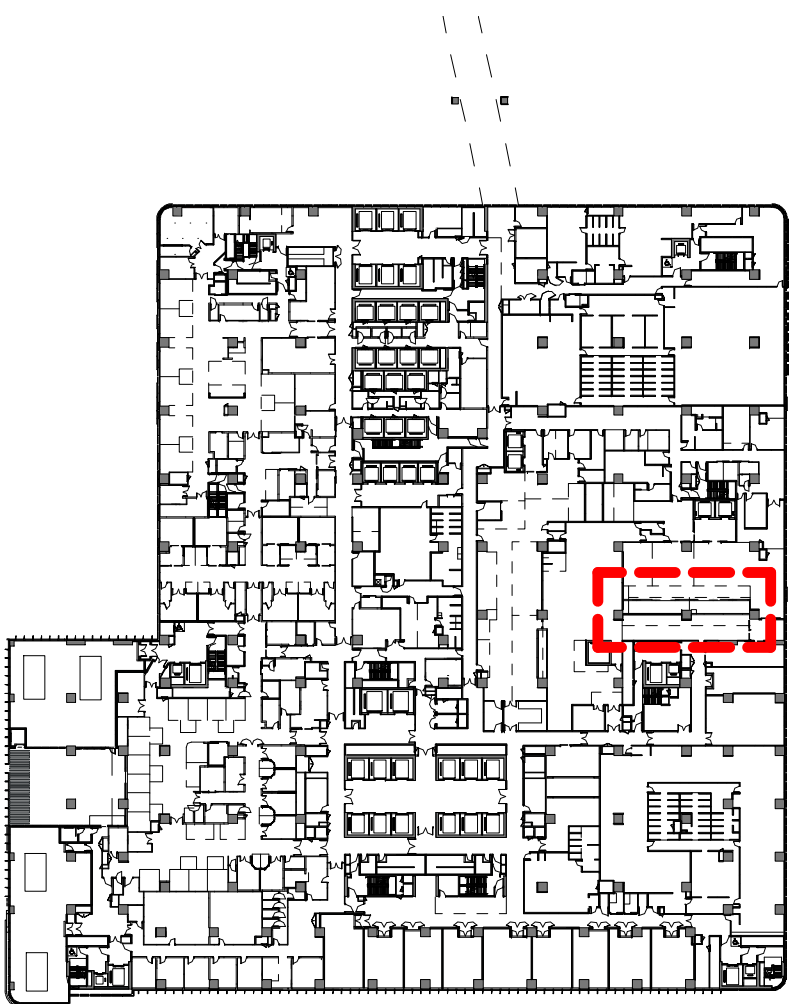
Project :
Redevelopment of Prince of Wales Hospital, Phase 2 (Stage 1) at Ngan Shing Street, Shatin

Location :	Stage :
IPB	DETAILED DESIGN

Drawing Title :
FPE ITEM A00013 - COMPOSITE
DRAWING OF STEAM STERILIZER
AT L04 SSU STEAM STERILIZERS
(06.01.31) LOCATION PLAN

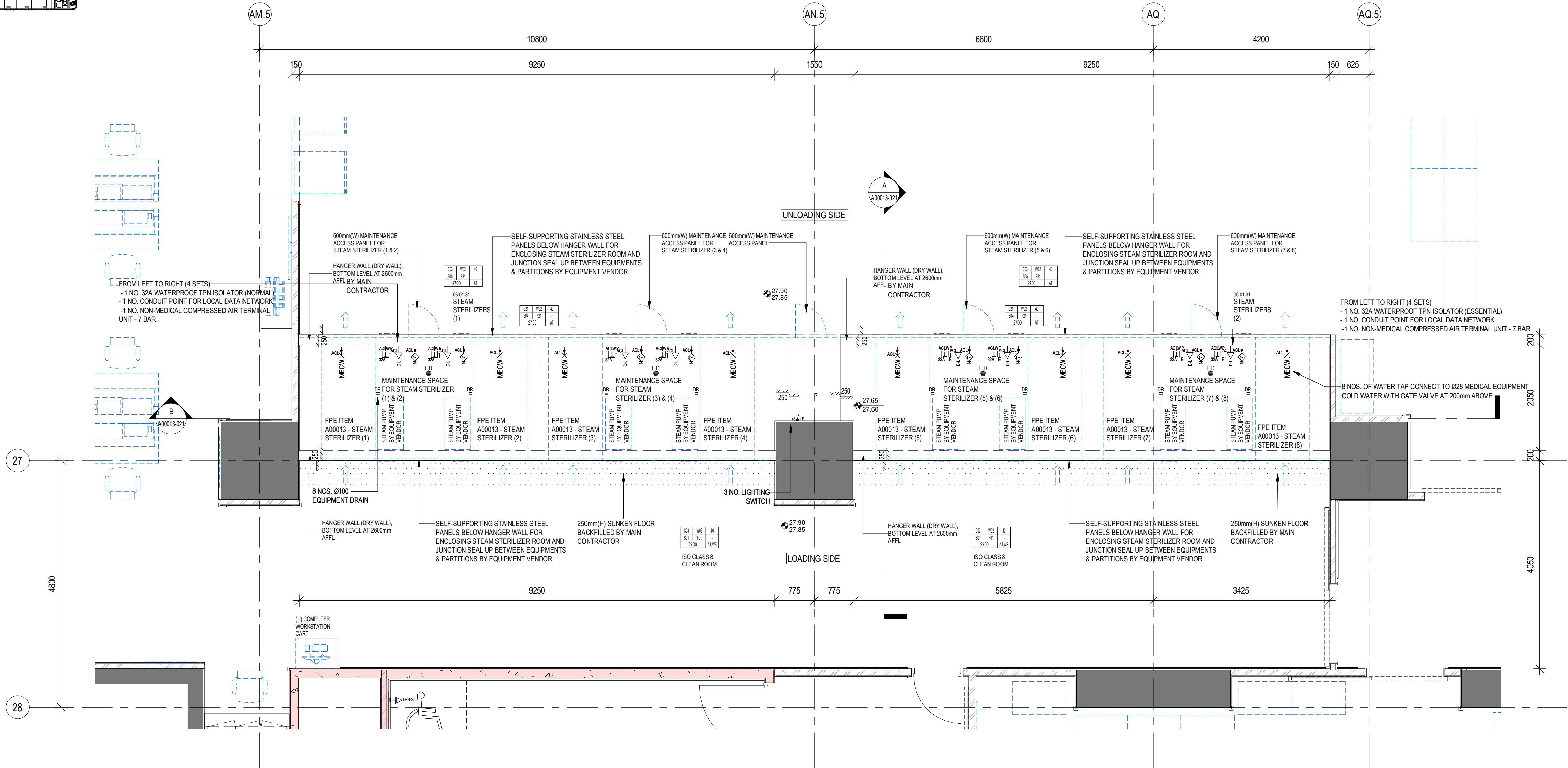
DATE:	04/2023	SCALE:	As indicated
DRAFTED BY:	CHKD BY:	DESIGNED BY:	REVIEWED BY:
WHK	DFC	APK	PYC
JOB NO.	DRAWING NO.	REV NO.	
32110	IPB/WTPL/FPE/A00013-000	00	

TENDER



KEY PLAN - L04

EQUIPMENT: STERILIZING UNITS, STEAM, BULK
CATEGORY: B2



1 06.01.31 STEAM STERILIZERS - PLAN
1 : 50

LEGEND

- AS BUILT BY MAIN CONTRACTOR
- - - WORKS BY EQUIPMENT VENDOR (ITEMS NAMES WITH PREFIX "(U)" SHALL BE PROVIDED BY OTHERS)

F.D.O. REF. : —			
D.L.O. REF. : —			
Client :  醫院管理局 HOSPITAL AUTHORITY			
Project Management Consultant : ARUP			
NOTE : DO NOT SCALE DRAWINGS.			
00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED
Architect :  WONG TUNG & PARTNERS LIMITED ARCHITECTS & PLANNERS			
Structural, Civil & Geotechnical Engineering Consultant : 			
Building Services Engineering Consultant : 			
Quantity Surveying Consultant : 			
Project :  Redevelopment of Prince of Wales Hospital, Phase 2 (Stage 1) at Ngan Shing Street, Shatin			
Location : IPB		Stage : DETAILED DESIGN	
Drawing Title : FPE ITEM A00013 - COMPOSITE DRAWING OF STEAM STERILIZER AT L04 SSU STEAM STERILIZERS (06.01.31) PLAN			
DATE: 04/2023		SCALE: As indicated	
DRAFTED BY: WHK		CHECKED BY: DFC	
DESIGNED BY: APK		REVIEWED BY: PYC	
JOB NO. 32110	DRAWING NO. IPB/WTPL/FPE/A00013-001	REV.NO. 00	

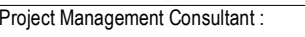
TENDER



F.S.D. REF. :

D.L.O. REF. :

Client:

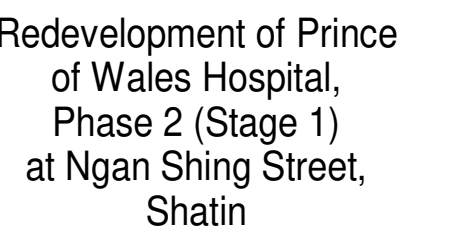
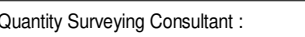
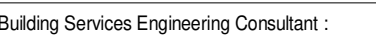


ARUP

NOTE :
DO NOT SCALE DRAWINGS.



Structural, Civil & Geotechnical Engineering Consultant :



Location :	S
------------	---

Stage :

IPEB

DETAILED DESIGN

Drawing Title :

FPE ITEM A00013 - COMPOSITE
DRAWING OF STEAM STERILIZER
AT L04 SSU STEAM STERILIZERS
(06.01.31) REFLECTED CEILING
PLAN

DATE: 04/2023	SCALE: As indicated
---------------	---------------------

DRAFTED BY: VHK	CHECKED BY: DFC	DESIGNED BY: APK	REVIEWED BY: PYC
--------------------	--------------------	---------------------	---------------------

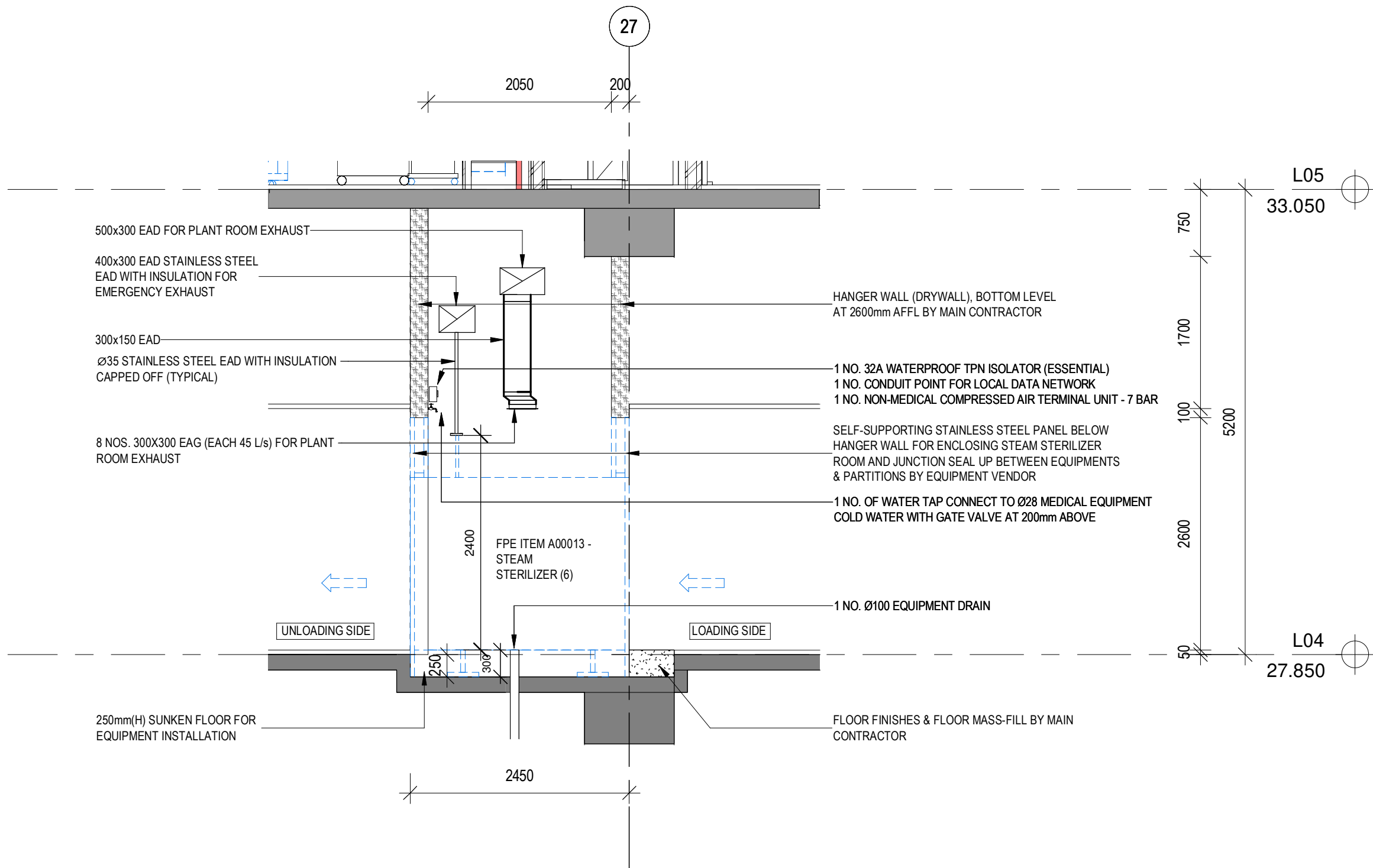
JOB NO.	DRAWING NO.	REV.NO.
32110	IPB/WTPL/FPE/A00013-002	00

TENDER

— AS BUILT BY MAIN CONTRACTOR

----- WORKS BY EQUIPMENT VENDOR
(ITEMS NAMES WITH PREFIX "(U)"
SHALL BE PROVIDED BY OTHERS)

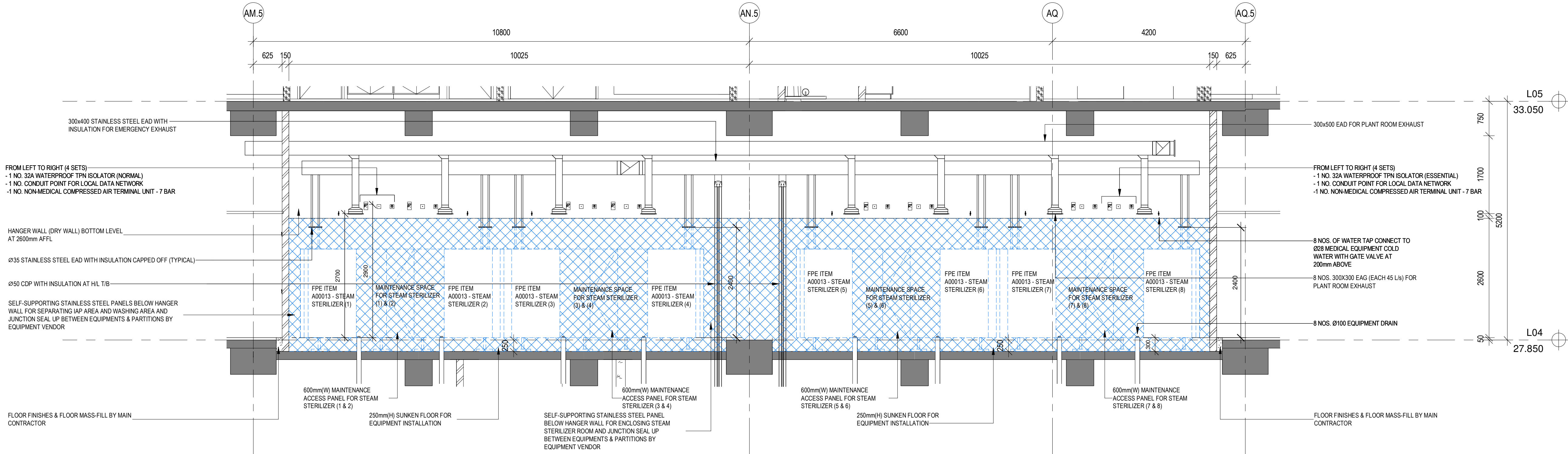
EQUIPMENT: STERILIZING UNITS, STEAM, BULK
CATEGORY: B2



LEGEND

- AS-BUILT BY MAIN CONTRACTOR
- WORKS BY EQUIPMENT VENDOR (ITEMS NAMES WITH PREFIX "(U)" SHALL BE PROVIDED BY OTHERS)
- WORKS BY EQUIPMENT VENDOR

06.01.31 STEAM STERILIZERS - SECTION A
1 : 50



06.01.31 STEAM STERILIZERS - SECTION B
1 : 50

F.S.D. REF. :
D.L.O. REF. :
Client :
Project Management Consultant :
NOTE :
DO NOT SCALE DRAWINGS.

醫院管理局
HOSPITAL
AUTHORITY

ARUP

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :

WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :

MEINHARDT

Building Services Engineering Consultant :

WSP

Quantity Surveying Consultant :

RLB
利比
Rider
Levett
Bucknall

Project :

Redevelopment of Prince
of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin

Location :
Stage :
IPEB
DETAILED DESIGN

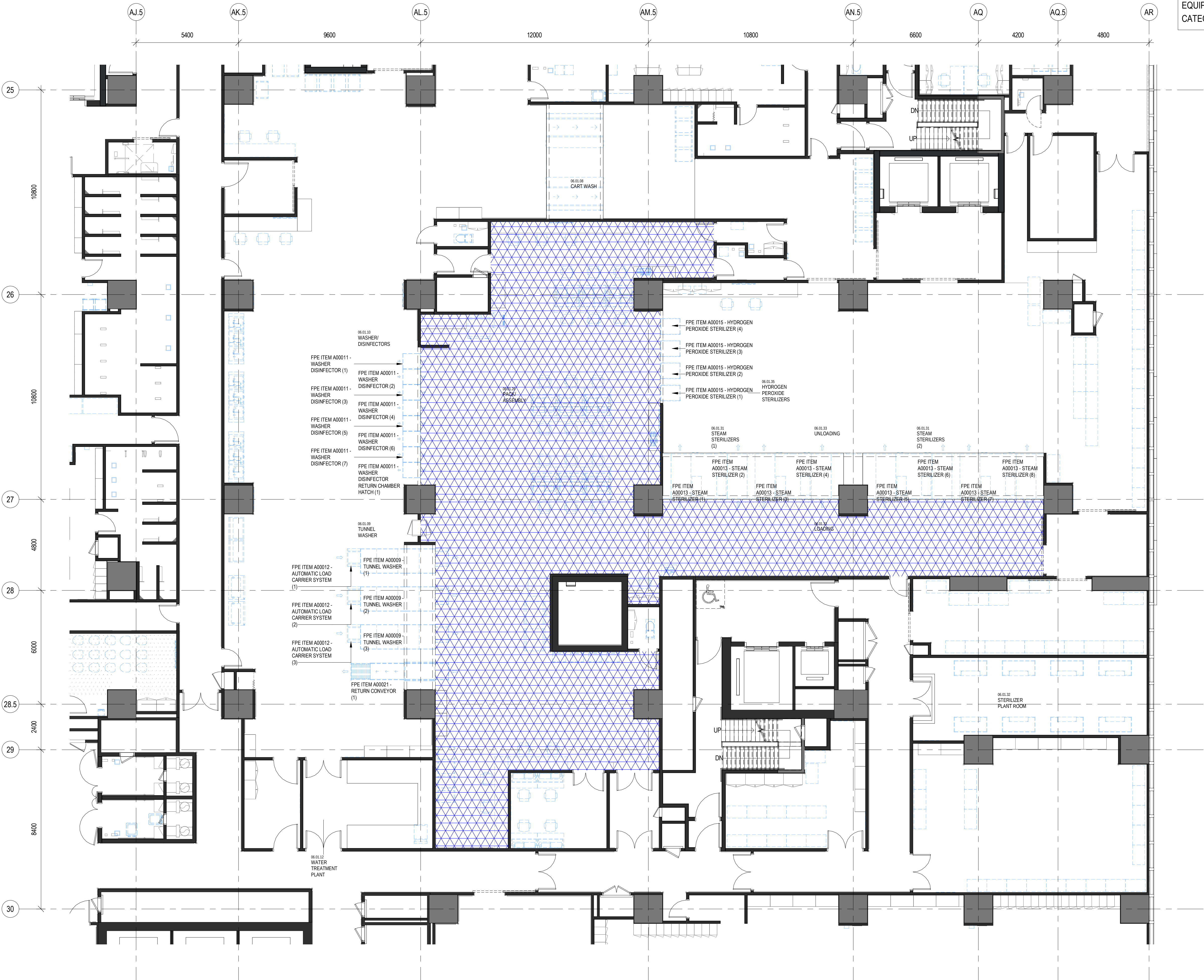
Drawing Title :
FPE ITEM A00013 - COMPOSITE
DRAWING OF STEAM STERILIZER
AT L04 SSU STEAM STERILIZERS
(06.01.31) SECTIONS

DATE:	04/2023	SCALE:	As indicated
DRAFTED BY:	VHK	CHECKED BY:	DFC
DESIGNED BY:	APK	REVIEWED BY:	PYC
JOB NO.	32110	DRAWING NO.	IPB/WTP/L/FPE/A00013-021
REV NO.	00		

TENDER

220

THE OWNERSHIP OF THE COPYRIGHT IN THIS DRAWING IS RETAINED BY THE ISSUER WHOSE CONSENT MUST BE OBTAINED BEFORE ANY USE OR REPRODUCTION OF THE DRAWING OR ANY PART THEREOF CAN BE MADE.



EQUIPMENT: STERILIZING UNITS, STEAM, BULK
CATEGORY: B2

ISO CLASS 8 CLEAN ROOM DEMARCATION DIAGRAM
PART PLAN – L04

1 : 100

LEGEND

ISO CLASS 8 CLEAN ROOM EXTENT

F.S.D. REF. :
D.L.O. REF. :
Client :
Project Management Consultant :
NOTE :
DO NOT SCALE DRAWINGS.

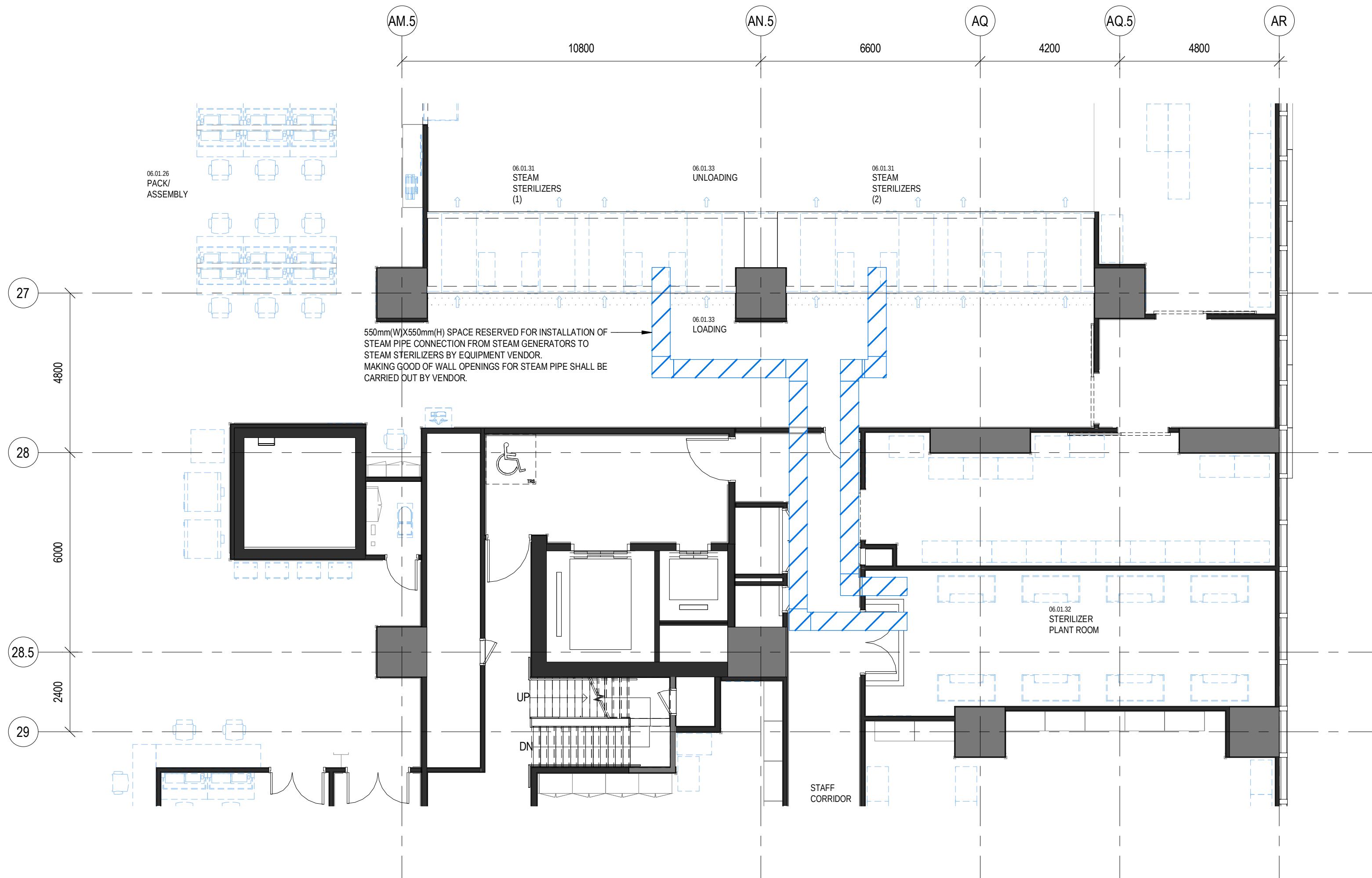
HOSPITAL
AUTHORITY
ARUP

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :
WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS
Structural, Civil & Geotechnical Engineering Consultant :
MEIN-HARDT
Building Services Engineering Consultant :
wsp
Quantity Surveying Consultant :
RLB Rider
利比 Levett
Bucknall
Project :
Redevelopment of Prince
of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin
Location :
IPEB
Stage :
DETAILED DESIGN
Drawing Title :
FPE ITEM A00013 - COMPOSITE
DRAWING OF STEAM STERILIZER
AT L04 SSU STEAM STERILIZERS
(06.01.31) CLEAN ROOM
DEMARCATION DIAGRAM
DATE: 04/2023
DRAFTED BY: WHK
CHECKED BY: DFC
DESIGNED BY: APC
REVIEWED BY: PYC
SCALE: As indicated
JOB NO. 32110
DRAWING NO. IPB/WTP/L/FPE/A00013-041
REV NO. 00

TENDER

EQUIPMENT: STERILIZING UNITS, STEAM, BULK
CATEGORY: B2



STEAM PIPE ROUTING DIAGRAM
PART PLAN – L04

1
1 : 100

F.S.D. REF. :
D.L.O. REF. :
Client :
Project Management Consultant :
NOTE :
DO NOT SCALE DRAWINGS.

醫院管理局
HOSPITAL
AUTHORITY

ARUP

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :

WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :

MEIN-HARDT

Building Services Engineering Consultant :

wsp

Quantity Surveying Consultant :

RLB Rider
利比 Levett
Bucknall

Project :
Redevelopment of Prince
of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin

Location :
IPEB

Stage :
DETAILED DESIGN

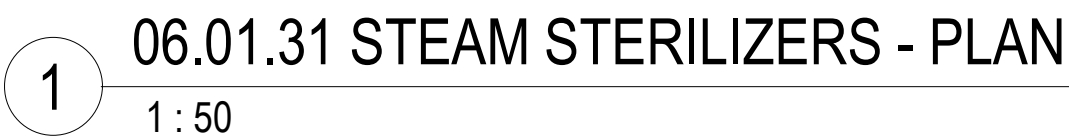
Drawing Title :
FPE ITEM A00013 - COMPOSITE
DRAWING OF STEAM STERILIZER
AT L04 SSU STEAM STERILIZERS
(06.01.31) STEAM PIPE ROUTING
DIAGRAM

DATE:	04/2023	SCALE:	1 : 100
DRAFTED BY:	CHECKED BY:	DESIGNED BY:	REVIEWED BY:
Author	Checker	Designer	Approver
JOB NO.	DRAWING NO.	REV NO.	
32110	IPB/WTPL/FPE/A00013-081	00	

TENDER

222

THE OWNERSHIP OF THE COPYRIGHT IN THIS DRAWING IS RETAINED BY THE ISSUER WHOSE CONSENT MUST BE OBTAINED BEFORE ANY USE OR REPRODUCTION OF THE DRAWING OR ANY PART THEREOF CAN BE MADE.

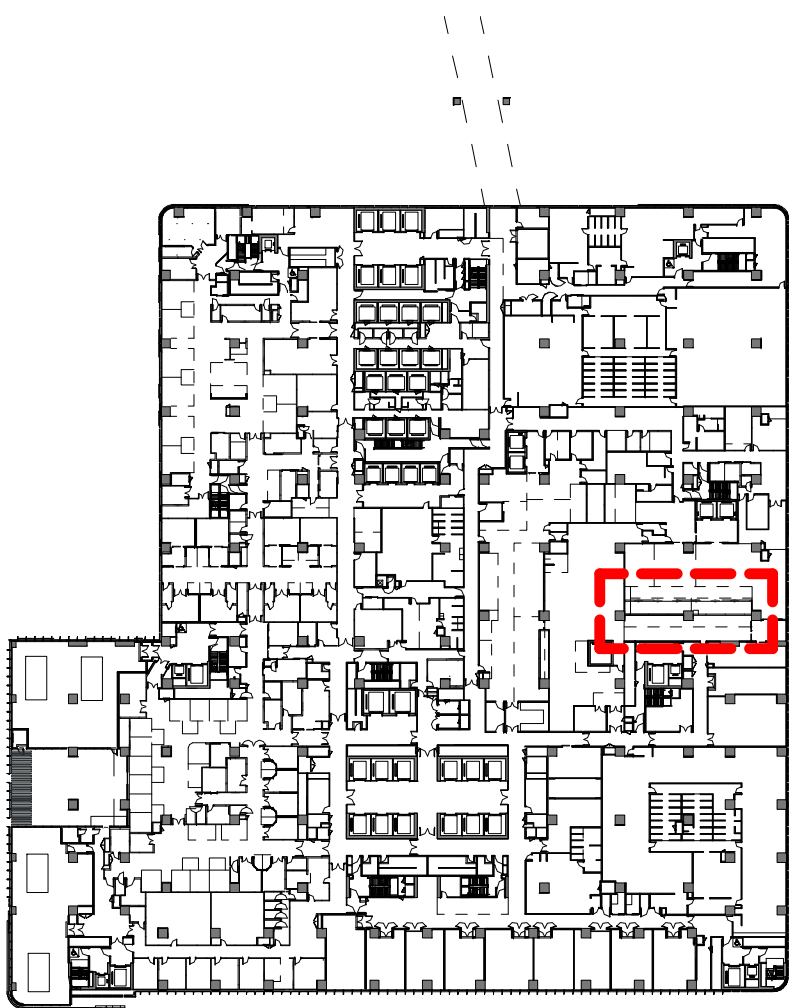


— AS BUILT BY MAIN CONTRACTOR

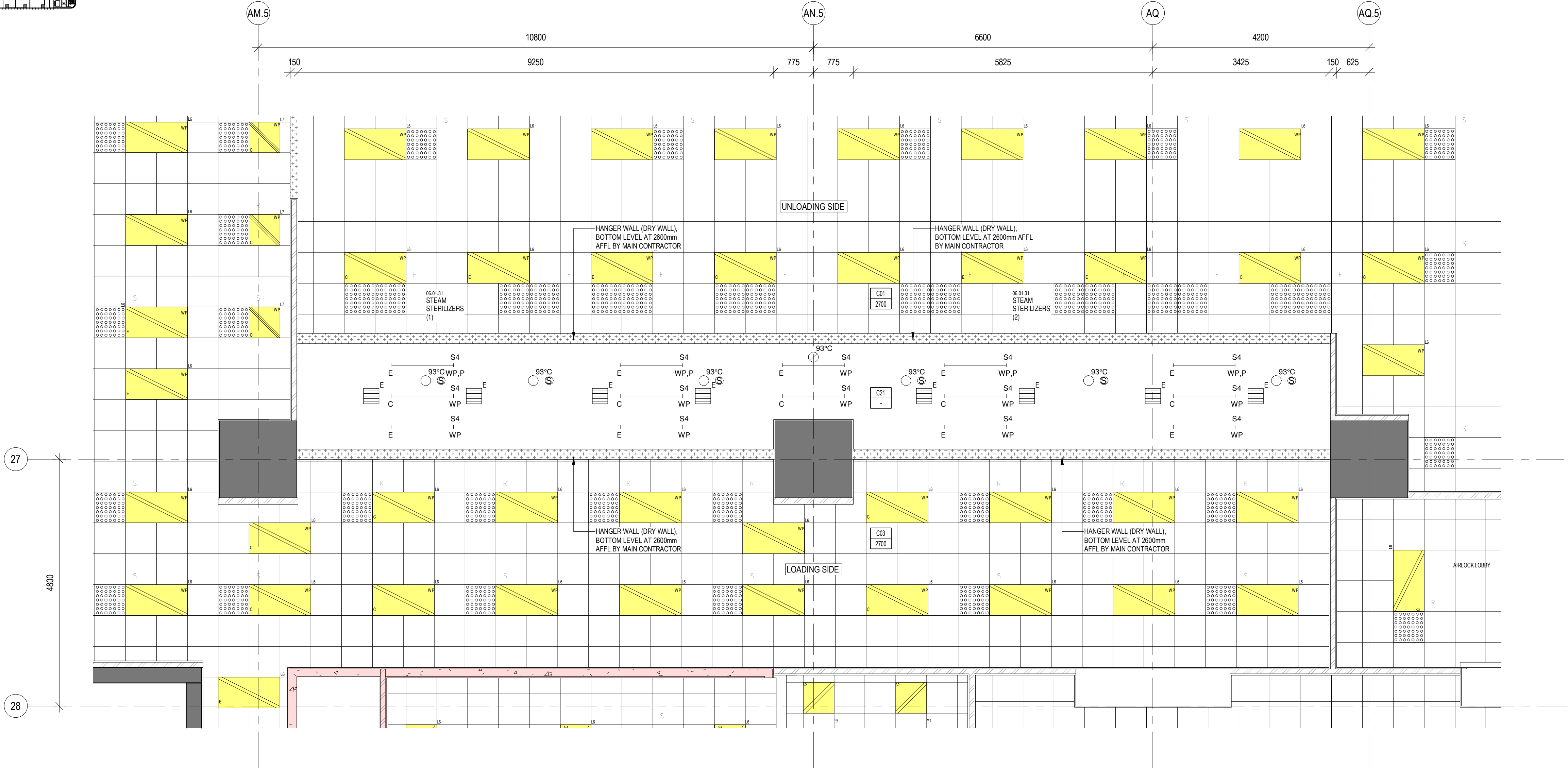
JOB NO.	DRAWING NO.	REV.NO.
32110	IPB/WTPL/FPE/A00013-101	00

THE OWNERSHIP OF THE COPYRIGHT IN THIS DRAWING IS RETAINED BY THE ISSUER WHOSE CONSENT MUST BE OBTAINED BEFORE ANY USE OR REPRODUCTION OF THE DRAWING OR ANY PART THEREOF CAN BE MADE.

EQUIPMENT: STERILIZING UNITS, STEAM, BULK
CATEGORY: B2



KEY PLAN - L04



1 06.01.31 STEAM STERILIZERS - REFLECTED CEILING PLAN
1 : 50

LEGEND

— AS BUILT BY MAIN CONTRACTOR

F.S.D. REF. : —
D.L.O. REF. : —
Client :

Project Management Consultant :
ARUP
NOTE :
DO NOT SCALE DRAWINGS.

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :

WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :

Building Services Engineering Consultant :

Quantity Surveying Consultant :

Project :

Redevelopment of Prince of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin

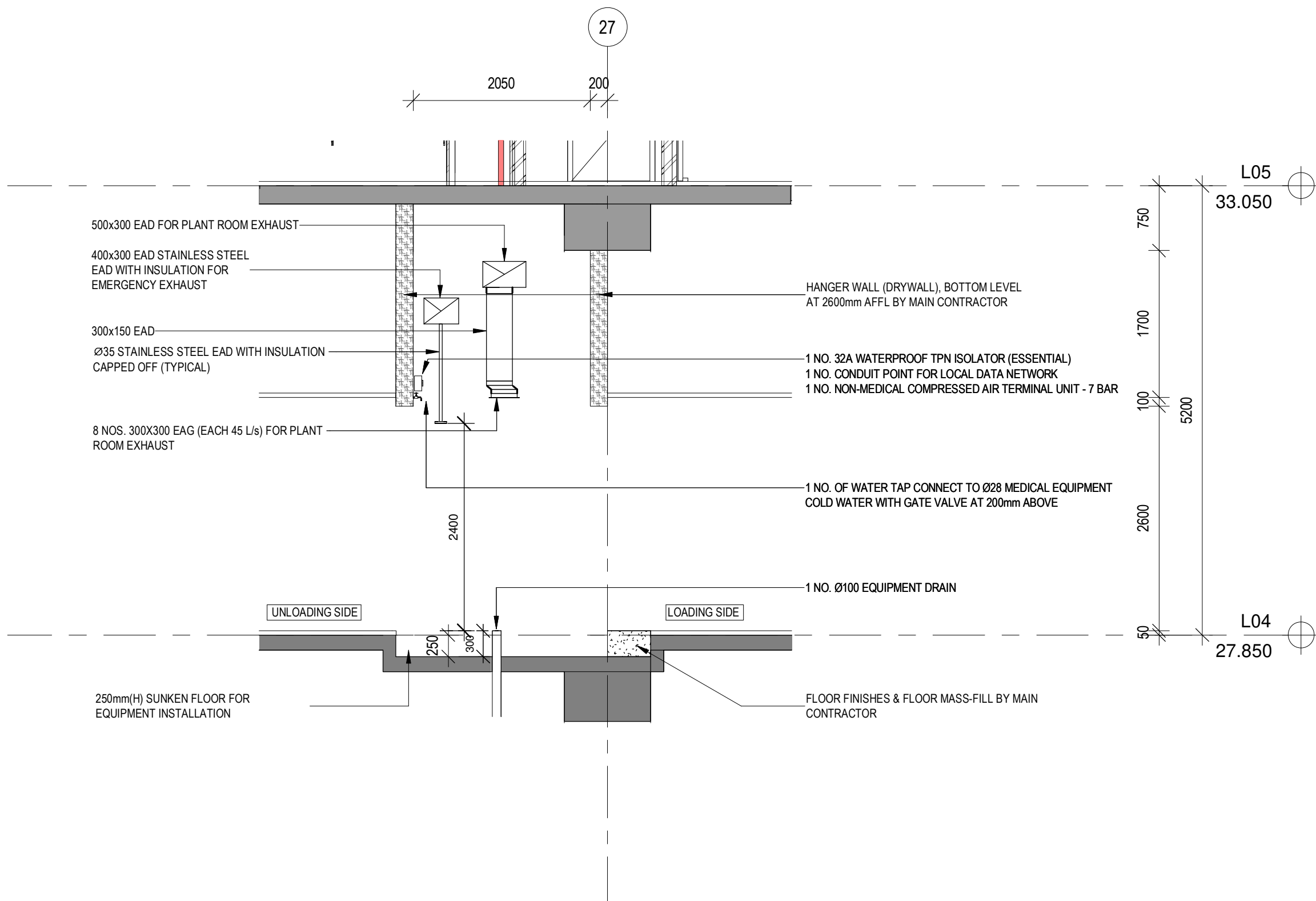
Location :	Stage :
IPB	DETAILED DESIGN

Drawing Title :
FPE ITEM A00013 - AS BUILT
DRAWING OF STEAM STERILIZER
AT L04 SSU STEAM STERILIZERS
(06.01.31) REFLECTED CEILING
PLAN

DATE:	04/2023	SCALE:	As indicated
DRAFTED BY:	CHECKED BY:	DESIGNED BY:	REVIEWED BY:
Author	Checker	Designer	Approver
32110	IPB/WTPL/FPE/A00013-102	00	

TENDER

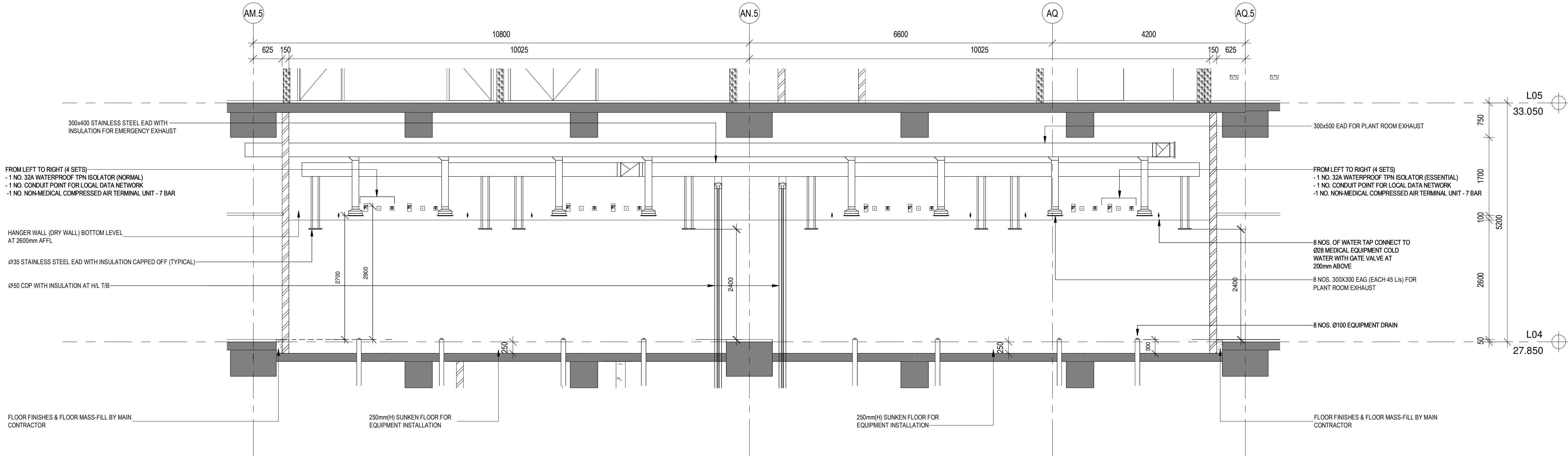
EQUIPMENT: STERILIZING UNITS, STEAM, BULK
CATEGORY: B2



LEGEND

— AS-BUILT BY MAIN CONTRACTOR

06.01.31 STEAM STERILIZERS - SECTION A
1 : 50



06.01.31 STEAM STERILIZERS - SECTION B
1 : 50

F.S.D. REF. : —
D.L.O. REF. : —
Client :
Project Management Consultant :
HOSPITAL AUTHORITY
ARUP
NOTE :
DO NOT SCALE DRAWINGS.

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :
WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS
Structural, Civil & Geotechnical Engineering Consultant :
MEIN-HARDT
Building Services Engineering Consultant :
wsp
Quantity Surveying Consultant :
RLB Rider Levett Bucknall
Project :
Redevelopment of Prince of Wales Hospital, Phase 2 (Stage 1) at Ngan Shing Street, Shatin
Location : IPEB Stage : DETAILED DESIGN
Drawing Title :
FPE ITEM A00013 - AS BUILT
DRAWING OF STEAM STERILIZER
AT L04 SSU STEAM STERILIZERS
(06.01.31) SECTIONS
DATE: 04/2023 SCALE: As indicated
DRAFTED BY: WHK CHECKED BY: DFC DESIGNED BY: APK REVIEWED BY: PYC
JOB NO. 32110 DRAWING NO. IPB/WTP/L/FPE/A00013-121 REV NO. 00

TENDER

GENERAL NOTES:

THE "GENERAL NOTES" SHOULD BE READ IN CONJUNCTION WITH "PARTICULAR NOTES" AND REQUIREMENTS SPECIFIED IN THE TENDER DOCUMENT.

ALL DIMENSIONS AND SIZES SHOWN ON THE COMPOSITE DRAWINGS ARE IN MM UNLESS OTHERWISE STATED.

DEFINITIONS

THE FOLLOWING TERMS ARE ILLUSTRATED IN THE GENERAL AND PARTICULAR NOTES:

1. "FORWARD PROCURED EQUIPMENT" OR "FPE" MEANS BUILDER'S WORKS, FIXTURES, FURNITURE, MEDICAL EQUIPMENT AND THE LIKE TO BE DESIGNED, SUPPLIED, INSTALLED AND T&C BY THE EQUIPMENT VENDOR.
2. "COMPOSITE DRAWINGS" MEANS DRAWINGS TO BE ISSUED BY THE HOSPITAL FOR ISSUANCE TO EQUIPMENT VENDOR FOR PROCUREMENT OF FPE. THE AS-BUILT DRAWINGS SHOWING ONLY THE SITE CONDITIONS FOR THE INSTALLATION OF THE FPE SHALL FORM PART OF THE COMPOSITE DRAWINGS.
3. FPE, EQUIPMENT, SERVICES, FURNITURE/ FITTINGS SHOWN IN BLUE DOTTED LINE AND ANNOTATED FPE NAMES WITH PREFIX "FPE ITEM (*FPE NUMBER*) -" OR SUFFIX "BY EQUIPMENT VENDOR" IN THE COMPOSITE DRAWINGS SHALL BE SUPPLIED AND INSTALLED BY THE RESPECTIVE EQUIPMENT VENDOR UNLESS OTHERWISE SPECIFIED. ITEMS NAMES WITH PREFIX "(U)" ILLUSTRATED IN THE COMPOSITE DRAWINGS SHALL BE PROVIDED BY OTHERS.

SUMMARY OF WORKS

THIS SECTION SPECIFIES THE GENERAL REQUIREMENTS FOR MEDICAL EQUIPMENT INSTALLATION. THE SCOPE OF MEDICAL EQUIPMENT INSTALLATION GENERALLY INCLUDES, BUT NOT LIMITED, TO THE FOLLOWING:

1. THE EQUIPMENT VENDOR IS A DIRECT CONTRACTOR APPOINTED BY THE HOSPITAL AND SHALL BE RESPONSIBLE FOR THE DESIGN, SUPPLY, INSTALL AND T&C OF THE EQUIPMENT SYSTEM INCLUDING ASSOCIATED BUILDER'S WORKS, BUILDING SERVICES CONNECTIONS AND HEALTH & SAFETY PROVISION. THE EQUIPMENT VENDOR OF THE FORWARD PROCURED EQUIPMENT (FPE) SHALL INSTALL THE EQUIPMENT IN A TIMELY MANNER ACCORDING TO THE PROGRAMME AS AGREED WITH THE MAIN CONTRACTOR. THE EXTENT AND LOCATION OF THE FPE AND THE MAIN CONTRACTOR WORKS REQUIRED ARE INDICATED IN THE DRAWINGS.
2. THE EQUIPMENT VENDOR SHALL COORDINATE WITH THE MAIN CONTRACTOR IN THE EARLY STAGE OF THE CONTRACT TO IDENTIFY THE FPE INSTALLATION MAY HAVE AN IMPLICATION ON FIRE SERVICES INSTALLATION, THE LAYOUT OF THE APPROVED BUILDING PLAN, PLUMBING AND DRAINAGE ETC. WHICH MAY AFFECT STATUTORY SUBMISSIONS AND INSPECTIONS INCLUDING BUT NOT LIMITED TO FIRE INSPECTION, OCCUPATION PERMIT AND STATUTORY RE-SUBMISSION. SUCH REQUIREMENTS MUST BE CLEARLY INDICATED IN THE PROGRAMME OF WORKS FOR CLOSE MONITORING TO AVOID ANY POTENTIAL DELAY TO THE MAIN WORKS MASTER PROGRAMME.

DESIGN AND COORDINATION RESPONSIBILITY – BUILDER'S WORKS

1. MAIN CONTRACTOR (MC) SHALL BE RESPONSIBLE TO BUILD THE ROOM ENCLOSURE INCLUDING:

• CONSTRUCTION OF CONCRETE FLOOR SLABS AND ENCLOSURE WALLS INCLUDING FINISHES;

• FORMING OF SUNKEN SLAB AND SUNKEN PIT ON THE EXTENT AS SHOWN IN THE COMPOSITE DRAWINGS;

• FORMING WALL OPENINGS FOR WINDOW AND DOORS;

• FORMING WALL OPENINGS FOR PENETRATION OF DUCTWORK/PIPEWORK FOR BS CONNECTIONS AS SHOWN IN AS-BUILT DRAWINGS.

• MAIN CONTRACTOR SHALL BE RESPONSIBLE FOR FIRE INSTALLATION SERVICES FOR THE ROOM PRIOR TO INSTALLATION OF FPE ITEMS (UNLESS OTHERWISE STATED IN THE DRAWINGS)

• MAIN CONTRACTOR SHALL CARRY OUT T&C WITH EQUIPMENT VENDOR AFTER THE COMPLETION OF FPE INSTALLATION TO ENSURE COMPLIANCE WITH THE OVERALL BUILDING SYSTEM AND THE REQUIRED TEST STANDARDS CAN BE MAINTAINED / ACHIEVED.
2. THE EQUIPMENT VENDOR/ SUPPLIER SHALL ACCEPT THE 'AS BUILT' LAYOUT ON COMPOSITE DRAWINGS BE THE 'AS-BUILT' SITE CONDITION WHEN HANDED OVER FROM THE MAIN CONTRACTOR, ANY INSTALLATION PURSUANT TO THE EXISTING STRUCTURE SHALL BE THE SCOPE OF WORKS BY EQUIPMENT VENDOR. THE EQUIPMENT VENDOR SHALL ACCEPT THE PROPOSED BUILDER'S WORKS SUCH AS THE HEIGHT, THICKNESS OF ENCLOSURE WALLS / FLOORS (.ETC) & DIMENSIONS OF SUNKEN FLOOR ARE ACCEPTABLE FOR CONSTRUCTION BY MAIN CONTRACTOR AS SHOWN IN THE AS-BUILT DRAWINGS.

THE COMPOSITE DRAWINGS ISSUED FOR TENDER PURPOSES ARE INDICATIVE FOR REFERENCE OF DESIGN INTENT ONLY AND ARE NOT CONCLUSIVE FOR FULL SYSTEM OF EQUIPMENT INSTALLATION. THE EQUIPMENT VENDOR IS RESPONSIBLE TO PROVIDE A FUNCTIONAL DESIGN LAYOUT FOR THE REQUIRED OPERATION FLOW. THE DIMENSIONS AS SHOWN IN THE COMPOSITE DRAWINGS INDICATE THE MAXIMUM SPACE AVAILABLE FOR INSTALLATION OF THE FPE. THE EQUIPMENT VENDOR SHALL CHECK CAREFULLY AGAINST THE DIMENSIONS, INSTALLATION SPACE AND FUTURE MAINTENANCE SPACES OF THE PROPOSED EQUIPMENT AND INFORM THE HOSPITAL OF ANY PROBLEMS FOUND. ANY DEVIATIONS TO THE PROPOSED DESIGN IN COMPOSITE DRAWINGS AND/OR QUALIFICATIONS TO THE PROPOSED BUILDER'S WORKS / BUILDING SERVICES PROVISIONS BY THE MAIN CONTRACTOR MUST BE RAISED DURING TENDER RETURN FOR CONSIDERATION. OTHERWISE, THE COMPOSITE DRAWING PROPOSAL WOULD DEEM TO BE ACCEPTED AS SUITABLE FOR THEIR OFFERED EQUIPMENT. ANY COST IMPLICATION FOR DESIGN CHANGES AFTER TENDER AWARD SHALL BE BORNE BY THE EQUIPMENT VENDOR.

THE EQUIPMENT VENDOR MUST CONFIRM AND HIGHLIGHT THE INCOMPATIBILITY AND/OR INADEQUACY IN THE ARCHITECTURAL AND BUILDING SERVICES PROVISIONS TO BE PROVIDED BY THE HOSPITAL, WHICH WILL BE MODIFIED/IMPROVED BY THE EQUIPMENT (SUBJECT TO HOSPITAL'S APPROVAL) AT THEIR OWN COST FOR PROPER AND SAFE INSTALLATION AND OPERATION OF THEIR EQUIPMENT ON OFFER. IN THIS RESPECT, THE EQUIPMENY VENDOR SHALL CHECK ALL THE ARCHITECTURAL AND BUILDING SERVICES PROVISION SUCH AS ROOM SPACE, CEILING HEADROOM, CEILING AND FLOOR LOADING, MAIN SUPPLY CURRENT RATING, AIR-CONDITIONING CAPACITY, WATER SUPPLY AND DRAIN ETC. AS DETAILED IN THE COMPOSITE DRAWINGS. THE EQUIPMENT SHALL ALSO BE RESPONSIBLE FOR ALL THE BUILDING SERVICES AND BUILDER'S WORKS WHICH ARE DEEMED NECESSARY BY THE END USER AND FOR PROPER INSTALLATION, COMMISSION AND SUBSEQUENT OPERATION OF THE PROPOSED EQUIPMENT AND THE COST IS CONSIDERED TO BE COVERED IN THE QUOTATION SUM.

3. THE EQUIPMENT VENDOR SHALL ALSO BE RESPONSIBLE TO REVIEW AND ASSESS SURROUNDING SITE CONDITION FOR THE INSTALLATION OF THE FPE EQUIPMENT & TO ACHIEVE PERFORMANCE AS REQUIRED IN SPECIFICATIONS. ANY ENABLING WORKS FOR SITE PREPARATION TO ACHIEVE INSTALLATION CONDITION SHALL BE AT THE COST OF THE EQUIPMENT VENDOR. THE PROPOSED FPE EQUIPMENT MUST NOT CAUSE ANY INTERFERENCE TO THE EQUIPMENT INSTALLATION AT ADJACENT ROOMS BY OTHER VENDOR. ANY PROPOSAL TO INSTALL EXHAUST PIPE / LOUVRES WHICH AFFECT THE DESIGN OF FACADE MUST BE INDICATED ON DRAWINGS FOR APPROVAL PRIOR TO INSTALLATION ON SITE.

4. THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR THE WORKS & COST ASSOCIATED TO ALL NECESSARY TRANSPORTATION AND HOISTING, INCLUDING PLANNING OF ACCESS ROUTE FOR DELIVERY & TEMPORARY LIFTING EQUIPMENT, MOBILE CRANE, ELEVATED LIFTING PLATFORM, TEMPORARY LIGHTING, TEMPORARY WATER, TEMPORARY DRAINAGE AND TEMPORARY POWER PROVISION FOR INSTALLATION OF EQUIPMENT AS WELL AS DEMOLITION & CLEARANCE OF TEMPORARY WORKS. THE EQUIPMENT VENDOR MAY REFER TO THE DELIVERY ROUTE DRAWINGS SUPPLEMENTED IN THE GENERAL NOTES OR FPE LOCATION PLANS FOR THE SUGGESTED DELIVERY ROUTE. PLEASE NOTE THAT THE FREIGHT LIFTS/ HOT LIFTS INDICATED IN THE COMPOSITE DRAWINGS MAY NOT BE IN OPERATION DURING THE DELIVERY OF FPE EQUIPMENT, THE EQUIPMENT VENDOR IS RESPONSIBLE TO SEEK ALTERNATIVE MEANS OF DELIVERY AT THEIR OWN COST. THE EQUIPMENT VENDOR MAY PROPOSE ALTERNATIVE DELIVERY ROUTES AND COORDINATE WITH THE MAIN CONTRACTOR ON THE FINAL DELIVERY ROUTE, SITE LOGISTIC, PROGRAMME AND PROVIDE ASSOCIATED ATTENDANCE AND COORDINATION.
5. EQUIPMENT VENDOR SHALL ALSO BE RESPONSIBLE FOR THE HEALTH & SAFETY OF ASSOCIATED TO THE INSTALLATION & FUTURE MAINTENANCE OF EQUIPMENT INCLUDING BUT NOT LIMITED TO THE SIGNAGE / WARNING SIGN, WARNING LIGHT, PROTECTIVE BARRIERS, SAFETY PROVISION FOR FUTURE MAINTENANCE ETC. THE EQUIPMENT VENDOR SHALL COORDINATE WITH MAIN CONTRACTOR FOR DEMARCATION AND FENCING OFF WORKS AREA, THE EQUIPMENT VENDOR IS RESPONSIBLE FOR THE SECURITY OF THEIR WORKS AND MATERIAL STORAGE ON SITE.
6. THE LAYOUT PROPOSED BY VENDOR MUST BE DESIGNED WITHIN THE EXISTING SITE CONDITION AS SHOWN IN THE 'AS BUILT' DRAWINGS. THE EQUIPMENT VENDOR SHALL BE INVITED TO VERIFY THE 'AS BUILT' CONDITION ON SITE WHEN THE AREA IS AVAILABLE FOR INSPECTION. THE EQUIPMENT VENDOR, THE MAIN CONTRACTOR AND THE HOSPITAL OR HOSPITAL'S REPRESENTATIVE SHALL JOINTLY INSPECT THE ACTUAL BUILDER'S WORKS AND BUILDING SERVICES ON WHETHER THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE AS-BUILT DRAWINGS. ANY DEFECTS, IRREGULARITIES, DEFICIENCIES ETC. SHALL BE RECTIFIED BY THE MAIN CONTRACTOR TO THE SATISFACTION OF THE HOSPITAL.

PRIOR TO ANY FPE INSTALLATION WORKS, THE EQUIPMENT VENDOR SHALL ACCEPT THE ENVIRONMENTAL CONDITIONS FOR THE ROOMS IN WHICH THE FPE ARE BEING INSTALLED. THE EQUIPMENT VENDOR SHALL LIAISE AND COORDINATE WITH THE MAIN CONTRACTOR TO PROVIDE WRITTEN CONFIRMATION AND ACCEPTANCE OF THE ENVIRONMENTAL AND SITE CONDITIONS, ETC. FOR THEIR INSTALLATION OF FPE. RECORD PHOTOS, LOCATION AND EXTENT OF, CONDITIONS OF THE AREA, ENVIRONMENTAL CONDITIONS OF THE AREA SUCH AS VENTILATION, TEMPERATURE, HUMIDITY ETC. ALLOWED FOR THE EQUIPMENT VENDOR TO INSTALL THE FPE SHALL BE PROPERLY DOCUMENTED AND ENDORSED BY THE EQUIPMENT VENDOR AND THE MAIN CONTRACTOR. SUCH RECORD SHALL BE SUBMITTED TO THE HOSPITAL FOR RECORD WITHIN 7 DAYS FOR THE AREA ALLOWED FOR THE INSTALLATION OF FPE. THE EQUIPMENT VENDOR SHALL INCLUDE ANY ITEMS IN THE REPORT AS COMMENTED BY THE HOSPITAL.

7. SHOULD THERE BE DISCREPANCIES FOUND ON SETTING OUT DIMENSIONS BETWEEN COMPOSITE DRAWINGS AND ACTUAL SITE CONDITIONS, THE EQUIPMENT VENDOR SHALL COORDINATE WITH MAIN CONTRACTOR FOR THE 'AS-BUILT' SETTING OUT AND INTERFACE CONNECTION WITH BUILDING SERVICES & BUILDER'S WORKS ON SITE WITHOUT ANY COST IMPLICATIONS. THE PROPOSED EQUIPMENT SHOP DRAWING BY EQUIPMENT VENDOR MUST INDICATE CONNECTION POINTS TO EXISTING BUILDING SERVICE FOR COMMENT. THE EQUIPMENT VENDOR SHALL ALSO PROVIDE ACTUAL EQUIPMENT LOADING AND SUPPORTING ANCHORING POINT LOADS TO THE MAIN CONTRACTOR FOR COORDINATION AFTER CONTRACT AWARD. THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR ANY STRENGTHENING WORKS WHERE NECESSARY TO ENABLE A SAFE INSTALLATION OF THE EQUIPMENT. THE EQUIPMENT VENDOR SHALL ALSO DESIGN AND PROVIDE NOISE & VIBRATION ATTENUATION PROVISIONS FOR THEIR EQUIPMENT TO REDUCE THE NOISE & VIBRATION NUISANCE INSIDE THE ROOM OR ADJACENT ROOMS.
8. THE EQUIPMENT VENDOR SHALL BEAR ALL THE COSTS INCURRED FOR THE MODIFICATION AND ADDITIONAL BUILDING SERVICE PROVISION RELATED TO EQUIPMENT INSTALLATION AND NORMAL OPERATION (E.G. ELECTRICITY ENHANCEMENT). THE EQUIPMENT VENDOR SHALL ALSO BE RESPONSIBLE FOR ALL NECESSARY EQUIPMENT OR ACCESSORIES, INCLUDING CORRESPONDING SUPPORTS, ANCHOR, BRACKET, MOUNTING PLATE, CABLE CONTAINMENT, AND ACCESSORIES (...ETC) TO COMPLETE THE CONSTRUCTION AND INSTALLATION UNDER EQUIPMENT VENDOR'S CONTRACT REGARDLESS IF THESE ITEMS WERE SHOWN IN THE COMPOSITE DRAWINGS. THE EQUIPMENT VENDOR SHALL ALSO BE RESPONSIBLE FOR ALL NECESSARY COORDINATION UNDER THE DESIGN & BUILD CONTRACT & INSTALLATION OF EQUIPMENT MUST BE IN COMPLIANCE WITH HONG KONG LEGISLATIONS & REGULATIONS. FOR FPE INVOLVING DANGEROUS GOODS UNDER THE CLASSIFICATION OF HK FIRE SERVICES DEPARTMENT (FSD), THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR ALL NECESSARY SUBMISSIONS AND OBTAINING APPROVAL/ LICENSE FROM FSD. SHOULD THERE BE ANY FPE UNDER BOILERS AND PRESSURE VESSELS ORDINANCE (CAP 56), THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR OBTAINING THE "CERTIFICATE OF FITNESS" FROM LABOUR DEPARTMENT.
9. THE EQUIPMENT VENDOR IS REQUIRED TO SUBMIT A DESIGN PROPOSAL AND DETAIL PROGRAMME UPON CONTRACT AWARD FOR SCHEDULE OF WORKS INCLUDING DESIGN PERIOD, SHOP DRAWINGS SUBMISSION. THE EQUIPMENT VENDOR SHALL COORDINATE WITH MAIN CONTRACTOR FOR ACCESS AND CONSTRUCTION PROGRESS IN LINE WITH THE MASTER PROGRAMME TO MEET STATUTORY INSPECTIONS. SHOULD THERE BE DELAY ON THE AGREED FPE PROGRAMME, THE EQUIPMENT VENDOR SHALL NOTIFY THE HOSPITAL FOR THE ANTICIPATED DELAY AND ADVISE FOR CATCH UP PROGRAMME AT THEIR OWN COST.
10. THE EQUIPMENT VENDOR SHALL COORDINATE WITH MAIN CONTRACTOR FOR FPE WORKS ABOVE CEILING AND AGREE A TIME SCHEDULE FOR THE INSTALLATION WORKS. SHOULD THE EQUIPMENT VENDOR FAIL TO FOLLOW THE AGREED PROGRAMME, THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR ASSOCIATED ABORTIVE WORKS & ANY ADDITIONAL COSTS IF THE MAIN CONTRACTOR IS PREPARED TO TAKE DOWN AND REINSTATE THE FALSE CEILING AND MAKE GOOD AFTER THEIR WORKS.
11. DAMAGES ON ANY SURFACE OR STRUCTURE CAUSED DURING THE INSTALLATION OF EQUIPMENT SHOULD BE MADE GOOD, REINSTATED OR BACKFILLED TO MATCH WITH EXISTING CONDITION. THE SCOPE OF WORKS FOR EQUIPMENT VENDOR SHALL ALSO INCLUDE SEALING UP JUNCTIONS AND TOUCHING UP OF FINISHES AT CONNECTION WITH THE EXISTING BUILDING STRUCTURE BY MAIN CONTRACTOR. THE EQUIPMENT VENDOR SHALL PROTECT, CLEAN AND REMOVE PROTECTION FOR THEIR FPE. DURING THE PROGRESS OF THE WORKS, ALL OPEN ENDS OF PIPES, CONDUITS, DUCTS, ETC. SHALL BE PROPERLY CAPPED TO PREVENT PEST/RODENT FROM ENTERING. THE EQUIPMENT VENDOR SHALL FOLLOW THE HOUSE-KEEPING AND SITE SAFETY RULES OF THE MAIN CONTRACTOR DURING THE CONSTRUCTION PERIOD.
12. THE EQUIPMENT VENDOR SHALL PROVIDE THE FOLLOWINGS SUBMISSIONS FOR COMMENTS PRIOR TO COMMENCEMENT OF INSTALLATION:

- MATERIAL SUBMISSIONS WITH PRODUCT CATALOGUE, TECHNICAL DATA & JOB REFERENCE IN HK

• FPE SHOP DRAWING FOR THE PROPOSED LAYOUT WITH DIMENSION & SETTING OUT

• COORDINATED COMBINED BUILDER'S WORK DRAWINGS FOR FPE INSTALLATION

• COMBINED BUILDING SERVICES DRAWINGS FOR FPE INSTALLATION

• VERIFICATION DOCUMENTS FOR APPROVED / LICENSED SUPPLY & INSTALLER

• TEST REPORT & CERTIFICATE FOR COMPLIANCE OF THE LATEST STANDARDS

THE EQUIPMENT VENDOR SHALL ALSO PROVIDE THE FOLLOWING DOCUMENTS UPON COMPLETION OF INSTALLATION.

- T&C REPORTS OF THE INSTALLED SYSTEM

• 'AS FITTED' DRAWINGS

• O&M MANUAL UPON COMPLETION OF INSTALLATION.

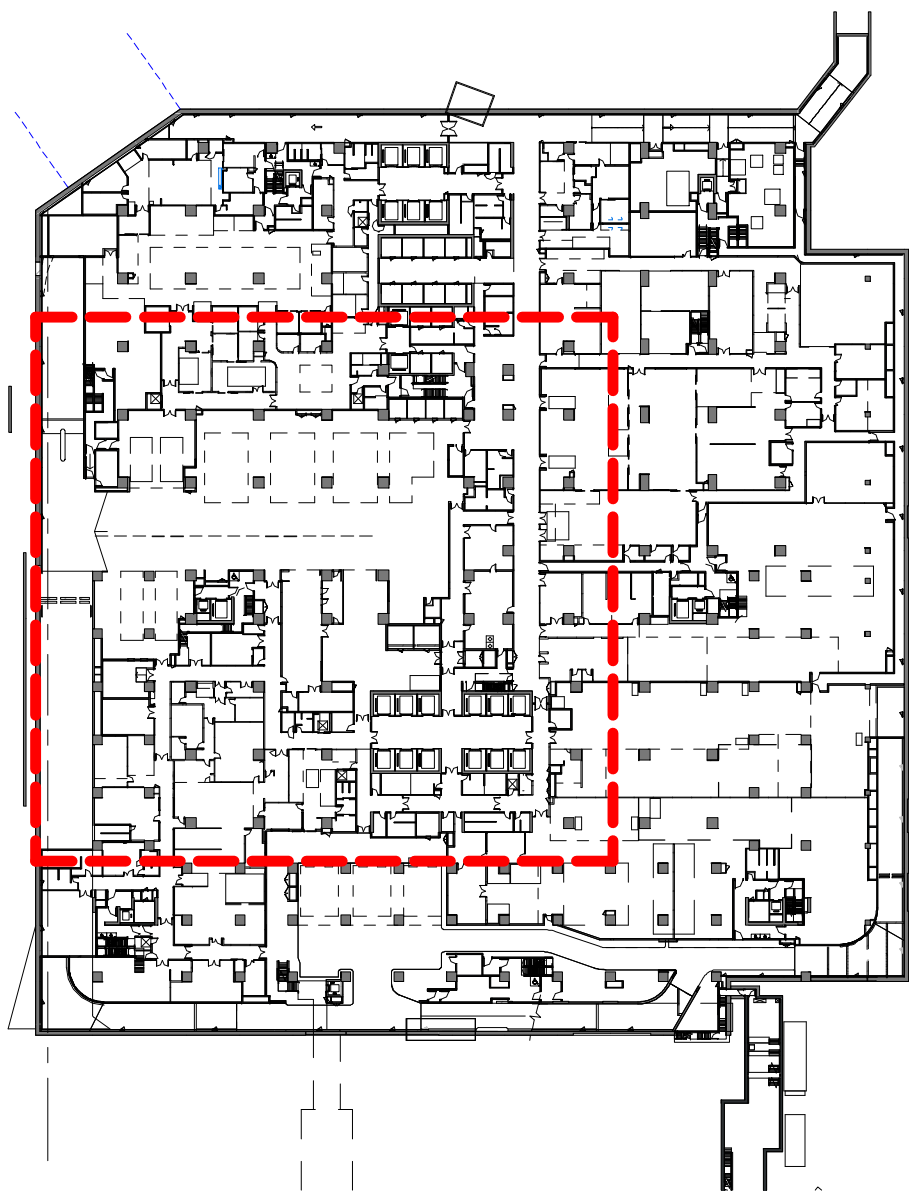
• WARRANTY

DESIGN AND COORDINATION RESPONSIBILITY – MEP PROVISIONS

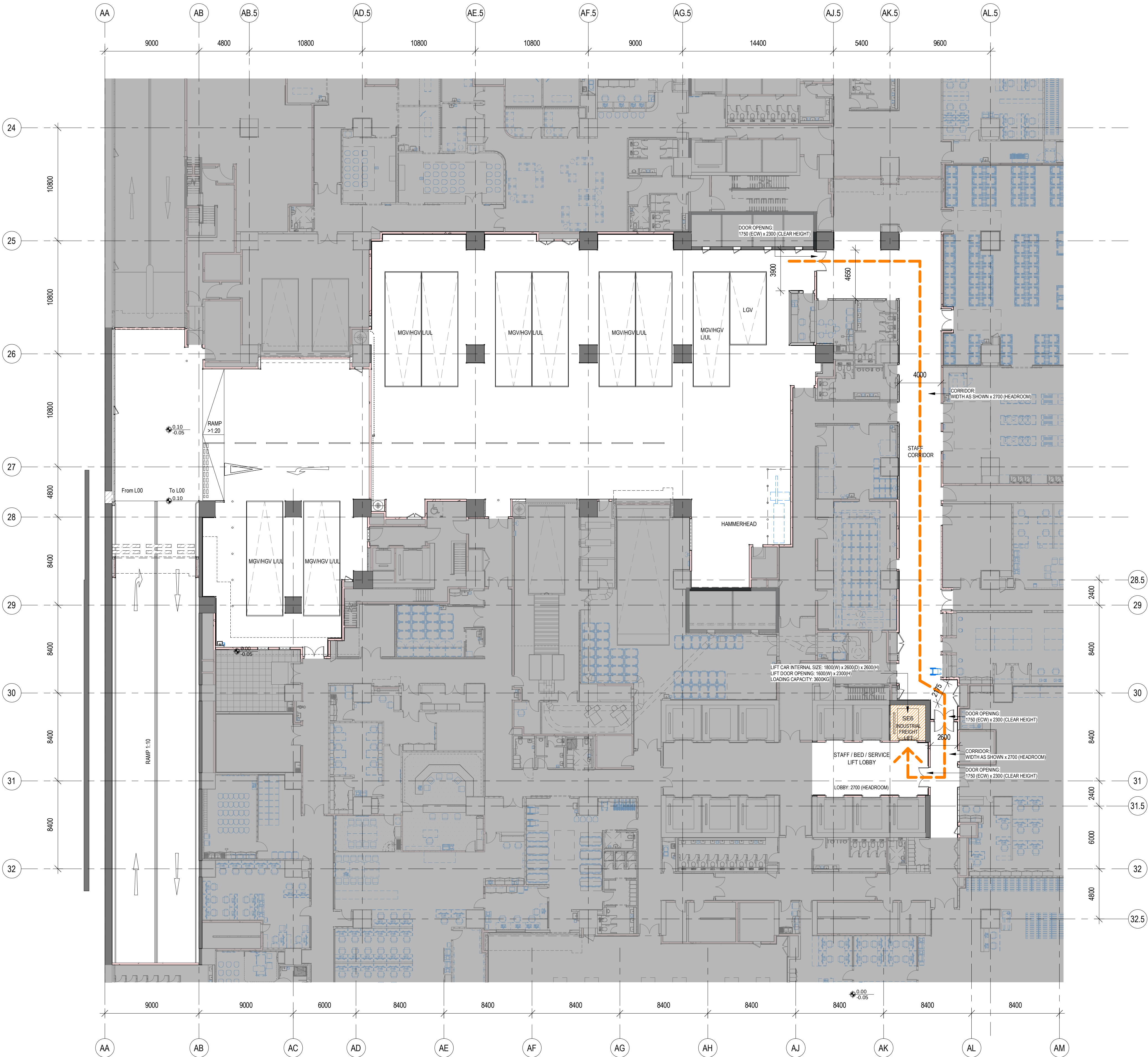
1. THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR CONNECTING THEIR EQUIPMENT AND THEIR ASSOCIATED SYSTEM, IF ANY, TO THE CORRESPONDING BUILDING SERVICES INFRASTRUCTURE PROVIDED AS SHOWN IN THE COMPOSITE DRAWINGS FOR THEIR PROPER FUNCTION AND OPERATION AS INTENDED. THE EQUIPMENT VENDOR SHALL LIAISE AND COORDINATE WITH THE MAIN CONTRACTOR TO RESERVE WALL/ SLAB OPENINGS WHERE NECESSARY FOR THE INSTALLATION OF MEP CONNECTIONS FOR THE FPE. WORKS AT THE INTERFACE OF SUCH OPENINGS SHALL BE CARRIED OUT BY THE EQUIPMENT VENDOR UNLESS OTHERWISE SPECIFIED. THE EQUIPMENT VENDOR SHALL PROVIDE SETTING OUT DRAWINGS FOR THE WALL OPENINGS IN ACCORDANCE TO THE MASTER PROGRAMME. IN CASE ANY ACTUAL BUILDING SERVICES REQUIRED BY THE EQUIPMENT VENDOR FOR THE ACTUAL FPE PROCURED BY THE HOSPITAL DEVIATED FROM THE BUILDING SERVICES PROVISIONS AS SHOWN IN THE COMPOSITE DRAWINGS, THE EQUIPMENT VENDOR SHALL NOTIFY THE MAIN CONTRACTOR IMMEDIATELY FOR FURTHER DIRECTIONS FROM THE HOSPITAL. ANY REVISION OR ADDITION WORK ON THE INFRASTRUCTURE SERVICES PROVIDED, IF REQUESTED BY THE EQUIPMENT VENDOR, SHALL BE RESPONSIBLE BY THE EQUIPMENT VENDOR SUBJECT TO APPROVAL BY THE HOSPITAL AND AT HIS OWN COST.
2. POWER CABLES AND ASSOCIATED CABLE CONTAINMENT CONNECTING FROM RESERVED POWER SUPPLY TO THE EQUIPMENT SHALL BE SUPPLIED AND INSTALLED BY THE EQUIPMENT VENDOR. LOCATION AND RATING OF THE RESERVED POWER SUPPLY ARE SHOWN IN THE COMPOSITE DRAWINGS. THE EQUIPMENT VENDOR SHALL EMPLOY REGISTERED ELECTRICAL WORKER (REW) TO CARRY OUT ALL ELECTRICAL WORKS AND SHALL SUBMIT THE WORK COMPLETION CERTIFICATE (I.E. FORM WR1, WR1A) TO MAIN CONTRACTOR / EMSD AFTER COMPLETION OF ELECTRICAL WORKS.
3. FOR POWER OR LIGHTING SYSTEM TO BE CARRIED OUT BY THE EQUIPMENT VENDOR AS SHOWN IN THE COMPOSITE DRAWINGS, THE EQUIPMENT VENDOR SHALL ENSURE THEIR INSTALLATION IS COMPLYING WITH BUILDING ENERGY CODE (BEC) UNDER BUILDING ENERGY EFFICIENCY ORDINANCE (BEEQ) UNLESS EXEMPTION WOULD BE APPLIED BY THE EQUIPMENT VENDOR.
4. THE EQUIPMENT VENDOR SHALL ENSURE THEIR EQUIPMENT WILL NOT INDUCE EXCESSIVE HARMONIC TO THE BUILDING ELECTRICAL SYSTEM, OTHERWISE, SUITABLE HARMONIC FILTERING EQUIPMENT SHALL BE PROVIDED BY THE EQUIPMENT VENDOR.
5. THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR UNINTERRUPTIBLE POWER SUPPLY (UPS) FOR THEIR EQUIPMENT WHERE NECESSARY OR SPECIFIED IN THE COMPOSITE DRAWINGS TO PROTECT THEIR SENSITIVE/ CRITICAL EQUIPMENT OF OPERATION DURING POWER FAILURE OR VOLTAGE DIP.
6. THE EQUIPMENT VENDOR SHALL PROVIDE EARTHING CONDUCTOR/ CABLE TO THE EARTH TERMINAL PROVIDED AT THE RESERVED POWER SUPPLY POINT. RELEVANT REQUIREMENT SUCH AS INSTALLATION REQUIREMENT AND CABLE SIZING SHALL BE ACCORDING TO THE LATEST EDITION OF CODE OF PRACTICE FOR ELECTRICITY (WIRING) REGULATION.
7. THE EQUIPMENT VENDOR SHALL PROVIDE SUPPLEMENTARY BONDING TO MAINTAIN EQUIPOTENTIAL ZONE. RELEVANT REQUIREMENT SUCH AS INSTALLATION REQUIREMENT AND CABLE SIZING SHALL BE ACCORDING TO THE LATEST EDITION OF CODE OF PRACTICE FOR ELECTRICITY (WIRING) REGULATION.
8. WATER PIPING AND ACCESSORIES CONNECTING FROM THE RESERVED WATER CONNECTION VALVES, WHERE NECESSARY, SHALL BE SUPPLIED AND INSTALLED BY THE EQUIPMENT VENDOR. LOCATION/ SIZE OF THE RESERVED WATER CONNECTION VALVES ARE SHOWN IN THE COMPOSITE DRAWINGS.
9. DRAIN PIPE AND ACCESSORIES CONNECTING FROM THE RESERVED DRAINAGE CONNECTION, WHERE NECESSARY, SHALL BE SUPPLIED AND INSTALLED BY THE EQUIPMENT VENDOR. LOCATION/ SIZE OF THE RESERVED DRAINAGE CONNECTION PIPE ARE SHOWN IN THE COMPOSITE DRAWINGS.
10. THE PLUMBING INSTALLATION SHALL BE IN FULL COMPLIANCE WITH THE LATEST EDITION OF THE WATER WORKS REGULATIONS, ARCHITECTURAL SERVICES DEPARTMENT (ASD) REQUIREMENT AND BUILDING (STANDARD OR SANITARY FITMENTS, DRAINAGE WORKS AND LATRINES) REGULATIONS. THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR ALL NECESSARY SUBMISSIONS AND OBTAINING APPROVAL FROM WATER AUTHORITY ACCORDING TO WATER WORKS REGULATIONS ON THEIR EQUIPMENT AND PLUMBING WORKS WHICH CONNECT TO PLUMBING SYSTEM OF THE BUILDING. ALL PLUMBING WORKS BY THE EQUIPMENT VENDOR SHALL BE CARRIED OUT BY FIRST CLASS LICENSE PLUMBER.
11. MEDICAL GASES OR NON-MEDICAL GASES PIPING AND ACCESSORIES CONNECTING FROM THE RESERVED MEDICAL/NON-MEDICAL GASES PIPE CONNECTION VALVES, WHERE NECESSARY, SHALL BE SUPPLIED AND INSTALLED BY THE EQUIPMENT VENDOR. LOCATION/ SIZE OF THE RESERVED MEDICAL/ NON-MEDICAL CASES CONNECTION VALVES AND SUPPLY PRESSURE ARE SHOWN IN THE COMPOSITE DRAWINGS.
12. TOWN GAS PIPING AND ACCESSORIES CONNECTING FROM THE RESERVED GAS PIPE CONNECTION VALVES, WHERE NECESSARY, SHALL BE SUPPLIED AND INSTALLED BY THE EQUIPMENT VENDOR. LOCATION/ SIZE OF THE RESERVED GAS CONNECTION VALVES AND SUPPLY PRESSURE ARE SHOWN IN THE COMPOSITE DRAWINGS.
13. AIR SUPPLY OR EXHAUST DUCTING AND ACCESSORIES CONNECTING FROM THE RESERVED DUCTWORK CONNECTIONS, WHERE NECESSARY, SHALL BE SUPPLIED AND INSTALLED BY THE EQUIPMENT VENDOR. LOCATION/SIZE OF THE DUCTWORK CONNECTION AND AVAILABLE STATUS PRESSURE AT THE DUCTWORK CONNECTION ARE SHOWN IN THE COMPOSITE DRAWINGS. UNLESS OTHERWISE STATED IN THE COMPOSITE DRAWINGS, THE RESERVED AIR DUCT CONNECTION WILL BE LOCATED AT 300MM BELOW FALSE CEILING ON TOP OF THE EQUIPMENT.
14. DATA/ VOICE AND THE RELATED CONTROL AND WIRING, CABLE CONTAINMENT/ ACCESSORIES, WHERE NECESSARY, SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT VENDOR.
15. E-STOP, WARNING LIGHT AND RELATED INTERLOCKING CONTROL WITH ASSOCIATED WIRING, CABLE CONTAINMENT/ ACCESSORIES, WHERE NECESSARY, SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT VENDOR.
16. EXPANSION/ FLEXIBLE JOINT SHOULD BE PROVIDED FOR THE PIPEWORK TO BE INSTALLED BY THE EQUIPMENT VENDOR PASSING THROUGH ANY BUILDING JOINT, STRUCTURE JOINT OR MOVABLE JOINTS. LOCATION OF THESE BUILDING JOINT, STRUCTURE JOINT OR MOVABLE JOINTS ARE SHOWN ON THE COMPOSITE DRAWINGS.

F.S.D. REF. : —			
D.L.O. REF. : —			
Client :  醫院管理局 HOSPITAL AUTHORITY			
Project Management Consultant : 			
NOTE : DO NOT SCALE DRAWINGS.			
00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED
Architect :  WONG TUNG & PARTNERS LIMITED ARCHITECTS & PLANNERS			
Structural, Civil & Geotechnical Engineering Consultant : 			
Building Services Engineering Consultant : 			
Quantity Surveying Consultant : 			
Project :  Redevelopment of Prince of Wales Hospital, Phase 2 (Stage 1) at Ngan Shing Street, Shatin			
Location :	Stage : IPEB DETAILED DESIGN		
Drawing Title : COMPOSITE DRAWINGS - GENERAL NOTES 01			
DATE: 04/2023		SCALE: 1 : 50	
DRAFTED BY: WHK	CHECKED BY: DFC	DESIGNED BY: APK	REVIEWED BY: PYC
JOB NO. 32110	DRAWING NO. IPB/WTPL/FPE/GN01		REV NO. 00

TENDER



KEY PLAN - B01



NOTES:
FOR EQUIPMENT OF DELIVERY SIZE
SMALLER THAN 1600(W) x 2600 (D) x 2300(H)

LEGEND
--- EQUIPMENT DELIVERY ROUTE
■ NON-APPLICABLE AREA

1
PROPOSED DELIVERY ROUTE FROM B01 LOADING/ UNLOADING
VIA SOUTH INDUSTRIAL FREIGHT LIFT

1 : 200

F.S.D. REF. :
D.L.O. REF. :
Client :
Project Management Consultant :
NOTE :
DO NOT SCALE DRAWINGS.

醫院管理局
HOSPITAL
AUTHORITY

ARUP

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :

MEINHARDT

Building Services Engineering Consultant :

wsp

Quantity Surveying Consultant :

RLB
利比
Rider
Levett
Bucknall

Project :

Redevelopment of Prince
of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin

Location :
IPEB

Stage :
DETAILED DESIGN

Drawing Title :
PROPOSED DELIVERY ROUTE
FROM B01 LOADING/ UNLOADING
VIA SOUTH INDUSTRIAL FREIGHT
LIFT

DATE:	04/2023	SCALE:	As indicated
DRAFTED BY:	VHK	CHECKED BY:	DFC
DESIGNED BY:	APK	REVIEWED BY:	PYC
JOB NO.	32110	DRAWING NO.	IPB/WTP/LFPE/GN06
REV NO.	00		

TENDER

227

THE OWNERSHIP OF THE COPYRIGHT IN THIS DRAWING IS RETAINED BY THE ISSUER WHOSE CONSENT MUST BE OBTAINED BEFORE ANY USE OR REPRODUCTION OF THE DRAWING OR ANY PART THEREOF CAN BE MADE.

PARTICULAR NOTES FOR CATEGORY B2 EQUIPMENT

THE "PARTICULAR NOTES" SHOULD BE READ IN CONJUNCTION WITH "GENERAL NOTES" AND REQUIREMENT SPECIFIED IN THE TENDER DOCUMENT.

TESTING & COMMISSIONING

1. UPON COMPLETION OF INSTALLATION AND T&C BY THE EQUIPMENT VENDOR, MAIN CONTRACTOR SHALL, JOINTLY WITH THE EQUIPMENT VENDOR, REPORT COMPLETION OF THE RESPECTIVE FPE. THE REPORT SHALL IDENTIFY THE DATE OF COMPLETION OF THE INSTALLATION WITH RECORD PHOTOS, T&C REPORT ACCEPTABLE TO THE EMPLOYER, CONFIRMATION FROM THE EQUIPMENT VENDOR THAT THE FPE HAS BEEN INSTALLED AND OPERATE AND FUNCTION TO ITS PURPOSE AS INTENDED TO.
2. UNLESS OTHERWISE STATED, ALL FPE SHALL BE INSTALLED AND T&C BY EQUIPMENT VENDOR. MAIN CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY AND/OR PERMANENT BUILDING SERVICES PROVISIONS/CONNECTIONS AND ANY OTHER TOOLS, EQUIPMENT AND/OR ACCESSORIES, AS APPROPRIATE AND REQUIRED, TO FACILITATE THE REQUIRED T&C WORKS.
3. THE MAIN CONTRACTOR AND EQUIPMENT VENDOR SHALL JOINTLY ATTEND ALL TESTING AND COMMISSIONING WORKS TO ENSURE THE FUNCTIONING THE EQUIPMENT AND THE PERFORMANCE OF RELATED MEP SYSTEMS.
4. FOR PASS-THROUGH EQUIPMENT LOCATED IN AIR-TIGHT ROOMS/ CLEANROOMS (INCLUDING BUT NOT LIMITED TO THE STEAM STERILIZER/ WASHER DISINFECTOR CHAMBER/ HYDROGEN PEROXIDE STERILIZER/ RETURN CONVEYOR IN THE IAP AREA)

• THE MAIN CONTRACTOR SHALL CARRY OUT ROOM AIR LEAKAGE TEST TO ENSURE ROOM INTEGRITY AND AIR TIGHTNESS OF ALL PRESSURIZED ROOMS AS SPECIFIED IN THE DRAWINGS. REFERENCE SHALL BE MADE TO AIR TIGHTNESS TEST PARTICULAR SPECIFICATION. REFER TO BS DRAWINGS FOR PRESSURE REQUIREMENTS OF THE PRESSURIZED ROOMS. THE MAIN CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING THE AIR TIGHTNESS TESTING FOR THE PERMANENT PRIMARY ENCLOSURE OF ALL AIR-TIGHT ROOMS.

• FOR LOCATIONS WHERE WALL OPENINGS HAVE BEEN RESERVED FOR INSTALLATION OF PASS-THROUGH EQUIPMENT TO BE PROVIDED BY THE HOSPITAL, THE MAIN CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTING TEMPORARY PARTITION TO SEAL UP THE WALL OPENINGS AND CARRY OUT THE AIR TIGHTNESS TEST. THE AIR TIGHTNESS TEST MAY BE WITNESSED BY THE HOSPITAL APPOINTED PERSONNEL AND THE EQUIPMENT VENDOR. UNTIL THE AIR TIGHTNESS TEST HAS BEEN CONDUCTED SUCCESSFULLY, THE MAIN CONTRACTOR CAN THEN DEMOLISH THE TEMPORARY PARTITION AND PREPARE THE SITE FOR THE PASS-THROUGH EQUIPMENT INSTALLATION.

• AFTER INSTALLATION OF EQUIPMENT BY SUPPLIER, THE MAIN CONTRACTOR WILL CARRY OUT A SUBSEQUENT AIR PARTICLE TEST TO SHOW COMPLIANCE OF AIR TIGHTNESS. IF THIS SUBSEQUENT TEST FAILED TO COMPLY WITH THE REQUIRED TEST STANDARDS, IT WOULD DEEM TO BE THE AIR LEAKAGE CAUSED BY WORKMANSHIP OF THE EQUIPMENT VENDOR. BOTH THE MAIN CONTRACTOR AND EQUIPMENT VENDOR ARE RESPONSIBLE TO IDENTIFY THE SOURCE OF AIR LEAKAGE AND RECTIFICATION WORKS BY EQUIPMENT VENDOR TO BE CARRIED OUT FOR FURTHER TESTING(S) UNTIL COMPLIANCE OF THE TEST STANDARDS. THE EQUIPMENT VENDOR SHALL BEAR THE COST FOR RECTIFICATION WORKS AND THE ASSOCIATED COST OF RE-TESTING (S) BY CERTIFIED PERSONNEL UNDER LABORATORY ACCREDITATION SCHEME IN HONG KONG. PLEASE REFER TO THE FINISHES CODE OF THE ROOM, THE LEGEND 'AT' DENOTES LOCATION WHERE AIR PARTICLE TEST IS REQUIRED.

• AIR-TIGHT ACCESS PANEL SHALL BE USED IF NECESSARY TO ACHIEVE AIR-TIGHTNESS AND NOT TO ALLOW AIR LEAKAGE. NEVERTHELESS, THE AIR-TIGHTNESS OF ALL AIR-TIGHT ROOMS SHALL BE TESTED AND VERIFIED AFTER COMPLETION OF THE WORKS SPECIFIED.

FOR EQUIPMENT WHERE SUNKEN FLOOR SLABS/ PITS IS NECESSARY FOR INSTALLATION

1. AT LOCATION WHERE BACKFILLING OF THE SUNKEN FLOOR/ SUNKEN PIT IS REQUIRED, THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR THE COST & THE WORKS. THE EQUIPMENT VENDOR SHALL COORDINATE WITH THE MAIN CONTRACTOR FOR SITE PROGRESS TO COMPLETE THE LIGHT-WEIGHT CONCRETE POURING WORKS BEFORE OP INSPECTION. IF BACKFILL OF SLAB IS NOT REQUIRED, AT LOCATION WHERE EQUIPMENT VENDOR PROPOSE ANY WORKS WHICH MAY AFFECT THE EXISTING WATERPROOFING LAYER, SHOP DRAWINGS MUST BE SUBMITTED TO HIGHLIGHT LOCATION OF PENETRATION & REMEDIAL PROPOSAL AT WATERPROOFING LAYER PRIOR TO INSTALLATION ON SITE.
2. ANY DAMAGES INCURRED TO THE EXISTING WALL, SKIRTING & FLOOR FINISHES UNDER THE MAIN CONTRACT, THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR THE COST OF REMEDIAL WORKS AND SUCH WORKS SHALL BE UNDERTAKEN THE MAIN CONTRACTOR TO MAINTAIN THE WARRANTY UNDER MAIN CONTRACT.

FOR EQUIPMENT WHERE HANGER WALLS ARE NECESSARY FOR INSTALLATION

1. AT LOCATIONS WHERE MORE THAN ONE SET OF HANGER WALLS ARE REQUIRED ABOVE THE EQUIPMENT, DRY WALL CONSTRUCTION HAD BEEN SPECIFIED IN ORDER TO ALLOW FLEXIBILITY FOR CONSTRUCTION SUBJECT TO THE PROPOSED DIMENSION OF THE EQUIPMENT UNLESS OTHERWISE SPECIFIED. THE EQUIPMENT VENDOR SHALL CONFIRM WITH THE MAIN CONTRACTOR FOR LOCATION OF THE HANGER WALL TO SUIT THE PROPOSED EQUIPMENT. THE EQUIPMENT VENDOR SHALL ALSO BE RESPONSIBLE FOR THE SELF STRUCTURAL SUPPORT AND STABILITY OF THE PROPOSED FPE EQUIPMENT & PANEL SYSTEM WITHOUT IMPOSING ADDITIONAL LOADING / TRANSFER FORCE ONTO THE EXISTING HANGER WALL SYSTEM. THE INDEPENDENT STRUCTURE OF THE HANGER WALL & THE SELF SUPPORTING FPE EQUIPMENT SHALL ALLOW MAX. 10MM GAP & BE FILLED WITH SEALANT JOINT; HENCE DIRECT FIXING CONNECTION TO THE EXISTING HANGER WALLS STRUCTURE IS PROHIBITED.

FOR EQUIPMENT WHERE CEILING SUPPORTING SYSTEM ON STRUCTURAL SOFFIT IS NECESSARY FOR INSTALLATION

1. THERE IS PROVISION UNDER THE MAIN CONTRACT FOR THE CEILING METAL STRUCTURAL SUPPORTING SYSTEM OR PROPRIETARY METAL STRUT CHANNEL CEILING-MOUNTED SUPPORT STRUCTURE SYSTEM AT STRUCTURAL CEILING SOFFIT WHICH SHALL BE DESIGNED AND INSTALLED BY THE MAIN CONTRACTOR IN ROOMS WHERE INSTALLATION OF FIXED CEILING-HUNG EQUIPMENT INCLUDING BUT NOT LIMITED TO EXAMINATION LAMPS, OPERATING LAMPS, PENDANTS, OVERHEAD HEATER, X-RAY IMAGING EQUIPMENT, ETC IS REQUIRED. THE FPE EQUIPMENT VENDOR SHALL PROVIDE SETTING OUT LOCATION, LOADING & OPERATIONAL FORCE REQUIREMENTS OF THE PROPOSED FPE ITEMS FOR THE MAIN CONTRACTOR TO VERIFY COMPATIBILITY OF THE CEILING SUPPORTING SYSTEM INSTALLED UNDER MAIN CONTRACT.
2. THE EQUIPMENT VENDOR SHALL PROVIDE THE LOWER TIER OF CEILING METAL SUPPORTING SYSTEM UNDER THE FALSE CEILING FOR THE MOUNTING OF FPE EQUIPMENT. THIS PROPOSED MOUNTING SYSTEM SHALL BE DESIGNED WITH STRUCTURAL CALCULATIONS FOR SHOP DRAWINGS SUBMISSION. ALL SYSTEMS SHALL BE ADEQUATELY BRACED IN ALL FOUR DIRECTIONS FOR LATERAL LOADING AS SPECIFIED BY THE EQUIPMENT VENDOR'S SPECIFICATIONS. MOVEMENT SHALL NOT EXCEED THE TOTAL FOR THAT ALLOWED ON THE SYSTEM AT THE WORST-CASE LOADING CONDITION. THE PROPOSED FRAMING SYSTEM SHALL BE FLEXIBLE FOR ADJUSTMENT OF FIXING CONNECTION TO SUIT SITE CONDITION AND AVOIDANCE OF INTERFERENCES.
3. ALL MATERIALS USED SHOULD CONFORM TO THE APPROPRIATE SPECIFICATIONS FROM ASTM, AISI, AISC, AND / OR AWS. SUBMIT CERTIFICATION THAT PRODUCTS COMPLY WITH SPECIFIED REQUIREMENTS AND ARE SUITABLE FOR INTENDED APPLICATION.
4. FOR EQUIPMENT MOUNTING ON STRUCTURAL SOFFIT (SUCH AS PENDANT SYSTEM)

• THERE ARE BUILDER'S WORK PROVISION OF PENDANT MOUNTING IN THE MAIN CONTRACT, PLEASE REFER TO THE AS-BUILT DRAWINGS FOR PROVISION. ANY OTHER FIXING REQUIREMENT SHALL BE POST-DRILLED OR BOLT CONNECTION BY THE EQUIPMENT VENDOR AND STRUCTURAL CALCULATION FOR FIXING DETAILS SHALL BE SUBMITTED BY EQUIPMENT VENDOR FOR STATUTORY SUBMISSION & APPROVAL PRIOR TO COMMENCEMENT OF WORKS.
5. FOR UNISTRUT FIXING ON STRUCTURAL SOFFIT (SUCH AS X-RAY IMAGING EQUIPMENT)

• THERE ARE BUILDER'S WORK PROVISION OF UNISTRUT IN THE MAIN CONTRACT, PLEASE REFER TO THE AS-BUILT DRAWINGS FOR PROVISION. ANY OTHER FIXING REQUIREMENT SHALL BE POST-DRILLED OR BOLT CONNECTION BY THE EQUIPMENT VENDOR AND STRUCTURAL CALCULATION FOR FIXING DETAILS SHALL BE SUBMITTED BY EQUIPMENT VENDOR FOR STATUTORY SUBMISSION & APPROVAL PRIOR TO COMMENCEMENT OF WORKS.

• THE PROPRIETARY METAL STRUT CHANNEL CEILING-MOUNTED SUPPORT STRUCTURE SYSTEM SHALL BE DESIGNED AND INSTALLED BY THE MAIN CONTRACTOR FOR THE INSTALLATION OF OVERHEAD MOVABLE CEILING-HUNG EQUIPMENT INCLUDING BUT NOT LIMITED TO X-RAY IMAGING EQUIPMENT, CT SCANNER, C-ARM OR BI-PLANE SYSTEM, ETC AS REQUIRED. THE PROPOSED FPE EQUIPMENT IS EXPECTED TO BE COMPATIBLE FOR FIXING & TAKING LOAD OF THE FPE EQUIPMENT BY THIS CEILING-MOUNTED SUPPORT STRUCTURE SYSTEM. ANY ADDITIONAL LOAD BEARING OR STRENGTHENING SHALL BE AT THE COST OF THE EQUIPMENT VENDOR. PLEASE REFER TO THE FOLLOWING SPECIFICATIONS OF PROPRIETARY METAL STRUT CHANNEL CEILING-MOUNTED SUPPORT STRUCTURE SYSTEM FOR REFERENCE: -

a. CEILING CHANNEL GRIDS SHALL BE OF A UNIVERSAL GRID OR PER MANUFACTURER'S SPECIFICATION TO SUIT THE MEDICAL EQUIPMENT, CONSISTING OF 12 GAUGE 1-5/8" (41MM X 41MM X 2.5MMTK) COLD-FORMED STEEL CHANNEL RAILS FLUSH WITH THE FINISHED CEILING AND EXTENDING WALL TO WALL UNLESS OTHERWISE NOTED AND SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL OF THE EQUIPMENT OR AS DIRECTED BY THE EQUIPMENT VENDOR.

b. CEILING DIRECT MOUNTING CHANNEL SYSTEMS SHALL BE SINGLE CHANNELS OR PER MANUFACTURER'S SPECIFICATION TO SUIT THE MEDICAL EQUIPMENT, CONSISTING OF 12 GAUGE 1-5/8" (41MM X 41MM X 2.5MMTK) COLD-FORMED STEEL CHANNEL RAILS FLUSH WITH THE FINISHED CEILING AND EXTENDING WALL TO WALL UNLESS OTHERWISE NOTED AND SHALL BE PARALLEL TO THE PATH OF TRAVEL OF THE EQUIPMENT OR AS DIRECTED BY THE EQUIPMENT VENDOR. TAKE-UP RAILS FINISH PAINTED WHITE WITH TROLLEYS SHALL BE PROVIDED AND INSTALLED WITH THESE SYSTEMS.

c. ALL NECESSARY SYSTEM ACCESSORIES INCLUDING RAILS, BOLTS & NUTS, STRUTS, FASTENERS ETC. FOR THE COMPLETE INSTALLATION OF THE CEILING HUNG MEDICAL EQUIPMENT.

d. FOR CEILING CHANNEL, RAILS SHALL BE DESIGNED FOR NO MORE THAN 1/720TH OF THE SPAN MAXIMUM DEFLECTION IN EITHER PLANE WHEN MAXIMUM LOADING CONDITIONS ARE APPLIED DUE TO EQUIPMENT OPERATION.

e. CEILING CHANNEL SHALL BE INSTALLED HORIZONTAL IN PLANE AND PARALLEL TO EACH OTHER WITHIN 1/32ND OF AN INCH.

f. FOR CEILING CHANNEL, RAILS SHALL BE ON CENTRES AS REQUIRED BY EQUIPMENT VENDOR AND ALLOW CONTINUOUS ATTACHMENT ALONG ANY POINT ON THE RAIL. SYSTEM SHALL BE TRUE, PLUMB, AND LEVEL TO THE TOLERANCES SPECIFIED.

g. SUPPLY AND INSTALL WHITE SNAP-IN CLOSURE STRIPS INTO THE OPEN CEILING CHANNEL AS REQUIRED AFTER THE EQUIPMENT HAS BEEN INSTALLED UNLESS OTHERWISE NOTED.

FOR EQUIPMENT WHERE EQUIPMENT MOUNTING ON TRACK AT STRUCTURAL SLAB IS NECESSARY FOR INSTALLATION

1. FOR EQUIPMENT MOUNTING ON TRACK AT STRUCTURAL SLAB (SUCH AS MOBILE SHELFING), THE EQUIPMENT VENDOR SHALL SUPPLY THE TRACKS AND COORDINATE WITH THE MAIN CONTRACTOR FOR INSTALLATION OF THE TRACKS PRIOR TO APPLICATION OF FLOOR SCREEDING AND FINISHES IN ORDER TO PROVIDE AN EMBEDDED TRACKING SYSTEM WITH FLUSH LEVEL FLOOR FINISH.

F.S.D. REF. :
D.L.O. REF. :
Client :



醫院管理局
HOSPITAL
AUTHORITY

Project Management Consultant :


NOTE :
DO NOT SCALE DRAWINGS.

00
REV.

TENDER ISSUE
DESCRIPTION

05/2023
DATE

APK
CHECKED

Architect :



WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :


Building Services Engineering Consultant :


Quantity Surveying Consultant :



利比

Rider
Levett
Bucknall

Project :



Redevelopment of Prince
of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin

Location :
IPEB

Stage :
DETAILED DESIGN

Drawing Title :
FPE CATEGORY B2 - COMPOSITE
DRAWINGS - PARTICULAR NOTES

DATE: 04/2023
DRAFTED BY: WHK
JOB NO. 32110

SCALE: 1 : 50
CHECKED BY: DFC
DRAWING NO. IPB/WTPL/FPE/PN-B2

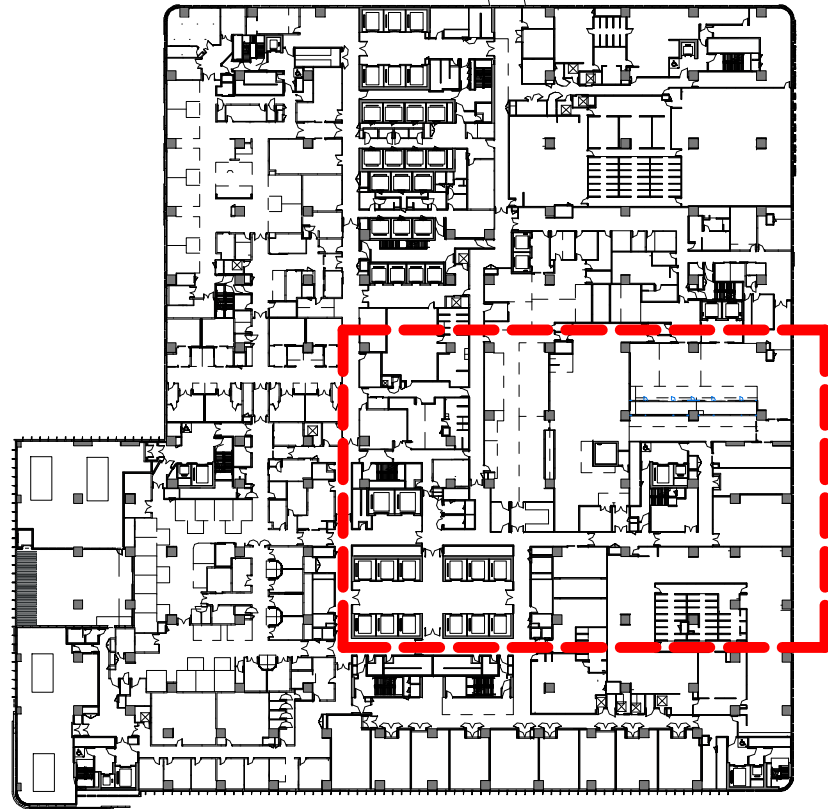
DESIGNED BY: APK
REV NO. 00

REVIEWED BY: PYC

TENDER

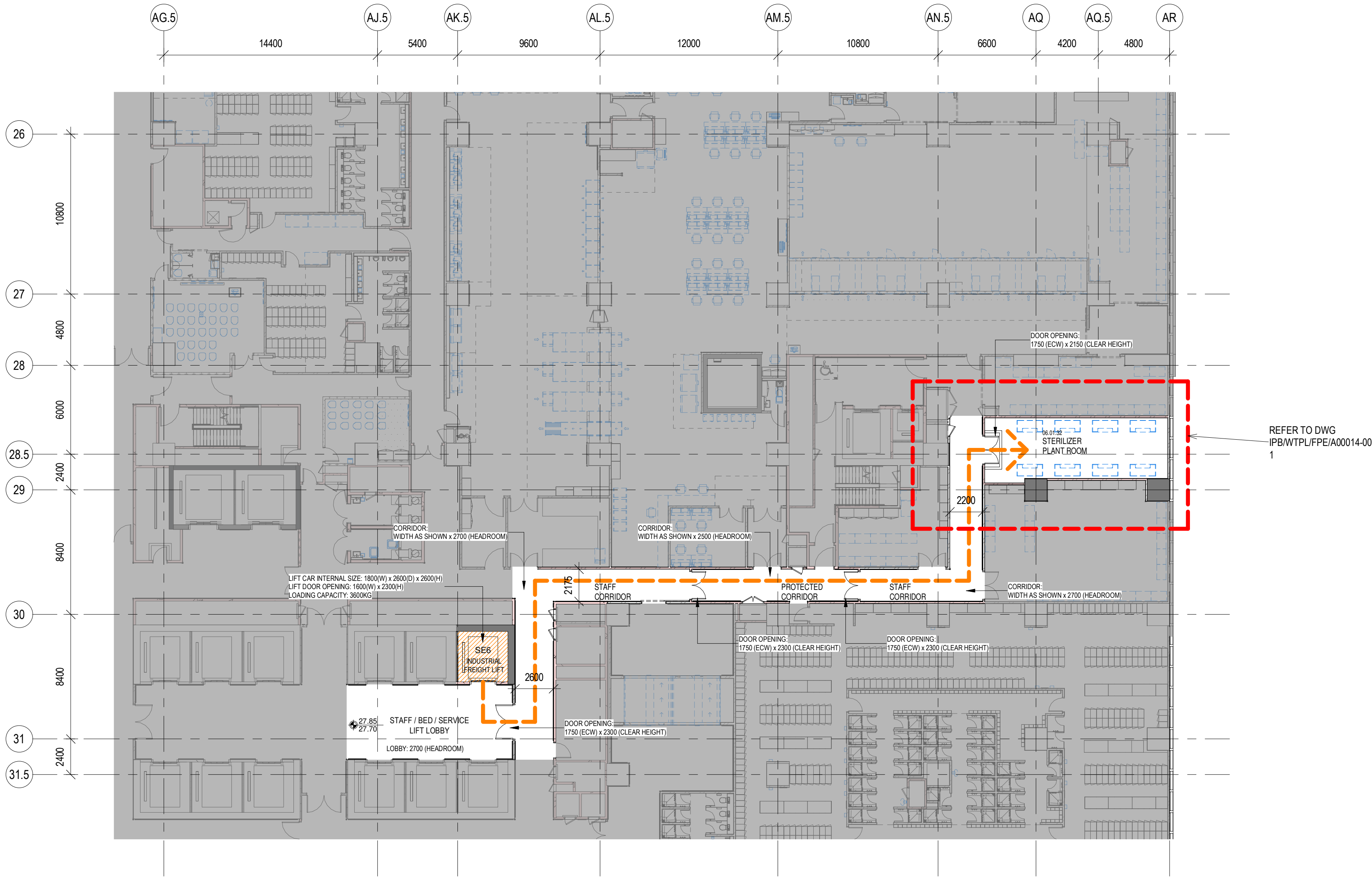
228

THE OWNERSHIP OF THE COPYRIGHT IN THIS DRAWING IS RETAINED BY THE ISSUER WHOSE CONSENT MUST BE OBTAINED BEFORE ANY USE OR REPRODUCTION OF THE DRAWING OR ANY PART THEREOF CAN BE MADE.



KEY PLAN - L04

EQUIPMENT:
STEAM GENERATOR WITH STEAM HEADER
WITH 8 TAKE-OFFS
CATEGORY: B2



06.01.32 STERILIZER PLANT ROOM -
LOCATION PLAN & EQUIPMENT DELIVERY ROUTE - L04

1 : 200

LEGEND

- EQUIPMENT DELIVERY ROUTE
- NON-APPLICABLE AREA

F.S.D. REF. :
D.L.O. REF. :
Client :



醫院管理局
HOSPITAL
AUTHORITY

Project Management Consultant :

ARUP

NOTE :
DO NOT SCALE DRAWINGS.

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :



WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :



Building Services Engineering Consultant :



Quantity Surveying Consultant :



Rider
Levett
Bucknall

Project :



Redevelopment of Prince
of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin

Location :
IPEB

Stage :
DETAILED DESIGN

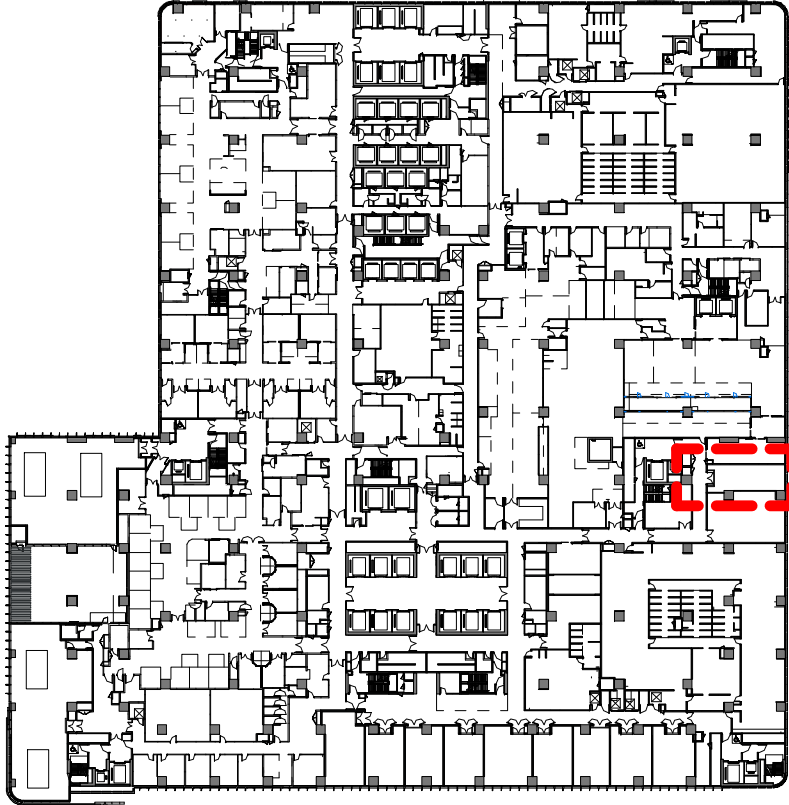
Drawing Title :
FPE ITEM A00014 - COMPOSITE
DRAWING OF STEAM GENERATOR
AT L04 SSU STERILIZER PLANT
ROOM (06.01.32) LOCATION PLAN

DATE:	04/2023	SCALE:	As indicated
DRAFTED BY:	WHK	CHECKED BY:	DFC
DESIGNED BY:	APK	REVIEWED BY:	PYC
JOB NO.	32110	DRAWING NO.	IPB/WTPL/FPE/A00014-000
REV NO.	00		

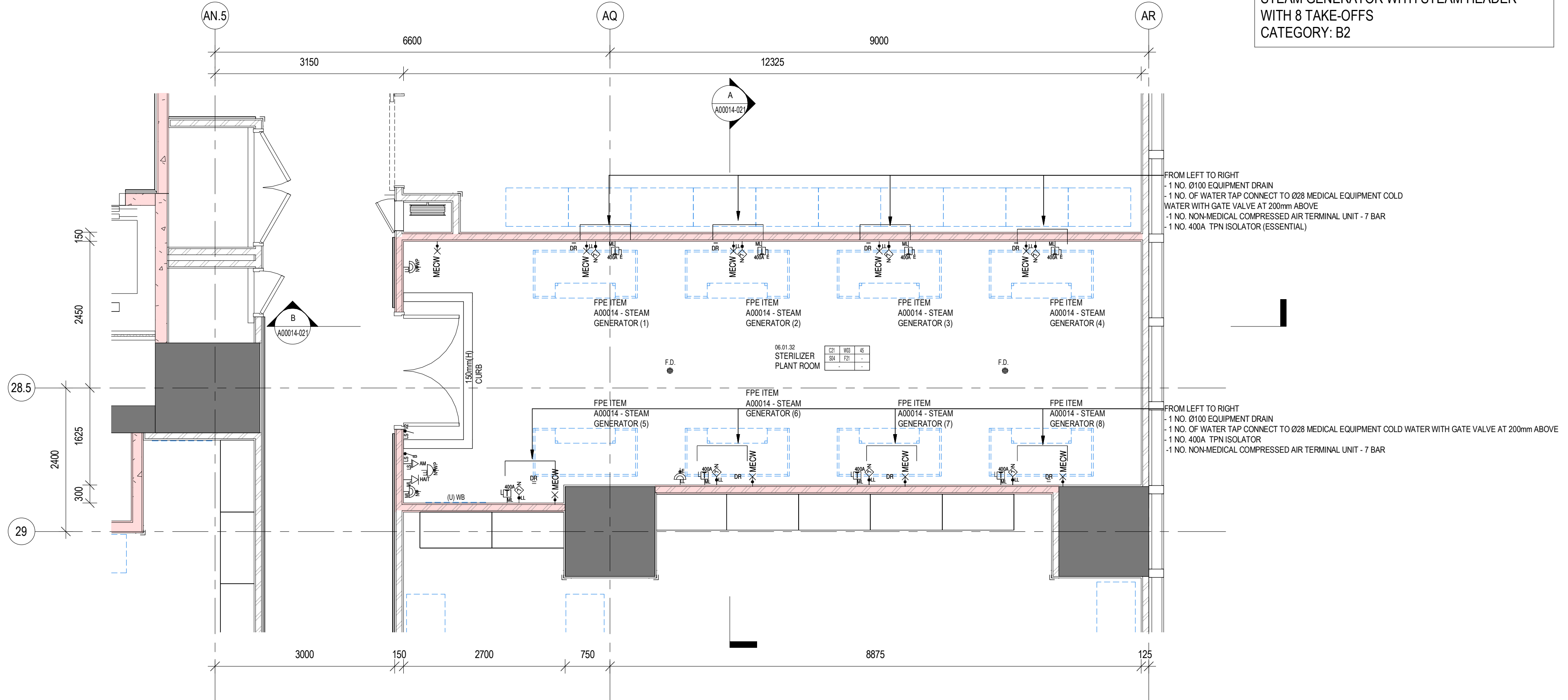
TENDER

229

THE OWNERSHIP OF THE COPYRIGHT IN THIS DRAWING IS RETAINED BY THE ISSUER WHOSE CONSENT MUST BE OBTAINED BEFORE ANY USE OR REPRODUCTION OF THE DRAWING OR ANY PART THEREOF CAN BE MADE.



KEY PLAN - L04

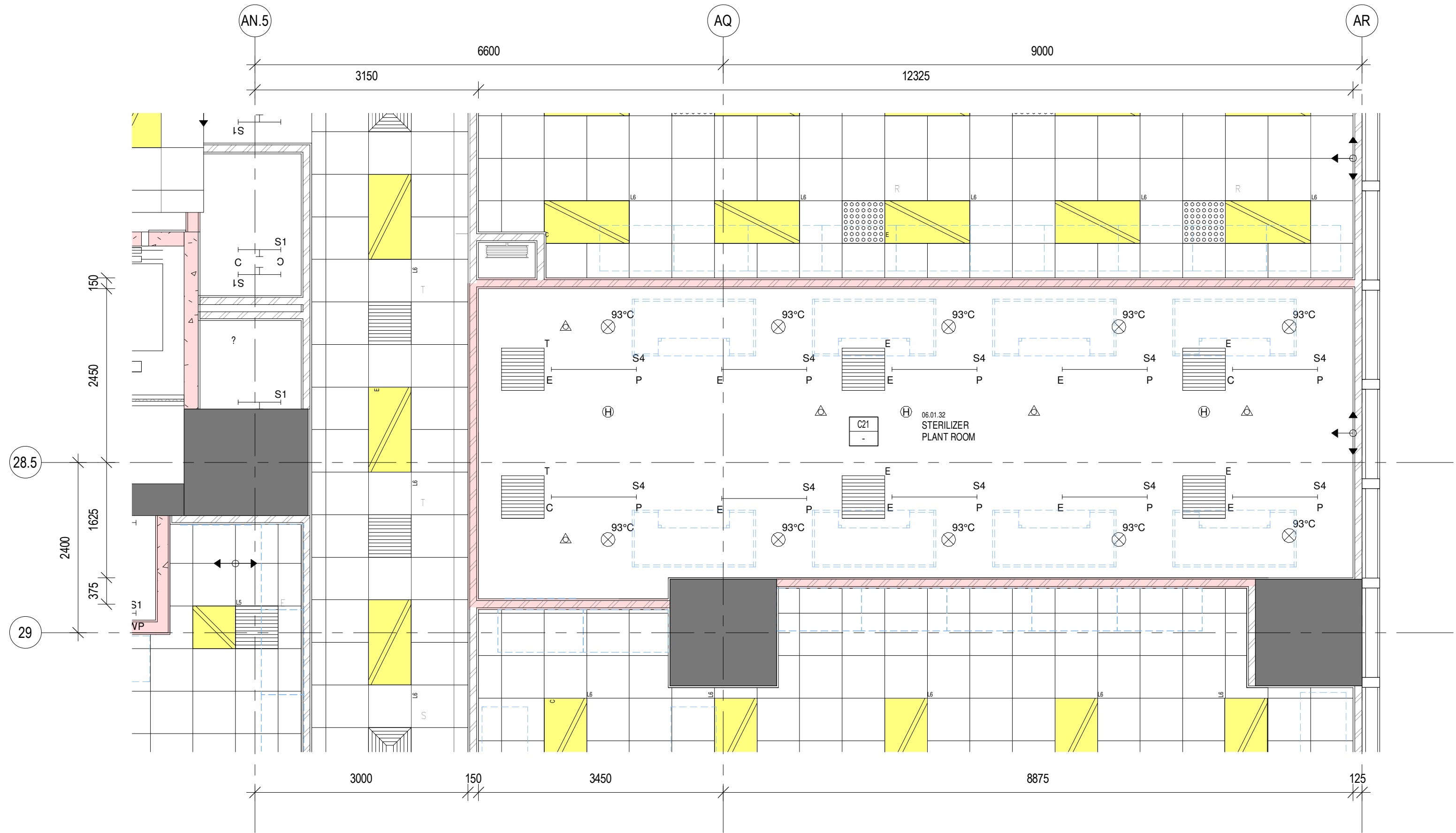


EQUIPMENT:
STEAM GENERATOR WITH STEAM HEADER
WITH 8 TAKE-OFFS
CATEGORY: B2

FROM LEFT TO RIGHT
- 1 NO. Ø100 EQUIPMENT DRAIN
- 1 NO. OF WATER TAP CONNECT TO Ø28 MEDICAL EQUIPMENT COLD
WATER WITH GATE VALVE AT 200mm ABOVE
- 1 NO. NON-MEDICAL COMPRESSED AIR TERMINAL UNIT - 7 BAR
- 1 NO. 400A TPN ISOLATOR (ESSENTIAL)

FROM LEFT TO RIGHT
- 1 NO. Ø100 EQUIPMENT DRAIN
- 1 NO. OF WATER TAP CONNECT TO Ø28 MEDICAL EQUIPMENT COLD WATER WITH GATE VALVE AT 200mm ABOVE
- 1 NO. 400A TPN ISOLATOR
- 1 NO. NON-MEDICAL COMPRESSED AIR TERMINAL UNIT - 7 BAR

1 06.01.32 STERILIZER PLANT ROOM - PLAN
1:50



LEGEND

- AS BUILT BY MAIN CONTRACTOR
- - - - - WORKS BY EQUIPMENT VENDOR
(ITEMS NAMES WITH PREFIX "(U)"
SHALL BE PROVIDED BY OTHERS)

2 06.01.32 STERILIZER PLANT ROOM - REFLECTED CEILING PLAN
1:50

F.S.D. REF.: —
D.L.O. REF.: —
Client: —

醫院管理局
HOSPITAL
AUTHORITY

Project Management Consultant: —

ARUP

NOTE:
DO NOT SCALE DRAWINGS.

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect: —

WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant: —

MEIN-HARDT

Building Services Engineering Consultant: —

wsp

Quantity Surveying Consultant: —

RLB Rider
利比 Levett
Bucknall

Project: —

Redevelopment of Prince
of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin

Location: — Stage: —

IPB DETAILED DESIGN

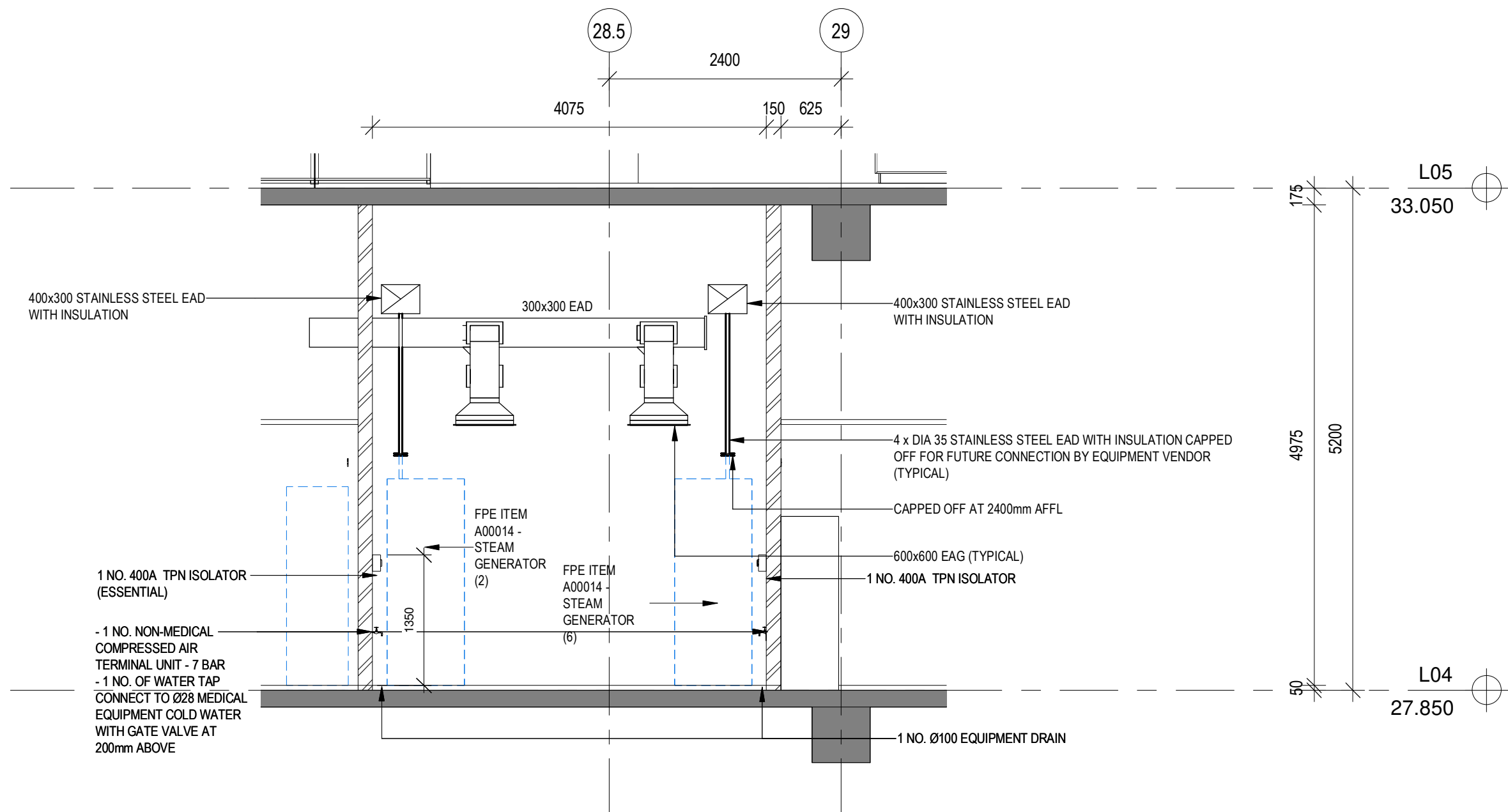
Drawing Title: —

FPE ITEM A00014 - COMPOSITE
DRAWING OF STEAM GENERATOR
AT L04 SSU STERILIZER PLANT
ROOM (06.01.32) PLAN &
REFLECTED CEILING PLAN

DATE:	04/2023	SCALE:	As indicated
DRAFTED BY:	WHK	CHECKED BY:	DFC
DESIGNED BY:	APK	REVIEWED BY:	PKC
JOB NO.	32110	DRAWING NO.	IPB/WTP/L/FPE/A00014-001
REV NO.	00		

TENDER

EQUIPMENT:
STEAM GENERATOR WITH STEAM HEADER
WITH 8 TAKE-OFFS
CATEGORY: B2



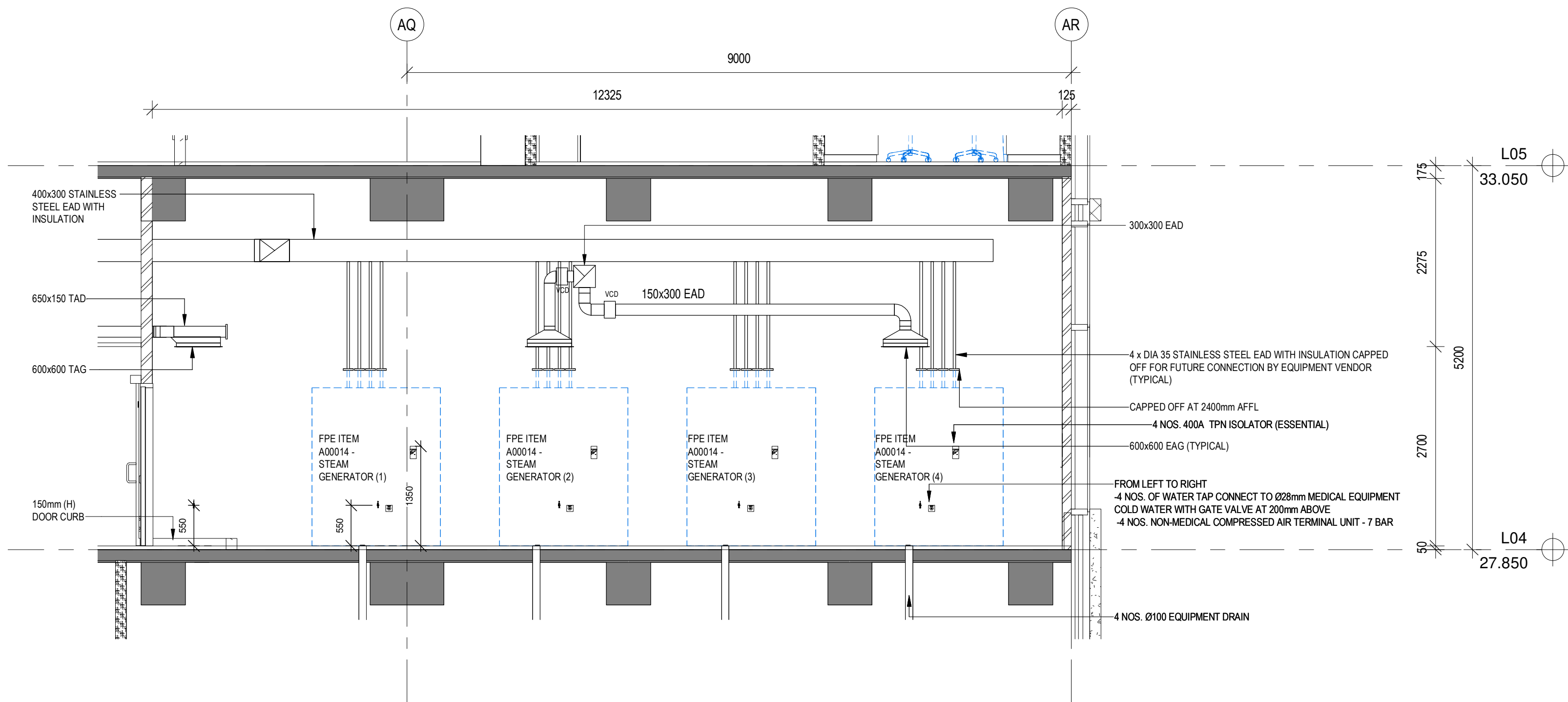
A 06.01.32 STERILIZER PLANT ROOM - SECTION A
1 : 50

LEGEND

— AS-BUILT BY MAIN CONTRACTOR

--- WORKS BY EQUIPMENT VENDOR
(ITEMS NAMES WITH PREFIX "(U)"
SHALL BE PROVIDED BY OTHERS)

WORKS BY EQUIPMENT VENDOR



B 06.01.32 STERILIZER PLANT ROOM - SECTION B
1 : 50

F.S.D. REF. :
D.L.O. REF. :
Client :
Project Management Consultant :
NOTE :
DO NOT SCALE DRAWINGS.



ARUP

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :



WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :



Building Services Engineering Consultant :



Quantity Surveying Consultant :



Project :



Redevelopment of Prince
of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin

Location :

Stage :

IPEB

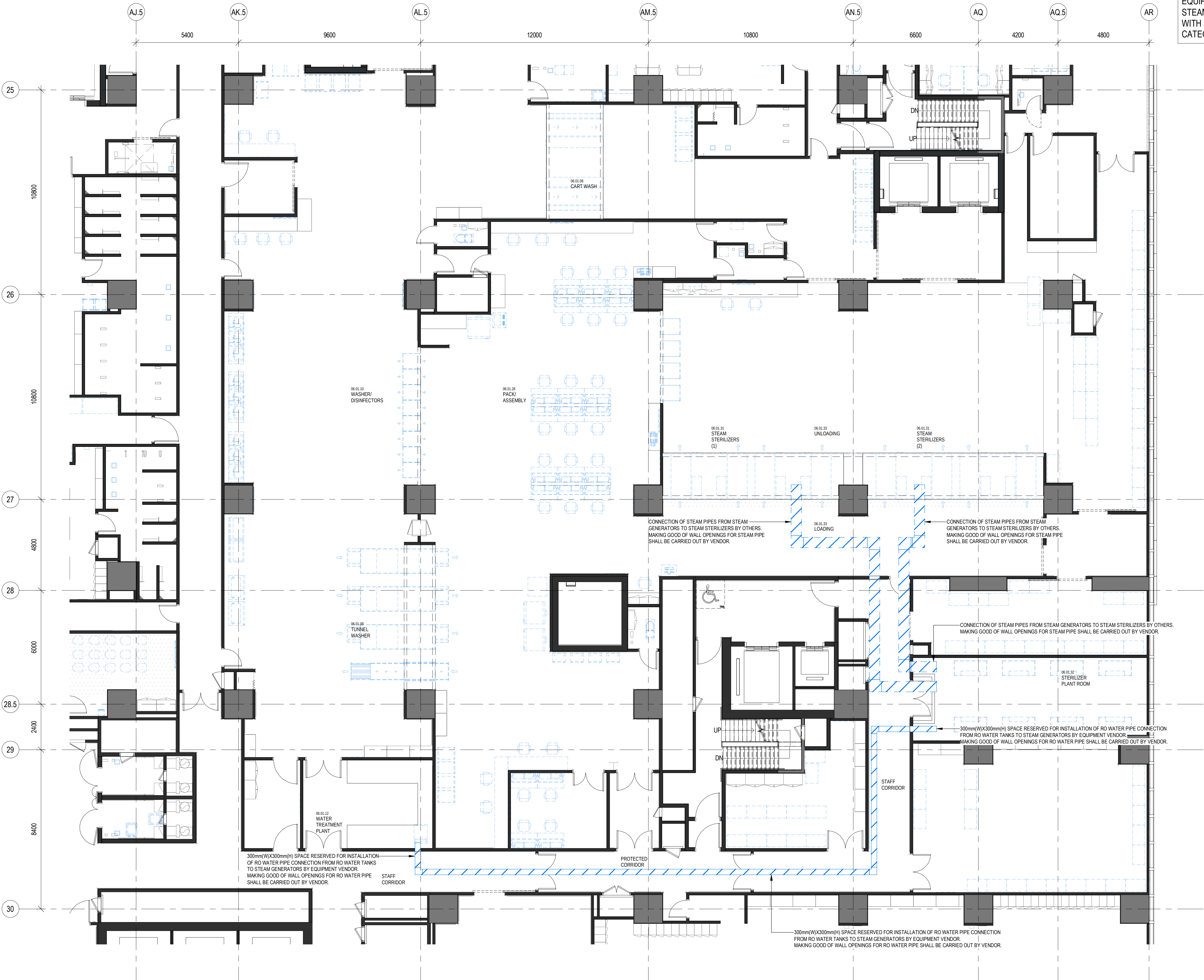
DETAILED DESIGN

Drawing Title :

FPE ITEM A00014 - COMPOSITE
DRAWING OF STEAM GENERATOR
AT L04 SSU STERILIZER PLANT
ROOM (06.01.32) SECTIONS

DATE:	04/2023	SCALE:	As indicated
DRAFTED BY:	CHKD BY:	DESIGNED BY:	REVIEWED BY:
WHK	DFC	APK	PYC
JOB NO.	DRAWING NO.	REV NO.	
32110	IPB/WTP/L/FPE/A00014-021	00	

TENDER



EQUIPMENT:
STEAM GENERATOR WITH STEAM HEADER
WITH 8 TAKE-OFFS
CATEGORY: B2

RO WATER & STEAM PIPE ROUTING DIAGRAM
PART PLAN – L04

1 : 100

F.S.D. REF. :
D.L.O. REF. :
Client :
Project Management Consultant :
NOTE :
DO NOT SCALE DRAWINGS.



醫院管理局
HOSPITAL
AUTHORITY



ARUP

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :



WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :



MEINHARDT

Building Services Engineering Consultant :



WSP

Quantity Surveying Consultant :



RLB
利比
Rider
Levett
Bucknall

Project :



Redevelopment of Prince
of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin

Location :
IPEB
Stage :
DETAILED DESIGN

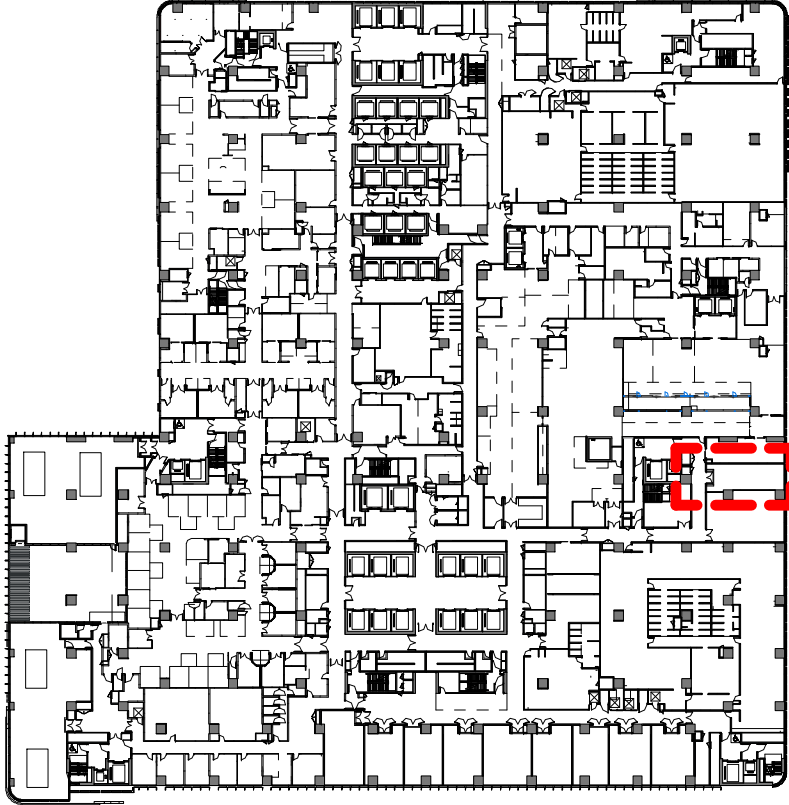
Drawing Title :

FPE ITEM A00014 - COMPOSITE
DRAWING OF STEAM STERILIZER
AT L04 SSU STERILIZER PLANT
ROOM (06.01.32) STEAM PIPE
ROUTING DIAGRAM

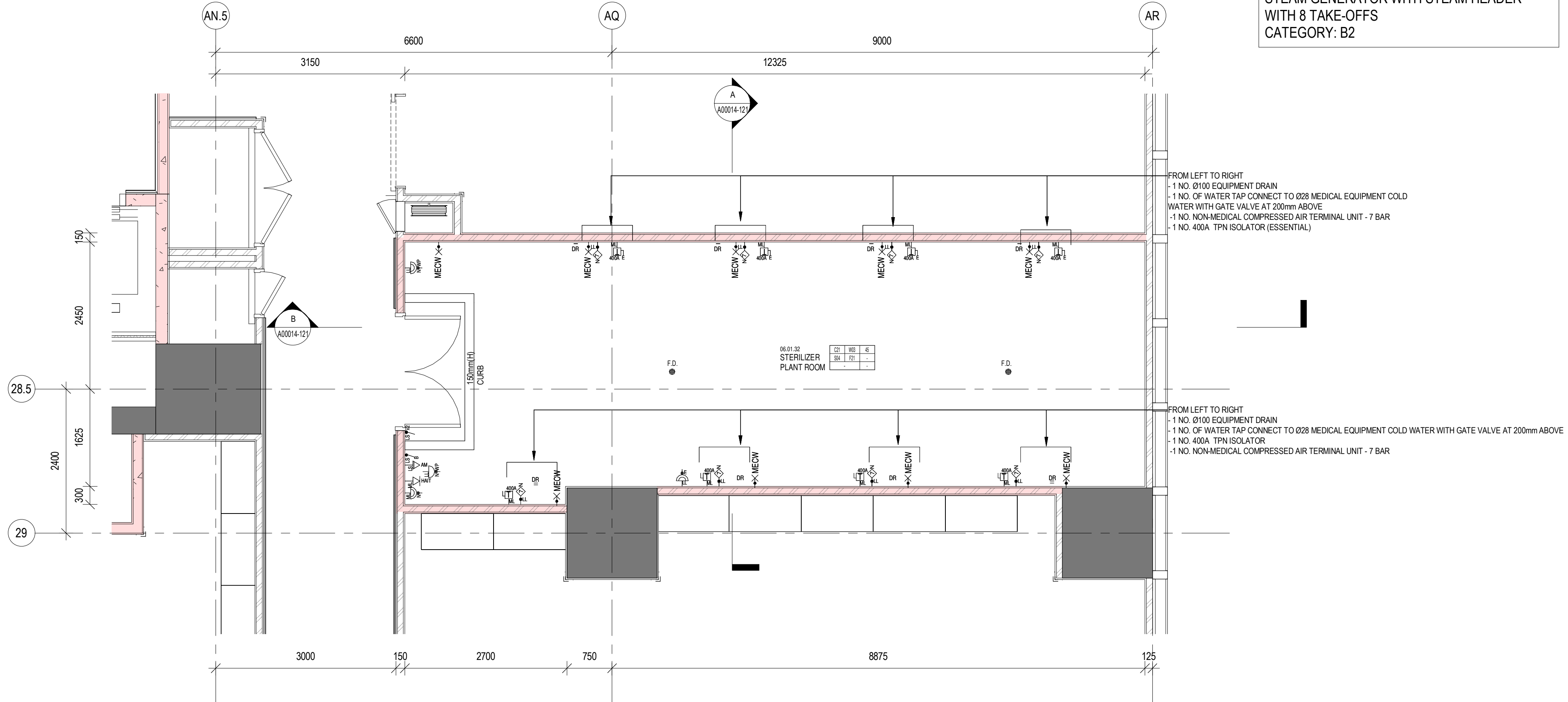
DATE:	04/2023	SCALE:	1 : 100
DRAFTED BY:	WHK	CHECKED BY:	DFC
JOB NO.	32110	DRAWING NO.	IPB/WTPL/FPE/A00014-081
DESIGNED BY:	APK	REV. NO.	00
REVIEWED BY:	PYC		

TENDER

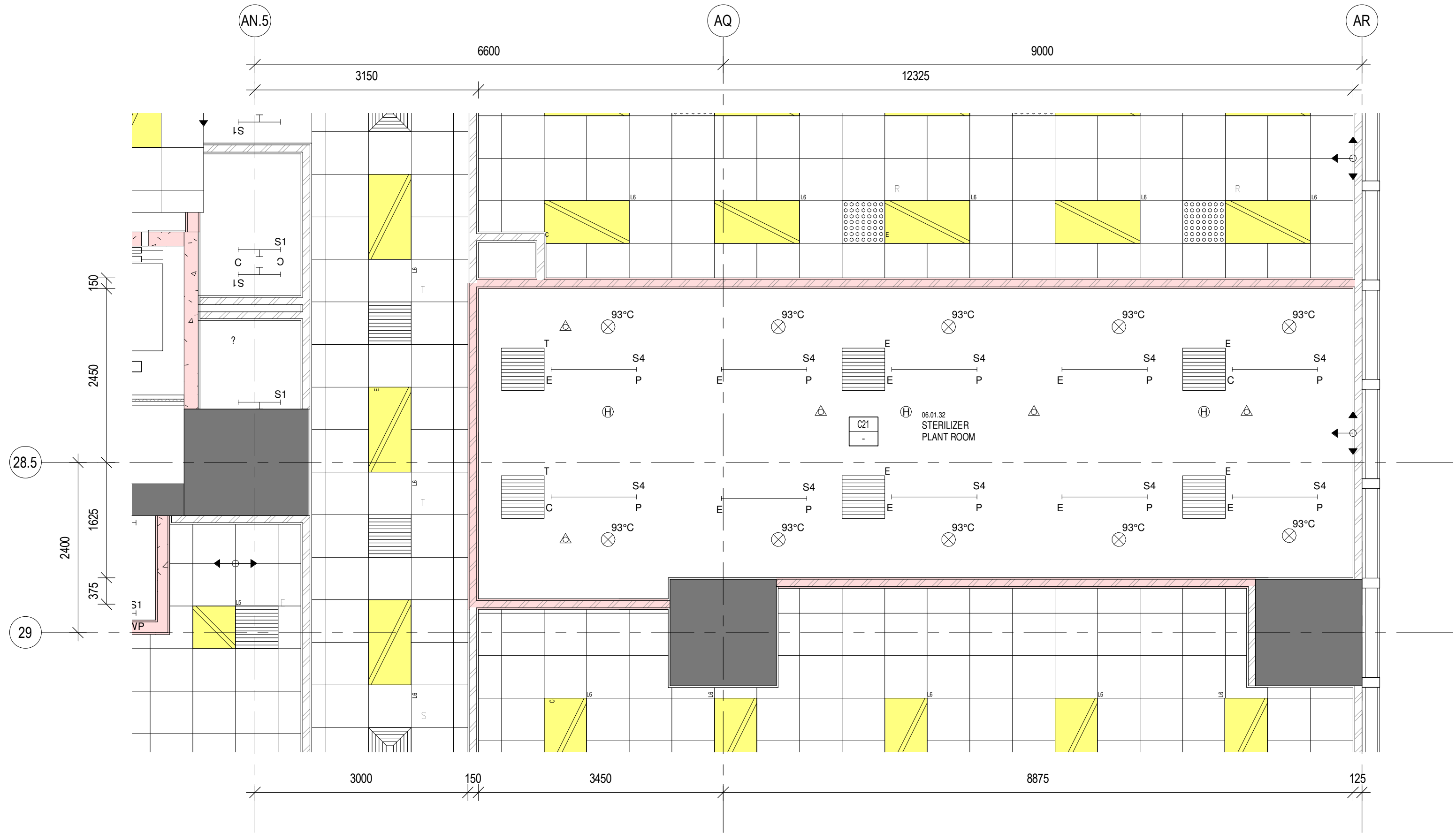
THE OWNERSHIP OF THE COPYRIGHT IN THIS DRAWING IS RETAINED BY THE ISSUER WHOSE CONSENT MUST BE OBTAINED BEFORE ANY USE OR REPRODUCTION OF THE DRAWING OR ANY PART THEREOF CAN BE MADE.



KEY PLAN - L04



1 06.01.32 STERILIZER PLANT ROOM - PLAN
1:50



2 06.01.32 STERILIZER PLANT ROOM - REFLECTED CEILING PLAN
1:50

EQUIPMENT:
STEAM GENERATOR WITH STEAM HEADER
WITH 8 TAKE-OFFS
CATEGORY: B2

FROM LEFT TO RIGHT
- 1 NO. Ø100 EQUIPMENT DRAIN
- 1 NO. OF WATER TAP CONNECT TO Ø28 MEDICAL EQUIPMENT COLD
WATER WITH GATE VALVE AT 200mm ABOVE
- 1 NO. NON-MEDICAL COMPRESSED AIR TERMINAL UNIT - 7 BAR
- 1 NO. 400A TPN ISOLATOR (ESSENTIAL)

FROM LEFT TO RIGHT
- 1 NO. Ø100 EQUIPMENT DRAIN
- 1 NO. OF WATER TAP CONNECT TO Ø28 MEDICAL EQUIPMENT COLD WATER WITH GATE VALVE AT 200mm ABOVE
- 1 NO. 400A TPN ISOLATOR
- 1 NO. NON-MEDICAL COMPRESSED AIR TERMINAL UNIT - 7 BAR

F.S.D. REF. : —
D.L.O. REF. : —
Client :
Project Management Consultant :
NOTE :
DO NOT SCALE DRAWINGS.

醫院管理局
HOSPITAL
AUTHORITY

ARUP

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :
WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :
MEIN-HARDT

Building Services Engineering Consultant :
wsp

Quantity Surveying Consultant :
RLB Rider
利比 Levett
Bucknall

Project :
Redevelopment of Prince
of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin

Location :
IPEB

Stage :
DETAILED DESIGN

Drawing Title :
FPE ITEM A00014 - AS BUILT
DRAWING OF STEAM GENERATOR
AT L04 SSU STERILIZER PLANT
ROOM (06.01.32) PLAN &
REFLECTED CEILING PLAN

DATE:	04/2023	SCALE:	As indicated
DRAFTED BY:	WHK	CHECKED BY:	DFC
DESIGNED BY:	APK	REVIEWED BY:	PYC
JOB NO.	32110	DRAWING NO.	IPB/WTP/L/FPE/A00014-101
REV NO.	00		

TENDER

F.S.D. REF. :

D.L.O. REF. :

Client :



Project Management Consultant :

ARUP

NOTE :
DO NOT SCALE DRAWINGS.

Architect :

WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :



Building Services Engineering Consultant :



Quantity Surveying Consultant :



Project



Redevelopment of Prince of Wales Hospital, Phase 2 (Stage 1) at Ngan Shing Street, Shatin

Location :

Stage :

DETAILED DESIGN

Drawing Title

FPE ITEM A00014 - AS BUILT
DRAWING OF STEAM GENERATOR
AT L04 SSU STERILIZER PLANT
ROOM (06.01.32) SECTIONS

DATE: 04/2023		SCALE: As indicated	
DRAFTED BY: VHK	CHECKED BY: DFC	DESIGNED BY: APK	REVIEWED BY: PYC
JOB NO. 32110	DRAWING NO. IPB/WTPL/FPE/A00014-121		REV.NO. 00

TENDER



—— AS-BUILT BY MAIN CONTRACTOR

A



GENERAL NOTES:

THE "GENERAL NOTES" SHOULD BE READ IN CONJUNCTION WITH "PARTICULAR NOTES" AND REQUIREMENTS SPECIFIED IN THE TENDER DOCUMENT.

ALL DIMENSIONS AND SIZES SHOWN ON THE COMPOSITE DRAWINGS ARE IN MM UNLESS OTHERWISE STATED.

DEFINITIONS

THE FOLLOWING TERMS ARE ILLUSTRATED IN THE GENERAL AND PARTICULAR NOTES:

1. "FORWARD PROCURED EQUIPMENT" OR "FPE" MEANS BUILDER'S WORKS, FIXTURES, FURNITURE, MEDICAL EQUIPMENT AND THE LIKE TO BE DESIGNED, SUPPLIED, INSTALLED AND T&C BY THE EQUIPMENT VENDOR.
2. "COMPOSITE DRAWINGS" MEANS DRAWINGS TO BE ISSUED BY THE HOSPITAL FOR ISSUANCE TO EQUIPMENT VENDOR FOR PROCUREMENT OF FPE. THE AS-BUILT DRAWINGS SHOWING ONLY THE SITE CONDITIONS FOR THE INSTALLATION OF THE FPE SHALL FORM PART OF THE COMPOSITE DRAWINGS.
3. FPE, EQUIPMENT, SERVICES, FURNITURE/ FITTINGS SHOWN IN BLUE DOTTED LINE AND ANNOTATED FPE NAMES WITH PREFIX "FPE ITEM (*FPE NUMBER*) -" OR SUFFIX "BY EQUIPMENT VENDOR" IN THE COMPOSITE DRAWINGS SHALL BE SUPPLIED AND INSTALLED BY THE RESPECTIVE EQUIPMENT VENDOR UNLESS OTHERWISE SPECIFIED. ITEMS NAMES WITH PREFIX "(U)" ILLUSTRATED IN THE COMPOSITE DRAWINGS SHALL BE PROVIDED BY OTHERS.

SUMMARY OF WORKS

THIS SECTION SPECIFIES THE GENERAL REQUIREMENTS FOR MEDICAL EQUIPMENT INSTALLATION. THE SCOPE OF MEDICAL EQUIPMENT INSTALLATION GENERALLY INCLUDES, BUT NOT LIMITED, TO THE FOLLOWING:

1. THE EQUIPMENT VENDOR IS A DIRECT CONTRACTOR APPOINTED BY THE HOSPITAL AND SHALL BE RESPONSIBLE FOR THE DESIGN, SUPPLY, INSTALL AND T&C OF THE EQUIPMENT SYSTEM INCLUDING ASSOCIATED BUILDER'S WORKS, BUILDING SERVICES CONNECTIONS AND HEALTH & SAFETY PROVISION. THE EQUIPMENT VENDOR OF THE FORWARD PROCURED EQUIPMENT (FPE) SHALL INSTALL THE EQUIPMENT IN A TIMELY MANNER ACCORDING TO THE PROGRAMME AS AGREED WITH THE MAIN CONTRACTOR. THE EXTENT AND LOCATION OF THE FPE AND THE MAIN CONTRACTOR WORKS REQUIRED ARE INDICATED IN THE DRAWINGS.
2. THE EQUIPMENT VENDOR SHALL COORDINATE WITH THE MAIN CONTRACTOR IN THE EARLY STAGE OF THE CONTRACT TO IDENTIFY THE FPE INSTALLATION MAY HAVE AN IMPLICATION ON FIRE SERVICES INSTALLATION, THE LAYOUT OF THE APPROVED BUILDING PLAN, PLUMBING AND DRAINAGE ETC. WHICH MAY AFFECT STATUTORY SUBMISSIONS AND INSPECTIONS INCLUDING BUT NOT LIMITED TO FIRE INSPECTION, OCCUPATION PERMIT AND STATUTORY RE-SUBMISSION. SUCH REQUIREMENTS MUST BE CLEARLY INDICATED IN THE PROGRAMME OF WORKS FOR CLOSE MONITORING TO AVOID ANY POTENTIAL DELAY TO THE MAIN WORKS MASTER PROGRAMME.

DESIGN AND COORDINATION RESPONSIBILITY – BUILDER'S WORKS

1. MAIN CONTRACTOR (MC) SHALL BE RESPONSIBLE TO BUILD THE ROOM ENCLOSURE INCLUDING:

• CONSTRUCTION OF CONCRETE FLOOR SLABS AND ENCLOSURE WALLS INCLUDING FINISHES;

• FORMING OF SUNKEN SLAB AND SUNKEN PIT ON THE EXTENT AS SHOWN IN THE COMPOSITE DRAWINGS;

• FORMING WALL OPENINGS FOR WINDOW AND DOORS;

• FORMING WALL OPENINGS FOR PENETRATION OF DUCTWORK/PIPEWORK FOR BS CONNECTIONS AS SHOWN IN AS-BUILT DRAWINGS.

• MAIN CONTRACTOR SHALL BE RESPONSIBLE FOR FIRE INSTALLATION SERVICES FOR THE ROOM PRIOR TO INSTALLATION OF FPE ITEMS (UNLESS OTHERWISE STATED IN THE DRAWINGS)

• MAIN CONTRACTOR SHALL CARRY OUT T&C WITH EQUIPMENT VENDOR AFTER THE COMPLETION OF FPE INSTALLATION TO ENSURE COMPLIANCE WITH THE OVERALL BUILDING SYSTEM AND THE REQUIRED TEST STANDARDS CAN BE MAINTAINED / ACHIEVED.
2. THE EQUIPMENT VENDOR/ SUPPLIER SHALL ACCEPT THE 'AS BUILT' LAYOUT ON COMPOSITE DRAWINGS BE THE 'AS-BUILT' SITE CONDITION WHEN HANDED OVER FROM THE MAIN CONTRACTOR, ANY INSTALLATION PURSUANT TO THE EXISTING STRUCTURE SHALL BE THE SCOPE OF WORKS BY EQUIPMENT VENDOR. THE EQUIPMENT VENDOR SHALL ACCEPT THE PROPOSED BUILDER'S WORKS SUCH AS THE HEIGHT, THICKNESS OF ENCLOSURE WALLS / FLOORS (.ETC) & DIMENSIONS OF SUNKEN FLOOR ARE ACCEPTABLE FOR CONSTRUCTION BY MAIN CONTRACTOR AS SHOWN IN THE AS-BUILT DRAWINGS.

THE COMPOSITE DRAWINGS ISSUED FOR TENDER PURPOSES ARE INDICATIVE FOR REFERENCE OF DESIGN INTENT ONLY AND ARE NOT CONCLUSIVE FOR FULL SYSTEM OF EQUIPMENT INSTALLATION. THE EQUIPMENT VENDOR IS RESPONSIBLE TO PROVIDE A FUNCTIONAL DESIGN LAYOUT FOR THE REQUIRED OPERATION FLOW. THE DIMENSIONS AS SHOWN IN THE COMPOSITE DRAWINGS INDICATE THE MAXIMUM SPACE AVAILABLE FOR INSTALLATION OF THE FPE. THE EQUIPMENT VENDOR SHALL CHECK CAREFULLY AGAINST THE DIMENSIONS, INSTALLATION SPACE AND FUTURE MAINTENANCE SPACES OF THE PROPOSED EQUIPMENT AND INFORM THE HOSPITAL OF ANY PROBLEMS FOUND. ANY DEVIATIONS TO THE PROPOSED DESIGN IN COMPOSITE DRAWINGS AND/OR QUALIFICATIONS TO THE PROPOSED BUILDER'S WORKS / BUILDING SERVICES PROVISIONS BY THE MAIN CONTRACTOR MUST BE RAISED DURING TENDER RETURN FOR CONSIDERATION. OTHERWISE, THE COMPOSITE DRAWING PROPOSAL WOULD DEEM TO BE ACCEPTED AS SUITABLE FOR THEIR OFFERED EQUIPMENT. ANY COST IMPLICATION FOR DESIGN CHANGES AFTER TENDER AWARD SHALL BE BORNE BY THE EQUIPMENT VENDOR.

THE EQUIPMENT VENDOR MUST CONFIRM AND HIGHLIGHT THE INCOMPATIBILITY AND/OR INADEQUACY IN THE ARCHITECTURAL AND BUILDING SERVICES PROVISIONS TO BE PROVIDED BY THE HOSPITAL, WHICH WILL BE MODIFIED/IMPROVED BY THE EQUIPMENT (SUBJECT TO HOSPITAL'S APPROVAL) AT THEIR OWN COST FOR PROPER AND SAFE INSTALLATION AND OPERATION OF THEIR EQUIPMENT ON OFFER. IN THIS RESPECT, THE EQUIPMENY VENDOR SHALL CHECK ALL THE ARCHITECTURAL AND BUILDING SERVICES PROVISION SUCH AS ROOM SPACE, CEILING HEADROOM, CEILING AND FLOOR LOADING, MAIN SUPPLY CURRENT RATING, AIR-CONDITIONING CAPACITY, WATER SUPPLY AND DRAIN ETC. AS DETAILED IN THE COMPOSITE DRAWINGS. THE EQUIPMENT SHALL ALSO BE RESPONSIBLE FOR ALL THE BUILDING SERVICES AND BUILDER'S WORKS WHICH ARE DEEMED NECESSARY BY THE END USER AND FOR PROPER INSTALLATION, COMMISSION AND SUBSEQUENT OPERATION OF THE PROPOSED EQUIPMENT AND THE COST IS CONSIDERED TO BE COVERED IN THE QUOTATION SUM.

3. THE EQUIPMENT VENDOR SHALL ALSO BE RESPONSIBLE TO REVIEW AND ASSESS SURROUNDING SITE CONDITION FOR THE INSTALLATION OF THE FPE EQUIPMENT & TO ACHIEVE PERFORMANCE AS REQUIRED IN SPECIFICATIONS. ANY ENABLING WORKS FOR SITE PREPARATION TO ACHIEVE INSTALLATION CONDITION SHALL BE AT THE COST OF THE EQUIPMENT VENDOR. THE PROPOSED FPE EQUIPMENT MUST NOT CAUSE ANY INTERFERENCE TO THE EQUIPMENT INSTALLATION AT ADJACENT ROOMS BY OTHER VENDOR. ANY PROPOSAL TO INSTALL EXHAUST PIPE / LOUVRES WHICH AFFECT THE DESIGN OF FACADE MUST BE INDICATED ON DRAWINGS FOR APPROVAL PRIOR TO INSTALLATION ON SITE.

4. THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR THE WORKS & COST ASSOCIATED TO ALL NECESSARY TRANSPORTATION AND HOISTING, INCLUDING PLANNING OF ACCESS ROUTE FOR DELIVERY & TEMPORARY LIFTING EQUIPMENT, MOBILE CRANE, ELEVATED LIFTING PLATFORM, TEMPORARY LIGHTING, TEMPORARY WATER, TEMPORARY DRAINAGE AND TEMPORARY POWER PROVISION FOR INSTALLATION OF EQUIPMENT AS WELL AS DEMOLITION & CLEARANCE OF TEMPORARY WORKS. THE EQUIPMENT VENDOR MAY REFER TO THE DELIVERY ROUTE DRAWINGS SUPPLEMENTED IN THE GENERAL NOTES OR FPE LOCATION PLANS FOR THE SUGGESTED DELIVERY ROUTE. PLEASE NOTE THAT THE FREIGHT LIFTS/ HOT LIFTS INDICATED IN THE COMPOSITE DRAWINGS MAY NOT BE IN OPERATION DURING THE DELIVERY OF FPE EQUIPMENT, THE EQUIPMENT VENDOR IS RESPONSIBLE TO SEEK ALTERNATIVE MEANS OF DELIVERY AT THEIR OWN COST. THE EQUIPMENT VENDOR MAY PROPOSE ALTERNATIVE DELIVERY ROUTES AND COORDINATE WITH THE MAIN CONTRACTOR ON THE FINAL DELIVERY ROUTE, SITE LOGISTIC, PROGRAMME AND PROVIDE ASSOCIATED ATTENDANCE AND COORDINATION.
5. EQUIPMENT VENDOR SHALL ALSO BE RESPONSIBLE FOR THE HEALTH & SAFETY OF ASSOCIATED TO THE INSTALLATION & FUTURE MAINTENANCE OF EQUIPMENT INCLUDING BUT NOT LIMITED TO THE SIGNAGE / WARNING SIGN, WARNING LIGHT, PROTECTIVE BARRIERS, SAFETY PROVISION FOR FUTURE MAINTENANCE ETC. THE EQUIPMENT VENDOR SHALL COORDINATE WITH MAIN CONTRACTOR FOR DEMARCATON AND FENCING OFF WORKS AREA, THE EQUIPMENT VENDOR IS RESPONSIBLE FOR THE SECURITY OF THEIR WORKS AND MATERIAL STORAGE ON SITE.
6. THE LAYOUT PROPOSED BY VENDOR MUST BE DESIGNED WITHIN THE EXISTING SITE CONDITION AS SHOWN IN THE 'AS BUILT' DRAWINGS. THE EQUIPMENT VENDOR SHALL BE INVITED TO VERIFY THE 'AS BUILT' CONDITION ON SITE WHEN THE AREA IS AVAILABLE FOR INSPECTION. THE EQUIPMENT VENDOR, THE MAIN CONTRACTOR AND THE HOSPITAL OR HOSPITAL'S REPRESENTATIVE SHALL JOINTLY INSPECT THE ACTUAL BUILDER'S WORKS AND BUILDING SERVICES ON WHETHER THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE AS-BUILT DRAWINGS. ANY DEFECTS, IRREGULARITIES, DEFICIENCIES ETC. SHALL BE RECTIFIED BY THE MAIN CONTRACTOR TO THE SATISFACTION OF THE HOSPITAL.

PRIOR TO ANY FPE INSTALLATION WORKS, THE EQUIPMENT VENDOR SHALL ACCEPT THE ENVIRONMENTAL CONDITIONS FOR THE ROOMS IN WHICH THE FPE ARE BEING INSTALLED. THE EQUIPMENT VENDOR SHALL LIAISE AND COORDINATE WITH THE MAIN CONTRACTOR TO PROVIDE WRITTEN CONFIRMATION AND ACCEPTANCE OF THE ENVIRONMENTAL AND SITE CONDITIONS, ETC. FOR THEIR INSTALLATION OF FPE. RECORD PHOTOS, LOCATION AND EXTENT OF, CONDITIONS OF THE AREA, ENVIRONMENTAL CONDITIONS OF THE AREA SUCH AS VENTILATION, TEMPERATURE, HUMIDITY ETC. ALLOWED FOR THE EQUIPMENT VENDOR TO INSTALL THE FPE SHALL BE PROPERLY DOCUMENTED AND ENDORSED BY THE EQUIPMENT VENDOR AND THE MAIN CONTRACTOR. SUCH RECORD SHALL BE SUBMITTED TO THE HOSPITAL FOR RECORD WITHIN 7 DAYS FOR THE AREA ALLOWED FOR THE INSTALLATION OF FPE. THE EQUIPMENT VENDOR SHALL INCLUDE ANY ITEMS IN THE REPORT AS COMMENTED BY THE HOSPITAL.

7. SHOULD THERE BE DISCREPANCIES FOUND ON SETTING OUT DIMENSIONS BETWEEN COMPOSITE DRAWINGS AND ACTUAL SITE CONDITIONS, THE EQUIPMENT VENDOR SHALL COORDINATE WITH MAIN CONTRACTOR FOR THE 'AS-BUILT' SETTING OUT AND INTERFACE CONNECTION WITH BUILDING SERVICES & BUILDER'S WORKS ON SITE WITHOUT ANY COST IMPLICATIONS. THE PROPOSED EQUIPMENT SHOP DRAWING BY EQUIPMENT VENDOR MUST INDICATE CONNECTION POINTS TO EXISTING BUILDING SERVICE FOR COMMENT. THE EQUIPMENT VENDOR SHALL ALSO PROVIDE ACTUAL EQUIPMENT LOADING AND SUPPORTING ANCHORING POINT LOADS TO THE MAIN CONTRACTOR FOR COORDINATION AFTER CONTRACT AWARD. THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR ANY STRENGTHENING WORKS WHERE NECESSARY TO ENABLE A SAFE INSTALLATION OF THE EQUIPMENT. THE EQUIPMENT VENDOR SHALL ALSO DESIGN AND PROVIDE NOISE & VIBRATION ATTENUATION PROVISIONS FOR THEIR EQUIPMENT TO REDUCE THE NOISE & VIBRATION NUISANCE INSIDE THE ROOM OR ADJACENT ROOMS.
8. THE EQUIPMENT VENDOR SHALL BEAR ALL THE COSTS INCURRED FOR THE MODIFICATION AND ADDITIONAL BUILDING SERVICE PROVISION RELATED TO EQUIPMENT INSTALLATION AND NORMAL OPERATION (E.G. ELECTRICITY ENHANCEMENT). THE EQUIPMENT VENDOR SHALL ALSO BE RESPONSIBLE FOR ALL NECESSARY EQUIPMENT OR ACCESSORIES, INCLUDING CORRESPONDING SUPPORTS, ANCHOR, BRACKET, MOUNTING PLATE, CABLE CONTAINMENT, AND ACCESSORIES (...ETC) TO COMPLETE THE CONSTRUCTION AND INSTALLATION UNDER EQUIPMENT VENDOR'S CONTRACT REGARDLESS IF THESE ITEMS WERE SHOWN IN THE COMPOSITE DRAWINGS. THE EQUIPMENT VENDOR SHALL ALSO BE RESPONSIBLE FOR ALL NECESSARY COORDINATION UNDER THE DESIGN & BUILD CONTRACT & INSTALLATION OF EQUIPMENT MUST BE IN COMPLIANCE WITH HONG KONG LEGISLATIONS & REGULATIONS. FOR FPE INVOLVING DANGEROUS GOODS UNDER THE CLASSIFICATION OF HK FIRE SERVICES DEPARTMENT (FSD), THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR ALL NECESSARY SUBMISSIONS AND OBTAINING APPROVAL/ LICENSE FROM FSD. SHOULD THERE BE ANY FPE UNDER BOILERS AND PRESSURE VESSELS ORDINANCE (CAP 56), THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR OBTAINING THE "CERTIFICATE OF FITNESS" FROM LABOUR DEPARTMENT.
9. THE EQUIPMENT VENDOR IS REQUIRED TO SUBMIT A DESIGN PROPOSAL AND DETAIL PROGRAMME UPON CONTRACT AWARD FOR SCHEDULE OF WORKS INCLUDING DESIGN PERIOD, SHOP DRAWINGS SUBMISSION. THE EQUIPMENT VENDOR SHALL COORDINATE WITH MAIN CONTRACTOR FOR ACCESS AND CONSTRUCTION PROGRESS IN LINE WITH THE MASTER PROGRAMME TO MEET STATUTORY INSPECTIONS. SHOULD THERE BE DELAY ON THE AGREED FPE PROGRAMME, THE EQUIPMENT VENDOR SHALL NOTIFY THE HOSPITAL FOR THE ANTICIPATED DELAY AND ADVISE FOR CATCH UP PROGRAMME AT THEIR OWN COST.
10. THE EQUIPMENT VENDOR SHALL COORDINATE WITH MAIN CONTRACTOR FOR FPE WORKS ABOVE CEILING AND AGREE A TIME SCHEDULE FOR THE INSTALLATION WORKS. SHOULD THE EQUIPMENT VENDOR FAIL TO FOLLOW THE AGREED PROGRAMME, THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR ASSOCIATED ABORTIVE WORKS & ANY ADDITIONAL COSTS IF THE MAIN CONTRACTOR IS PREPARED TO TAKE DOWN AND REINSTATE THE FALSE CEILING AND MAKE GOOD AFTER THEIR WORKS.
11. DAMAGES ON ANY SURFACE OR STRUCTURE CAUSED DURING THE INSTALLATION OF EQUIPMENT SHOULD BE MADE GOOD, REINSTATED OR BACKFILLED TO MATCH WITH EXISTING CONDITION. THE SCOPE OF WORKS FOR EQUIPMENT VENDOR SHALL ALSO INCLUDE SEALING UP JUNCTIONS AND TOUCHING UP OF FINISHES AT CONNECTION WITH THE EXISTING BUILDING STRUCTURE BY MAIN CONTRACTOR. THE EQUIPMENT VENDOR SHALL PROTECT, CLEAN AND REMOVE PROTECTION FOR THEIR FPE. DURING THE PROGRESS OF THE WORKS, ALL OPEN ENDS OF PIPES, CONDUITS, DUCTS, ETC. SHALL BE PROPERLY CAPPED TO PREVENT PEST/RODENT FROM ENTERING. THE EQUIPMENT VENDOR SHALL FOLLOW THE HOUSE-KEEPING AND SITE SAFETY RULES OF THE MAIN CONTRACTOR DURING THE CONSTRUCTION PERIOD.
12. THE EQUIPMENT VENDOR SHALL PROVIDE THE FOLLOWINGS SUBMISSIONS FOR COMMENTS PRIOR TO COMMENCEMENT OF INSTALLATION:

- MATERIAL SUBMISSIONS WITH PRODUCT CATALOGUE, TECHNICAL DATA & JOB REFERENCE IN HK

• FPE SHOP DRAWING FOR THE PROPOSED LAYOUT WITH DIMENSION & SETTING OUT

• COORDINATED COMBINED BUILDER'S WORK DRAWINGS FOR FPE INSTALLATION

• COMBINED BUILDING SERVICES DRAWINGS FOR FPE INSTALLATION

• VERIFICATION DOCUMENTS FOR APPROVED / LICENSED SUPPLY & INSTALLER

• TEST REPORT & CERTIFICATE FOR COMPLIANCE OF THE LATEST STANDARDS

THE EQUIPMENT VENDOR SHALL ALSO PROVIDE THE FOLLOWING DOCUMENTS UPON COMPLETION OF INSTALLATION.

- T&C REPORTS OF THE INSTALLED SYSTEM

• 'AS FITTED' DRAWINGS

• O&M MANUAL UPON COMPLETION OF INSTALLATION.

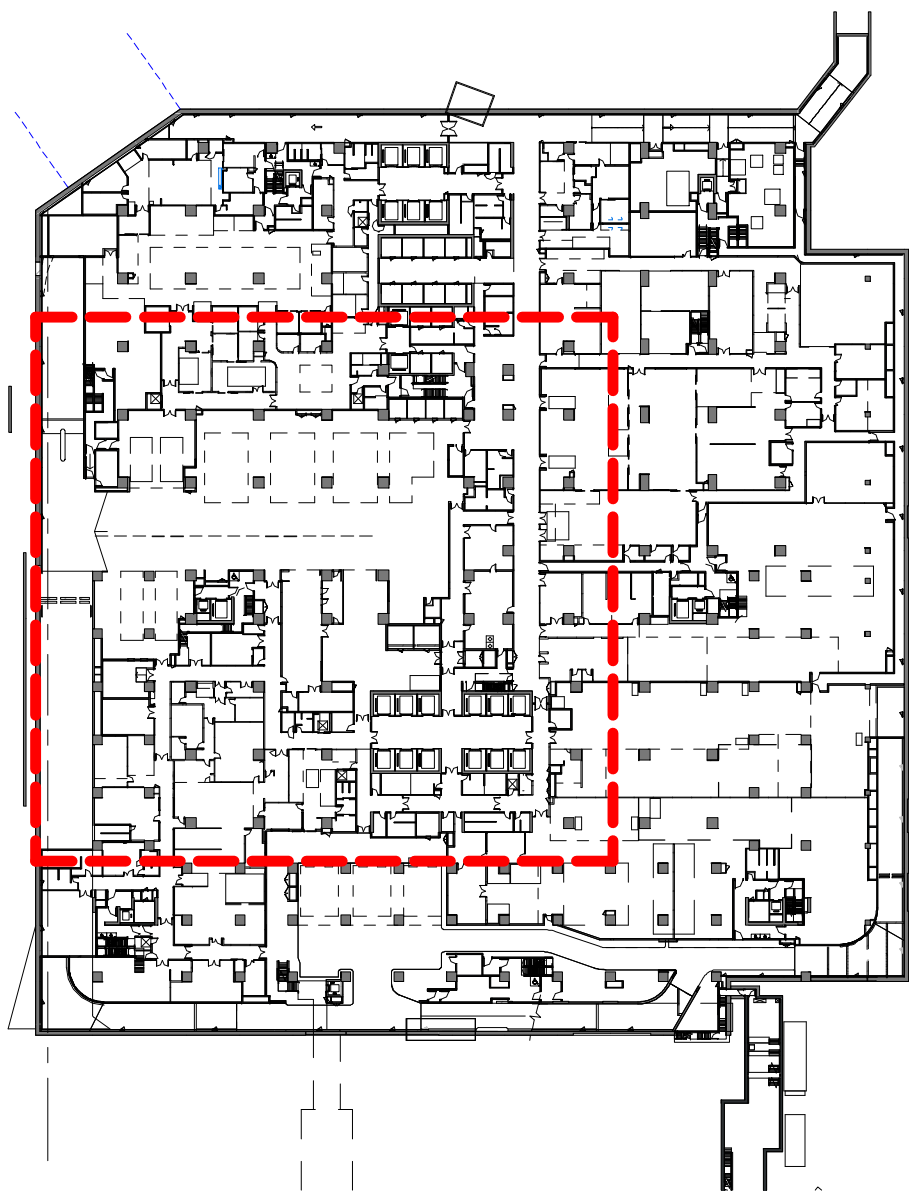
• WARRANTY

DESIGN AND COORDINATION RESPONSIBILITY – MEP PROVISIONS

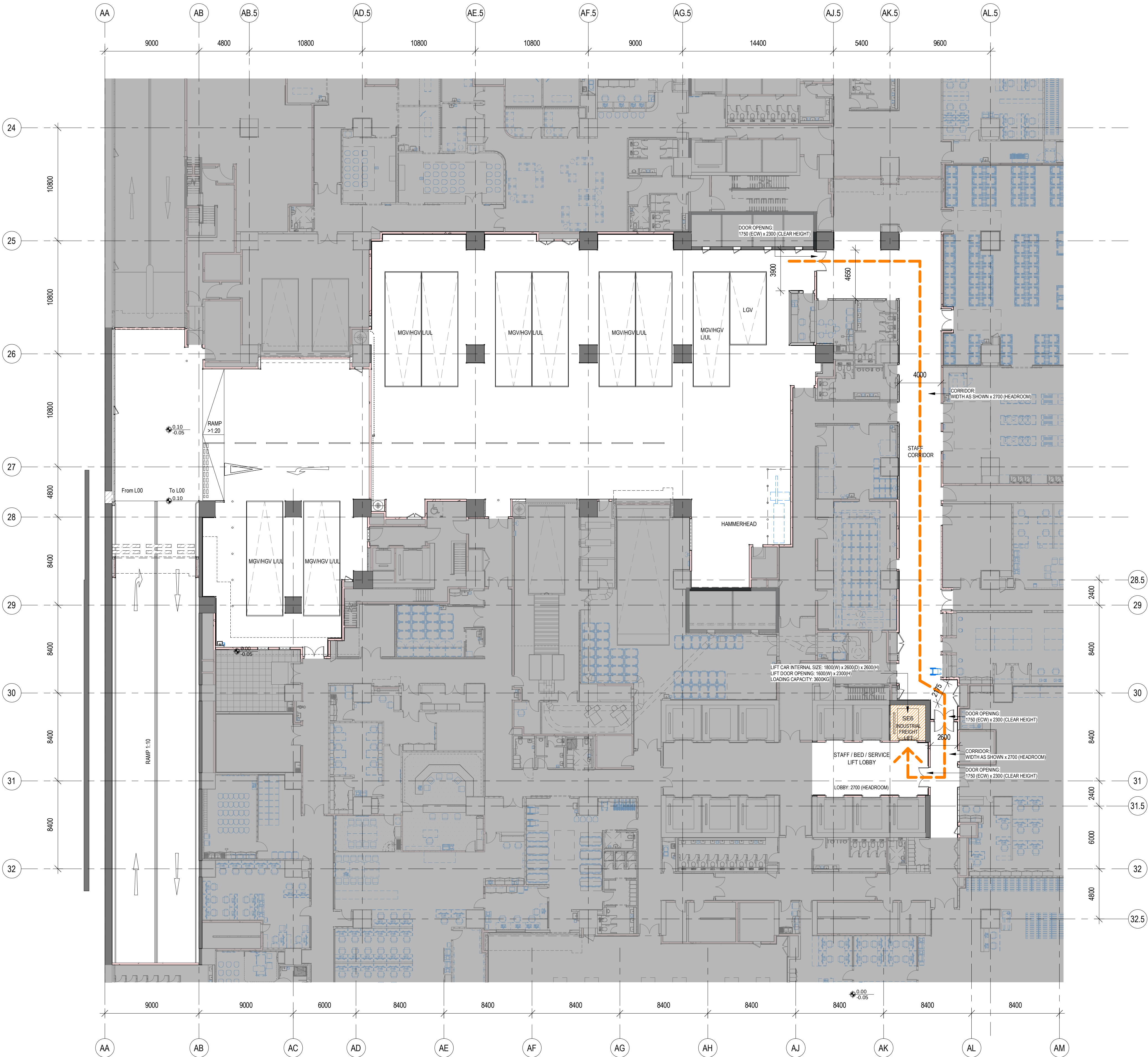
1. THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR CONNECTING THEIR EQUIPMENT AND THEIR ASSOCIATED SYSTEM, IF ANY, TO THE CORRESPONDING BUILDING SERVICES INFRASTRUCTURE PROVIDED AS SHOWN IN THE COMPOSITE DRAWINGS FOR THEIR PROPER FUNCTION AND OPERATION AS INTENDED. THE EQUIPMENT VENDOR SHALL LIAISE AND COORDINATE WITH THE MAIN CONTRACTOR TO RESERVE WALL/ SLAB OPENINGS WHERE NECESSARY FOR THE INSTALLATION OF MEP CONNECTIONS FOR THE FPE. WORKS AT THE INTERFACE OF SUCH OPENINGS SHALL BE CARRIED OUT BY THE EQUIPMENT VENDOR UNLESS OTHERWISE SPECIFIED. THE EQUIPMENT VENDOR SHALL PROVIDE SETTING OUT DRAWINGS FOR THE WALL OPENINGS IN ACCORDANCE TO THE MASTER PROGRAMME. IN CASE ANY ACTUAL BUILDING SERVICES REQUIRED BY THE EQUIPMENT VENDOR FOR THE ACTUAL FPE PROCURED BY THE HOSPITAL DEVIATED FROM THE BUILDING SERVICES PROVISIONS AS SHOWN IN THE COMPOSITE DRAWINGS, THE EQUIPMENT VENDOR SHALL NOTIFY THE MAIN CONTRACTOR IMMEDIATELY FOR FURTHER DIRECTIONS FROM THE HOSPITAL. ANY REVISION OR ADDITION WORK ON THE INFRASTRUCTURE SERVICES PROVIDED, IF REQUESTED BY THE EQUIPMENT VENDOR, SHALL BE RESPONSIBLE BY THE EQUIPMENT VENDOR SUBJECT TO APPROVAL BY THE HOSPITAL AND AT HIS OWN COST.
2. POWER CABLES AND ASSOCIATED CABLE CONTAINMENT CONNECTING FROM RESERVED POWER SUPPLY TO THE EQUIPMENT SHALL BE SUPPLIED AND INSTALLED BY THE EQUIPMENT VENDOR. LOCATION AND RATING OF THE RESERVED POWER SUPPLY ARE SHOWN IN THE COMPOSITE DRAWINGS. THE EQUIPMENT VENDOR SHALL EMPLOY REGISTERED ELECTRICAL WORKER (REW) TO CARRY OUT ALL ELECTRICAL WORKS AND SHALL SUBMIT THE WORK COMPLETION CERTIFICATE (I.E. FORM WR1, WR1A) TO MAIN CONTRACTOR / EMSD AFTER COMPLETION OF ELECTRICAL WORKS.
3. FOR POWER OR LIGHTING SYSTEM TO BE CARRIED OUT BY THE EQUIPMENT VENDOR AS SHOWN IN THE COMPOSITE DRAWINGS, THE EQUIPMENT VENDOR SHALL ENSURE THEIR INSTALLATION IS COMPLYING WITH BUILDING ENERGY CODE (BEC) UNDER BUILDING ENERGY EFFICIENCY ORDINANCE (BEEQ) UNLESS EXEMPTION WOULD BE APPLIED BY THE EQUIPMENT VENDOR.
4. THE EQUIPMENT VENDOR SHALL ENSURE THEIR EQUIPMENT WILL NOT INDUCE EXCESSIVE HARMONIC TO THE BUILDING ELECTRICAL SYSTEM, OTHERWISE, SUITABLE HARMONIC FILTERING EQUIPMENT SHALL BE PROVIDED BY THE EQUIPMENT VENDOR.
5. THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR UNINTERRUPTIBLE POWER SUPPLY (UPS) FOR THEIR EQUIPMENT WHERE NECESSARY OR SPECIFIED IN THE COMPOSITE DRAWINGS TO PROTECT THEIR SENSITIVE/ CRITICAL EQUIPMENT OF OPERATION DURING POWER FAILURE OR VOLTAGE DIP.
6. THE EQUIPMENT VENDOR SHALL PROVIDE EARTHING CONDUCTOR/ CABLE TO THE EARTH TERMINAL PROVIDED AT THE RESERVED POWER SUPPLY POINT. RELEVANT REQUIREMENT SUCH AS INSTALLATION REQUIREMENT AND CABLE SIZING SHALL BE ACCORDING TO THE LATEST EDITION OF CODE OF PRACTICE FOR ELECTRICITY (WIRING) REGULATION.
7. THE EQUIPMENT VENDOR SHALL PROVIDE SUPPLEMENTARY BONDING TO MAINTAIN EQUIPOTENTIAL ZONE. RELEVANT REQUIREMENT SUCH AS INSTALLATION REQUIREMENT AND CABLE SIZING SHALL BE ACCORDING TO THE LATEST EDITION OF CODE OF PRACTICE FOR ELECTRICITY (WIRING) REGULATION.
8. WATER PIPING AND ACCESSORIES CONNECTING FROM THE RESERVED WATER CONNECTION VALVES, WHERE NECESSARY, SHALL BE SUPPLIED AND INSTALLED BY THE EQUIPMENT VENDOR. LOCATION/ SIZE OF THE RESERVED WATER CONNECTION VALVES ARE SHOWN IN THE COMPOSITE DRAWINGS.
9. DRAIN PIPE AND ACCESSORIES CONNECTING FROM THE RESERVED DRAINAGE CONNECTION, WHERE NECESSARY, SHALL BE SUPPLIED AND INSTALLED BY THE EQUIPMENT VENDOR. LOCATION/ SIZE OF THE RESERVED DRAINAGE CONNECTION PIPE ARE SHOWN IN THE COMPOSITE DRAWINGS.
10. THE PLUMBING INSTALLATION SHALL BE IN FULL COMPLIANCE WITH THE LATEST EDITION OF THE WATER WORKS REGULATIONS, ARCHITECTURAL SERVICES DEPARTMENT (ASD) REQUIREMENT AND BUILDING (STANDARD OR SANITARY FITMENTS, DRAINAGE WORKS AND LATRINES) REGULATIONS. THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR ALL NECESSARY SUBMISSIONS AND OBTAINING APPROVAL FROM WATER AUTHORITY ACCORDING TO WATER WORKS REGULATIONS ON THEIR EQUIPMENT AND PLUMBING WORKS WHICH CONNECT TO PLUMBING SYSTEM OF THE BUILDING. ALL PLUMBING WORKS BY THE EQUIPMENT VENDOR SHALL BE CARRIED OUT BY FIRST CLASS LICENSE PLUMBER.
11. MEDICAL GASES OR NON-MEDICAL GASES PIPING AND ACCESSORIES CONNECTING FROM THE RESERVED MEDICAL/NON-MEDICAL GASES PIPE CONNECTION VALVES, WHERE NECESSARY, SHALL BE SUPPLIED AND INSTALLED BY THE EQUIPMENT VENDOR. LOCATION/ SIZE OF THE RESERVED MEDICAL/ NON-MEDICAL CASES CONNECTION VALVES AND SUPPLY PRESSURE ARE SHOWN IN THE COMPOSITE DRAWINGS.
12. TOWN GAS PIPING AND ACCESSORIES CONNECTING FROM THE RESERVED GAS PIPE CONNECTION VALVES, WHERE NECESSARY, SHALL BE SUPPLIED AND INSTALLED BY THE EQUIPMENT VENDOR. LOCATION/ SIZE OF THE RESERVED GAS CONNECTION VALVES AND SUPPLY PRESSURE ARE SHOWN IN THE COMPOSITE DRAWINGS.
13. AIR SUPPLY OR EXHAUST DUCTING AND ACCESSORIES CONNECTING FROM THE RESERVED DUCTWORK CONNECTIONS, WHERE NECESSARY, SHALL BE SUPPLIED AND INSTALLED BY THE EQUIPMENT VENDOR. LOCATION/SIZE OF THE DUCTWORK CONNECTION AND AVAILABLE STATUS PRESSURE AT THE DUCTWORK CONNECTION ARE SHOWN IN THE COMPOSITE DRAWINGS. UNLESS OTHERWISE STATED IN THE COMPOSITE DRAWINGS, THE RESERVED AIR DUCT CONNECTION WILL BE LOCATED AT 300MM BELOW FALSE CEILING ON TOP OF THE EQUIPMENT.
14. DATA/ VOICE AND THE RELATED CONTROL AND WIRING, CABLE CONTAINMENT/ ACCESSORIES, WHERE NECESSARY, SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT VENDOR.
15. E-STOP, WARNING LIGHT AND RELATED INTERLOCKING CONTROL WITH ASSOCIATED WIRING, CABLE CONTAINMENT/ ACCESSORIES, WHERE NECESSARY, SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT VENDOR.
16. EXPANSION/ FLEXIBLE JOINT SHOULD BE PROVIDED FOR THE PIPEWORK TO BE INSTALLED BY THE EQUIPMENT VENDOR PASSING THROUGH ANY BUILDING JOINT, STRUCTURE JOINT OR MOVABLE JOINTS. LOCATION OF THESE BUILDING JOINT, STRUCTURE JOINT OR MOVABLE JOINTS ARE SHOWN ON THE COMPOSITE DRAWINGS.

F.S.D. REF. : —			
D.L.O. REF. : —			
Client :  醫院管理局 HOSPITAL AUTHORITY			
Project Management Consultant : 			
NOTE : DO NOT SCALE DRAWINGS.			
00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED
Architect :  WONG TUNG & PARTNERS LIMITED ARCHITECTS & PLANNERS			
Structural, Civil & Geotechnical Engineering Consultant : 			
Building Services Engineering Consultant : 			
Quantity Surveying Consultant : 			
Project :  Redevelopment of Prince of Wales Hospital, Phase 2 (Stage 1) at Ngan Shing Street, Shatin			
Location :	Stage : IPEB DETAILED DESIGN		
Drawing Title : COMPOSITE DRAWINGS - GENERAL NOTES 01			
DATE: 04/2023		SCALE: 1 : 50	
DRAFTED BY: WHK	CHECKED BY: DFC	DESIGNED BY: APK	REVIEWED BY: PYC
JOB NO. 32110	DRAWING NO. IPB/WTPL/FPE/GN01		REV NO. 00

TENDER



KEY PLAN - B01



NOTES:
FOR EQUIPMENT OF DELIVERY SIZE
SMALLER THAN 1600(W) x 2600 (D) x 2300(H)

LEGEND
--- EQUIPMENT DELIVERY ROUTE
■ NON-APPLICABLE AREA

1 PROPOSED DELIVERY ROUTE FROM B01 LOADING/ UNLOADING
VIA SOUTH INDUSTRIAL FREIGHT LIFT

1 : 200

F.S.D. REF. :
D.L.O. REF. :
Client :
Project Management Consultant :
NOTE :
DO NOT SCALE DRAWINGS.

醫院管理局
HOSPITAL
AUTHORITY
ARUP

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :

MEINHARDT

Building Services Engineering Consultant :

wsp

Quantity Surveying Consultant :

RLB
利比
Rider
Levett
Bucknall

Project :

Redevelopment of Prince
of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin

Location :
IPEB
Stage :
DETAILED DESIGN

Drawing Title :
PROPOSED DELIVERY ROUTE
FROM B01 LOADING/ UNLOADING
VIA SOUTH INDUSTRIAL FREIGHT
LIFT

DATE:	04/2023	SCALE:	As indicated
DRAFTED BY:	WHK	CHECKED BY:	DFC
DESIGNED BY:	APK	REVIEWED BY:	PYC
JOB NO.	32110	DRAWING NO.	IPB/WTP/LFPE/GN06
REV NO.	00		

TENDER

THE OWNERSHIP OF THE COPYRIGHT IN THIS DRAWING IS RETAINED BY THE ISSUER WHOSE CONSENT MUST BE OBTAINED BEFORE ANY USE OR REPRODUCTION OF THE DRAWING OR ANY PART THEREOF CAN BE MADE.

236

PARTICULAR NOTES FOR CATEGORY B2 EQUIPMENT

THE "PARTICULAR NOTES" SHOULD BE READ IN CONJUNCTION WITH "GENERAL NOTES" AND REQUIREMENT SPECIFIED IN THE TENDER DOCUMENT.

TESTING & COMMISSIONING

1. UPON COMPLETION OF INSTALLATION AND T&C BY THE EQUIPMENT VENDOR, MAIN CONTRACTOR SHALL, JOINTLY WITH THE EQUIPMENT VENDOR, REPORT COMPLETION OF THE RESPECTIVE FPE. THE REPORT SHALL IDENTIFY THE DATE OF COMPLETION OF THE INSTALLATION WITH RECORD PHOTOS, T&C REPORT ACCEPTABLE TO THE EMPLOYER, CONFIRMATION FROM THE EQUIPMENT VENDOR THAT THE FPE HAS BEEN INSTALLED AND OPERATE AND FUNCTION TO ITS PURPOSE AS INTENDED TO.
2. UNLESS OTHERWISE STATED, ALL FPE SHALL BE INSTALLED AND T&C BY EQUIPMENT VENDOR. MAIN CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY AND/OR PERMANENT BUILDING SERVICES PROVISIONS/CONNECTIONS AND ANY OTHER TOOLS, EQUIPMENT AND/OR ACCESSORIES, AS APPROPRIATE AND REQUIRED, TO FACILITATE THE REQUIRED T&C WORKS.
3. THE MAIN CONTRACTOR AND EQUIPMENT VENDOR SHALL JOINTLY ATTEND ALL TESTING AND COMMISSIONING WORKS TO ENSURE THE FUNCTIONING THE EQUIPMENT AND THE PERFORMANCE OF RELATED MEP SYSTEMS.
4. FOR PASS-THROUGH EQUIPMENT LOCATED IN AIR-TIGHT ROOMS/ CLEANROOMS (INCLUDING BUT NOT LIMITED TO THE STEAM STERILIZER/ WASHER DISINFECTOR CHAMBER/ HYDROGEN PEROXIDE STERILIZER/ RETURN CONVEYOR IN THE IAP AREA)

• THE MAIN CONTRACTOR SHALL CARRY OUT ROOM AIR LEAKAGE TEST TO ENSURE ROOM INTEGRITY AND AIR TIGHTNESS OF ALL PRESSURIZED ROOMS AS SPECIFIED IN THE DRAWINGS. REFERENCE SHALL BE MADE TO AIR TIGHTNESS TEST PARTICULAR SPECIFICATION. REFER TO BS DRAWINGS FOR PRESSURE REQUIREMENTS OF THE PRESSURIZED ROOMS. THE MAIN CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING THE AIR TIGHTNESS TESTING FOR THE PERMANENT PRIMARY ENCLOSURE OF ALL AIR-TIGHT ROOMS.

• FOR LOCATIONS WHERE WALL OPENINGS HAVE BEEN RESERVED FOR INSTALLATION OF PASS-THROUGH EQUIPMENT TO BE PROVIDED BY THE HOSPITAL, THE MAIN CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTING TEMPORARY PARTITION TO SEAL UP THE WALL OPENINGS AND CARRY OUT THE AIR TIGHTNESS TEST. THE AIR TIGHTNESS TEST MAY BE WITNESSED BY THE HOSPITAL APPOINTED PERSONNEL AND THE EQUIPMENT VENDOR. UNTIL THE AIR TIGHTNESS TEST HAS BEEN CONDUCTED SUCCESSFULLY, THE MAIN CONTRACTOR CAN THEN DEMOLISH THE TEMPORARY PARTITION AND PREPARE THE SITE FOR THE PASS-THROUGH EQUIPMENT INSTALLATION.

• AFTER INSTALLATION OF EQUIPMENT BY SUPPLIER, THE MAIN CONTRACTOR WILL CARRY OUT A SUBSEQUENT AIR PARTICLE TEST TO SHOW COMPLIANCE OF AIR TIGHTNESS. IF THIS SUBSEQUENT TEST FAILED TO COMPLY WITH THE REQUIRED TEST STANDARDS, IT WOULD DEEM TO BE THE AIR LEAKAGE CAUSED BY WORKMANSHIP OF THE EQUIPMENT VENDOR. BOTH THE MAIN CONTRACTOR AND EQUIPMENT VENDOR ARE RESPONSIBLE TO IDENTIFY THE SOURCE OF AIR LEAKAGE AND RECTIFICATION WORKS BY EQUIPMENT VENDOR TO BE CARRIED OUT FOR FURTHER TESTING(S) UNTIL COMPLIANCE OF THE TEST STANDARDS. THE EQUIPMENT VENDOR SHALL BEAR THE COST FOR RECTIFICATION WORKS AND THE ASSOCIATED COST OF RE-TESTING (S) BY CERTIFIED PERSONNEL UNDER LABORATORY ACCREDITATION SCHEME IN HONG KONG. PLEASE REFER TO THE FINISHES CODE OF THE ROOM, THE LEGEND 'AT' DENOTES LOCATION WHERE AIR PARTICLE TEST IS REQUIRED.

• AIR-TIGHT ACCESS PANEL SHALL BE USED IF NECESSARY TO ACHIEVE AIR-TIGHTNESS AND NOT TO ALLOW AIR LEAKAGE. NEVERTHELESS, THE AIR-TIGHTNESS OF ALL AIR-TIGHT ROOMS SHALL BE TESTED AND VERIFIED AFTER COMPLETION OF THE WORKS SPECIFIED.

FOR EQUIPMENT WHERE SUNKEN FLOOR SLABS/ PITS IS NECESSARY FOR INSTALLATION

1. AT LOCATION WHERE BACKFILLING OF THE SUNKEN FLOOR/ SUNKEN PIT IS REQUIRED, THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR THE COST & THE WORKS. THE EQUIPMENT VENDOR SHALL COORDINATE WITH THE MAIN CONTRACTOR FOR SITE PROGRESS TO COMPLETE THE LIGHT-WEIGHT CONCRETE POURING WORKS BEFORE OP INSPECTION. IF BACKFILL OF SLAB IS NOT REQUIRED, AT LOCATION WHERE EQUIPMENT VENDOR PROPOSE ANY WORKS WHICH MAY AFFECT THE EXISTING WATERPROOFING LAYER, SHOP DRAWINGS MUST BE SUBMITTED TO HIGHLIGHT LOCATION OF PENETRATION & REMEDIAL PROPOSAL AT WATERPROOFING LAYER PRIOR TO INSTALLATION ON SITE.
2. ANY DAMAGES INCURRED TO THE EXISTING WALL, SKIRTING & FLOOR FINISHES UNDER THE MAIN CONTRACT, THE EQUIPMENT VENDOR SHALL BE RESPONSIBLE FOR THE COST OF REMEDIAL WORKS AND SUCH WORKS SHALL BE UNDERTAKEN THE MAIN CONTRACTOR TO MAINTAIN THE WARRANTY UNDER MAIN CONTRACT.

FOR EQUIPMENT WHERE HANGER WALLS ARE NECESSARY FOR INSTALLATION

1. AT LOCATIONS WHERE MORE THAN ONE SET OF HANGER WALLS ARE REQUIRED ABOVE THE EQUIPMENT, DRY WALL CONSTRUCTION HAD BEEN SPECIFIED IN ORDER TO ALLOW FLEXIBILITY FOR CONSTRUCTION SUBJECT TO THE PROPOSED DIMENSION OF THE EQUIPMENT UNLESS OTHERWISE SPECIFIED. THE EQUIPMENT VENDOR SHALL CONFIRM WITH THE MAIN CONTRACTOR FOR LOCATION OF THE HANGER WALL TO SUIT THE PROPOSED EQUIPMENT. THE EQUIPMENT VENDOR SHALL ALSO BE RESPONSIBLE FOR THE SELF STRUCTURAL SUPPORT AND STABILITY OF THE PROPOSED FPE EQUIPMENT & PANEL SYSTEM WITHOUT IMPOSING ADDITIONAL LOADING / TRANSFER FORCE ONTO THE EXISTING HANGER WALL SYSTEM. THE INDEPENDENT STRUCTURE OF THE HANGER WALL & THE SELF SUPPORTING FPE EQUIPMENT SHALL ALLOW MAX. 10MM GAP & BE FILLED WITH SEALANT JOINT; HENCE DIRECT FIXING CONNECTION TO THE EXISTING HANGER WALLS STRUCTURE IS PROHIBITED.

FOR EQUIPMENT WHERE CEILING SUPPORTING SYSTEM ON STRUCTURAL SOFFIT IS NECESSARY FOR INSTALLATION

1. THERE IS PROVISION UNDER THE MAIN CONTRACT FOR THE CEILING METAL STRUCTURAL SUPPORTING SYSTEM OR PROPRIETARY METAL STRUT CHANNEL CEILING-MOUNTED SUPPORT STRUCTURE SYSTEM AT STRUCTURAL CEILING SOFFIT WHICH SHALL BE DESIGNED AND INSTALLED BY THE MAIN CONTRACTOR IN ROOMS WHERE INSTALLATION OF FIXED CEILING-HUNG EQUIPMENT INCLUDING BUT NOT LIMITED TO EXAMINATION LAMPS, OPERATING LAMPS, PENDANTS, OVERHEAD HEATER, X-RAY IMAGING EQUIPMENT, ETC IS REQUIRED. THE FPE EQUIPMENT VENDOR SHALL PROVIDE SETTING OUT LOCATION, LOADING & OPERATIONAL FORCE REQUIREMENTS OF THE PROPOSED FPE ITEMS FOR THE MAIN CONTRACTOR TO VERIFY COMPATIBILITY OF THE CEILING SUPPORTING SYSTEM INSTALLED UNDER MAIN CONTRACT.
2. THE EQUIPMENT VENDOR SHALL PROVIDE THE LOWER TIER OF CEILING METAL SUPPORTING SYSTEM UNDER THE FALSE CEILING FOR THE MOUNTING OF FPE EQUIPMENT. THIS PROPOSED MOUNTING SYSTEM SHALL BE DESIGNED WITH STRUCTURAL CALCULATIONS FOR SHOP DRAWINGS SUBMISSION. ALL SYSTEMS SHALL BE ADEQUATELY BRACED IN ALL FOUR DIRECTIONS FOR LATERAL LOADING AS SPECIFIED BY THE EQUIPMENT VENDOR'S SPECIFICATIONS. MOVEMENT SHALL NOT EXCEED THE TOTAL FOR THAT ALLOWED ON THE SYSTEM AT THE WORST-CASE LOADING CONDITION. THE PROPOSED FRAMING SYSTEM SHALL BE FLEXIBLE FOR ADJUSTMENT OF FIXING CONNECTION TO SUIT SITE CONDITION AND AVOIDANCE OF INTERFERENCES.
3. ALL MATERIALS USED SHOULD CONFORM TO THE APPROPRIATE SPECIFICATIONS FROM ASTM, AISI, AISC, AND / OR AWS. SUBMIT CERTIFICATION THAT PRODUCTS COMPLY WITH SPECIFIED REQUIREMENTS AND ARE SUITABLE FOR INTENDED APPLICATION.
4. FOR EQUIPMENT MOUNTING ON STRUCTURAL SOFFIT (SUCH AS PENDANT SYSTEM)

• THERE ARE BUILDER'S WORK PROVISION OF PENDANT MOUNTING IN THE MAIN CONTRACT, PLEASE REFER TO THE AS-BUILT DRAWINGS FOR PROVISION. ANY OTHER FIXING REQUIREMENT SHALL BE POST-DRILLED OR BOLT CONNECTION BY THE EQUIPMENT VENDOR AND STRUCTURAL CALCULATION FOR FIXING DETAILS SHALL BE SUBMITTED BY EQUIPMENT VENDOR FOR STATUTORY SUBMISSION & APPROVAL PRIOR TO COMMENCEMENT OF WORKS.
5. FOR UNISTRUT FIXING ON STRUCTURAL SOFFIT (SUCH AS X-RAY IMAGING EQUIPMENT)

• THERE ARE BUILDER'S WORK PROVISION OF UNISTRUT IN THE MAIN CONTRACT, PLEASE REFER TO THE AS-BUILT DRAWINGS FOR PROVISION. ANY OTHER FIXING REQUIREMENT SHALL BE POST-DRILLED OR BOLT CONNECTION BY THE EQUIPMENT VENDOR AND STRUCTURAL CALCULATION FOR FIXING DETAILS SHALL BE SUBMITTED BY EQUIPMENT VENDOR FOR STATUTORY SUBMISSION & APPROVAL PRIOR TO COMMENCEMENT OF WORKS.

• THE PROPRIETARY METAL STRUT CHANNEL CEILING-MOUNTED SUPPORT STRUCTURE SYSTEM SHALL BE DESIGNED AND INSTALLED BY THE MAIN CONTRACTOR FOR THE INSTALLATION OF OVERHEAD MOVABLE CEILING-HUNG EQUIPMENT INCLUDING BUT NOT LIMITED TO X-RAY IMAGING EQUIPMENT, CT SCANNER, C-ARM OR BI-PLANE SYSTEM, ETC AS REQUIRED. THE PROPOSED FPE EQUIPMENT IS EXPECTED TO BE COMPATIBLE FOR FIXING & TAKING LOAD OF THE FPE EQUIPMENT BY THIS CEILING-MOUNTED SUPPORT STRUCTURE SYSTEM. ANY ADDITIONAL LOAD BEARING OR STRENGTHENING SHALL BE AT THE COST OF THE EQUIPMENT VENDOR. PLEASE REFER TO THE FOLLOWING SPECIFICATIONS OF PROPRIETARY METAL STRUT CHANNEL CEILING-MOUNTED SUPPORT STRUCTURE SYSTEM FOR REFERENCE: -

a. CEILING CHANNEL GRIDS SHALL BE OF A UNIVERSAL GRID OR PER MANUFACTURER'S SPECIFICATION TO SUIT THE MEDICAL EQUIPMENT, CONSISTING OF 12 GAUGE 1-5/8" (41MM X 41MM X 2.5MMTK) COLD-FORMED STEEL CHANNEL RAILS FLUSH WITH THE FINISHED CEILING AND EXTENDING WALL TO WALL UNLESS OTHERWISE NOTED AND SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL OF THE EQUIPMENT OR AS DIRECTED BY THE EQUIPMENT VENDOR.

b. CEILING DIRECT MOUNTING CHANNEL SYSTEMS SHALL BE SINGLE CHANNELS OR PER MANUFACTURER'S SPECIFICATION TO SUIT THE MEDICAL EQUIPMENT, CONSISTING OF 12 GAUGE 1-5/8" (41MM X 41MM X 2.5MMTK) COLD-FORMED STEEL CHANNEL RAILS FLUSH WITH THE FINISHED CEILING AND EXTENDING WALL TO WALL UNLESS OTHERWISE NOTED AND SHALL BE PARALLEL TO THE PATH OF TRAVEL OF THE EQUIPMENT OR AS DIRECTED BY THE EQUIPMENT VENDOR. TAKE-UP RAILS FINISH PAINTED WHITE WITH TROLLEYS SHALL BE PROVIDED AND INSTALLED WITH THESE SYSTEMS.

c. ALL NECESSARY SYSTEM ACCESSORIES INCLUDING RAILS, BOLTS & NUTS, STRUTS, FASTENERS ETC. FOR THE COMPLETE INSTALLATION OF THE CEILING HUNG MEDICAL EQUIPMENT.

d. FOR CEILING CHANNEL, RAILS SHALL BE DESIGNED FOR NO MORE THAN 1/720TH OF THE SPAN MAXIMUM DEFLECTION IN EITHER PLANE WHEN MAXIMUM LOADING CONDITIONS ARE APPLIED DUE TO EQUIPMENT OPERATION.

e. CEILING CHANNEL SHALL BE INSTALLED HORIZONTAL IN PLANE AND PARALLEL TO EACH OTHER WITHIN 1/32ND OF AN INCH.

f. FOR CEILING CHANNEL, RAILS SHALL BE ON CENTRES AS REQUIRED BY EQUIPMENT VENDOR AND ALLOW CONTINUOUS ATTACHMENT ALONG ANY POINT ON THE RAIL. SYSTEM SHALL BE TRUE, PLUMB, AND LEVEL TO THE TOLERANCES SPECIFIED.

g. SUPPLY AND INSTALL WHITE SNAP-IN CLOSURE STRIPS INTO THE OPEN CEILING CHANNEL AS REQUIRED AFTER THE EQUIPMENT HAS BEEN INSTALLED UNLESS OTHERWISE NOTED.

FOR EQUIPMENT WHERE EQUIPMENT MOUNTING ON TRACK AT STRUCTURAL SLAB IS NECESSARY FOR INSTALLATION

1. FOR EQUIPMENT MOUNTING ON TRACK AT STRUCTURAL SLAB (SUCH AS MOBILE SHELFING), THE EQUIPMENT VENDOR SHALL SUPPLY THE TRACKS AND COORDINATE WITH THE MAIN CONTRACTOR FOR INSTALLATION OF THE TRACKS PRIOR TO APPLICATION OF FLOOR SCREEDING AND FINISHES IN ORDER TO PROVIDE AN EMBEDDED TRACKING SYSTEM WITH FLUSH LEVEL FLOOR FINISH.

F.S.D. REF. :
—

D.L.O. REF. :
—

Client :



醫院管理局
HOSPITAL
AUTHORITY

Project Management Consultant :



NOTE :
DO NOT SCALE DRAWINGS.

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :



WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :



Building Services Engineering Consultant :



Quantity Surveying Consultant :



Project :



Redevelopment of Prince
of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin

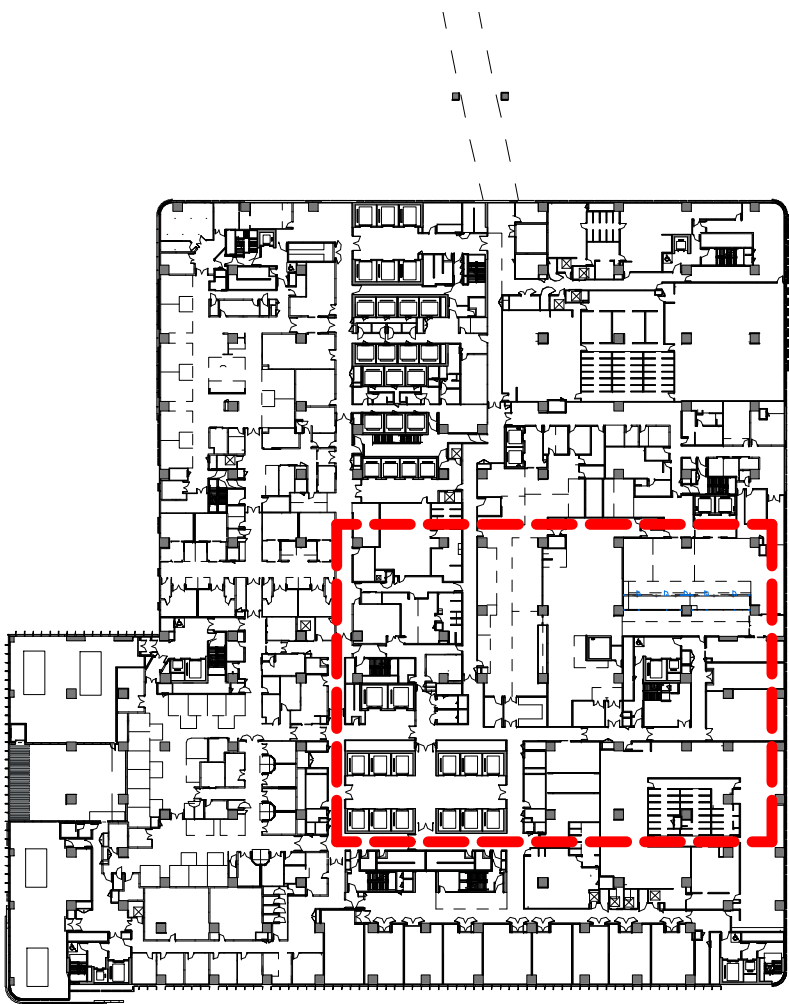
Location :	Stage :
IPEB	DETAILED DESIGN

Drawing Title :

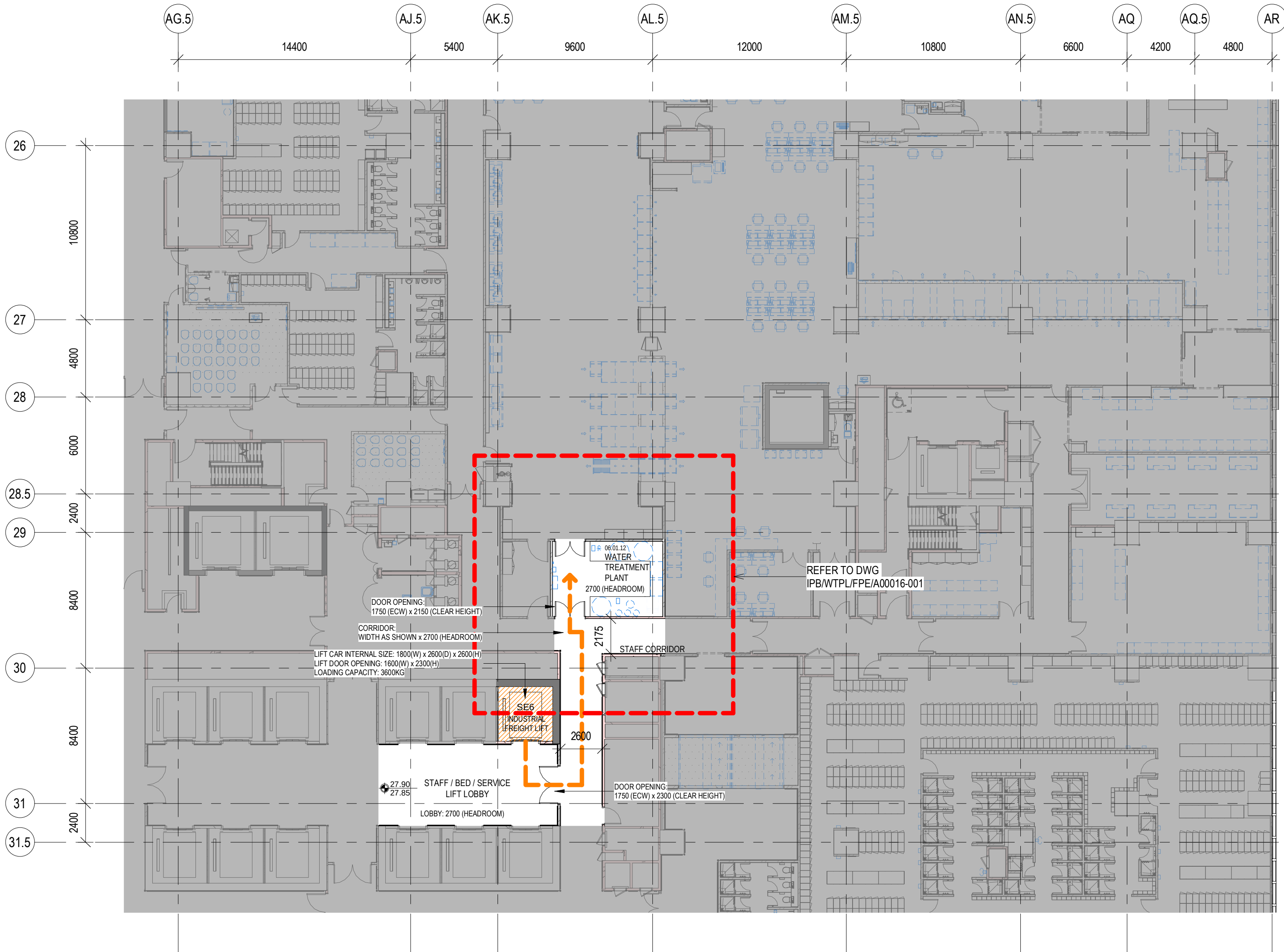
FPE CATEGORY B2 - COMPOSITE
DRAWINGS - PARTICULAR NOTES

DATE:	04/2023	SCALE:	1 : 50
DRAFTED BY:	CHECKED BY:	DESIGNED BY:	REVIEWED BY:
WHK	DFC	APK	PYC
JOB NO.	DRAWING NO.	REV NO.	
32110	IPB/WTPL/FPE/PN-B2	00	

TENDER



KEY PLAN - L04



LEGEND

- EQUIPMENT DELIVERY ROUTE
- NON-APPLICABLE AREA

EQUIPMENT:
REVERSE OSMOSIS WATER TREATMENT PLANT
CATEGORY: B2

F.S.D. REF. :
D.L.O. REF. :
Client :
Project Management Consultant :
NOTE :
DO NOT SCALE DRAWINGS.

醫院管理局
HOSPITAL
AUTHORITY

ARUP

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :

WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :

MEIN-HARDT

Building Services Engineering Consultant :

wsp

Quantity Surveying Consultant :

RLB Rider
利比 Levett
Bucknall

Project :

Redevelopment of Prince
of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin

Location :

Stage :

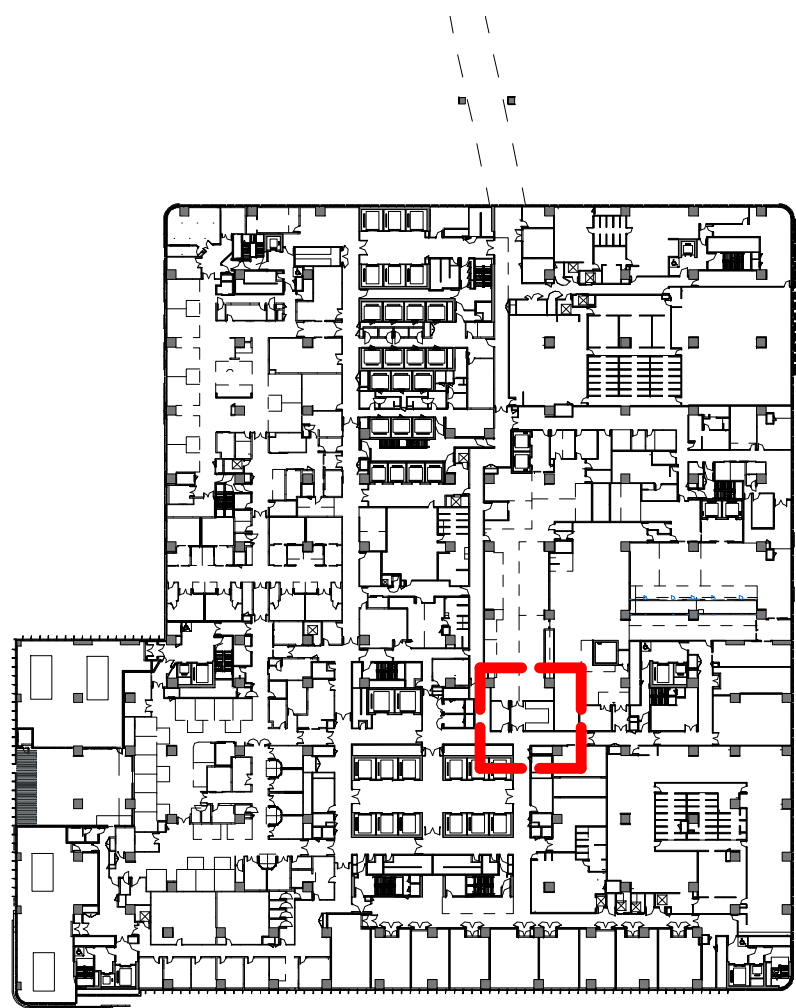
IPEB DETAILED DESIGN

Drawing Title :

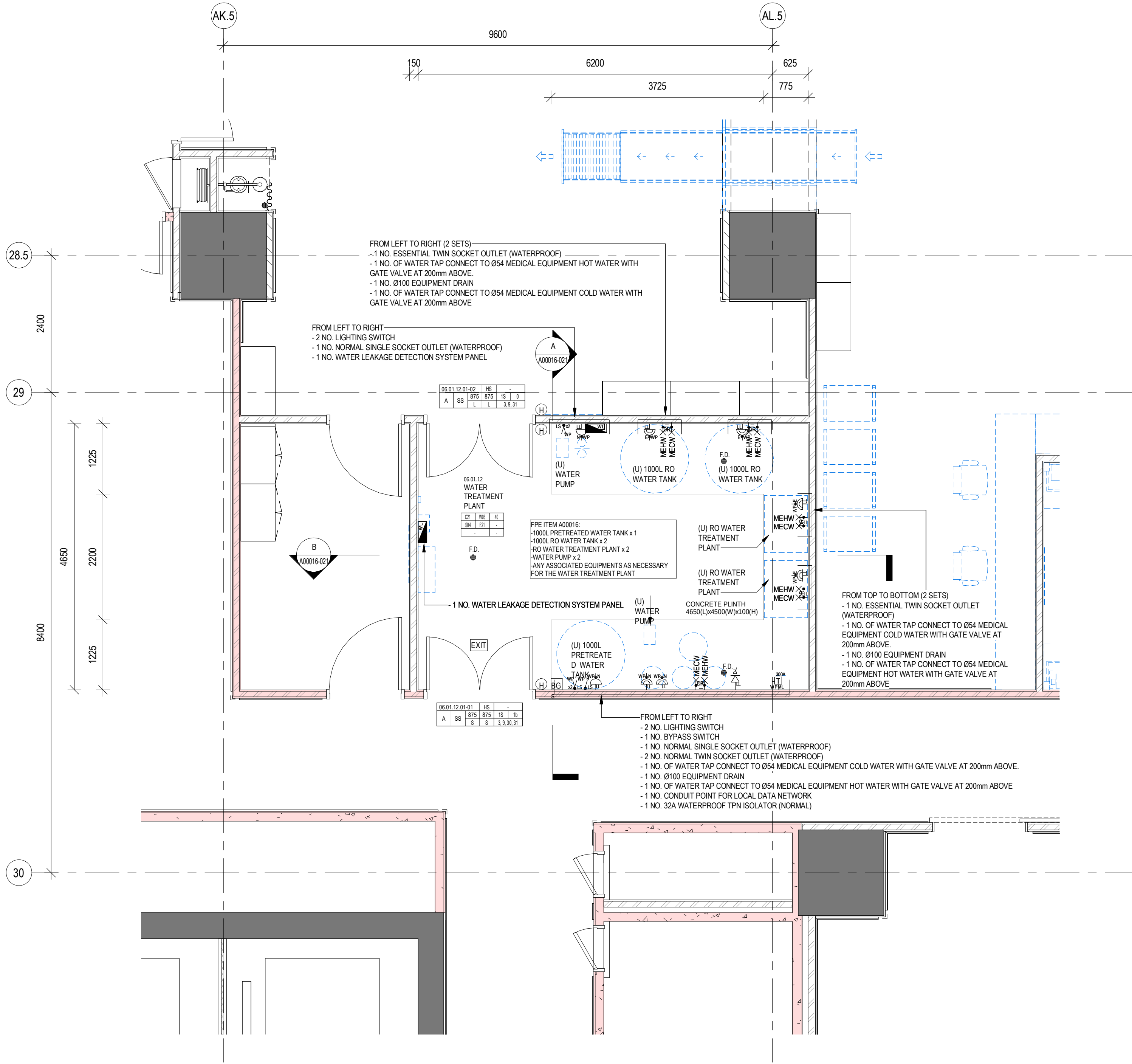
FPE ITEM A00016 - COMPOSITE
DRAWINGS OF REVERSE OSMOSIS
WATER TREATMENT PLANT AT L04
SSU WATER TREATMENT PLANT
(06.01.12) LOCATION PLAN

DATE:	04/2023	SCALE:	As indicated
DRAFTED BY:	WHK	CHECKED BY:	DFC
DESIGNED BY:	APK	REVIEWED BY:	PYC
JOB NO.	32110	DRAWING NO.	IPB/WTPL/FPE/A00016-000
REV. NO.	00		

TENDER



KEY PLAN - L04



1 06.01.12 REVERSE OSMOSIS WATER TREATMENT PLANT - PLAN
1:50

LEGEND

- AS BUILT BY MAIN CONTRACTOR
- - - - - WORKS BY EQUIPMENT VENDOR (ITEMS NAMES WITH PREFIX "(U)" SHALL BE PROVIDED BY OTHERS)

EQUIPMENT:
REVERSE OSMOSIS WATER TREATMENT PLANT
CATEGORY: B2

F.S.D. REF. :
D.L.O. REF. :
Client :

Project Management Consultant :

NOTE :
DO NOT SCALE DRAWINGS.

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :

WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS
Structural, Civil & Geotechnical Engineering Consultant :

Building Services Engineering Consultant :

Quantity Surveying Consultant :

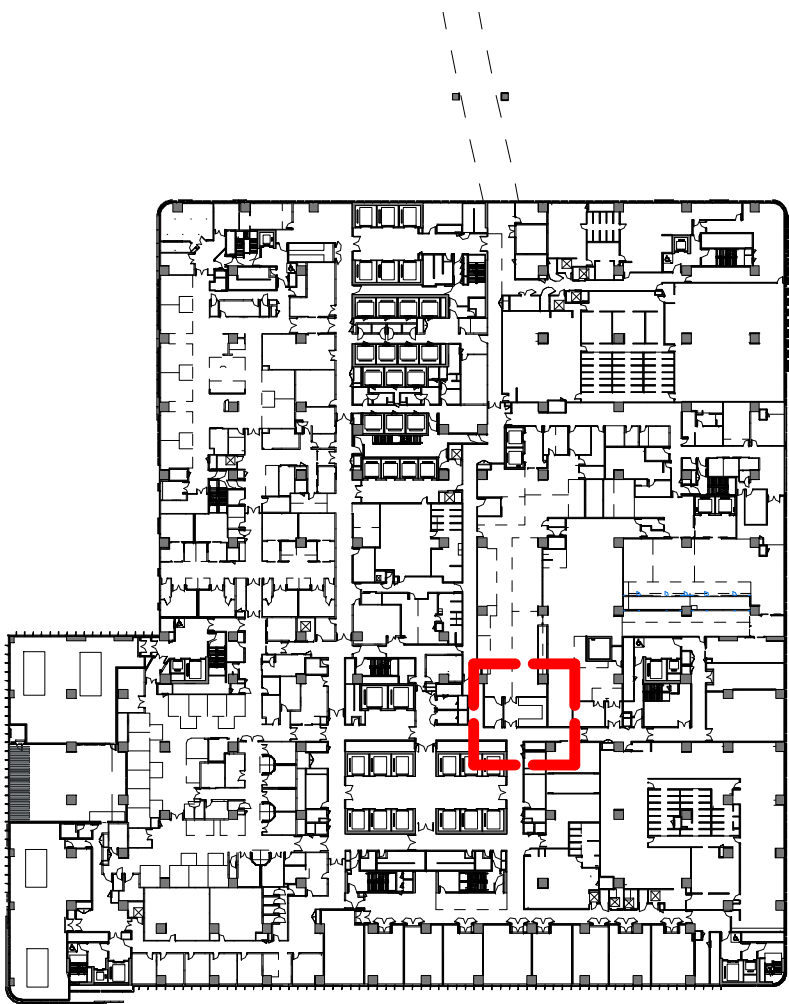
Project :

Redevelopment of Prince of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin
Location :
Stage :
IPEB
DETAILED DESIGN
Drawing Title :
FPE ITEM A00016 - COMPOSITE
DRAWINGS OF REVERSE OSMOSIS
WATER TREATMENT PLANT AT L04
SSU WATER TREATMENT PLANT
(06.01.12) PLAN
DATE: 04/2023
SCALE: As indicated
DRAFTED BY: VHK
CHECKED BY: DFC
DESIGNED BY: APK
REVIEWED BY: PYC
JOB NO. 32110
DRAWING NO. IPB/WTP/L/FPE/A00016-001
REV NO. 00

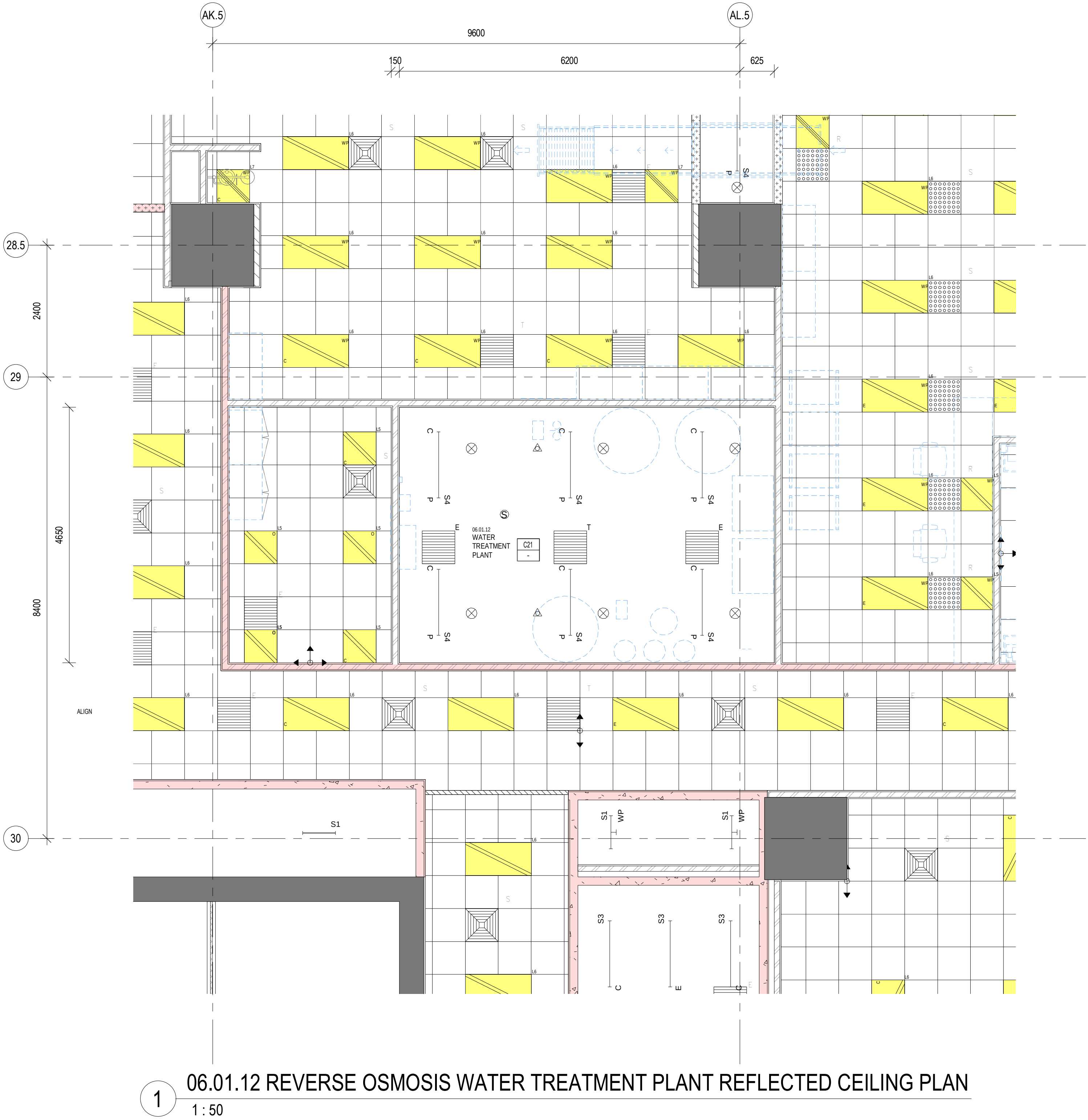
TENDER

239

THE OWNERSHIP OF THE COPYRIGHT IN THIS DRAWING IS RETAINED BY THE ISSUER WHOSE CONSENT MUST BE OBTAINED BEFORE ANY USE OR REPRODUCTION OF THE DRAWING OR ANY PART THEREOF CAN BE MADE.



KEY PLAN - L04

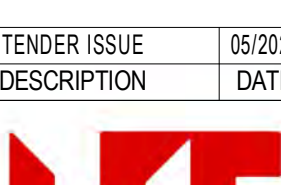


1 06.01.12 REVERSE OSMOSIS WATER TREATMENT PLANT REFLECTED CEILING PLAN
1 : 50

LEGEND

- AS BUILT BY MAIN CONTRACTOR
- - - - - WORKS BY EQUIPMENT VENDOR (ITEMS NAMES WITH PREFIX "U)" SHALL BE PROVIDED BY OTHERS)

EQUIPMENT:
REVERSE OSMOSIS WATER TREATMENT PLANT
CATEGORY: B2

F.D.O. REF. : —			
D.L.O. REF. : —			
Client :  醫院管理局 HOSPITAL AUTHORITY			
Project Management Consultant : 			
NOTE : DO NOT SCALE DRAWINGS.			
00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED
Architect :  WONG TUNG & PARTNERS LIMITED ARCHITECTS & PLANNERS			
Structural, Civil & Geotechnical Engineering Consultant :  MEINHARDT			
Building Services Engineering Consultant :  wsp			
Quantity Surveying Consultant :  Rider Levett Bucknall			
Project :  Redevelopment of Prince of Wales Hospital, Phase 2 (Stage 1) at Ngan Shing Street, Shatin			
Location : IPB		Stage : DETAILED DESIGN	
Drawing Title : FPE ITEM A00016 - COMPOSITE DRAWINGS OF REVERSE OSMOSIS WATER TREATMENT PLANT AT L04 SSU WATER TREATMENT PLANT (06.01.12) REFLECTED CEILING PLAN			
DATE: 04/2023		SCALE: As indicated	
DRAFTED BY: WPK		CHECKED BY: DFC	
DESIGNED BY: APK		REVIEWED BY: PYC	
JOB NO. 32110	DRAWING NO. IPB/WTP/L/FPE/A00016-002	REV.NO. 00	

TENDER

F.S.D. REF. :

D.L.O. REF. :

Client :



Project Management Consultant :

ARUP

NOTE :
DO NOT SCALE DRAWINGS.

Architect :

WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :



Building Services Engineering Consultant :



Quantity Surveying Consultant :



Project



Redevelopment of Prince of Wales Hospital, Phase 2 (Stage 1) at Ngan Shing Street, Shatin

Location :

Stage :

IPE

DETAILED DESIGN

Drawing Title :

FPE ITEM A00016 - COMPOSITE
DRAWINGS OF REVERSE OSMOSIS
WATER TREATMENT PLANT AT L04
SSU WATER TREATMENT PLANT
(06.01.12) SECTIONS

DATE: 04/2023		SCALE: As indicated	
DRAFTED BY: WHK	CHECKED BY: DFC	DESIGNED BY: APK	REVIEWED BY: PYC
JOB NO. 32110	DRAWING NO. IPB/WTPL/FPE/A00016-021		REV.NO. 00

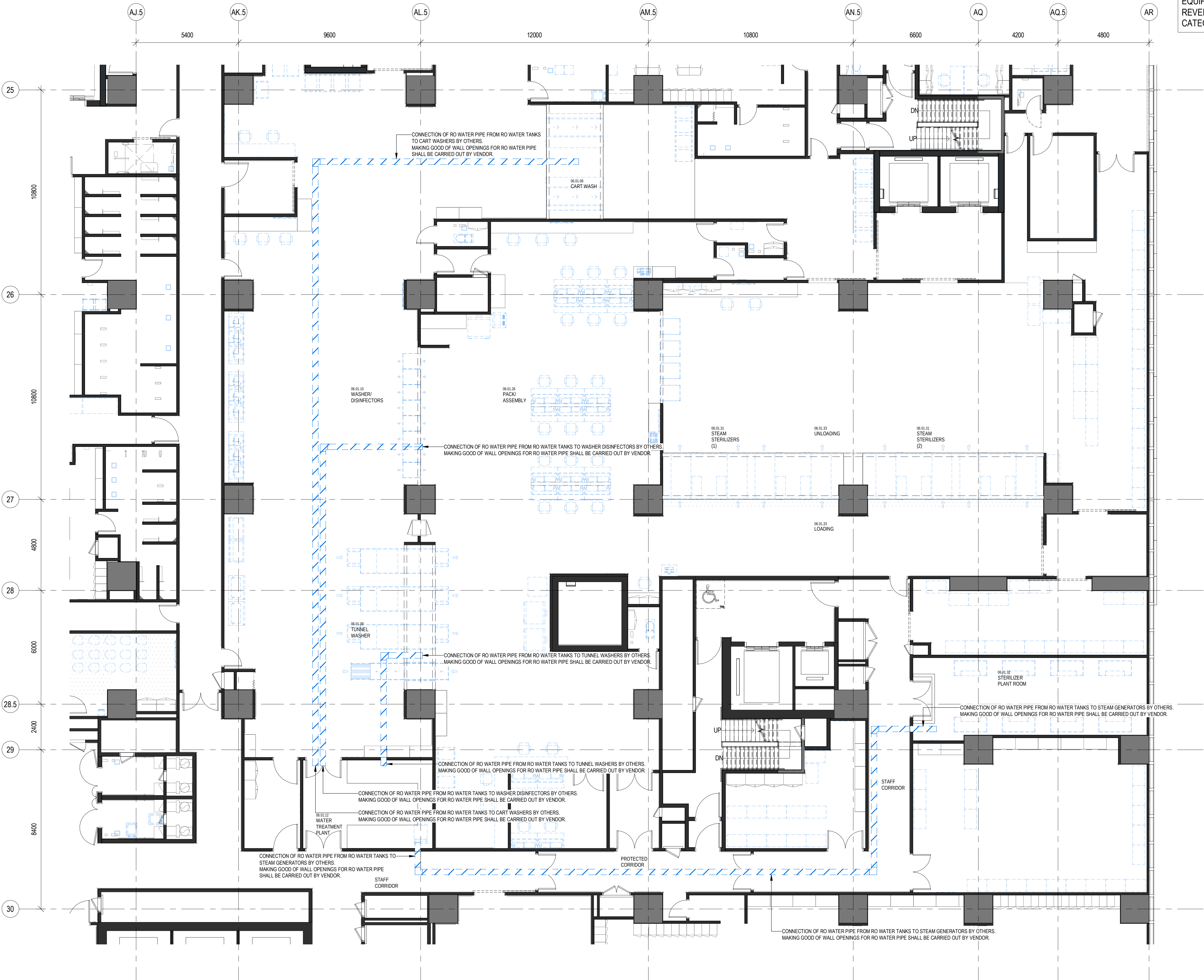
TENDER



LEGEND

AS BUILT BY MAIN CONTRACTOR

WORKS BY EQUIPMENT VENDOR
(ITEMS NAMES WITH PREFIX "(U)"
SHALL BE PROVIDED BY OTHERS)



EQUIPMENT:
REVERSE OSMOSIS WATER TREATMENT PLANT
CATEGORY: B2

RO WATER PIPE ROUTING DIAGRAM
PART PLAN – L04

1 : 100

F.S.D. REF. :
D.L.O. REF. :
Client :
Project Management Consultant :
NOTE :
DO NOT SCALE DRAWINGS.



醫院管理局
HOSPITAL
AUTHORITY



ARUP

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :


WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :


MEINHARDT

Building Services Engineering Consultant :


WSP

Quantity Surveying Consultant :


RLB Rider
利比 Levett
Bucknall

Project :


Redevelopment of Prince
of Wales Hospital,
Phase 2 (Stage 1)
at Ngan Shing Street,
Shatin

Location :
IPEB
Stage :
DETAILED DESIGN

Drawing Title :
FPE ITEM A00016 - COMPOSITE
DRAWINGS OF REVERSE OSMOSIS
WATER TREATMENT PLANT AT L04
SSU WATER TREATMENT PLANT
(06.01.12) RO WATER PIPE
ROUTING DIAGRAM

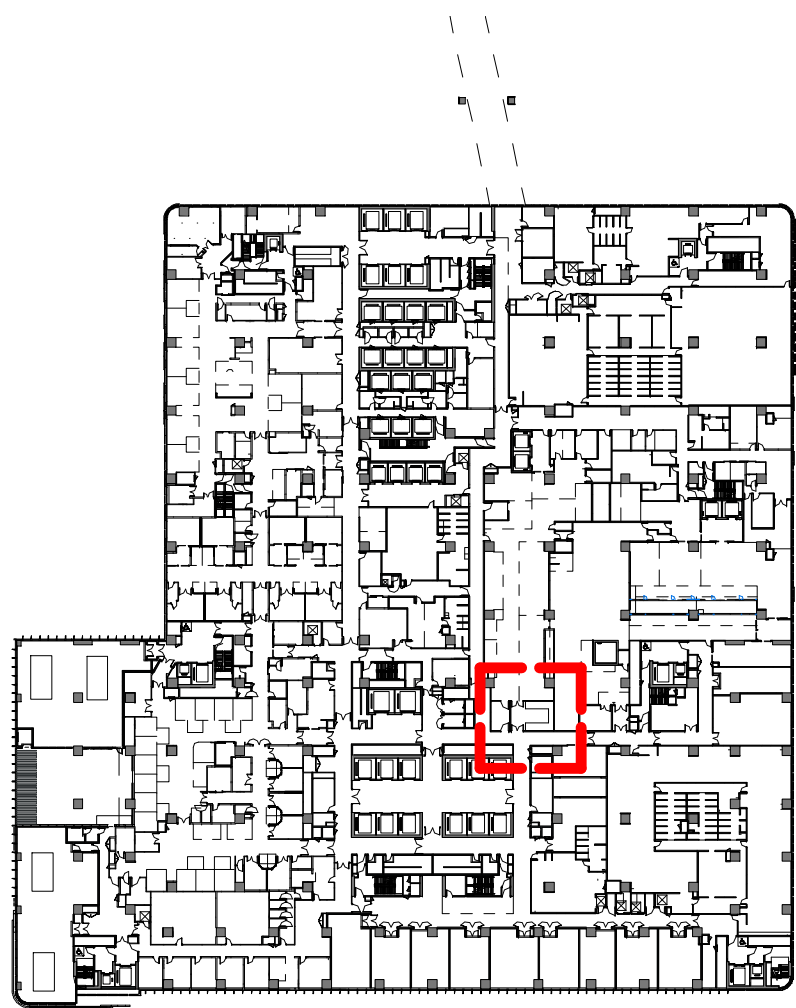
DATE:	04/2023	SCALE:	1 : 100
DRAFTED BY:	CHKD BY:	DESIGNED BY:	REVIEWED BY:
WHK	DFC	APK	PYC
JOB NO.	DRAWING NO.	REV NO.	
32110	IPB/WTPL/FPE/A00016-081	00	

TENDER

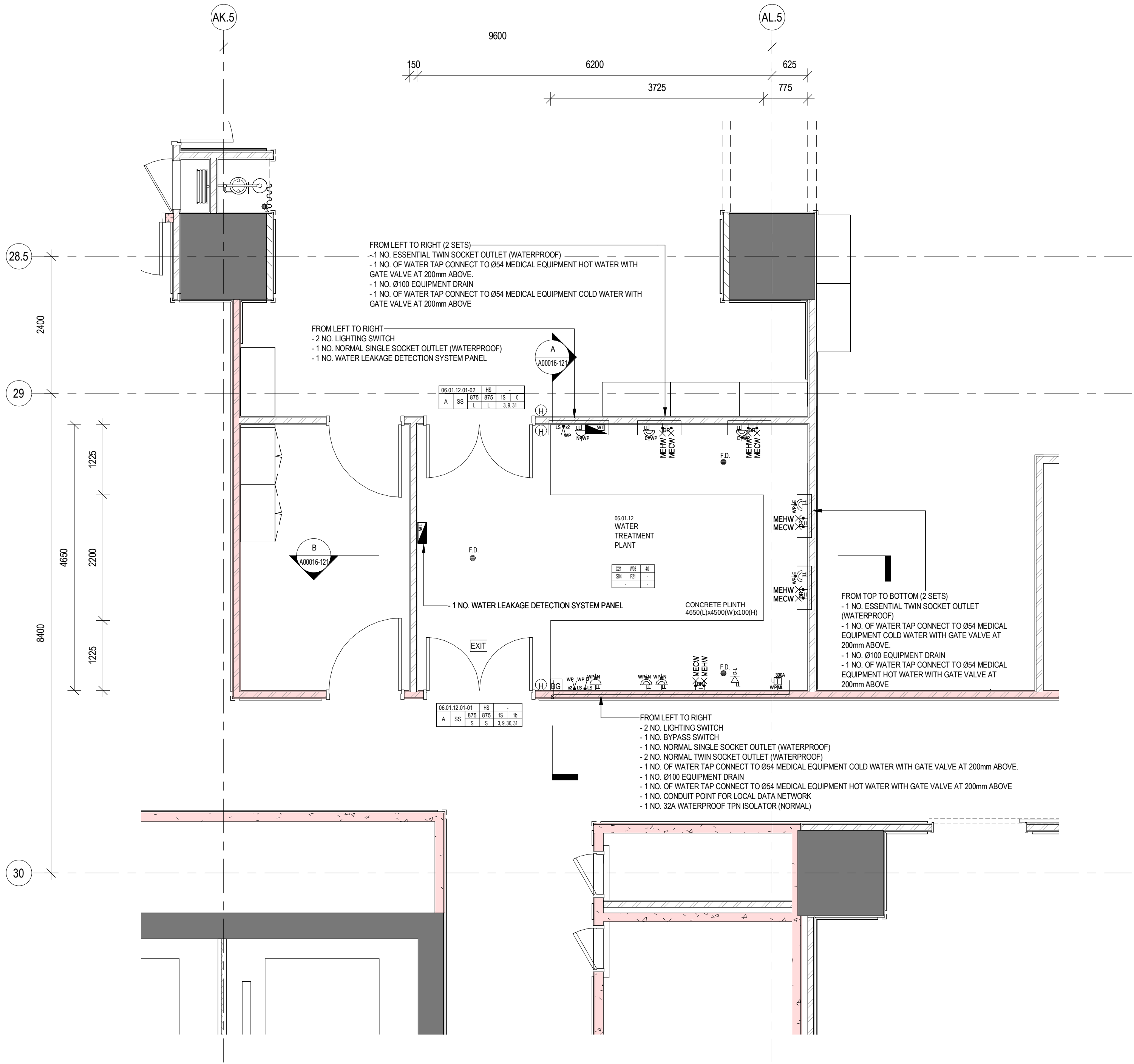
242

THE OWNERSHIP OF THE COPYRIGHT IN THIS DRAWING IS RETAINED BY THE ISSUER WHOSE CONSENT MUST BE OBTAINED BEFORE ANY USE OR REPRODUCTION OF THE DRAWING OR ANY PART THEREOF CAN BE MADE.

EQUIPMENT:
REVERSE OSMOSIS WATER TREATMENT PLANT
CATEGORY: B2



KEY PLAN - L04



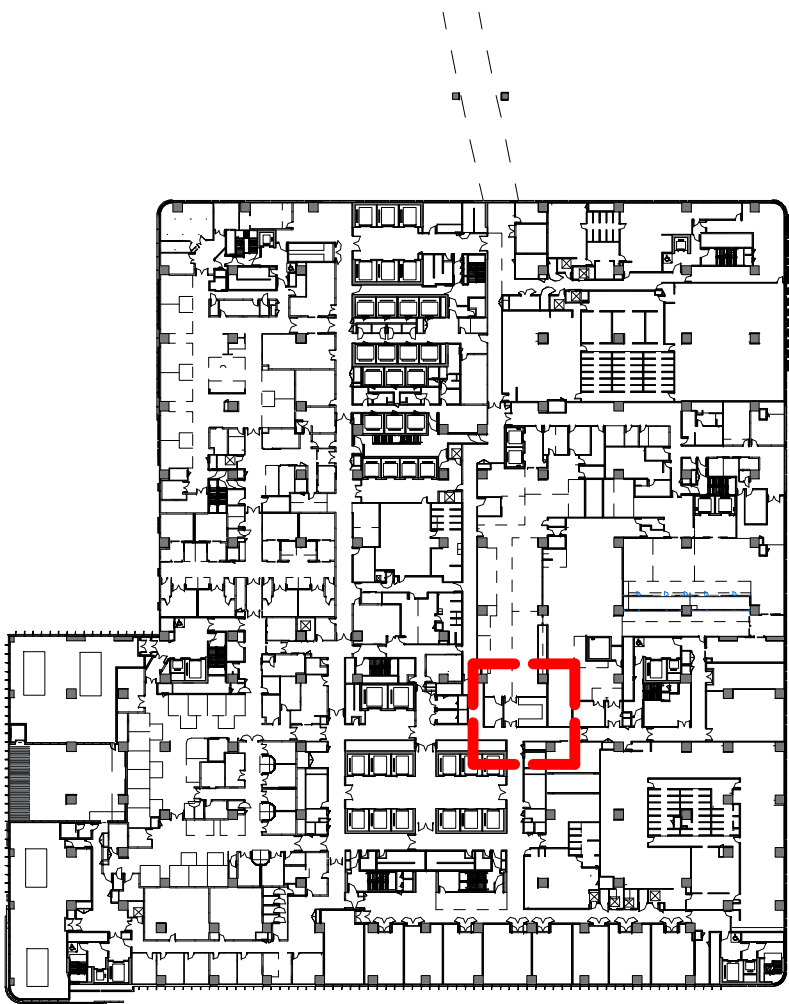
1 06.01.12 REVERSE OSMOSIS WATER TREATMENT PLANT - PLAN
1:50

LEGEND

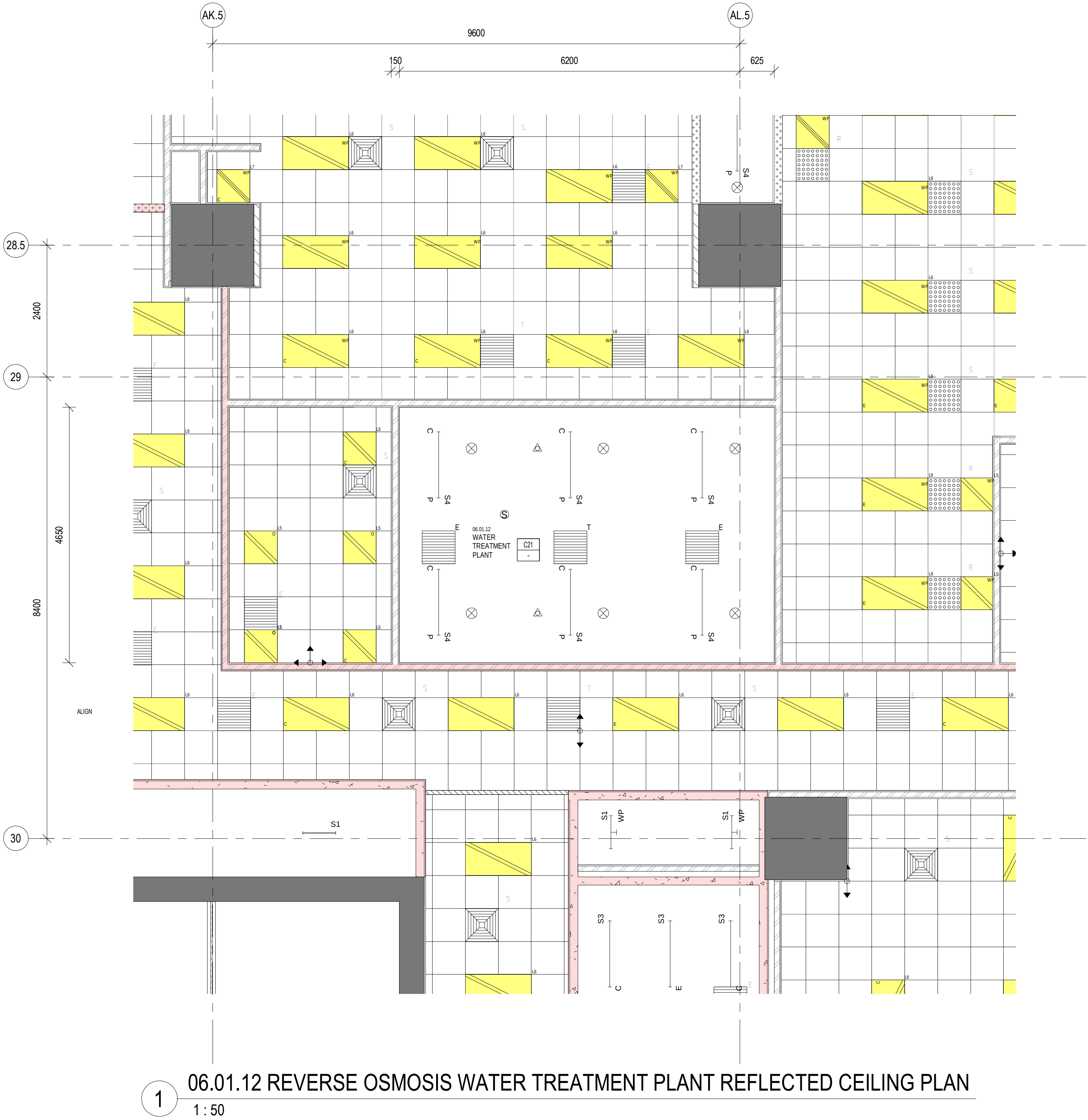
— AS BUILT BY MAIN CONTRACTOR

F.D.O. REF. : —			
D.L.O. REF. : —			
Client :  醫院管理局 HOSPITAL AUTHORITY			
Project Management Consultant : ARUP			
NOTE : DO NOT SCALE DRAWINGS.			

TENDER



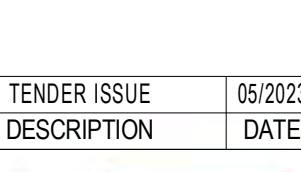
KEY PLAN - L04



LEGEND

— AS BUILT BY MAIN CONTRACTOR

EQUIPMENT:
REVERSE OSMOSIS WATER TREATMENT PLANT
CATEGORY: B2

F.S.D. REF. : —			
D.L.O. REF. : —			
Client :  醫院管理局 HOSPITAL AUTHORITY			
Project Management Consultant : 			
NOTE : DO NOT SCALE DRAWINGS.			
00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED
Architect :  WONG TUNG & PARTNERS LIMITED ARCHITECTS & PLANNERS			
Structural, Civil & Geotechnical Engineering Consultant : 			
Building Services Engineering Consultant : 			
Quantity Surveying Consultant : 			
Project :  Redevelopment of Prince of Wales Hospital, Phase 2 (Stage 1) at Ngan Shing Street, Shatin			
Location : IPEB		Stage : DETAILED DESIGN	
Drawing Title : FPE ITEM A00016 - AS BUILT DRAWINGS OF REVERSE OSMOSIS WATER TREATMENT PLANT AT L04 SSU WATER TREATMENT PLANT (06.01.12) REFLECTED CEILING PLAN			
DATE: 04/2023		SCALE: As indicated	
DRAFTED BY: WHK	CHECKED BY: DFC	DESIGNED BY: APK	REVIEWED BY: PYC
JOB NO. 32110	DRAWING NO. IPB/WTP/L/FPE/A00016-102	REV.NO. 00	

TENDER

F.S.D. REF. :

D.L.O. REF. :

Client :



Project Management Consultant :

ARUP

NOTE :
DO NOT SCALE DRAWINGS.

00	TENDER ISSUE	05/2023	APK
REV.	DESCRIPTION	DATE	CHECKED

Architect :



WONG TUNG & PARTNERS LIMITED
ARCHITECTS & PLANNERS

Structural, Civil & Geotechnical Engineering Consultant :



Building Services Engineering Consultant :



Quantity Surveying Consultant :



Project



Redevelopment of Prince of Wales Hospital, Phase 2 (Stage 1) at Ngan Shing Street, Shatin

Location :

Stage :

B	DETAILED DESIGN
---	-----------------

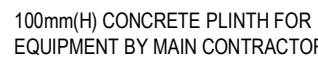
Drawing Title :

FPE ITEM A00016 - AS BUILT
DRAWINGS OF REVERSE OSMOSIS
WATER TREATMENT PLANT AT L04
SSU WATER TREATMENT PLANT
(06.01.12) SECTIONS

DATE: 04/2023	SCALE: As indicated
---------------	---------------------

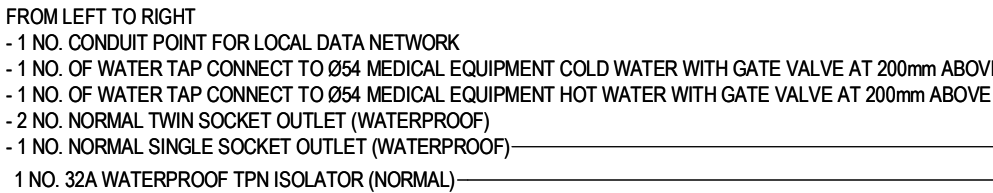
DRAFTED BY: WHK	CHECKED BY: DFG	DESIGNED BY: APK	REVIEWED BY: PYC
--------------------	--------------------	---------------------	---------------------

JOB NO.	DRAWING NO.	REV.NO.
32110	IPB/WTPL/FPE/A00016-121	00



A

1 : 50



1 NO. OF WATER TAP CONNECT TO Ø54 MEDICAL EQUIPMENT COLD WATER WITH GATE VALVE AT 200mm ABOVE
1 NO. OF WATER TAP CONNECT TO Ø54 MEDICAL EQUIPMENT HOT WATER WITH GATE VALVE AT 200mm ABOVE

2 NOS. Ø100 EQUIPMENT DRAIN

-FROM LEFT TO RIGHT
- 1 NO. BYPASS SWITCH (WATERPROOF)
- 2 NO. LIGHTING SWITCH (WATERPROOF)

B

1 : 50

—— AS-BUILT BY MAIN CONTRACTOR

TENDER



PWH - House Rules for FPE / HAIT Vendors



List of Content

PWH - General Notes for FPE & HAIT Vendors	Page 1-2
PWH - 進場登記及培訓流程	Page 3-4
PWH - 安全環保要求及守則 [2018]	Page 5-55
PWH - Guidance for FPE / HAIT Vendor on Insurance Matters	Page 56-57



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

PWH - General Notes for FPE / HAIT Vendors

1. The FPE/HAIT Vendors shall follow the Contractor's Master Programme which may be adjusted to suit the site progress and conditions.
2. The FPE/HAIT Vendors shall coordinate with the Contractors and other contractors, whether domestic, specialist contractors and utility undertakers, working concurrently on site.
3. The FPE/HAIT Vendors shall comply with all the applicable site management and planning rules, including but not limited to the following: -
 - Disposal of site generated debris/rubbish to designated locations assigned by the Contractor.
 - The routes indicated in the Tender Documents are for information and reference only. Exact routes may be adjusted in line with the site planning and construction.
 - The FPE/HAIT Vendors shall be responsible to provide all necessary temporary protection to the final installed works carried by the Contractor.

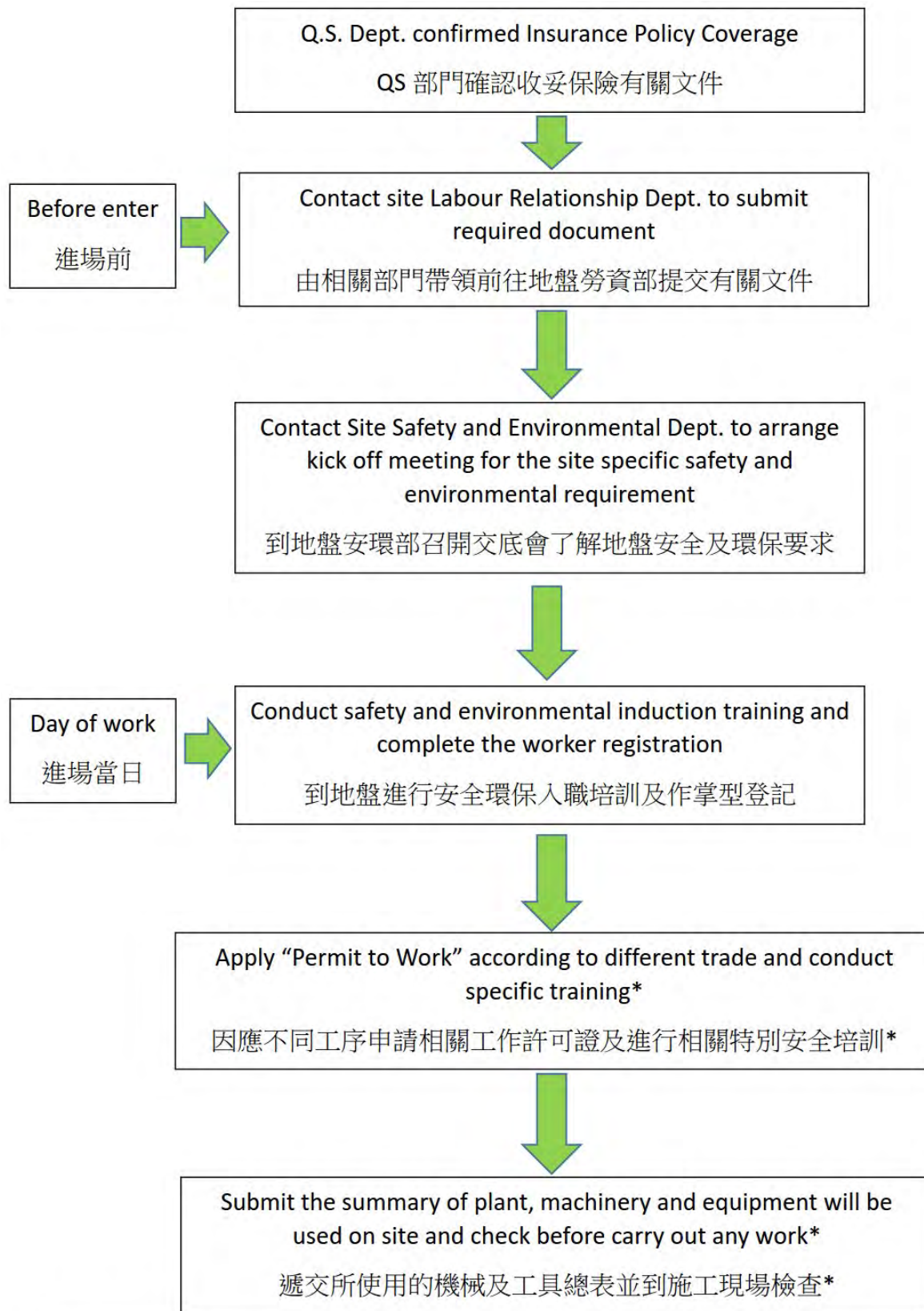


中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

PWH -進場登記及培訓流程



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGRG. (HONG KONG) LTD.



*The site specific safety and environmental requirements are stated in kick off meeting material

*地盤安全及環保的要求已於交底會的文件中列出



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

安全環保要求及守則



安全要求及守則

1. 業主之承辦商(下稱：**承辦商**)必須配合並遵守本公司所訂定的所有安全守則。承辦商必須遵守及執行一切安全措施以符合所有有關安全法例及安全守則的規定，如有關法例及安全守則之更改，將根據最新之要求作為標準，有關之法例已列出，如下：

1.1	香港法例第 59 章	《工廠及工業經營規例》
1.2	香港法例第 59A 章	《工廠及工業經營規例》
1.3	香港法例第 59B 章	《工廠及工業經營(密閉空間)規例》
1.4	香港法例第 59C 章	《工廠及工業經營(噴砂打磨)特別規例》
1.5	香港法例第 59D 章	《工廠及工業經營(應呈報工場的急救設備)規例》
1.6	香港法例第 59E 章	《工廠及工業經營(職業病呈報)規例》
1.7	香港法例第 59G 章	《工廠及工業經營(木工機械)規例》
1.8	香港法例第 59I 章	《建築工地(安全)規例》
1.9	香港法例第 59J 章	《工廠及工業經營(起重機械及起重裝置)規例》
1.10	香港法例第 59L 章	《工廠及工業經營(砂輪)規例》
1.11	香港法例第 59M 章	《工廠及工業經營(在壓縮空氣中工作)規例》
1.12	香港法例第 59N 章	《工廠及工業經營(易燃液體的噴塗)規例》
1.13	香港法例第 59O 章	《工廠及工業經營(載貨升降機)規例》
1.14	香港法例第 59Q 章	《工廠及工業經營(機械的防護及操作)規例》
1.15	香港法例第 59R 章	《工廠及工業經營(槍彈推動打釘工具)規例》
1.16	香港法例第 59S 章	《工廠及工業經營(保護眼睛)規例》
1.17	香港法例第 59T 章	《工廠及工業經營(工作噪音)規例》
1.18	香港法例第 59V 章	《工廠及工業經營(應呈報工場的防火設備)規例》
1.19	香港法例第 59W 章	《工廠及工業經營(電力)規例》
1.20	香港法例第 59Z 章	《工廠及工業經營(安全主任及安全督導員)規例》
1.21	香港法例第 59AA 章	《工廠及工業經營(可致癌物質)規例》
1.22	香港法例第 59AB 章	《工廠及工業經營(危險物質)規例》
1.23	香港法例第 59AC 章	《工廠及工業經營(吊船)規例》
1.24	香港法例第 59AD 章	《工廠及工業經營(石棉)規例》
1.25	香港法例第 59AE 章	《工廠及工業經營(密閉空間)規例》
1.26	香港法例第 59AF 章	《工廠及工業經營(安全管理)規例》
1.27	香港法例第 59AG 章	《工廠及工業經營(負荷物移動機械)規例》
1.28	香港法例第 59AI 章	《工廠及工業經營(氣體焊接及火焰切割)規例》
1.29	香港法例第 509 章	《職業安全及健康條例》
1.30	香港法例第 406 章	《電力條例》
1.31	香港法例第 470 章	《建築工地升降機及塔式工作平台(安全)條例》
1.32	香港法例第 295 章	《危險品條例》
1.33	香港法例第 282 章	《僱員補償條例》
1.34	香港法例第 485 章	《強制性公積金計劃條例》
1.35	香港法例第 583 章	《建造業工人註冊條例》
1.36	香港法例第 56 章	《鍋爐及壓力容器條例》

2. 違例事宜：

- 2.1 倘因承辦商未能遵守有關的安全法例而引至本公司蒙受金錢上的損失，包括成本支出、小費用、罰款、因民事訴訟所需承擔的賠償等等，該等損失將由承辦商負責承擔。
- 2.2 有關因承辦商違例而被檢控，承辦商必須委派代表出席法庭聆訊。
- 2.3 如本公司項目經理、總管及安全主任認為承辦商違反有關的安全法例，項目經理、總管及安全主任有權停止其工作直至該等情況完全改善為止，承辦商不單不可藉此索償，還須負責賠償本公司所有因該項停工而引致金錢或時間上的損失。



3. 承辦商必須確保:

3.1 安全訓練

- a. 承辦商必須安排所有新進之工人於即日接受入職安全環保培訓。
- b. 入職安全環保培訓將於星期一至星期六，早上 8 時 30 分至 10 時 00 分舉行。
- c. 承辦商必須協助本公司與其工人進行工具箱座談(Tool Box Talk)，其代表的負責人、安全主任或打理工人必須接受及完成安全訓練技巧課程。
- d. 承辦商駐工地負責人必須持有建造業議會訓練學院或職業安全健康局所發出的『安全施工程序課程』及『安全訓練技巧課程』證書，並於開工前將副本交予本公司負責人記錄存檔。
- e. 所有進入工地之工人〔包括運送材料的工人及司機，不論是直接或間接僱用於工地內工作〕必須持有有效的建造業安全訓練證明書，俗稱『平安咭』，才可獲准進入工地施工。每個工人在本工地施工時必須攜帶此『平安咭』。
- f. 承辦商須委派持有及攜帶由建造業議會(CIC)所發出的『銀咭』工作，方可進入工地進行相關工作。包括 12 個工種，並列如下：AS1 髹漆及裝飾工 AS2 木模板工 AS3 拆卸工 (建築物) AS4 水喉工 AS5 鋼筋屈紮工 AS6 批盪工、鋪瓦工、AS7 竹棚工、金屬棚架工、AS9 幕牆工、AS10 升降機技工 A11 塔式起重機組裝工 (安裝、拆卸及升降)、A12 工地建材索具工、A13 隧道工

3.2 遵守本公司制定及公佈的所有工地安全措施、安全守則、內部安全通告及會議決定。

3.3 所有屬下員工已經受到由承辦商購買有效的勞工保險保障，而有效保單須於員工首天工作前出示，以作記錄。

3.4 對於任何大小工程而言，承辦商都必須準備合適的施工方案、風險評估報告及呈交一切有關的法定檢驗證書及操作員證書，例如：包括但不限於所有起重機械及起重裝置認可之檢驗證書、起重機械操作員的有效操作證書等。

3.5 申請工作證

- 所有承辦商必須每天在開工前，向本公司申請工人工作證。
- 工人必須攜帶及展示工作證，而工作證不得轉讓。
- 承辦商派代表/打理工人收集屬下所有工人註冊證，到本公司指定地點申請，一般以一張工人註冊證兌換一張工人工作證方式進行。
- 而每天完工後亦需要交還工人工作證，讓工人取回註冊證離開。

3.6 以承辦商的工人總人數為準，若人數少於二十人，承辦商須委任一名安全代表及駐工地處理安全事項。(二十至五十人，二名安全督導員) 若總人數達五十人或以上包括承辦商及其分判商，承辦商須委任最少一名全職安全督導員駐工地處理安全事項。人數每增加五十人，須委任多一名全職安全督導員駐工地處理安全事項。

<u>工人總人數</u>	<u>最少安全代表人數</u>
少於二十	一名 (安全代表)
二十至五十	二名 (安全督導員)
五十至九十九	三名 (安全督導員)
一百人或以上	一名 (註冊安全主任)

3.7 倘若承辦商僱用 50 – 99 名工人在任何一日或多過一個工地工作，就必須設立最少包含八個元素的安管理制度。包括: 安全政策、安全組織、安全守則、安全巡視、個人防護設備、意外調查、安全訓練及緊急應變計劃。必須合符以上 1.26 條例，承辦商需於每六個月委任安全查核員(Safety



- Review Officer)在有關之工程進行一次安全查核。而承辦商需閱讀及簽署於安全查核報告上，及在接獲報告後14天內擬定改善計劃及實施，並且需接獲報告後21天內，將該報告連同改善計劃的文本提交勞工處長及呈交本公司以作記錄。
- 3.8 倘若承辦商僱用100名工人或以上在任何一日於一個或多過一個工地工作，就必須設立包含14個元素的安管理制度。除上述八個元素外，需加入安全委員會、對其分判商的評核、挑選及管控、評核與工作有關的或潛在的危險、並發展安全程序、安全推廣、工人健康保障計劃、及工地安全控制。必須合符以上1.26條例，承辦商需於每六個月委任註冊安全審核員(Registered Safety Auditor) 在有關之建築工程進行一次安全審核。而承辦商需閱讀及簽署於安全審核報告上，及在接獲報告後14天內擬定改善計劃及實施，並且需接獲報告後21天內，將該報告連同改善計劃的文本提交勞工處長及呈交本公司以作記錄。
- 3.9 所有工人須在星期一至星期五出席安全早會及危害識別活動。
- 3.10 未經許可，任何車輛在沒有有效的停泊證，均不可在本工地停泊車輛。
- 3.11 工地範圍內嚴禁吸煙、飲酒、賭博、吸毒或留宿。
- 3.12 除獲得工地總管許可下，所有工地物品均不可隨意進出工地。
- 3.13 如需要借用地點擺放物料、水電作進行工程之用，請及早向本公司的負責人員申請及批准以便安排。
- 3.14 承辦商於在本工地內必須穿著由本公司派發及指定之工作制服(如適用)。
- 3.15 承辦商的公司代表 / 安全代表須進行每日清潔巡查，每日清理工作及清除垃圾。
- 3.16 承辦商的公司 / 安全代表須每週參與安全巡查工作。
- 3.17 所有每週安全巡查的安全項目須在巡查後十二小時內改正及呈交改善後之相片給安全部。
- 3.18 各承辦商有責任提供合規格及足夠的個人防護裝備給其工友，以合乎法例及本公司的安全標準並儲存發放記錄。
- 3.19 承辦商必須遵守由發展局發出的建築工地安全實務手冊的內容履行應有之責任、規管所使用之工具及安排合適的工人等一切安全事宜。
- 3.20 氣體焊接、風煤切割及設備
- 承辦商必須遵守《工廠及工業經營(氣體焊接及火焰切割)規例》及勞工處所發出之《工作守則: 氣體焊接及火焰切割工作的安全與健康》的內容規定。
 - 承辦商之風煤樽必須配置合規格及良好之防止回火器，壓力調節器及氣壓表。
 - 承辦商之風煤吹管必須配置合規格及良好之止回閥。
 - 承辦商之風煤軟氣喉必須使用良好及沒有老化龜裂跡象，乙炔必須使用紅色軟氣喉，而氧氣必須使用藍色軟氣喉。
 - 承辦商之風煤樽與軟氣喉接駁位置，必須安裝彈簧防止軟氣喉拗曲。
 - 承辦商之風煤樽必須儲存良好及企立擺放，必須使用風煤籠運送，並擺放一樽水劑滅火筒於風煤籠內。
 - 用作吊運之風煤籠，必須由註冊專業工程師(RPE)檢驗及附有有效之檢驗證書(表格 6及7)。
 - 承辦商不可在工地儲存過量危險品，每個風煤籠只可儲存兩風一煤氣樽。
 - 承辦商必須確保氣體焊接及火焰切割之工作由持有有效訓練證書之工人進行。
 - 承辦商必須確保進行氣體焊接及火焰切割之工人配戴合附勞工處認可型號之燒焊護眼鏡或保護面盾燒焊手套，保護衣或燒焊圍裙。



- k. 承辦商必須執行熱工序許可證制度；(見附件一)

3.21 電力焊接

- a. 承辦商必須遵守《工廠及工業經營(電力)規例》、《建築工地(安全)規例》在建築工地使用電力、勞工處所發出之《工作守則:手工電弧焊接工作的安全與健康》及機電工程署所發出之《電力線路(規例)工作守則》的內容規定。
- b. 所有燒焊機及電焊鉗必須符合標準BS 638 : Part 7, IEC 60974 - 1 (or BS EN60974 - 1) 及 BS EN 60974 - 11或其他相等之標準。
- c. 電弧焊機必須裝有自動電壓調節器，以控制及減低其空載輸出電壓，減低觸電的機會。另外，電弧焊機的外殼必須有效地接地，而電線的接駁位置亦都必須有效地絕緣，以減低觸電的危險。
- d. 承辦商必須執行熱工序許可證制度；(見附件一)

3.22 手提電力工具及便攜式的電設備

- a. 所有手提電力工具及便攜式的電力設備(例如: 潛水泵)，在工地使用前必須由註冊電業人員檢查及登記。檢查必須包括目視檢查工具及設備之一般狀態，及檢查其功能、接地保護的連續性、正負極及絕緣狀況。如經工地大僑(REW)檢查合格後，所有合格之所有手提電力工具及便攜式的電設備必須進行登記及記錄。識別標籤必須包括註冊編號、工具種類、擁有人之姓名及檢驗日期。註冊之手提電力工具及便攜式的電設備於每隔三個月及維修後，必須重新復檢。
- b. 承辦商所使用之電動工具必須接駁水線(除非電動工具為雙重絕緣)，電壓必須符合政府、業主和工地安全主任有關要求，手工具及照明設備等，其電壓不得高於110伏特或指定之電壓。
- c. 手提電力工具及便攜式的電力設備及臨時工地照明，必須使用110伏特或由較低供應之降壓器，而其輸出線圈必須中心抽頭接地及必須符合BS3535:Part 2:1990 或相等級別標準。所有電線必須終止於及密封於Class I 及 IP55以上標準之變壓器內及輸出電路必須裝配短路保護。在密閉及潮濕環境，臨時照明及手提電力工具不可超出25伏特。
- d. 承辦商必須委任其註冊電業技工負責定期檢查、保養、維修其電力工具，確保其安全、可靠，安全主任及委派之代表有權沒收違例及違反安全要求之用具，承辦商不得異議。

3.23 防火安全及消防要求

- a. 承辦商在工地內之休息室、辦公室等架步內必須擺放適當數量之滅火筒，承辦商必須確保其滅火筒性能良好及依期維修保養，並遵守如下要求：
 - 保持防火門、樓梯、走火通道暢通無阻；
 - 滅火設備於當眼及易取處；
 - 易燃物品附近禁止吸煙，並張貼有關警告告示；
 - 易燃物品妥善存放及保管，與發熱或明火的物體保持安全距離；
 - 使用焊接或切割工具時，應與易燃物品隔離；
 - 如遇火警，使用適當之滅火設備；
 - 若火警不受控制，應立即從安全通道離開火警現場，報警和通知管理人員；
 - 所有在工地內工作的承辦商工人，必須接受防火訓練(例如:滅火用具的使用、火警演習等)；
 - 如進行明火工序，承辦商必須執行熱工序許可證制度；(見附件一)



3.24 壓力容器及危險品

- a. 承辦商所有在工地使用之壓力容器，必須符合**香港法例第 56 章《鍋爐及壓力容器條例》**內容要求。
- b. 在使用前，必須呈交由機電工程署及環保署批核之有效檢驗證書或許可證，並須定期檢驗和維修。否則，一律不准使用。
- c. 若根據工程需要承辦商必須使用某類化學品及危險品，其數量不得超過法例要求，若需領取許可證，概由承辦商負責。

3.25 起重機械及起重裝置

- a. 承辦商必須遵守香港法例第59J章《工廠及工業經營(起重機械及起重裝置)規例及勞工處發出的《安全使用塔式起重機安全守則》、《安全使用流動式起重機安全守則》及《起重機械及起重裝置的檢查、檢驗和測試指南》內容規定對起重機械的策劃、管理、操作和使用。
- b. 承辦商所有之起重機械及起重裝置，在進入工地後使用前，必須呈交有效認可之檢驗證書給安全部門，經檢查符合要求，方可使用。
- c. 而承辦商必須委派經合資格人士負責每週檢查起重機械、起重裝置等至少一次，填寫及簽署指定表格，該委派人士必須有足夠經驗和對該類型之機械有足夠認識，檢驗表格交工地安全部。
- d. 承辦商必須委任曾接受認可之外間專項吊運安全培訓課程(A12 -工地建材索具工)人員為合資格訊號員，本公司有權停止承辦商違規在工地內吊運操作。
- e. 所有流動起重機或吊重機械必須安裝倒後鏡、防後撞閉路電視系統、閃燈、掃尾杆及其他防後撞警告裝置，確保操作員在操作該來機械時沒有盲點。
- f. 承辦商必須落實執行有關吊運工作許可證制度，例如：貨車式起重機吊運許可證制度。**(見附件二)**

3.26 密閉場地工作

- a. 承辦商進行該項工作前，必須嚴格遵守勞工處發出的《工作守則：密閉空間工作的氣壓與健康》，並遵照指定安全程序經指定人士簽發工作許可證後，方可進入密閉場地工作。
- b. 承辦商必須委任密閉空間合資格人士進行風險評估，測試氣體、及監督密閉空間工作。
- c. 承辦商必須委任密閉空間核准工人進行密閉空間工作。
- d. 承辦商必須提供進行密閉空間的所需測試儀器、通風及救援設備。
- e. 承辦商委任之密閉空間核准工人於進入密閉場地工作時，必須由認識拯救程序和救援設備的人士協助，使用安全防護用品及在密閉空間留守準備支援。
- f. 承辦商必須落實執行有關密閉空間工作台許可證制度。**(見附件三)**

3.27 挖掘工程

- a. 在挖掘前，須按法定要求，做好保護地下設施工作，並按施工方案進行。
- b. 如進行挖掘工程，承辦商必須提供一名合資格人士，檢查並填妥有關表格，確保施工安全。
- c. 承辦商必須做妥挖掘工程有關安全措施並通知本公司檢查，包括裝設1米高度穩固圍欄，踢腳板和足夠安全通道。
- d. 挖掘工程超逾1.2米深度，須依照法例指示將泥坑挖掘至安全坡度或裝置臨時支撐，否則本公



司有權停止施工。

- e. 挖泥機必須安裝倒後鏡、防後撞閉路電視系統及其他防後撞警告裝置。
- f. 挖泥機的管理和相關安排必須符合勞工處發出的《安全使用挖土機工作守則》內容規定。
- g. 本公司有權停止承辦商現場不安全施工，包括使用不合規格機械在工地操作或因違反有關施工方案內容施工。
- h. 承辦商必須落實執行有關挖掘工作許可證制度。(見附件四)

3.28 機械保護系統裝置

- a. 承辦商使用之機械必須配有緊急停機掣及電磁索掣。
- b. 承辦商所使用之風車鋸必須配有緊急停機掣、電磁索掣、符合法例之護罩、鋸尾刀和底罩，並使用推木棍防止手部觸及轉動之部份。
- c. 承辦商所使用之座地鑽床必須設有防護罩，防止手部觸及轉動之部份。
- d. 承辦商必須根據本公司安全主任之指示及法例要求，在其他各工具之危險部分加上護罩。

3.29 搭建、改動、拆卸和維修竹棚或金屬棚架

- a. 搭建、改動、拆卸和維修竹棚、金屬棚架時，必須遵照本公司指示，並符合勞工處發出之《竹棚架工作安全守則》/《金屬棚架工作安全守則》/ 建造業議會的《竹棚架工作平台安排指引》內容規定。
- b. 承辦商必須安排合資格工人搭建、改動、拆卸或維修棚架，工作時必須配戴法例要求之個人防護用具。
- c. 若本公司要求承辦商修棚時，承辦商必須盡快安排人員辦妥，若承辦商延遲導致期間產生意外或被檢控，承辦商必須負上全部責任。每次搭建、改動、拆卸或維修後，承辦商必須立即派合資格人士驗棚及填妥指定表格。
- d. 由承辦商提供之合資格人士，必須具有足夠經驗，對該項工程非常熟悉，在搭建、改動或拆卸工序進行期間，應在場監督，並由合資格人士進行有關棚架工程。
- e. 承辦商必須落實執行有關高空工作許可證制度。(見附件五)
- f. 竹棚“合資格的人”

就《建築工地(安全)規例》規定須由合資格的人執行的職責而言，“合資格的人”指符合下述情況的人：

- i) 由承辦商指定執行該職責，而《建築工地(安全)規例》規定該承辦商須確保該職責由合資格的人執行；及
- ii) 因其所受的實質訓練及實際經驗而有足夠能力執行該職責。
- iii) 在搭建竹棚架而言，合資格的人須曾受《實質訓練及實際經驗》，是指該人
- iv) 已圓滿地完成正式的竹棚工作訓練，例如根據第47章《學徒制條例》第28條所規定的竹棚工學徒訓練，或建造業議會訓練學院舉辦的一年全日制建造棚架科基本工藝課程，或其他類似的竹棚訓練課程/計劃，或已在建造業議會訓練學院舉辦的竹棚工技能測試中取得合格成績；
- v) 具備十年或以上的竹棚架工作經驗(包括在正式訓練期間所得的經驗)；及
- vi) 能閱讀理解棚架計劃書、設計圖、規格及棚架施工方法說明書，使其能有足夠能力監督棚



架工程及證實棚架的安全性。他亦應能找出在周圍現存及可預見的潛在危險或能影響僱員衛生或危害僱員的工作環境。

vii) 合資格的人應由承辦商以書面指定及應獲授權可採取適時措施去消滅上述現存及可預見的潛在危險。

viii) 竹棚“曾受訓練的工人”

在搭建竹棚架而言，曾受訓練的工人是指竹棚工在合資格的人的直接監督下，負責在工地內架設、擴建、更改和拆卸棚架，並已圓滿地完成相等於上述為“合資格的人”而舉辦的正式竹棚架工作訓練，或已在建造業議會訓練學院舉辦的竹棚工中級工藝測試中取得合格的成績，以及具備一年或以上的竹棚架工作經驗(包括在正式訓練期間所得的經驗)。根據香港法例第583章《建造業工人註冊條例》註冊為竹棚業註冊熟練、半熟練、熟練(臨時) 和半熟練技工(臨時) 的竹棚工，亦獲竹棚架工作安全守則認可為曾受訓練的工人。

f. 金屬棚架“合資格的人”

就《建築工地(安全)規例》規定須由合資格的人執行的職責而言，“合資格的人”指符合下述情況的人：

i) 由承辦商指定執行該職責，而《建築工地(安全)規例》規定該承辦商須確保該職責由合資格的人執行；及

ii) 因其所受的實質訓練及實際經驗而有足夠能力執行該職責。

iii) 搭建金屬棚架而言，合資格的人須曾受《實質訓練及實際經驗》，是指該人

iv) 已完成建造業議會訓練學院舉辦的金屬棚架工作全日制正式訓練或其他類似的金屬棚架訓練課程/ 計劃，並具備四年或以上的金屬棚架工作經驗(包括在正式訓練期間取得的經驗)；或

v) 金屬棚架“曾受訓練的工人”

vi) 在搭建金屬棚架而言，曾受訓練的工人是指該人所執行的職責是在在合資格的人的直接監督下，在工地內架設、擴建、更改和拆卸金屬棚架，及該人已完成相等於上述為“合資格的人”而舉辦的正式金屬棚工作訓練，或已在建造業議會訓練學院舉辦的金屬棚工中級工藝測試中取得合格的成績，並具備最少一年金屬棚架工作經驗(包括在正式訓練期間所得的經驗)。根據香港法例第583章《建造業工人註冊條例》註冊為金屬棚架工的註冊熟練、半熟練、熟練(臨時) 或半熟練(臨時) 技工的工人，亦獲本工作守則認可為曾受訓練的工人。

vii) 已完成建造業議會訓練學院持有土木/結構工程或其他有關界別之高級

證書或更高學歷的人士所舉辦的金屬棚架訓練課程/計劃，或其他類似的金屬棚架訓練課程/計劃，並具備一年或以上的金屬棚架工作經驗(包括在正式訓練期間取得的經驗)；或

viii) 已在建造業議會訓練學院舉辦的金屬棚架工藝技能測試中取得合格的成績，並具備四年或以上的金屬棚架工作經驗(包括在正式訓練期間取得的經驗)，以及能閱讀理解棚架計劃書、設計圖、規格及棚架施工方法的說明書，使其能有足夠能力監督棚架工程及證實棚架的安全性。他亦應能找出在周圍現存及可預見的潛在危險或影響僱員衛生或危害僱員的工作環境；

ix) 合資格的人之應由承辦商以書面指定及應獲授權可採取即時措施去消滅上述現存及可預



見的潛在危險。

3.30 工作台、梯子使用及通道

- a. 承辦商因工作需要而搭建之工作台、出料台或通道必須符合法例及本公司規定，其安全設施包括標準圍欄、踢腳板、安全通道及工作台，全由承辦商負責搭建。若有需要填寫指定表格，承辦商必須委派合資格人士簽妥。
- b. 任何工序需要工人於2米或以上工作，便須要提供穩固工作台予工人作業。
- g. 承辦商必須使用由建造業議會發出的《離地工作的安全指引》訂明的工作台或梯子，而使用梯子時要對使用梯子的環境和情況作出評估及填妥《使用梯子檢查表》。

3.31 圍欄

承辦商工人若需要進入泥坑、沙井、泵井或斜坡等範圍內工作，必須負責安裝、建造及維修保養範圍內的圍欄、安全上落通道等一切安全設施，承辦商也要自備上落通道上落該工作範圍。

3.32 電力安全（在已打永久電設備附近工作）

對於在已打永久電設備附近的地方進行工作，例如在天花空間或電制房內工作，都必須執行電力工作許可證制度(見附件六)，對相關地方進行隔電工序，概括如下：

1. 所有進行有關工作之工人及其打理必須接受由承辦商提供之“電力工作許可證制度”安全培訓；
2. 進行有關工作前須向承辦商申請“電力工作許可證”及附上位置圖明確標示申請工作位置(layout plan)；
3. 每張工作許可證最長有效時間為一天；
4. 註冊安全主任及註冊電工會到場檢查申請位置之安全情況，打理人及有關工人亦須在場了解實際環境；
5. 承辦商須提供臨時照明(如手提電燈)及絕緣安全工作平台(如纖維梯台)予工人使用；
6. “電力工作許可證”須張貼於工作區域之當眼位置；
7. 工人必須逗留於申請範圍內工作，不可越過；
8. 完成工作後須註銷“電力工作許可證”並交還安全部存檔；
9. 負責電力管理的承辦商會因應申請許可證之內容，關閉申請區域之天花電源；
10. 嚴禁工人進行帶電工作。

以下是五類情況，也需要考慮執行電力工作許可證制度：

1. 在已裝有帶電設備的天花內工作
2. 在已裝有帶電設備的附近進行涉及用水的工作（Wet Trade）
3. 在潮濕環境下進行涉及電力的工作
4. 在未確定有否帶電導體的設備附近工作
5. 在設有低壓電力的房間內工作

3.33 升降機井道工作安全

承辦商應根據建造業議會出版的《升降機槽工程安全指引》作出適當的安全管理，加強施工前的



溝通及工作安排，確保不相容的升降機工程活動不會同時在同一升降機槽內進行。

承辦商應執行工作許可證制度(見附件七)，按業界的守則，記錄及保存升降機維修和保養的日誌，以作清楚記錄工程活動。而在進行升降機維修和保養時，都不可讓其他人員進入同一升降機槽內。此外，承辦商應以委任有經驗及合資格的人員操作升降機，以保障所有施工人員的安全。

3.34 一般安全工作

- a. 承辦商必須委派至少兩名工人全力負責執行安全工作，若本公司發現承辦商未能做妥有關安全措施，本公司有權要求承辦商增派工人，直至完成有關安全措施，本公司不作任何額外彌償。
- b. 安全工作包括：
 - 搭建、保養、維修圍欄；
 - 搭建、保養、維修通道；
 - 搭建、保養、維修工作台；
 - 清除污水及滅蚊；
 - 封地台孔；
 - 工地整潔；
 - 其他本公司指示之安全工作。

3.35 工傷呈報

倘承辦商的工人不論是直接或間接僱用於工作時受傷，承辦商必須立即知會本公司及於12小時內呈交該受傷工人的有關資料予本公司工地安全環保部。承辦商必須依照僱員補償條例及保險條文內的手續或程序辦理，否則，一切因承辦商違反規定而導致本公司在金錢上蒙受損失，將會按照上述條文第(2.1)項處理，而承辦商必須同意遵守。

3.36 安全早會 - 開工前伸展運動及危害識別活動

承辦商每天早上指定時間齊集所屬工人及工地工程打埋人及安全代表準時出席早操會，而出席人數不可小於當天上班總人數之70%。如承辦商當天早操會之出席人數未達當天其上班總人數之70%，則本公司將會通知僱用該承辦商之直屬機構。

3.37 本發展項目的警告制度如下：

第一次違反：口頭警告

第二次違反：停止工作+通知僱用該承辦商之直屬機構

其中包括：

- 嚴重、重複違反工地安全守則
- 沒有顧己及人，危及他人安全
- 使用違規，不安全機械、吊具、設施及設備等等

4. 若承辦商違反工地安全規定，本公司可有權停止其工作直至該等情況完全改善為止，承辦商不可藉此索償，包括金錢或時間上的損失。

5. 所有以上要求及守則，本公司有最終權利去解釋、執行和決定，承辦商不得異議。



環保要求及守則

1. 業主之承辦商(下稱：**承辦商**)必須配合並遵守本公司所訂定的所有環保守則。承辦商必須遵守及執行一切環保措施以合符所有有關環保法例及安全守則的規定，如有關法例及環保守則之更改，將根據最新之要求作為標準，有關之法例已列出，如下：
 - 1.1 香港法例第 311 章 《空氣污染管制條例》
 - 1.2 香港法例第 354 章 《廢物處置條例》
 - 1.3 香港法例第 358 章 《水污染管制條例》
 - 1.4 香港法例第 400 章 《噪音管制條例》
 - 1.5 香港法例第 403 章 《保護臭氧層條例》
 - 1.6 香港法例第 466 章 《海上傾倒物料條例》
 - 1.7 香港法例第 499 章 《環境影響評估條例》
2. 違例事宜：
 - 2.1 倘因承辦商未能遵守有關的環保法例，而引至本公司蒙受金錢上的損失，包括成本支出、小費用、罰款、因民事訴訟所需承擔的賠償等等，該等損失將由承辦商負責承擔。
 - 2.2 有關因承辦商違例而被檢控，承辦商必須委派代表出席法庭聆訊。
 - 2.3 如本公司項目經理、總管、安全主任及環保主任認為承辦商違反有關的環保法例，項目經理、總管、安全主任及環保主任有權停止其工作，直至該等情況完全改善為止，承辦商不單不可藉此索償，還須負責賠償本公司所有因該項停工而引致金錢或時間上的損失。
 - 2.4 本公司定期評核承辦商的環保表現，倘若承辦商屢勸不改，本司有權停止工作及通知僱用該承辦商之直屬機構。
3. 承辦商 必須確保：
 - 3.1 防塵措施
 - a. 一般管制規定
 - i. 一般規定
 - 承辦商必須確保空氣污染控制系統操作正常，並在該系統發生故障時盡快停止有關工序。
 - 除在混凝土灌漿前用作清潔板模，或在混凝土噴漿前用作清潔斜坡外，承辦商不可使用壓縮空氣清潔或除塵。
 - ii. 通路
 - 除非屬於道路開掘或重鋪工程，否則：
 - 工地內部的道路，對於未鋪設混凝土的運輸通路，承辦商必須通過灑水等方法維持路面濕潤，已鋪設好的路面亦須保持清潔。
 - 工地出入口 30 米以內的公共道路，承辦商必須保持清潔。
 - iii. 水泥
 - 超過 20 包的水泥，必須以隔塵布蓋好，或置於頂部與 3 個側面有遮蔽的地方。
 - 散裝運送的水泥，必須在筒倉內貯存，處理時必須在完全圍蔽的地方。



- iv. 泥地
 - 任何泥地在最近一次建造活動後 6 個月內，承辦商須以壓土或噴草等方法處理，防止塵土飛揚。
- v. 易生塵埃物料
 - 由空氣污染控制系統收集到的易生塵埃物料，承辦商須放在完全圍蔽的容器內處置或其有效之防塵措施。
- b. 個別活動的管制規定
 - i. 堆存易生塵埃物料
 - 承辦商須以隔塵布蓋好；或
 - 放在 3 面及頂有遮蔽的地方；或
 - 灑水維持表面濕潤。
 - ii. 裝卸或運送易生塵埃物料
 - 在緊接裝卸或運送之前，承辦商須灑水維持濕潤（水泥除外）。
 - iii. 用輸送帶運送易生塵埃物料
 - 承辦商須在輸送帶頂部及 2 面圍蔽。
 - 轉運點須完全圍蔽。
 - 輸送帶的主滑輪位置須安裝刮板及底板。
 - 輸送帶出口與卸落點須維持不超過 1 米。
 - 輸送帶的卸落點頂部及 3 面要圍蔽。
 - iv. 使用車輛
 - 承辦商車輛在緊接離開工地前要清洗。
 - 如載有易生塵埃物料，承辦商須以隔塵布蓋好。
 - 承辦商運輸泥土、碎石及垃圾之運泥車及夾斗車，必須安裝政府認可及完整之蝴蝶式電動蓋掩。
 - v. 動力鑽孔、切割、磨光及機械碎破
 - 除非設有有效的吸塵過濾器，否則在從事此類工作時，必須不斷灑水。
 - vi. 碎屑
 - 所有碎屑，必須以隔塵布蓋好，或貯於頂部與 3 個側面有遮蔽的地方。
 - 必須以隔塵布圍蔽碎屑槽。
 - 傾倒入碎屑槽前承辦商要灑水。
 - vii. 挖掘或翻動泥土
 - 從事挖掘或翻動泥土工作時，必須灑濕作業範圍。



viii. 生產混凝土

- 如使用袋裝水泥〈不超過 50 公斤〉，承辦商須在頂部及 3 面有遮蔽的地方進行。
- 如使用散裝水泥，承辦商須在完全圍蔽的地方進行。

ix. 清理工地

- 嚴禁在工地焚燒垃圾及用煙火驅蚊。
- 拔除樹木或燈柱等時，承辦商必須灑濕作業範圍。
- 承辦商須將上述拆項目於一天內用隔塵布蓋好或貯於頂部及 3 面有遮蔽的地方。

x. 爆破

- 承辦商須在爆破之前灑濕爆破 30 米內的範圍。
- 承辦商不可在強風訊號或 3 號或更高風球時進行爆破，除非獲得礦務處長的批准。

c. 應呈報工程的管制規定

i. 工地平整工程

- 承辦商須符合一般及個別活動管制規定。

ii. 填海工程

- 如存料堆高於 1.2 米並在工地邊界 50 米以內，承辦商須以土面堅固劑處理。
- 承辦商須符合一般及個別活動管制規定。

iii. 建築物的拆卸工程

- 承辦商必須灑濕作業範圍
- 承辦商必須用隔塵板或隔塵布圍蔽外牆，而圍蔽的高度須超出拆卸構築物的最高水平至少 1 米。
- 移走存料堆後，承辦商須清理街道。
- 承辦商須符合一般及個別活動管制規定。

iv. 隧道出口 100 米內進行的工程

- 承辦商須符合一般及個別活動規定。

v. 建築物的地基建造工程

- 承辦商須符合一般及個別活動規定。

vi. 建築物的上蓋建造工程

- 如建築物周圍豎設有棚架，承辦商須以隔塵布或網等圍蔽至該棚架的最高水平。
- 承辦商須以隔塵布完全圍蔽物料吊機。
- 承辦商須符合一般及個別活動管制規定。



vii. 道路建造工程

- 承辦商須符合一般及個別活動管制規定。

d. 規管工程管制規定

i. 外牆或屋頂翻新

- 如建築物周圍豎設有棚架，承辦商須以隔塵布或網等圍蔽至該棚架的最高水平。
- 承辦商須以隔塵布完全圍蔽物料吊機。
- 移走存料堆後，承辦商須清理街道。
- 承辦商須符合一般及個別活動規定。

ii. 道路開掘或重鋪工程

- 挖掘出來的易生塵埃物料，承辦商須用隔塵布蓋好，或灑水維持濕潤並於 24 小時內移走或回填。
- 存料堆不可超越欄障。
- 移走存料堆後，承辦商須清理街道。
- 承辦商須符合一般及個別活動管制規定。

iii. 斜坡鞏固工程

- 承辦商須符合一般及個別活動管制規定。

3.2 噪音管制

a. 噪音標籤

承辦商在使用重量超過 10 公斤的手提撞擊式破碎機或供應 500 千帕斯或以上的空氣壓縮機前，必須向噪音監督(即環保署)申請噪音標籤，並將標籤貼於機身上。

b. 建築噪音許可證

i. 一般建築工程

- 除非取得有效的建築噪音許可證，承辦商不可在一般工作天晚上七時至翌晨七時或公眾假期(包括星期日的任何時間，使用機動設備進行建築工程及/或在指定範圍進行訂明建築工程。

ii. 撞擊式打樁

- 除非取得有效的建築噪音許可證，承辦商不可在任何時間進行撞擊式打樁工程。
- 除非得到行政長官會同行政會議頒令豁免，承辦商不可在晚上七時至翌晨七時或公眾假期(包括星期日)任何時間進行撞擊式打樁工程。

c. 工地施工噪音管理工作程序

除非已向本公司申請並已取得許可證(見附件八)，承辦商不得在一般工作天晚上七時至翌晨七時或公眾假期(包括星期日)的任何時間，在工地從事任何工作。



3.3 污水處理

- a. 承辦商進行任何預鑽樁、管樁、迷你樁、泥釘、閘板及其他可產生大量污水或泥水之工程項目，所有因工程所產生之污水或泥水必須經過妥善沉澱及隔泥隔沙，承辦商必須自行提供及裝置進行沉澱及隔沙，才可適當地步轉入本公司設置之污水處理系統進行污水處理。承辦商必須派員現場監督污水轉入本公司設置之污水處理系統，嚴禁做成過載及溢出。
- b. 除非取得有效的污水排放牌照，否則，承辦商不可將污水排入污水渠、雨水渠、內陸水域海岸水域。
- c. 承辦商欲排放的污水必須符合已取得的污水排放牌照的要求。

3.4 廢物處理

- a. 化學廢物
 - i. 承辦商在產生或引致產生化學廢物前，必須向環保署署長登記為產生者。
 - ii. 化學廢物在運往廢物處理設施前，承辦商須依照環保署法例要求作適當包裝，標籤及存放。
 - iii. 承辦商須聘用獲環保署發牌的廢物收集商為其提供收集及運載化學廢物服務，並將廢物送往已領取牌照的處理設施棄置。
 - iv. 承辦商處理化學廢物時須採取足夠預防措施以確保不會泄漏。
- b. 拆建廢料
 - i. 承辦商必須把拆建廢料分類按照本公司所定的廢物管理程序。
 - ii. 承辦商在棄置拆建廢料時，必須按照有關法例要求持有有效的載運入帳票前往指定的廢物處理設施。
 - iii. 承辦商使用運載拆建廢料的車輛，其車輛總重不得超過根據《道路交通(車輛登記及領牌)規例》指定的許可車輛總重。

4. 本發展項目的警告制度如下:

4.1 第一次違反: 口頭警告

4.2 第二次違反: 停止工作+通知僱用該承辦商之直屬機構

中包括:

- 嚴重、重複違反工地環保守則或環保法例；
- 沒有顧己及人，危及他人，損害及染污環境；
- 使用違規，不環保機械、設施及設備等等；

5. 若承辦商違反工地環保規定，本公司可有權停止其工作直至該等情況完全改善為止，承辦商不可藉此索償，包括金錢或時間上的損失。

6. 所有以上要求及守則，本公司有最終權利去解釋、執行和決定，承辦商不得異議。



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

附件 各工作許可證

目錄

1. 熱工序許可證
2. 貨車式起重機吊運許可證
3. 密閉空間工作台許可證
4. 機械挖掘許可證
5. 高空工作許可證
6. 電力工作許可證
7. 升降機槽內工作許可證
8. 限制時間工作許可證



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

附件一

熱工序許可證



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

附件二

貨車式起重機吊 運許可證



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

附件三

密閉空間工作台 許可證



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

附件四

機械挖掘許可證



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

附件五

高空工作許可證



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

附件六

電力工作許可證



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

附件七

升降機槽內工作 許可證



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

附件八 限制時間工作許可證



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGRG. (HONG KONG) LTD.

Hot Work Permit 熱工序施工許可證

Part 1 第一部分 Application 申請: (to be filled by the Sub-Contractor 由分判商填寫)

Type of Permit 證可證種類 ☐ Ground 地面工作 ☐ Welding at height 高空燒焊 ☐ Flammable Hazard Area 易燃環境

Name and post of the Contractor's Representative 公司負責人姓名及職位: _____

Company 公司: _____

Detailed Working Location 詳細工作地點: _____

Type of Hot Work to be undertaken 有關熱工作種類:

☐ Arc Welding 電弧焊接 ☐ Flame Cutting 氣體切割 ☐ Other 其他

Equipment Used 工具儀器應用: _____

Duration of Work 工作期間: From 由 _____ (Date & Time 日期及時間) To 至 _____ (Date & Time 日期及時間)

Safety Precaution Taken 安全預防措施: _____

Fire Fighting Equipment in the Vicinity 附近的地方設有滅火器: ☐ Fire Extinguisher ☐ Fire Blanket ☐ Spark Tray
滅火筒 防火氈 焊屎兜

All flammable and ignitable materials and debris nearby have been removed ☐ Yes 是 ☐ No 否

所有附近的垃圾、易燃及可燃物料已搬離工作地點

Sufficient Ventilation at the Working Location ☐ Yes 是 ☐ No 否

工作的地點有足夠的通風

Name of Worker(S) involved 參與有關工作的工人姓名: _____

All Worker Wear Suitable PPE ☐ Yes 是 ☐ No 否

所有工人已配戴合適個人防護裝備

All Worker involved in flame cutting received recognized training ☐ Yes 是 ☐ No 否

所有有關參與氣體切割的工人已接受認可的訓練

I have personally checked all above-mentioned items and certify that the information provided is correct and true.

本人已檢查上述的事項並證明所有提供的資料為正確及真實

Signature of Contractor's Representative

分判商負責人簽署 _____

Date and Time of Application 申請日期及時間 _____

Part 2 第二部分 Approval 批准申請: (to be completed by the Contractor's Supervisory Staff 由承辦商管理人員填寫)

I hereby certified that I satisfied the requirement are complied with and approved this permit-to-work.

本人證明以上的申請符合要求及批准申請

Signature of Supervisory Staff 承辦商管理人員簽署 _____ (Date & Time 日期及時間) _____

Part 3 第三部分 Completion 完成工作:

(to be filled by the Sub-Contractor and Contractor's Supervisory Staff 由分判商填寫及承辦商管理人員填寫)

The work has been completed and any ignition source was removed 工作已完成並已移除任何燃源頭

Signature of Sub-Contractor's Representative 分判商負責人簽署 _____

Date & Time of Completion 完工日期及時間 _____

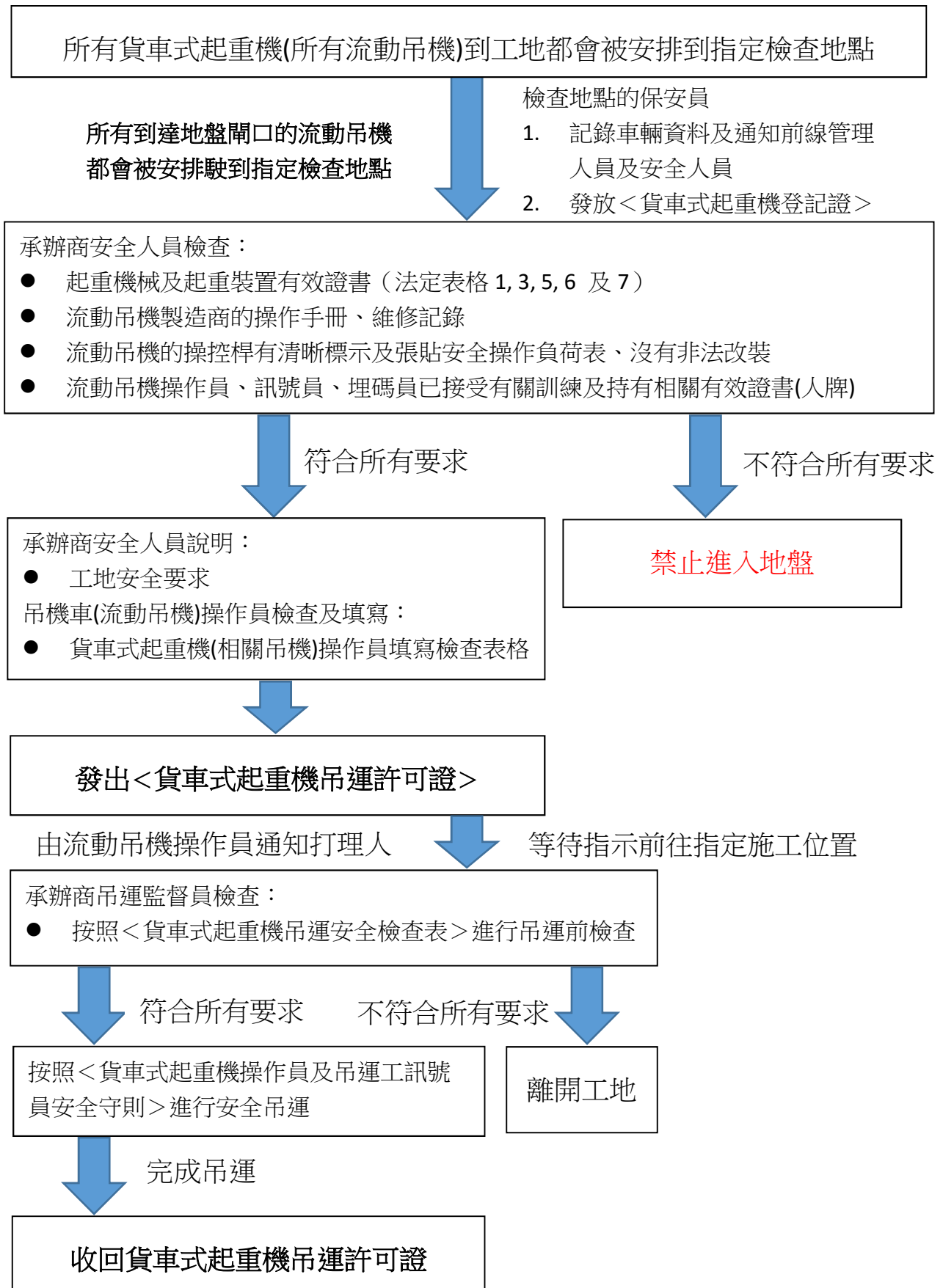
Signature of Supervisory Staff 承辦商管理人員簽署 _____

註: 以上許可證需要每天將正本放在施工位置以供查核, 及將副本交到本公司安全部存檔。



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

貨車式起重機(所有流動吊機)吊運監管流程圖



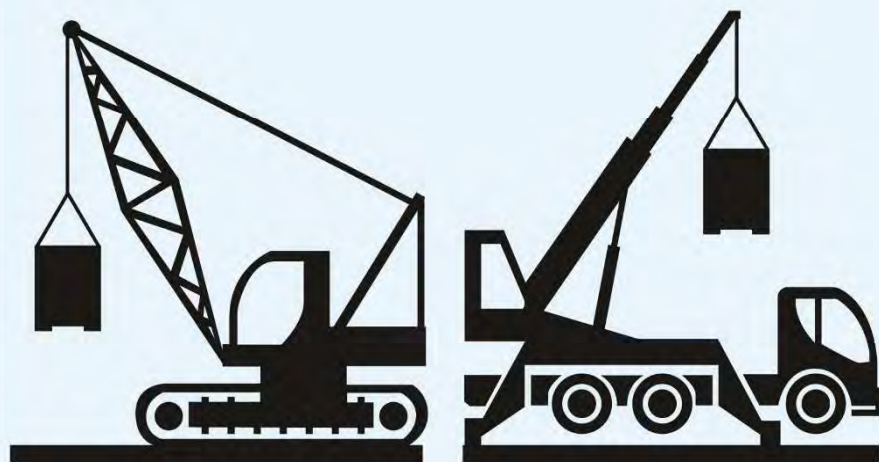


Temp-01



貨車式起重機登記證

起重機及操作員
須符合相關法例要求



注意事項



將許可證放置前面
擋風玻璃以便抽查



此許可證交還
閘口保安人員



使用葫蘆鉤吊運前
應申請工作許可證



貨車式起重機(吊機車)操作安全要點

- 吊機車不可進行任何改裝。
- 根據勞工處要求,吊機車上須放置操作手冊及維修紀錄表。
- 吊機車司機及操作員須攜帶有效駕駛執照及操作證明書/咭在身。
- 吊機車及車上所有吊具須有合格證書。
- 吊機車於使用前必須進行檢查及確保填妥表格一。
- 於吊運前必須確保地面狀況良好及平穩。
- 必須於吊運前完全伸出所有外航橫撐。
- 嚴禁使用複式吊索。
- 必須檢查吊機車各安全裝置,包括安全負荷自動顯示器及鴨脷等。
- 必須使用最少三倍的適當墊板墊於外航橫撐的腳掌下。
- 必須妥善圍封吊機車及吊運區域。
- 必須使用有足夠安全負重量的吊具進行吊運。
- 必須有合資格的吊運訊號員指揮吊運。
- 於起吊時訊號員必須吹哨子提醒附近工友。
- 必須於吊運物起吊到 500mm 高時稍作停留,由埋碼員/訊號員檢查吊運物是否穩固。
- 必須安裝倒車警報器



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

Plant No. 機器號碼: _____

Operator 機長姓名: _____

License Plate No. 車牌號碼: _____

Date of Inspection 檢查日期: _____

貨車式起重機檢查表格

P14-10A

	檢查情況 Inspection	狀況 Condition			備註 Remark
		Good	Poor	N/A	
Critical Parts 重要部件					
1. Configuration of Crane 吊機結構					
1.1 Outrigger 平水積腳	Configuration 配置				
1.2 Base 底座	Configuration 配置				
1.3 Slewing ring 轉盤	Configuration 配置				
1.4 Inner boom 二泵吊臂	Configuration 配置				
1.5 Extension boom 伸縮臂	Configuration 配置				
1.6 Hook 吊鉤	Configuration 配置				
1.7 Vehicle 車輛	Configuration 配置				
2. Structural Condition 結構狀況					
2.1 Outrigger 吊臂平水支撐臂					
2.1.1 Base Plate 支撐底掌	Deform 變型, Crack 裂				
2.1.2 Supporting Spherical Head 支撐和尚頭	Deform 變型, Crack 裂				
2.1.3 Outrigger Structure 平水腳結構	Deform 變型, Crack 裂				
2.1.4 Outrigger Horizontal Cylinder 平水積腳左右唧筒	Deform 變型, Crack 裂 Leakage 滲漏				
2.1.5 Outrigger Vertical Cylinder 平水積腳上落唧筒	Deform 變型, Crack 裂 Leakage 滲漏				
2.1.6 Oil Hoses 油喉	Crack 裂, Leakage 滲漏				
2.1.7 Mech Safety Lock 機械式安全鎖扣					
2.2 Base 底座					
2.2.1 Base Frame 吊臂底座結構	Deform 變型, Crack 裂				
2.2.2 Connecting Bolts & Nuts 連接車陣螺絲及螺母	Deform 變型, Crack 裂 Looseness 鬆緊度				
2.2.3 Truck Chassis Mounting 車陣固定位	Deform 變型, Crack 裂				
2.3 Slewing Bearing 轉盤螺絲					
2.3.1 Structural Members 結構部件	Deform 變型, Crack 裂 Looseness 鬆緊度				
2.3.2 Mounting Bolts 轉盤固定螺絲/螺母	Deform 變型, Crack 裂 Looseness 鬆緊度				
2.3.3 Slewing Motor & Gearbox 轉盤摩打及波箱	Deform 變型, Crack 裂 Looseness 鬆緊度 Leakage 滲漏				
2.4 Extension Boom 伸縮臂					
2.4.1 Structural Members 結構部件	Deform 變型, Crack 裂 Damage 損壞				



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

Plant No. 機器號碼: _____

Operator 機長姓名: _____

License Plate No. 車牌號碼: _____

Date of Inspection 檢查日期: _____

P14-10A

	檢查情況 Inspection	狀況 Condition			備註 Remark
Critical Parts 重要部件		Good	Poor	N/A	

2.4.2 Extension Boom Cylinder 伸縮臂積筒	Deform 變型, Crack 裂 Leakage 滲漏				
2.4.3 Hydraulic Hose 油喉	Deform 變型, Crack 裂 Leakage 滲漏				
2.4.4 Connecting Bolts & Nuts, pin & lock pin 連接螺絲及螺母 或 鎖邊及鎖牌	Deform 變型, Crack 裂 Looseness 鬆緊度				
2.5 Hook 吊鉤					
2.5.1 Hook Block 吊鉤結構	Deform 變型, Crack 裂				
2.5.2 Hook Swivel and Latch 吊鉤旋轉部份及保險扣	Deform 變型, Crack 裂 Looseness 鬆緊度				
2.5.3 Shackle 塞古	Deform 變型, Crack 裂 Looseness 鬆緊度				
3. Vehicle 車輛					
3.1 Tire 輪胎	Tread wear 軟紋深度				
3.2 Lighting & Signaling 照明燈及駕駛燈號	Function 運作狀況 Damage 損壞				
3.3 CCTV Reverse Device 倒車鏡頭視像系統	Function 運作狀況 Damage 損壞				
3.4 Ultrasonic Device 倒車雷達系統	Function 運作狀況 Damage 損壞				
3.5 Horn & Audible Reverse Warning Signal 響號 及 倒車響號	Function 運作狀況 Damage 損壞				
3.6 Vehicle Overall Performance 車輛狀況	Function 運作狀況				
3.7 Smoke Emission 黑煙排放	Visual 目視				

要求改善行動 Remedial Action Required	(Yes/No)	檢查員簽署 Inspector Signed _____	日期 Date: _____
------------------------------------	----------	---------------------------------	-------------------

*機長/機手簽名聲明: _____ Signature of Operator for declaration.	日期 Date: _____
---	-------------------

*簽署聲名有關車輛持有由註冊工程師檢驗後簽發的表格 1、3 及 5，並在有關法定表格發出後並未有進行結構上的改裝或進行任何足以影響吊運安全改裝

Signature of operator for declaration that the captioned Lorry-mounted Crane obtained a valid Form1, 3 and 5 issued by a RPE.

Also, no structural amendment is made after the Forms issued or no amendment is made which may danger the process of lifting.



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

貨車式起重機吊運安全檢查表

工地名稱：		日期：	
公司/分判商名稱(貨車式起重機車牌)：			
貨車式起重機操作員姓名：			
吊運監督員姓名：			
吊運工作位置：			
檢查日期：			
檢查時間：			
一	貨車式起重機檢查事項	是	否
1	是否具備《貨車式起重機吊運許可證》		
2	貨車式起重機的相關文件是否全部齊全(包括：起重機及起重裝置有效證明書、起重機製造商操作手冊、維修記錄簿、起重機操作員、訊號員、埋碼員等有關人員的有效證書)		
3	吊運區域地面是否足夠堅實、平坦及可以承受起重機在操作期間所產生的負荷		
4	起重機是否處於水平狀態進行吊運		
5	全部支重腳是否完全伸展且與地面保持直角 90 度		
6	全部支重腳及浮盤是否沒有損毀或鬆脫		
7	支重腳的浮盤底墊是否合適(最少 3 倍於浮盤面積且沒有損壞)		
8	吊運剎掣是否操作正常		
9	安全裝置是否正常運作(包括起重顯示器、頂咭及角度限位裝置)		
10	起重機吊臂上是否張貼安全負重量顯示圖		
11	起重機操作桿上是否貼上清晰指示標籤		
12	起重臂及轉動方向是否運作正常		
13	警報響號、燈號是否運作正常		
14	吊勾保險扣是否運作正常		
15	工作範圍是否已全面圍封並張貼警告告示，且沒有人逗留在吊運區工作		
16	是否有吊運信號員在現場指示起重機和吊運物的移動		
17	吊運區附近是否沒有潛在危險(如架空電纜、附近有其他吊運工作等)		
二	起重裝置檢查事項	是	否
1	吊索/帆布帶是否有使用塞古/勾環/環圈/鏈環連接於吊勾上		
2	起重裝置是否有有效檢驗證書，且使用正確的顏色辨別碼		
3	吊具的吊勾保險扣是否正常運作		
4	吊臂勾與吊具之間角度是否不大於 90 度		
5	吊重物是否已安裝導繩		
6	當吊運多枝鋼筋、竹枝或鐵通等過長物料時，是否用吊具捆綁 2 圈		
7	放置物料前，是否使用合適的墊料承托物料		
		吊運監督員簽署：	

註：1. 所有檢查項目必須全部符合要求方可進行吊運，否則停止吊運工作：

2. 嚴禁使用葫蘆勾(如事先獲得《使用葫蘆勾工作許可證》者除外)。



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.



貨車式起重機吊運許可證

車牌: _____

公司: _____

日期: _____

入場時間: _____

離場時間: _____

注意事項



將許可證放置前面
擋風玻璃以便抽查



此許可證交還
閘口保安人員



使用葫蘆鉤吊運前
應申請工作許可證

此吊機車已進行登記及檢查



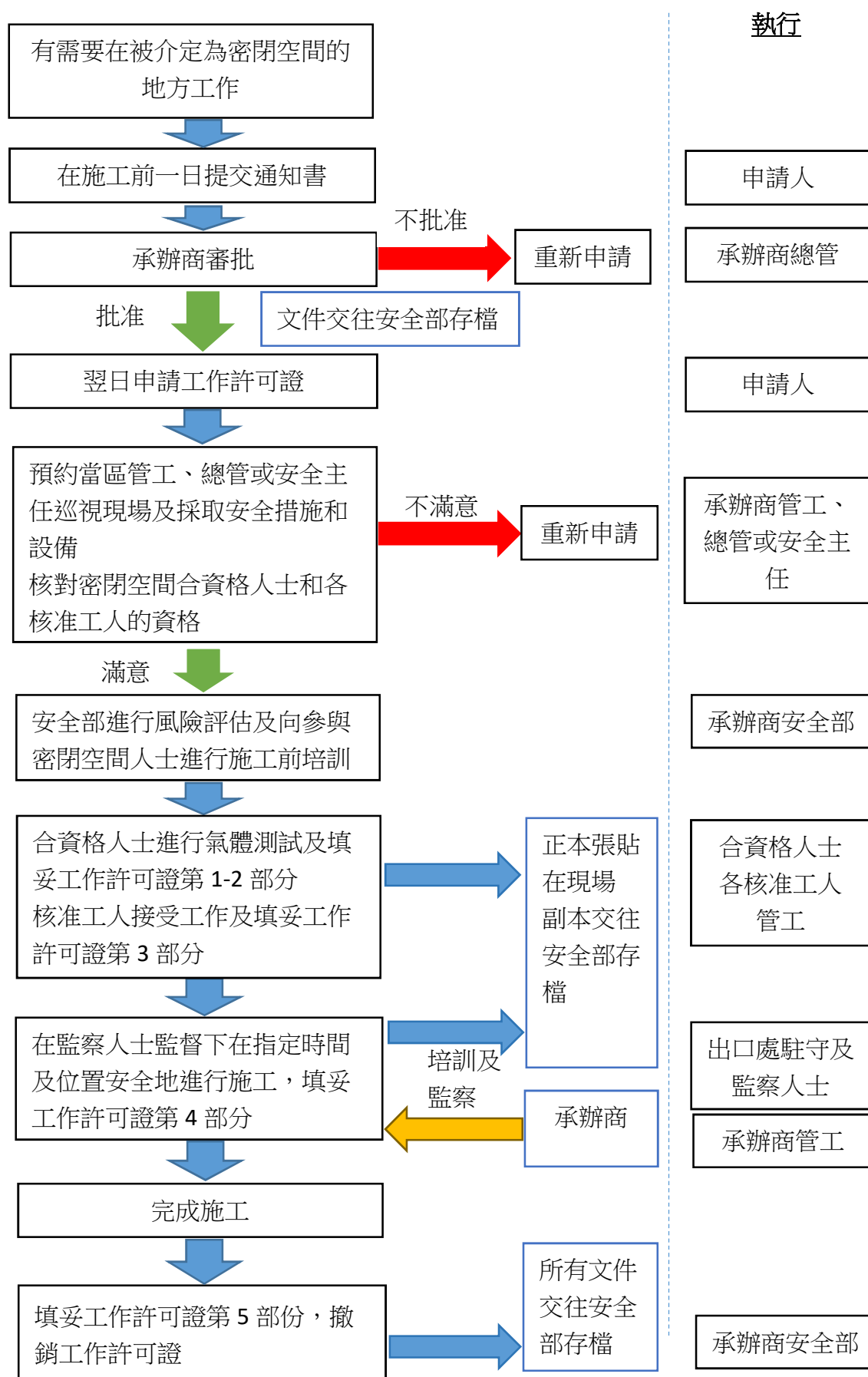
貨車式起重機(吊機車)操作員及吊索工/訊號員安全守則

1. 吊機車上起重機械及起重裝置(如纜索，帆布帶，塞古，鐵鏈，鉤，環等吊具)須有合資格檢驗人士發出的有效證明書。有效證明書副本須保存在吊機車上。無有效證明書的起重機械及起重裝置不能使用及必須棄置，不得存放在吊機車上。
2. 吊機車及起重機械須每週由吊機車操作員/有資格人員檢查，並填寫檢查報告在法定“表格一”內。已填寫的“表格一”正本保存在吊機車上。檢查時，如發現有不妥善情況或毛病，應立即停止使用並報告管理人員，以安排檢查，維修或更換。
3. 吊機車司機及操作員須攜帶有效駕駛執照及操作證明書/咭在身。
4. 吊索工/訊號員須有足夠訓練及經驗。
5. 如有吊機車到達工地須通知工地管理人員或保安，以便安排工地管理人員進行檢查和安排合適培訓。
6. 吊機車載物不可超重，超高，超長，超闊或超載乘客。
7. 吊機車在倒車時，必須有訊號員/帶車員指揮。
8. 行車/吊運時，注意附近建築物/結構/架空電纜的高度，以防碰撞。小心架空電纜，不可過於接近。行車時收妥吊臂及降至低水平。
9. 在吊運區妥善停放吊機車後，檢查好地面環境，吊運前必須完全伸展橫撐，而橫撐不可在鬆軟地面作支撐。
10. 吊機車上所有橫撐須完全伸出，橫撐和地面之間須要墊好。伸出橫撐時，注意旁邊不動的固定結構物，以防被夾在橫撐與不動的固定結構物之間。
11. 必須檢查吊機車各安全裝置，包括安全負荷自動顯示器及鴨脷等
12. 工作期間，遵守工地管理人員的安排/指示。
13. 吊運期間如發現有影響吊運安全的情況，應與工地管理人員商討，以便其作出適當安排/行動。
14. 使用吊具前，須作檢查，如發現損壞，須立刻停止使用並更換，不可使用損壞的吊具。
15. 查看標記在吊具上安全負重量。吊運的物料，不可超越吊具的安全負重量。
16. 牢固結紮物料，以防吊運途中跌下。尖銳物料邊應加保護墊，以防損壞吊具。
17. 如起重機械操作員視線受阻，應由訊號員以共識的訊號指揮。
18. 不可將纜索，鐵鏈等打結。
19. 嚴禁使用複式吊索。
20. 不得將吊運物在工人上空經過。所有人員不可經過和停留在吊運中的物料下面。
21. 吊運長/重物料，應加設引繩輔助，以便易於控制。
22. 不可站在/停留在吊運中的物料上。
23. 小心起重機械的旋轉部份，不可接近，以防被碰撞。
24. 起重機械應妥善圍封，如有人接近須予以驅趕。
25. 起重機械危險轉動部份的護罩，應保持在正確/有效位置上。
26. 配戴個人防護用具，如安全帽，手套，安全鞋，反光衣等。如涉及高空工作，要使用安全帶。
27. 卸下物料時，小心手被夾在物料之間或與地面之間。
28. 吊運的物料不可超越起重機械的安全負重量。吊運動作應柔和，不可將起重機械急速轉向或急停。
29. 吊重時，不可斜拉，重物離開地面前，不可迴轉。
30. 嚴禁將吊機交予未持有有效操作證書人士進行操作。



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

執行密閉空間工作許可證流程





中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

密 閉 空 間 工 作 通 知 書

工地: _____

第一部份：由申請人填寫

因工程需要，敝公司現申請於_____年____月____日____時至____時，安排_____名工人到
_____ (樓層及位置) 進行_____工作，初步評估該工作地方可能為密閉空間。

申請人姓名：_____ 申請人簽署：_____ 申請人電話：_____

申請人及職位：_____ 申請日期及時間：_____

預計參與人員：

	密閉空間 合資格人士	姓名		證件有效期：	
1	密閉空間 核准工人	姓名		證件有效期：	
2	密閉空間 核准工人	姓名		證件有效期：	
3	密閉空間 核准工人	姓名		證件有效期：	
4	密閉空間 核准工人	姓名		證件有效期：	
5	密閉空間 核准工人	姓名		證件有效期：	
6	密閉空間 核准工人	姓名		證件有效期：	
7	密閉空間 核准工人	姓名		證件有效期：	

注意

本通知書必須於施工前一日提交及簽妥，以便安排有關合資格人士進行檢查及準備設備

本通知書必須獲工地負責人簽署方為有效

每張工作許可證有效期不可超過每一日的 10 小時，不可逾時工作

第二部份：承辦商審核及審批 (由承辦商總管或項目經理填寫)

經審核，現批准/拒絕#以上申請。

審核人姓名：_____ 審核人簽署：_____ 日期及時間：_____

正本：承辦商必須自行交予安全部作存檔

副本：承辦商必須自行拷貝張貼於工作地點


中國建築工程(香港)有限公司

CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

地盤 : 編號: _____

合約編號 :

項目 : 密閉空間現場危險評估報告

視察日期 : _____ 涉及承判商 : _____ 位置 : _____

工作項目 : _____ 預計工作時間 : _____ 至 _____

指明危險檢查

項目	情況	有潛在危險	沒有潛在危險
1	因發生火警或爆炸而引致任何正在工作的人嚴重損傷的危險		
2	因體溫上升而引致任何正在工作的人喪失知覺的危險		
3	因氣體、煙氣、蒸氣或空氣貧氧而引致任何正在工作的人喪失知覺或窒息的危險		
4	因任何液體水平升高引致任何正在工作的人遇溺的危險		
5	因自由流動的固體而引致任何正在工作的人窒息的危險		
6	因陷入自由流動的固體而引致任何正在工作的人無力達至可呼吸空氣的環境的危險		
7	其他:		

 評定為密閉空間 : ☐是 ☐否

安全及健康措施建議:

請參閱工作許可證

報告人姓名: 職位 : 合資格人士(密閉空間)

簽署及日期 : _____

測試項目	Test Results	
	氣體測試 標準數值	測試時間 a.m. / p.m.
1. 氧氣 Oxygen	19.5~23.5%	%
2. 易燃氣體 Combustible gas	<25 %LEL	%LEL
3. 一氧化碳 Carbon Monoxide	<35 (ppm)	(ppm)
4. 硫化氫 Hydrogen Sulphide	<10 (ppm)	(ppm)
測試人姓名 :		
簽署 :		



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

密閉空間工作許可證明書

工地：_____ REF No. _____
 日期：_____
 時間：由 _____ AM/PM 至 To _____ AM/PM
 位置：_____
 工作類別：_____

1) 工作安全器具/裝備及所採取的安全措施：(由密閉空間合資格人士填寫)

請把有須要的項目內畫上✓及把有不須要的項目內畫上X。

適合的呼吸器具		個人安全警報器		三腳架		其他：_____	
照明		吹風機		抽風機		安全上落通道	

所採取的安全措施：_____

2) 氣體測試記錄：(由密閉空間合資格人士測試及填寫)

測試地點：_____

使用儀器： 型號及上次校準日期_____

	測試項目	測試結果 Test Results		
		標準數值	測試時間 a.m. / p.m.	測試時間 a.m. / p.m.
			第一次	第二次
1.	氧氣 Oxygen	19.5~23.5%	%	%
2.	易燃氣體 Combustible gas	<25 %LEL	%LEL	%LEL
3.	一氧化碳 Carbon Monoxide	<35 (ppm)	(ppm)	(ppm)
4.	硫化氫 Hydrogen Sulphide	<10 (ppm)	(ppm)	(ppm)
		測試人姓名：		
		簽署：		
		日期及時間：		

注意

- 由密閉空間合資格人士進行氣體測試
- 如氣體測試結果不在標準數值之內，應立即**禁止**任何人內進及即時通知工地總管或安全主任
- 每隔5個小時需再次進行上述之氣體測試
- 每張工作許可證有效期不可超過每一日的10小時，不可逾時工作



中國建築工程(香港)有限公司

CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

3) 接受安全工作：(由密閉空間核准工人填寫)

本人明白及會遵守進入密閉空間安全守則，並願意使用安全設備和器具及會依照上述指定工作時間前離開工作地點。

姓名：_____ 簽署：_____ 證件有效期：_____

姓名：_____ 簽署：_____ 證件有效期：_____

姓名：_____ 簽署：_____ 證件有效期：_____

姓名：_____ 簽署：_____ 證件有效期：_____

姓名：_____ 簽署：_____ 證件有效期：_____

姓名：_____ 簽署：_____ 證件有效期：_____

姓名：_____ 簽署：_____ 證件有效期：_____

姓名：_____ 簽署：_____ 證件有效期：_____

姓名：_____ 簽署：_____ 證件有效期：_____

姓名：_____ 簽署：_____ 證件有效期：_____

姓名：_____ 簽署：_____ 證件有效期：_____

姓名：_____ 簽署：_____ 證件有效期：_____

4) 監管 (由總管或管工填寫)

本人確定工人已依照並確定上述點工作安全，本人會依照法例派人在出口處監察工人安全，直至工人離開該工作地點。

總管或管工姓名：_____ 簽署：_____ 日期及時間：_____

在出口處駐守及監察人士

駐守及監察人士姓名：_____ 簽署：_____ 日期及時間：_____

5) 工作完成 (由總管或管工填寫)

工作完成，現註銷此工作許可證明書，如要連續施工，必須再行申請許可證。

總管或管工姓名：_____ 簽署：_____ 日期及時間：_____

註：以上許可證需要每天將正本放在施工位置以供查核，及將副本交到本公司安全部存檔。



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

挖掘許可證 PERMIT – TO – DIG

安全部熱線	緊急應變組組長	負責人 Responsible Person (RP)	
Safety Hotline	Emergency Coordinator	承辦商	分判商 ()
		Name:	Name:
		Tel.:	Tel.:

工作地點 Location of Work (Area, Chainage, etc.):					
Nature of Work (please tick) 工作性質 (請✓)	Boring/Coring 鑽探	Driving Piles 打聞板樁	Extracting Piles 拔聞板樁	Excavation/ Backfilling 挖掘 / 回填	Others (please specified 其他(請列明)
工作之資料 (尺寸, 深度等) Details of Work (size, depth, etc.):					

第一部份：探測地下設施

Part 1 Detection / Locating of Underground Utilities

(To be completed by a Competent Person registered at EMSD 必須由在機電工程處註冊之合資格人士填寫)

- 1.1 合資格人士姓名 職位
Name of Competent Person: _____ Designation: 合資格人士 _____
- 1.2 合資格人士證明書號碼
Certificate No. / Registration No. of Competent Person: _____
- 1.3 探測器之種類, 型號及機身編號
Type, Model and Serial No. of Detector / Locator used: _____
- 1.4 使用探測器所測定資料
Findings from Detector / Locator*: _____

- 1.5 地下設施之圖則資料 (註明圖則編號)
Finding from Utility Drawing* (specify drawing no.): _____

- 1.6 其他由公共設施公司所提供之資料
Other information obtained from Utility Companies*: _____

- 1.7 所訂探孔之數目, 位置及資料
Number, Location and Details of Trial Pits*: _____

附註: *附上相片()張及簡圖()張

Remark: *Attach photos () number & sketch () number.



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

挖掘許可證 PERMIT – TO – DIG

第二部份：挖掘前準備工作

Part 2 Preparation Works for the Excavation

(To be completed by the Responsible Person 由負責人士填寫)

2.1 由探孔所得之資料：

Finding from Trial Pits: _____

2.2 保護地下設施之方法 (如有需要時)

Utility protection method and precaution (if required): _____

2.3 已於 On _____ (日期 Date) _____ (時間 Time) 與 _____ (公共設施公司 Utility Companies) _____ (先生 Mr.) 同意如下 agreed the following _____.

2.4 挖掘支撐方法 (擋土結構，分級等)

Excavation supporting method (shoring, bench or batter): _____

2.5 其他有關之保護措施

Other precautions necessary: _____

2.6 使用之機械及工具

Plant & Equipment to be used: _____

2.7

工作人員訓練 Briefing to site personnel involved

本人明白保護設施的所需預防措施之要求並確保不會損壞設施，如有疑問立即停止並詢問有關管工。

I fully understand the precautions that are required with regard to the reverse and will ensure no damage to the utilities. If in doubt, I will ask the responsible person above.

	姓名 Name	身份証號碼 (首 4 個字) H.K.I.D. No. (first 4 digits)	職位 Post	簽署 Signature	訓練日期 Date of training
1					
2					
3					
4					
5					
6					
7					

註地盤委派地底設施勘察合資格人士*已向所有有關工序之人員提供挖掘許可証訓練。
The on-site designated supervisor / competent person of underground utilities detection* had conducted Permit-to-dig Training to all related site personnel.

合資格人士姓名: _____

簽署: _____



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

挖 掘 許 可 證 PERMIT – TO – DIG

上述之措施，程序及其所需物料已準備好後，可以正式進行挖掘或圍板工程。

The above-mentioned precautions and procedures has be followed and necessary equipment and materials (e.g. shoring sheets) are available, the excavation/sheet piling driving or extracting can be carried out.

簽署 Signature: _____	日期: Date: _____	簽署 Signature: _____	日期: Date: _____
負責人姓名 Name of RP: _____	職位 Title: _____	負責人姓名 Name of RP: _____	職位 Title: _____

簽署 Signature: _____	日期: Date: _____
------------------------	--------------------

合資格人士姓名
Name of RP: _____

正本 Original	副本 Copy 1	副本 Copy 2	副本 Copy 3
由負責人士存放 Kept by the Responsible Person (RP)	在工作地點展示 Displayed at the excavation	由合資格人士存放 Kept by the Competent Person for detecting U/G utilities	由安全部存放 Submitted to Safety Department once this Permit is issued.

註：以上許可證需要每天將正本放在施工位置以供查核，及將副本交到本公司安全部存檔。


中國建築工程(香港)有限公司

CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

進行高空工作通知書

承辦商: _____

第一部份：由申請人填寫

因工程需要，現申請於____年__月__日__時至____年__月__日__時，安排____名

工人到____(樓層)G.L.____(位置)進行高空工作。

涉及高危工序類別：
☐吊運 ☐機械 ☐防火 ☐電力 ☐高空工作 ☐其他_____

申請人姓名：_____ 申請人簽署：_____ 申請人電話：_____

申請人職位：_____ 申請日期及時間：_____

預計參與人員：

分判監督人員 姓名			
工人姓名		工人姓名	
工人姓名		工人姓名	
工人姓名		工人姓名	

****注意****

本通知書必須於施工前一日提交及簽妥

本通知書必須獲承辦商各負責人簽署方為有效

第二部份：承辦商審核 (由承辦商總管填寫)

承辦商總管姓名：_____ 承辦商總管簽署：_____ 日期及時間：_____

第三部份：承辦商審批 (承辦商工程師或其授權人填寫)

經審核，現批准/拒絕#以上申請。

工程師姓名：_____ 工程師簽署：_____ 日期及時間：_____

註 正本：請自行交予安全部作存檔

副本：請自行拷貝張貼於各工作地點



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

進行高空工作許可證

第一部份 (施工前準備)		
承辦商名稱: _____	工作日期及時間: _____ / _____ / _____ a.m./ p.m.	
許可證申請人士(分判商現場監督人士填寫)	進行高空工作的位置	
姓名 _____ 電話: _____	G.L. _____ 至 _____ 樓層 _____	
1. 進行高空工作的類別		
2. 已通知總管/當區管工工作位置	✓ / X / 管工姓名 _____	
3. 通知安全部/工程師部有關工作位置	✓ / X	
4. 由分判商正確圍封進行高空工作的位置及加上足夠警告告示	✓ / X	
5. 已檢查所需要的工作台	✓ / X / 不適用	
6. 設置牢固防墮設備	✓ / X / 不適用	
執行監督檢查人士	姓名: _____	簽署及日期: _____
總管批准上述許可證	姓名: _____	簽署及日期: _____
第二部份 (現場檢查)		
	姓名	簽署
現場監督負責人	1. _____	_____
參與工人	2. _____	_____
	3. _____	_____
	4. _____	_____
	5. _____	_____
	6. _____	_____
1. 每名員工已接受相關安全培訓	✓ / X	
2. 每名員工已配戴合規格個人防護裝備	✓ / X	
3. 工作台適合於現場使用	✓ / X	
分判商執行監督檢查人士: (現場監督) 姓名及簽署及日期:		
承辦商當區管工或助理管工: 姓名及簽署及日期:		
第三部份 (完成工序)		
工作完成, 並將地方回復安全狀態, 現註銷此工作許可證明書, 如要連續施工, 必須再行申請許可證。		
總管或管工姓名: _____ 簽署: _____ 日期及時間: _____		

註: 以上許可證需要每天將正本放在施工位置以供查核, 及將副本交到本公司安全部存檔。

PERMIT-TO-WORK CERIFICATE FOR WORKS WITH ENERGISED INSTALLATIONS (Plant Room/ Ceiling Void)
電力工作許可證(已打永久電的制房內/天花內)

Permit No. 工作許可證編號： _____

PART 1: Work Details (To be filled and signed by Contractor's Person-in-charge of the work) 第一部份: 工作細節 (由承辦商工程主管填寫和簽署)				
Contract No. 合約編號		Contractor 承辦商		
Name 姓名		Position 職位		
Date 工作日期		Description of Work 工作性質		
Location of Work (Layout Plan)* 工作位置 (附位置圖)		Time Period 時間		
		Signature & Date 簽署和日期		
PART 2: Workers Assigned (Input trade of work. For REW, input Registration no. & Grade) 第二部份: 工人姓名 (須填寫工種。如是註冊電工，須填寫註冊號碼及級別)				
	Name 姓名	Trade 工種	Worker's Registration Card No.	REW Registration no. & Grade 註冊電工 註冊號碼及級別
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
PART 3: UNDERTAKING (To be filled in by Person-in-charge of the work) 第三部份: 審批 (由工程主管填寫)				
I acknowledge receipt of this permit-to-work certificate and the works meet the safety requirements. 本人確認收到此工程許可證，工作符合安全要求的規定。				
Person-in-charge of the work 工程主管		Signature 簽署		Date & Time 日期和時間
B.S. Engineer (For B.S's Work only) 機電工程師 (機電工程) or 或 General Foreman (For Builder's Work only) 地盤總管 (建造工程)		Signature 簽署		Date & Time 日期和時間
Client's Representative 業主代表		Signature 簽署		Date & Time 日期和時間

Remarks 註：

Permit upon issue shall be kept by the Person-in-charge of the work/ Safety Department. A copy of the permit shall be displayed on spot for checking.
許可證於簽發後由工程主管/安環部保存。許可證副本須展示於工作地方，以供查閱。

Any violation of the safety requirements, the validity of this permit can be cancelled immediately without warning.

若發生任何違反安全要求的情況，此許可證可被即時取消而不予警告。

This Permit is only applicable to those activities associated with isolation of neutral conductor. When the isolation of neutral conductor is not applicable, the safety measures mentioned in the Appendix 15 of Electricity (Wiring) Regulations COP shall be followed.

此許可證只適用於已將中性線隔離的情況。如在中性線無法被隔離的情況下，應根據電力（線路）規例工作守則附錄 15 的安全預防措施進行工作。

PERMIT-TO-WORK CERIFICATE FOR WORKS WITH ENERGISED INSTALLATIONS (Plant Room/ Ceiling Void)
電力工作許可證(已打永久電的制房內/天花內)

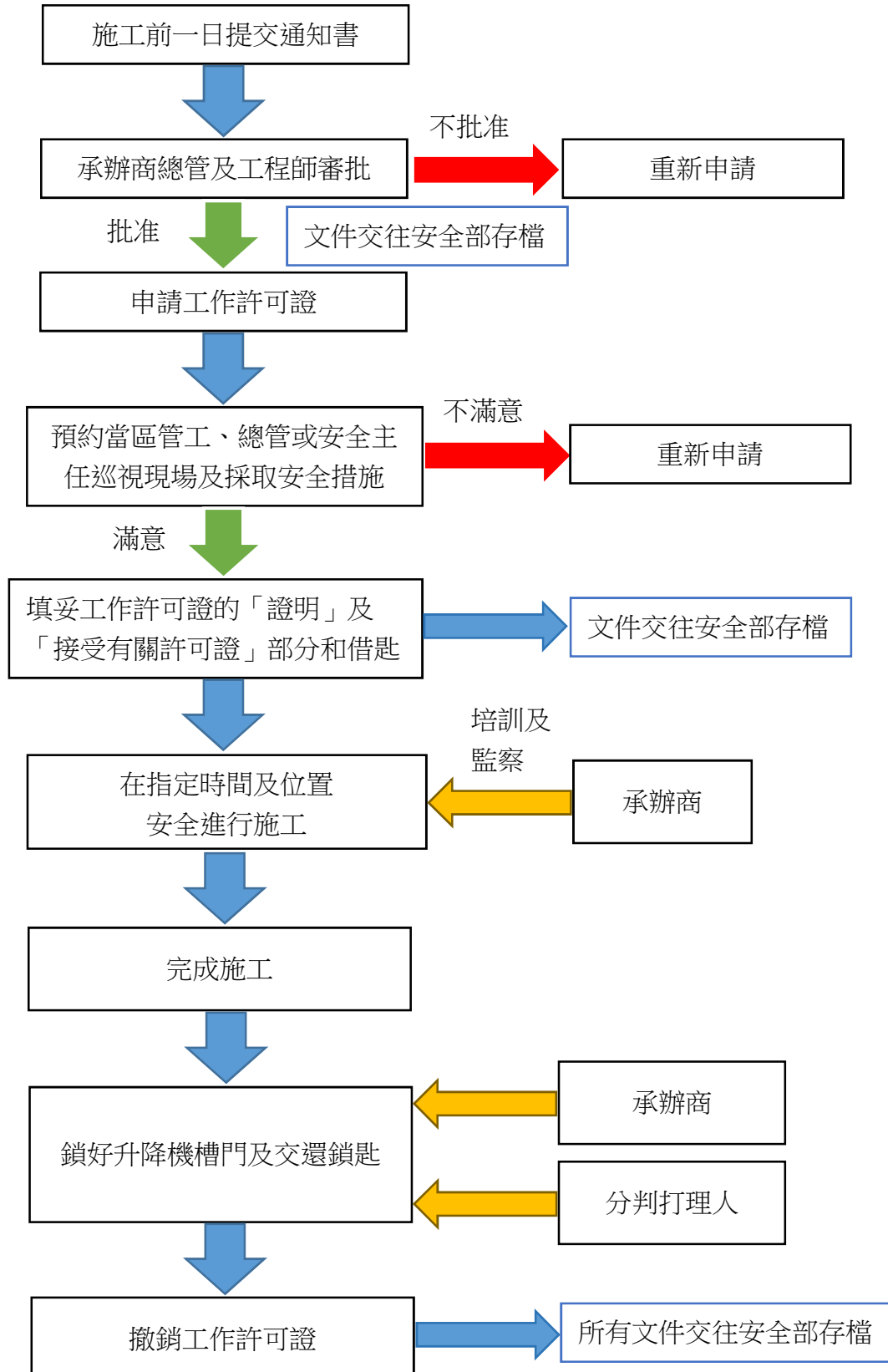
PART 4: ASSESSMENT (To be completed by Registered Electrical Worker and Safety Officer) 第四部份: 評估 (由安全主任及註冊電工填寫)		
1.	The Work is necessary and at the right place 已確定該位置正確及須要進行工作	☐ Yes 是 ☐ No 否
2.	Working place has adequate lights 工作地點有足夠的光線或照明	☐ Yes 是 ☐ No 否
3.	Temporary lighting and electric tools was operated at 110V or below 使用之臨時照明及電工具(如有)為 110V 或以下	☐ Yes 是 ☐ No 否
4.	Suitable safe working platform has been provided. 合適的安全工作台已經提供	☐ Yes 是 ☐ No 否
5.	REW Check that testing instrument is working in order 註冊電工已確定測試儀器正常運作	☐ Yes 是 ☐ No 否
6.	Works at risks of contacting energized installation within 1.5m vicinity 工作範圍附近(1.5 米)有帶電設備	☐ Yes 是 ☐ No 否
7.	Switch off & lock up the relevant power supply and display warning sign before commencing work near live conductor 如工作範圍有機會涉及電力/帶電導體, 已關掉有關電源, 把電掣上鎖及扣上警告牌	☐ Yes 是 ☐ No 否
8.	Others 其他: 如需供電測試, 必須配戴合適個人防護裝備 (如絕緣工具、絕緣手套、安全鞋、絕緣地蓆)	☐ Yes 是 ☐ No 否
PRE-WORK EVALUATION (To be completed by Registered Electrical Worker and Safety Officer) 工作前現場評估 (由安全主任及註冊電工填寫)		
Item 評估項目	Results 評估結果	Extra Safety Measures 額外安全措施
Works' Details 工作性質詳情		
Exact area where affected by works 工序的影響範圍		
Tools / materials involved 工序所涉及的工具 / 物質		
PPE Required for that work 工序所需要的個人防護裝備		
Others 其他		
Based on my assessment above, permit-to-work* is ☐ approved/ ☐ is not approved. 根據本人上述評估, 工作許可證*獲 ☐ 獲批准/ ☐ 不獲批准		
HA Vender Registered Safety Officer (Registration no.:) 安全主任(註冊號碼:)	Signature 簽署	Date & Time 日期和時間
HA Vender Registered Electrical Worker (Registration no. & Grade) 註冊電工(註冊號碼及類別:)	Signature 簽署	Date & Time 日期和時間
PART 5: Cancellation of the Permit 撤銷許可證 I confirm that the above related works had been completed and the area had been re-stored to safe condition. 第五部份: 本人確實上述相關工作已經完成及有關位置已經回復安全狀態。		
Person-in-charge of the work 工程主管	Signature 簽署	Date & Time 日期和時間
B.S. Engineer (For B.S's Work only) 機電工程師 (機電工程) or 或 General Foreman (For Builder's Work only) 地盤總管 (建造工程)	Signature 簽署	Date & Time 日期和時間
REW 註冊電工	Signature 簽署	Date & Time 日期和時間
Client's Representative 業主代表	Signature 簽署	Date & Time 日期和時間

*Delete as appropriate 請刪除不適用 註: 以上許可證需要每天將正本放在施工位置以供查核, 及將副本交到本公司安全部存檔。



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

升降機槽內工作許可證流程





中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

升降機槽內工作通知書

工地: _____

第一部份：由申請人填寫

因工程需要，敝公司現申請於____年__月__日__時至__時，安排____名工人到地盤_____(樓層及位置)至_____(樓層及位置)的升降機槽內_____(升降機槽編號)進行工程。

申請人姓名：_____ 申請人簽署：_____ 申請人電話：_____

申請人及職位：_____ 申請日期及時間：_____

預計參與人員：

監督人員姓名	
工人姓名	
工人姓名	
工人姓名	
工人姓名	

****注意****

本通知書必須於施工前一日提交及簽妥，以便安排有關合資格人士進行檢查
本通知書必須獲地盤各負責人簽署方為有效

第二部份：審核（由總管填寫）

地盤總管姓名：_____ 地盤總管簽署：_____ 日期及時間：_____

第三部份：審批（機電工程師或其授權人填寫）

經審核，現批准/拒絕#以上申請。

工程師姓名：_____ 工程師簽署：_____ 日期及時間：_____

正本：分判商必須自行交予安全部作存檔

副本：分判商必須自行拷貝張貼於各工作地點



工作許可證 (升降機槽內工作)
Permit to Work (Work inside lift shaft)

Permit No.許可證號碼: _____

Project地盤名稱 : _____
Location 工作地點 : (Lift shaft no.升降機槽) (Floor 樓層)
Description of work工作性質: _____

Company 公司 : _____ 日期 Date : _____
Permit valid from 許可工作由 : _____ hrs. to 至 : _____ hrs.

Foreseeable hazards associated with the work 可預見危害:

- ☐ Falling Objects 物料從高處下墮
- ☐ Fall of person 人體從高處下墮
- ☐ Insufficient Lighting 燈光不足
- ☐ Electric Shock 觸電
- ☐ Simultaneous working by different parties (e.g. workers, contractors) at two separate levels within the lift shaft 不同人士(例如工人、承建商)在升降機槽內兩個不同層面同時工作
- ☐ Other, please specify 其他,請註明 _____

Safety precautions taken 安全措施:

- ☐ Suitable working platform w/valid CSSR-Form 5 檢驗合格的工作台及表格五
- ☐ Independent lifeline fixed to suitable anchorage point 繫扣於合適穩固點上的獨立救生繩
- ☐ Full body harness w/fall arrestor 全身式安全帶連防墮器
- ☐ Guardrail / Toe-board / Wire net 井口圍欄 / 踢腳板 / 防墮鐵網
- ☐ Safety helmet / Gloves / Eye-protector/ Ear-protector 安全帽 / 手套 / 眼罩 / 耳塞
- ☐ Warning signs 警告牌
- ☐ Portable lighting device 燈光設備
- ☐ Proper isolation of electricity and grounding 良好絕緣及接地
- ☐ Prominent display of work permit 於工作地點張掛工作許可證
- ☐ Catch Fence 防墮物屏障
- ☐ Other, please specify 其他,請列明 _____

Ensure that all lift shaft openings above the working level are properly fenced off and completed with wire net and toe-board

確保工作地點上方之升降機槽口,已經圍封及裝有防墮鐵網及踢腳板



工作許可證
Permit to Work

Permit No.許可證號碼: _____

Certification 證明

I certify that the above precautions have already been taken. I had briefed the safety procedures to all workers involved in the work and they will be strictly followed in the duration of the work.

本人證明前述安全措施已全部妥善執行。本人已清楚向下列工作人員講解有關安全工作步驟，並保證遵守。

Signature簽名: _____

Permit holder (持有許可證人士)

Builders Responsible Person (*工程負責人)

(to be signed before commencement of works 開工前簽發)

Acceptance of the Permit 接受有關許可證

I have read and understood this Permit and shall undertake to work in accordance with all the conditions laid down in it.

本人已細閱及明白有關許可證，並承諾於工作中謹遵有關條款。

Signature簽署: _____

Supervisor (監督人員)

Permit Holder (持有許可證人士)

Details of the work team 工作人員資料:

Supervisor 監督人員姓名: 1. _____, 2. _____

Workman 工作人員姓名: 1. _____, 2. _____, 3. _____

4. _____, 5. _____, 6. _____

7. _____, 8. _____, 9. _____

Permit cancellation 撤銷許可證

I certify that the work under this permit is completed. All workers, tools and equipment are cleared from the job area.

本人證明此許可證內所述之工作經已完成。全部工人、工具及物料已搬離工作地點。

Signature簽署: _____

Supervisor (監督人員)

Permit Holder (持有許可證人士)

(to be signed upon completion of works 完工後簽發)

Remarks: * Builders Responsible Person for the certification of the Permit-to-work should be at the foreman level or above.

備註: * 工程負責人必須為管工級別或以上之人士，方可簽發。

註：以上許可證需要每天將正本放在施工位置以供查核，及將副本交到本公司安全部存檔。



中國建築工程(香港)有限公司

CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

Working in Restricted Hours / Permit-to-Work 限制時間 / 工作許可證

Application Form 申請表

Part 1 Application 第一部分 - 申請: (to be completed by applicant 由申請人填寫)				
Date 日期:				
Emergency Contact Person 緊急事故聯絡人 Name 姓名: Tel 電話:				
Applicant 申請人 Name 姓名: Tel 電話:		On-Site-In-Charge 駐工地負責人 (who is responsible for restricted hours works) Name 姓名: Tel 電話:		
Applicant / Working Team: 申請限制時間工作所屬公司:				
注意: 1) 申請書須於工作天當日下午4時前或假日前一天提交 2) 本許可證必須獲地盤負責人簽署方為有效				
Application Details 申請資料				
Monday to Saturday <u>7 pm - 11 pm</u> and <u>General Holidays including Sundays 7 am - 11 pm</u> 星期一至星期六晚上七時至晚上十一時及公眾假期包括星期日早上七時至晚上十一時				
Item 工序	Nature of Work and Equipment required 工作性質及所需機械設備	Location of Work 工作地點	Date and Time 日期及時間	Group to be used: 機械使用組別:
.....	工作將會/不會使用機動設備部.....;.....部.....;部.....;.....部.....;部.....;.....部.....;部.....;.....部.....;	Tower A / B GL...../.....,.....樓 Tower A / B GL...../.....,.....樓	時至.....時 開工人數:..... 時至.....時 開工人數:.....	
All days during nighttime <u>11 pm - 7 am</u> on the next day 所有日子包括公眾假期及星期日晚上十一時至翌日早上七時				
Item 工序	Nature of Work and Equipment required 工作性質及所需機械設備	Location of Work 工作地點	Date and Time 日期及時間	Group to be used: 機械使用組別:
.....	工作將會/不會使用機動設備部.....;.....部.....;部.....;.....部.....;部.....;.....部.....;部.....;.....部.....;	Tower A / B GL...../.....,.....樓 Tower A / B GL...../.....,.....樓	時至.....時 開工人數:..... 時至.....時 開工人數:.....	



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

Part 2 Review 第二部分 – 審批

(To be reviewed by Responsible Person of Client and and Joint-Venture (JV) 由業主及承辦商檢查)

I hereby certified that I have reviewed myself that the above application details comply with valid CNP(s) and approve this application of this permit. 本人謹証明以上申請資料已符合有效建築許可證的要求，及簽發此工作許可證。

Name and Signature of Responsible Person:

審批人姓名及簽署：

Client Representative 業主代表：

Contractor Representative 承辦商

Position:

職位：.....

Date:

日期：.....

Position:

職位：.....

Date:

日期：.....

Part 3 Checking 第三部分 – 查核

Relevant CNP(s) No. 相關建築噪音許可證號碼：

Relevant CNP(s) Effective Date

相關建築噪音許可證有效日期：

Checker 查核員 (to be completed by Environmental Officer or Environmental Supervisor 由環保主任或環保督導員查核)

Name and Signature of Responsible Person:

審批人姓名及簽署：

Position:

職位：.....

Date:

日期：.....

地盤巡查記錄

日期		
時間		
簽名		

巡查記錄由當值管工在施工地點即時在本許可證上簽名記錄。

分判商在完工後必須將本證交回地盤負責人。



中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

Guidance for FPE / HAIT Vendor on Insurance Matters

Guidance for FPE / HAIT Vendor on Insurance Matters

Project / Site : Main Work for In-Patient Extension Block for Redevelopment of Prince of Wales Hospital, Phase 2 (Stage 1)

Principal Contractor : China State Construction Engineering (Hong Kong) Limited

The FPE vendors shall procure the require insurance policies covering the risks in compliance with the all the applicable contract and statutory requirements including the Employees' Compensation Insurance and Third Party Liability Insurance.

1. **Third Party Liability Insurance**

The Third Party Liability Insurance shall be in the joint names with "China State Construction Engineering (Hong Kong) Limited as Occupier / Principal Contractor of the Site"

2. **Employees' Compensation Insurance**

The Employees' Compensation Insurance shall be in the joint names with "China State Construction Engineering (Hong Kong) Limited as Occupier / Principal Contractor of the Site"

The FPE vendors shall submit compliant insurance policies to demonstrate the compliance with (1) the statutory requirements for ECI and Third Party Liability Insurance at least 30 days prior to the planned commencement of FPE works on site for vetting and approval by the Project Team and the Principal Contractor.

Should the FPE vendors have any queries or need further information from China State Construction Engineering (Hong Kong) Limited regarding the insurance matters, please contact the following personnel:

- 1) Mr. Patrick FOK @ 9031 3125 and / or email address @ Patrick_fok@cohl.com;
- 2) Mr. Jason Mak @ 98081516 and / or email address @ hoicheung.mak@cohl.com;

Checklist of Infection Control**Infection Control Checklist for Other Workers# in HA**

Please “tick” the appropriate box. If “No” is selected, please elaborate in “Remarks” and course of action.

Infection Control Checklist		Yes	No	N/A	Remarks
1.	Other workers should receive basic infection control training, refresher or right-on-time training as requested by the hospital / clinic. Training records should be kept by their supervisors and produced upon request.	☐	☐	☐	
2.	Other workers should follow HA Response Level for health advice and enhanced infection control measures.	☐	☐	☐	
3.	Other workers are not allowed to work in the high-risk patient areas unless with mutual consent in special circumstances (such as emergency situations requiring contractors’ assistance)	☐	☐	☐	
4.	Other workers should maintain good personal hygiene (e.g. wash their hands before eating or serving food, after touching eyes, nose, mouth, and after using the toilet etc.)	☐	☐	☐	
5.	Other workers should follow HA guidelines and practice hand hygiene during their work, including before and after contacting the patient, after contacting the contaminated environment / equipment / wastes, and before entry and exit the patient care areas / wards, and when hands are visibly soiled.	☐	☐	☐	
6.	Other workers should keep their uniform / working clothes clean and neat.	☐	☐	☐	
7.	Other workers should follow standard precautions at all times and apply the transmission-based precautions (i.e. contact, droplet, or airborne precautions) according to the precaution signs or as instructed by the supervisors / hospital staff.	☐	☐	☐	
8.	Other workers who are required to use personal protective equipment (PPE) should be trained on how and when to use the PPE, including surgical mask, N95 respirator, eye protection, disposable gloves and gown.	☐	☐	☐	
9.	Other workers should maintain good environmental hygiene. Equipment/ tools should be properly cleaned and / or disinfected after use.	☐	☐	☐	
10.	Other workers should report any symptoms of fever, chills, unexplained muscle aches, sore throat, running nose, cough, chest infection, shortness of breath, diarrhea, vomiting and rashes to their supervisors before commencing duty, and seek medical attention immediately.	☐	☐	☐	
11.	Supervisors should keep record of sickness and other infectious diseases of their workers (e.g. chickenpox, hand-foot-mouth disease, etc.) and report to hospital infection control team promptly for any necessary actions.	☐	☐	☐	
12.	Supervisor should record the duty rosters and work locations of other workers and document incident reporting with proper time logs and produce without delay upon request by HA hospital.	☐	☐	☐	

“Other workers” means Contractors / Sub-contractors / Term Contractors and their employees as well as staff from Government departments working in HA

Person Authorized to Sign Tender		
Name of Tenderer : _____	Name : _____	Authorized Signature : _____
Tenderer’s Chop : _____	Position Held : _____	E-mail Address : _____
Date : _____	Tel. No: _____	Fax No.: _____

Estimated Workload for the Supply and Installation of Steam Sterilizer System and Water Purification System for Sterile Supplies Unit for the Redevelopment of Prince of Wales Hospital, New Territories East Cluster, Hospital Authority

Item 1: Sterilizing Units, Steam, Bulk (8 Sets)

The estimated workload includes but not limited to below items.

No.	Item Description	Estimated workload (Set)															Total estimated workload for 15 years (Set)
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
1	Door seal	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	360
2	Air filter	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	120
	Others (if any), please state:																

*Remarks: 1. The estimated workload specified above is given for the guidance and assistance of tenderers. The Hospital does not commit to order a minimum quantity of consumable item(s) with the Contractor(s) during the contractual period.

2. The number of sets shown in the item description does not represent the actual quantity. It is provided for reference purposes only and does not match the number of pieces included.

Estimated Workload for the Supply and Installation of Steam Sterilizer System and Water Purification System for Sterile Supplies Unit for the Redevelopment of Prince of Wales Hospital, New Territories East Cluster, Hospital Authority

Item 3: Water Purification Systems, Reverse Osmosis (1 Set)

The estimated workload includes but not limited to below items.

No.	Item Description	Estimated workload (Units for item 1-4: set; item 5-8: no. of job)												Total estimated workload for 12 years (Units for item 1-4: set; item 5-8: no. of job)
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	
1	Ultra-filter	4	4	4	4	4	4	4	4	4	4	4	4	48
2	UV lamp	2	2	2	2	2	2	2	2	2	2	2	2	24
3	Hepa filter 0.2 micron	2	2	2	2	2	2	2	2	2	2	2	2	24
4	5-micron filter	8	8	8	8	8	8	8	8	8	8	8	8	96
5	Filling materials for backwash filter with installation service		1		1		1		1		1		1	6
6	Filling materials for multi-media filter with installation service		1		1		1		1		1		1	6
7	Filling materials for carbon filter with installation service		1		1		1		1		1		1	6

No.	Item Description	Estimated workload (Units for item 1-4: set; item 5-8: no. of job)												Total estimated workload for 12 years (Units for item 1-4: set; item 5-8: no. of job)
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	
8	Filling materials for deionizer filter with installation service		1		1		1		1		1		1	6
	Others (if any), please state:													

*Remarks: 1. The estimated workload specified above is given for the guidance and assistance of tenderers. The Hospital does not commit to order a minimum quantity of consumable item(s) with the Contractor(s) during the contractual period

2. The number of sets shown in the item description does not represent the actual quantity. It is provided for reference purposes only and does not match the number of pieces included.