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Clerk to Public Works Subcommittee
Legislative Council Secretariat
Legislative Council Building
8 Jackson Road, Central
Hong Kong

(Attn: Ms Angel SHEK)

Dear Ms Shek,

Public Works Subcommittee
Follow-up to meeting on 20 May 2009

Supplementary information pertaining to item PWSC(2009-10)19

We refer to your letter referenced CB1/F/2/6(II) of 22 May 2009 to the Secretary for Financial Services and the Treasury.

In considering the paper referenced PWSC(2009-10)19 on upgrading of 236DS “**Tai Po sewage treatment works, stage 5 phase 2B**” to Category A, the Public Works Subcommittee requested the Administration to provide information on the following –

- (a) the technology and standards of odour control facilities to be adopted by Tai Po sewage treatment works (TPSTW) vis-à-vis those used by existing sewage treatment works in, for example, Chai Wan and Siu Ho Wan; and
- (b) sectional plans showing the design of “covers” for the proposed TPSTW on inlet works and primary sedimentation tank etc.



We would like to provide the Administration's response as follows.

The technology and standards of odour control facilities to be adopted by Tai Po sewage treatment works (TPSTW) vis-à-vis those used by existing sewage treatment works in, for example, Chai Wan and Siu Ho Wan

The Drainage Services Department (DSD) adopts three types of proven measures and technologies in the management and control of odour in our sewage treatment works (STW). These include provision of different types of deodourisation units at appropriate locations like activated carbon system, chemical scrubbers and biofilters to clean up the collected foul gases in the plants. We also apply chemicals, like calcium nitrate, ferric chloride and other deodourising agents, at various spots to combat odour generation or suppress smell. Thirdly, sealing of odour sources by covering up channels and chambers are also commonly used. Depending on the type of treatment operation in an STW, and the characteristics of its surrounding and the incoming sewage flow, we would apply a combination of the above three types of measures, which are also internationally proven practices, in our STW to meet the current odour standard of five odour units (OU)¹ as measured at the surrounding air sensitive receivers. The above standard adopted in Hong Kong is more stringent than those adopted in Britain, Australia and New Zealand. The above measures are effective to mitigate odour nuisance in our STW.

In TPSTW, we have adopted all three types of odour control measures. We dose calcium nitrate at the upstream Tai Yuen sewage pumping station; install deodourising units of activated carbon system in various spots of the TPSTW; and have covers built at sewage intakes and the outlet weirs of primary sedimentation tanks.

During the operation stage, we carry out monitoring of the odour performance of our STW to identify if there is any operational abnormality and take prompt rectification action if necessary. In case when there are changes in external factors affecting the operation and odour characteristics of a plant, we will tighten odour

¹ Odour is a perception of human and is measured by olfactometry involving a group of normal people selected and trained as panelists. Odour unit is defined as the dilution factor that is required for samples of odorous gases to be diluted with clean odour-free air to achieve the detection threshold. Hydrogen sulphide (H₂S) has a strong correlation with the odour in STWs and therefore, it is measured and generally used to assess the odour problem. According to Environmental Protection Department's guidance notes for sewage pumping station, 1 OU is equivalent to 0.00047 parts per million by volume of H₂S.

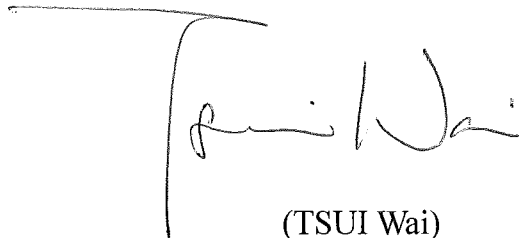
control measures or to provide additional odour control facilities to manage any potential odour nuisance. For this reason, we implemented additional odour control measures in Siu Ho Wan STW. We are also building additional deodourising units there. Similarly, we have planned to provide additional measures for Chai Wan STW, including covering up the pump sump in financial year 2009-10.

Sectional plans showing the design of “covers” for the proposed TPSTW

Sectional plans showing the design of ‘covers’ for TPSTW are at Enclosures 1 and 2.

We should be grateful if you would distribute this letter to PWSC Members.

Yours sincerely,





(TSUI Wai)

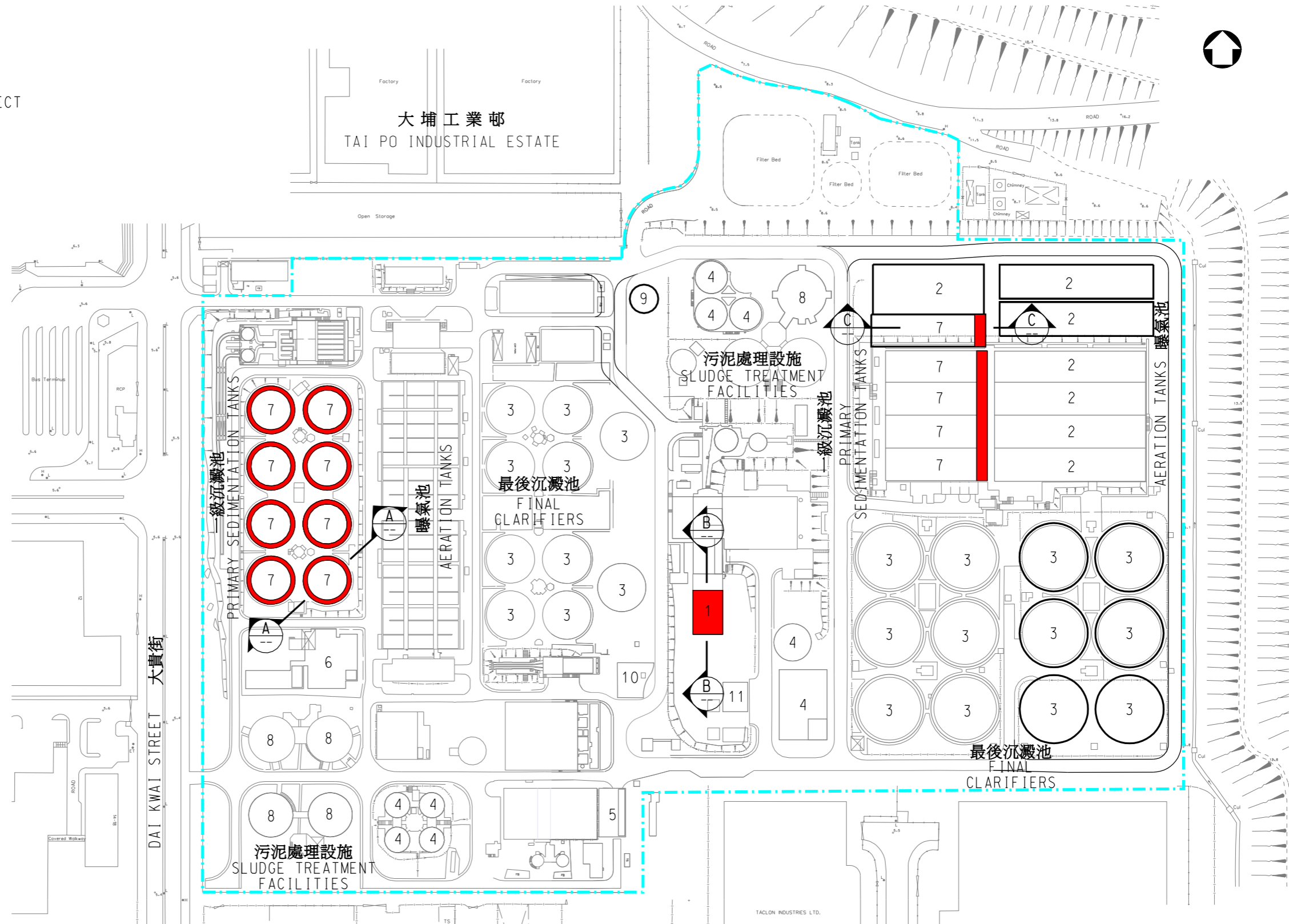
for Director of Drainage Services

c.c.	SFST	(Attn.: Miss Sandra Lam)	(Fax.: 2147 5240)
	SEN	(Attn.: Mr Elvis AU)	(Fax.: 2575 3371)
	SDEV	(Attn.: Mr KC LAM)	(Fax.: 2537 1961)

圖例：
LEGEND :

-  第5階段工程污水入口設施及一級沉澱池上蓋安裝
COVERS INSTALLED AT INLET WORKS AND PRIMARY SEDIMENTATION TANKS UNDER STAGE 5 PROJECT
-  大埔污水處理廠範圍
EXTENT OF TAI PO SEWAGE TREATMENT WORKS


1. 污水入口設施
INLET WORKS
2. 曝氣池
AERATION TANKS
3. 最後沉澱池
FINAL CLARIFIERS
4. 污泥濃縮設施
SLUDGE THICKENING FACILITIES
5. 污泥脫水設施
SLUDGE DEWATERING FACILITIES
6. 濾液處理設施
FILTRATE TREATMENT FACILITIES
7. 一級沉澱池
PRIMARY SEDIMENTATION TANKS
8. 污泥消化池
SLUDGE DIGESTION TANKS
9. 氣體貯存缸
GAS HOLDER
10. 紫外光消毒設施
ULTRAVIOLET DISINFECTION FACILITIES
11. 變壓房
TRANSFORMER HOUSE

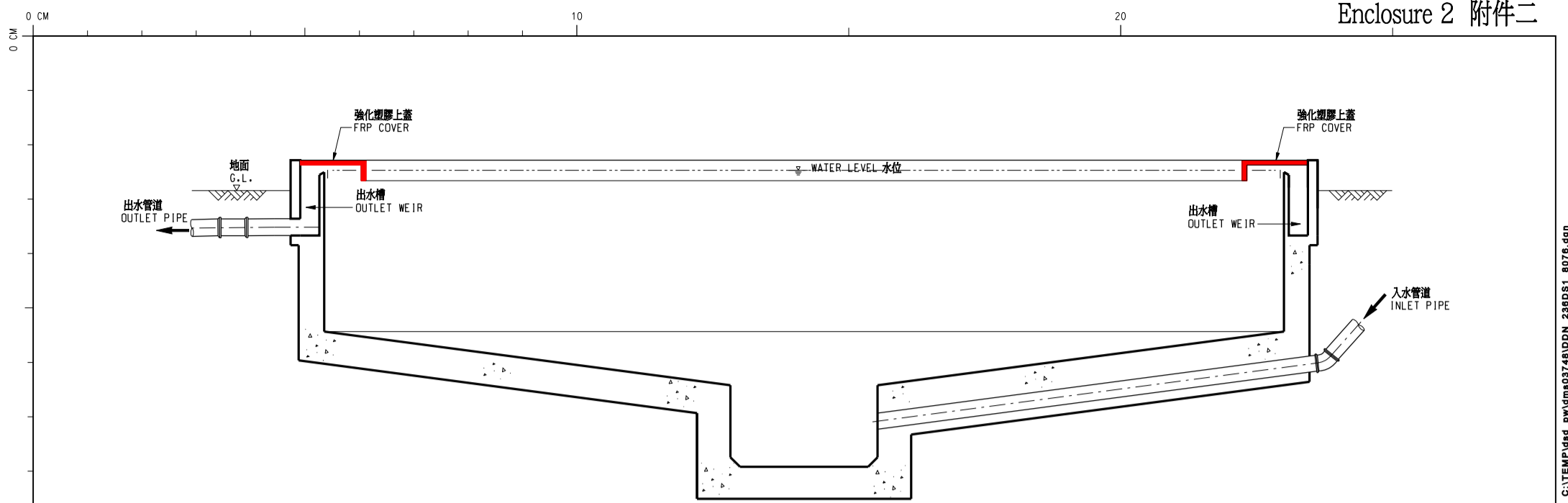


PROVISIONAL
SUBJECT TO AMENDMENT

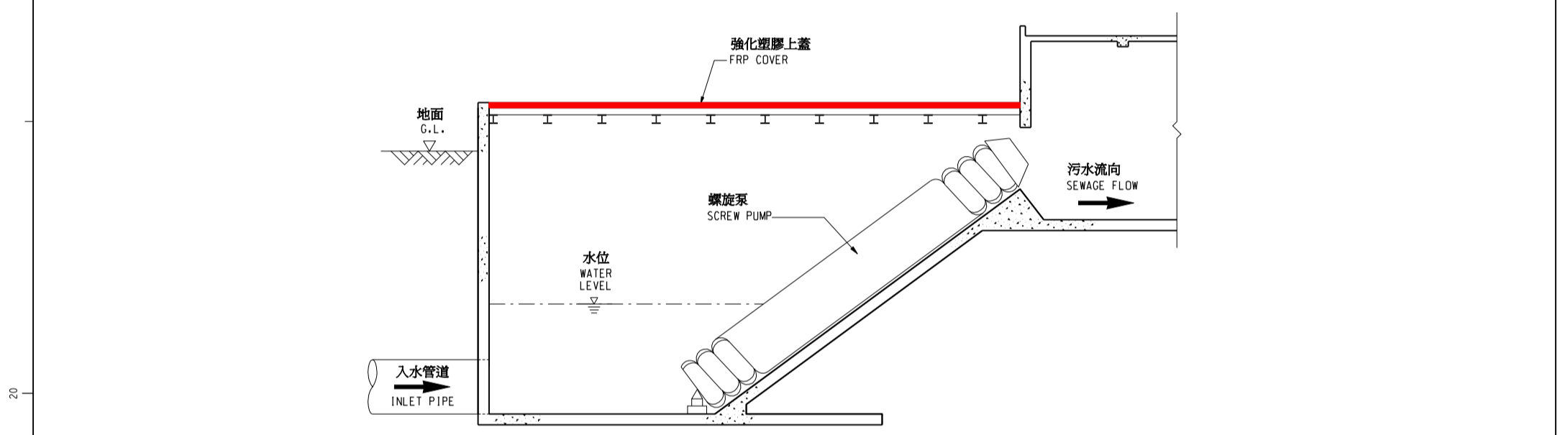
drawing title

大埔污水處理廠第5階段工程 - 氣味控制設施 (污水入口設施及一級沉澱池)
TAI PO SEWAGE TREATMENT WORKS STAGE 5 - ODOUR CONTROL FACILITIES
(INLET WORKS AND PRIMARY SEDIMENTATION TANKS)

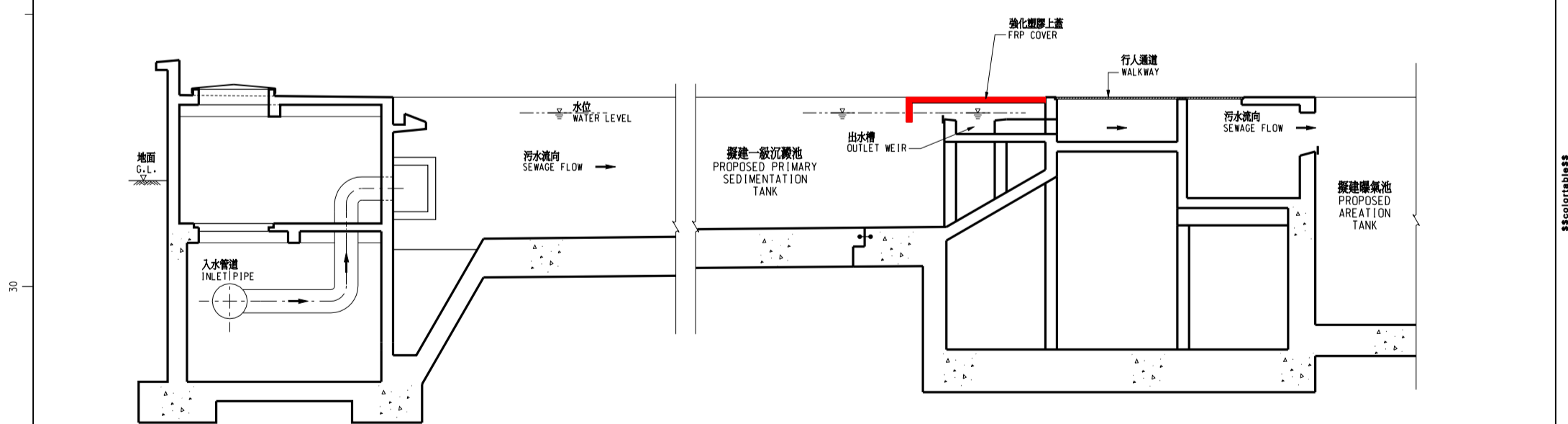
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drawn	SIGNED 22 MAY 2009	M.W. CHEUNG	
checked	SIGNED 22 MAY 2009	Ir C. Y. CHUNG	
approved	SIGNED 22 MAY 2009	Ir S. K. IP	
office	SEWERAGE PROJECTS DIVISION		
drawing no.		DDN/236DS1/8075	scale
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SECTION A-A
(CIRCULAR PRIMARY SEDIMENTATION TANK)
(圓形一級沉澱池)



SECTION B-B
(INLET PUMPING STATION)
(入水泵房)



SECTION C-C
(RECTANGULAR PRIMARY SEDIMENTATION TANK)
(長方形一級沉澱池)

PROVISIONAL
SUBJECT TO AMENDMENT

drawing title
大埔污水處理廠第5階段工程上蓋安裝 - 污水入口設施及一級沉澱池
TAI PO SEWAGE TREATMENT WORKS STAGE 5
COVERS INSTALLATION -
INLET WORKS AND PRIMARY SEDIMENTATION TANKS

drawn	SIGNED Y. K. FAN	date	22 MAY 2009	drawing no.	DDN/236DS1/8076	scale	NTS
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approved	SIGNED Ir S. K. IP	date	22 MAY 2009	COPYRIGHT RESERVED			
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