

For discussion  
on 26 May 1999

PWSC(1999-2000)19

## ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

### HEAD 707 - NEW TOWNS AND URBAN AREA DEVELOPMENT

#### New Territories North Development

#### Civil Engineering - Drainage and erosion protection

#### 30CD – Village flood protection for Yuen Long, Kam Tin and Ngau Tam Mei, North West New Territories

Members are invited to recommend to Finance  
Committee –

- (a) the upgrading of part of **30CD**, entitled “Phase 1 village flood protection for Pok Wai and Wang Chau, North West New Territories”, to Category A at an estimated cost of \$106.8 million in money-of-the-day prices;
- (b) the retention of the remainder of **30CD**, retitled “Village flood protection for Yuen Long, Kam Tin and Ngau Tam Mei, North West New Territories, stage 1 – remainder”, in Category B.

### PROBLEM

The villages in Pok Wai and Wang Chau in the North West New Territories are in low-lying areas and are prone to frequent flooding during typhoons or heavy rainstorms.

**/PROPOSAL .....**

**PROPOSAL**

2. The Director of Territory Development, with the support of the Secretary for Works, proposes to upgrade part of **30CD** to Category A at an estimated cost of \$106.8 million in money-of-the-day (MOD) prices for flood protection works at Pok Wai (Kam Tin) and Wang Chau (Yuen Long).

**PROJECT SCOPE AND NATURE**

3. The scope of **30CD** comprises the construction of flood protection works at Pok Wai, Wang Chau and Chuk Yuen Tsuen/Ha San Wai.

4. The part of **30CD** we now propose to upgrade to Category A comprises -

- (a) flood protection embankment and flood protection walls around the village proper of Pok Wai;
- (b) a floodwater storage pond, a pumping station and drains within the village proper of Pok Wai;
- (c) roads for maintenance access with associated drains at Pok Wai;
- (d) a stormwater intercepting drain of about 300 metres long at Wang Chau;
- (e) environmental mitigation measures including landscaping works; and
- (f) an environmental monitoring and audit programme for works mentioned in items (a) to (e) above.

Details of the proposed works are at Enclosures 1 and 2.

**/JUSTIFICATION .....**

## **JUSTIFICATION**

5. The villages at Pok Wai and Wang Chau are in low-lying flood plains of Kam Tin and Yuen Long respectively and are prone to flooding during typhoons and heavy rainstorms. Several flooding incidents in the past have adversely affected the houses and properties of local residents, and have also caused economic losses, and disruption to transport and social activities. The proposed flood protection works form part of the Government's overall flood control programme for the North West New Territories.

6. The proposed works will protect the village at Pok Wai from being flooded in the following ways -

- (a) during typhoons or heavy rainstorms, the proposed flood storage pond together with the drains will collect the rain that falls within the village boundaries. Before the pond starts to overflow, the system will pump out the water from the pond into the existing drainage channel; and
- (b) the proposed embankment and flood protection walls will prevent any external flood water from entering the village proper.

As part of the proposed works at Pok Wai, we will also construct access roads to facilitate future maintenance of the proposed flood storage pond and pumping station.

7. The proposed stormwater intercepting drain at Wang Chau is an interim measure to provide early relief of the flooding risk to the villages in Wang Chau. During typhoons and heavy rainstorms, the proposed drain will intercept stormwater from adjacent hillside and discharge it to an existing nullah nearby. We plan to implement the remaining flood protection works at Wang Chau including the construction of a storage tank with a pumping station in early 2001 when the site will become available by then.

## **FINANCIAL IMPLICATIONS**

8. We estimate the capital cost of the project to be \$106.8 million in MOD prices (see paragraph 9 below), made up as follows –

	<b>\$ million</b>	
(a) Flood protection embankment and walls	31.0	
(b) Floodwater storage pond and drains	17.0	
(c) Floodwater pumping station		
(i) civil works	16.0	
(ii) electrical and mechanical (E&M) works	11.0	
(d) Roadworks and associated drainage works	7.0	
(e) Stormwater intercepting drain at Wang Chau	5.5	
(f) Environmental mitigation measures (including landscape works)	1.5	
(g) Environmental monitoring and audit (EM&A) programme	1.0	
(h) Contingencies	9.0	
	<hr/>	
Sub-total	99.0	(at December 1998 prices)
(i) Provision for price adjustment	7.8	
	<hr/>	
Total	106.8	(in MOD prices)
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9. Subject to approval, we will phase the expenditure as follows -

/1999 - 2000 .....

<b>Year</b>	<b>\$ million (Dec 1998)</b>	<b>Price adjustment factor</b>	<b>\$ million (MOD)</b>
1999 - 2000	10.0	1.02625	10.3
2000 - 2001	58.2	1.06217	61.8
2001 - 2002	14.8	1.09934	16.3
2002 - 2003	12.0	1.13782	13.7
2003 - 2004	4.0	1.17765	4.7
	<hr/>		<hr/>
	99.0		106.8
	<hr/>		<hr/>

10. We have derived the MOD estimate on the basis of Government's latest forecast of trend labour and construction prices for the period from 1999 to 2004. We will tender the proposed civil engineering works under a standard remeasurement contract because the works involve extensive earthworks, the quantities of which may vary according to the actual ground conditions. The contract will provide for price adjustments because the construction period will exceed 21 months. We will tender the proposed E&M works on a fixed-price lump-sum basis because we can clearly define the scope of works in advance.

11. We estimate the annually recurrent expenditure to be \$875,800.

## **PUBLIC CONSULTATION**

12. For the works at Pok Wai, we consulted the San Tin Rural Committee on 20 September 1993 and the Yuen Long District Board on 21 October 1993. For the works at Wang Chau, we consulted the Ping Shan Rural

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Committee on 5 January 1999 and the Yuen Long Provisional District Board on 28 January 1999. Members supported the project for the relief it would bring to the flooding problems in Pok Wai and Wang Chau areas.

/13. ....

13. We gazetted the proposed village flood protection works for Pok Wai under the Roads (Works, Use and Compensation) Ordinance on 7 April 1995. We received five objections. We had a series of discussions with the objectors and four objectors subsequently withdrew their objections. The remaining objector maintained her objection against resumption of her land. To address her concern, we amended the works limit twice, but she still refused to withdraw her objection. On 7 December 1998, the Chief Executive in Council overruled the objection in the public interest and authorised the proposed roadworks subject to the modification.

### **ENVIRONMENTAL IMPLICATIONS**

14. In May 1994, we employed consultants to carry out an Environmental Impact Assessment (EIA) to assess the environmental impacts due to the construction and operation of a series of flood control projects in Yuen Long, Kam Tin and Ngau Tam Mei. Following the completion of the EIA report in May 1996, we consulted the Advisory Council on the Environment (ACE) in July 1996. ACE endorsed the report on condition that (a) old river channels would be considered for restoration into wildlife habitats; (b) the disposal of contaminated mud should be to the satisfaction of the Fill Management Committee (FMC) and that such disposal would have no adverse effects on the environment; and (c) the proponents should review the conceptual off-site compensation measures in the light of Government's latest policy on off-site compensation and report back to the Sub-committee of the ACE their specific proposals for the projects.

15. The EIA report concluded that the environmental impact of the proposed works at Pok Wai could be controlled to within established standards and guidelines through the implementation of the mitigation measures as recommended in the EIA. We will implement the measures recommended in the EIA. An Environmental Review undertaken by the Director of Environmental Protection in August 1996 for the village protection works at Wang Chau concluded that the proposed works will not cause long term environmental impact.

We estimate the cost of implementing the environmental mitigation measures (\$1.5 million) and EM&A programme (\$1 million) to be \$2.5 million which has been included as part of the overall project estimate.

/LAND .....

## **LAND ACQUISITION**

16. We will resume about 3.2 hectares of agricultural land for the proposed works. The land acquisition and clearance will affect two households involving seven persons and three temporary structures. The Director of Housing will offer eligible families accommodation in public housing in line with the existing policy. We will charge the costs of land acquisition and clearance, estimated at \$57 million, to **Head 701** - Land Acquisition.

## **BACKGROUND INFORMATION**

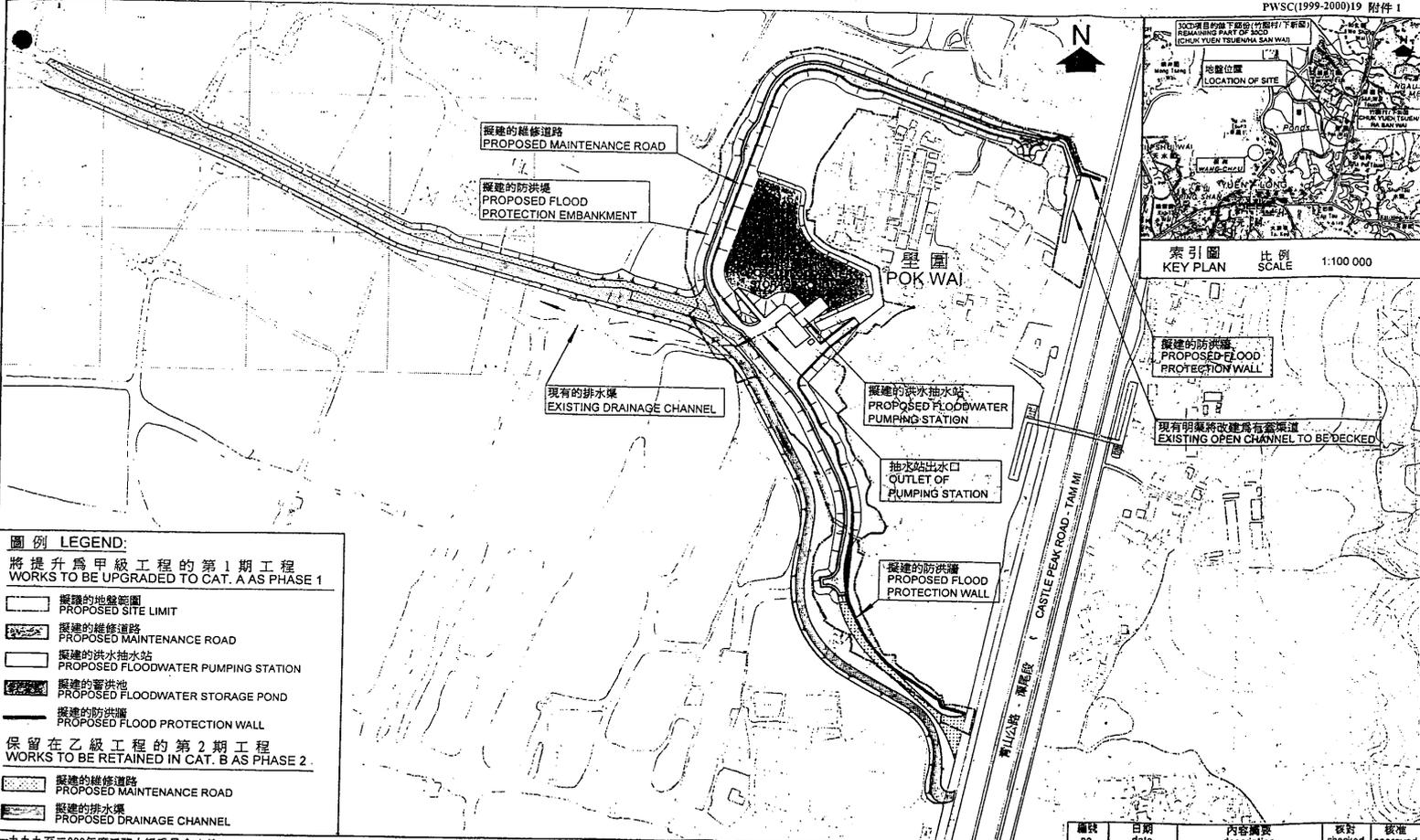
17. In August 1990, we upgraded **30CD** to Category B for the construction of flood protection works for 24 low-lying villages in Yuen Long, Kam Tin and Ngau Tam Mei. In June 1995, Finance Committee approved the upgrading of part of **30CD** to Category A as **71CD** "Village flood protection for Sha Po Tsuen, Kam Tin, New Territories". We started works in September 1996 and completed them in April 1999.

18. In December 1995, we upgraded **74CD** "Village flood protection for Yuen Long, Kam Tin and Ngau Tam Mei, NWNT - stage II" to Category B for flood protection works of 19 villages previously included in **30CD** upon completion of a preliminary project feasibility study. The remaining scope of **30CD** comprises the protection works at Pok Wai, Wang Chau and Chuk Yuen Tsuen/Ha San Wai. Details of the above-mentioned projects are at Enclosure 3.

19. The Director of Drainage Services has completed the detailed design and drawings for the proposed works using in-house staff resources. We plan to start the proposed works in September 1999 for completion in August 2001. We will implement the remaining works under **30CD** in late 2000 for completion in stages by mid 2003.



Works Bureau  
May 1999



**圖例 LEGEND:**  
將提升為甲級工程的第1期工程  
WORKS TO BE UPGRADED TO CAT. A AS PHASE 1

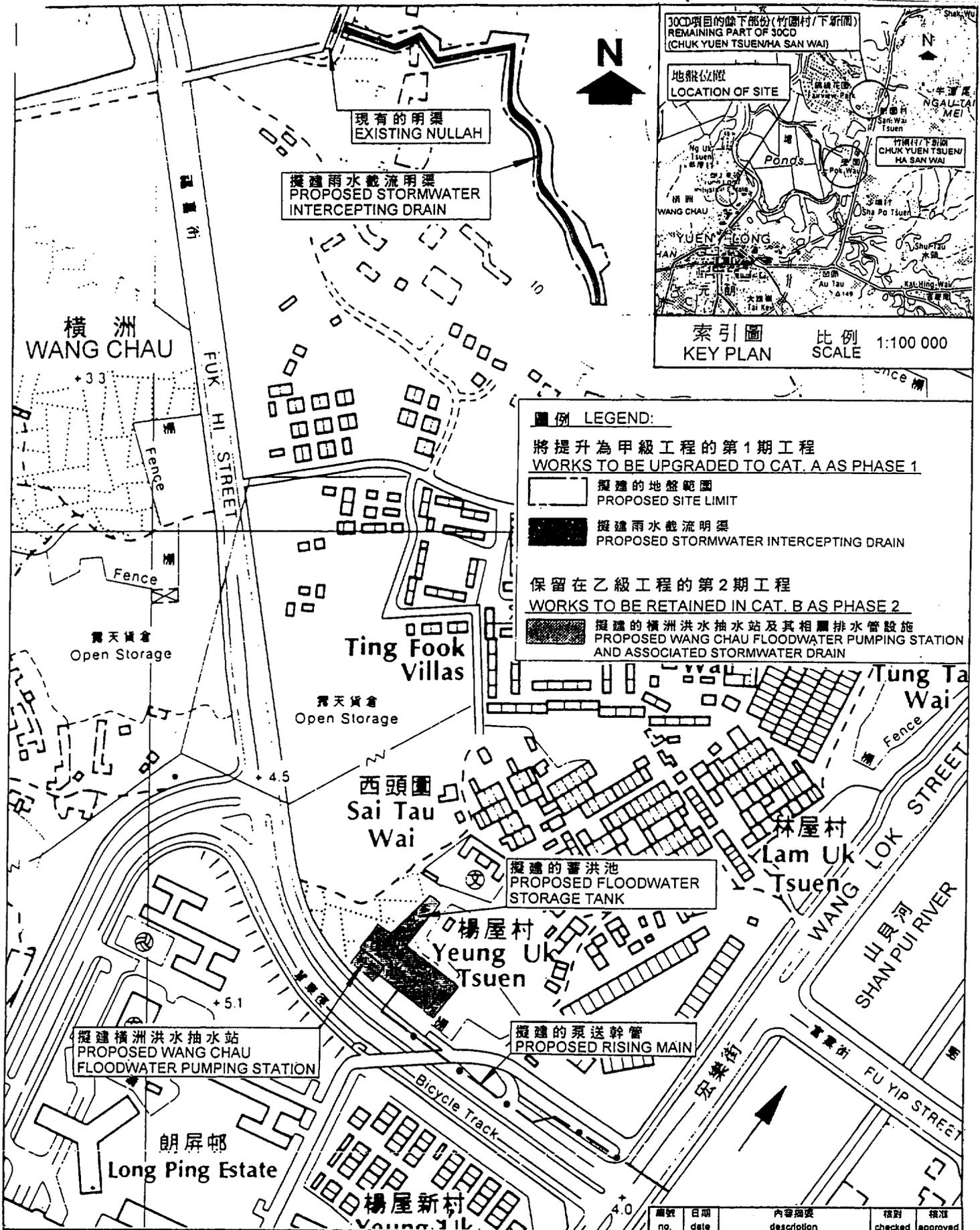
- 擬建的地盤範圍  
PROPOSED SITE LIMIT
- 擬建的維修道路  
PROPOSED MAINTENANCE ROAD
- 擬建的抽水抽水站  
PROPOSED FLOODWATER PUMPING STATION
- 擬建的蓄水池  
PROPOSED FLOODWATER STORAGE POND
- 擬建的防洪牆  
PROPOSED FLOOD PROTECTION WALL

保留在乙級工程的第2期工程  
WORKS TO BE RETAINED IN CAT. B AS PHASE 2

- 擬建的維修道路  
PROPOSED MAINTENANCE ROAD
- 擬建的排水渠  
PROPOSED DRAINAGE CHANNEL

一九九九至二〇〇〇年度工務小組委員會文件 P.W.S.C. SUBMISSION 1999/2000

圖則名稱 drawing title  新界西北部元朗、錦田及牛潭尾的鄉村防洪計劃 VILLAGE FLOOD PROTECTION FOR YUEN LONG, KAM TIN AND NGAU TAM MEI, NORTH WEST NEW TERRITORIES 建議的壘圍防洪工程 PROPOSED VILLAGE FLOOD PROTECTION WORKS FOR POK WAI	繪圖 drawn K. S. LO	簽署 Initial <i>[Signature]</i>	日期 date 11.03.99	項目編號 Item no. 30 CD	辦事處 office 新界北拓展處 NEW TERRITORIES NORTH DEVELOPMENT OFFICE  拓展署 TERRITORY DEVELOPMENT DEPARTMENT
	核對 checked W. K. HO	簽署 Initial <i>[Signature]</i>	日期 date 11.03.99	比例 scale 1:2 500	
	核准 approved H. Y. WONG	簽署 Initial <i>[Signature]</i>	日期 date 26.03.99	圖則編號 drawing no. NTN 2037	



一九九九至二〇〇〇年度工務小組委員會文件

P.W.S.C. SUBMISSION 1999/2000

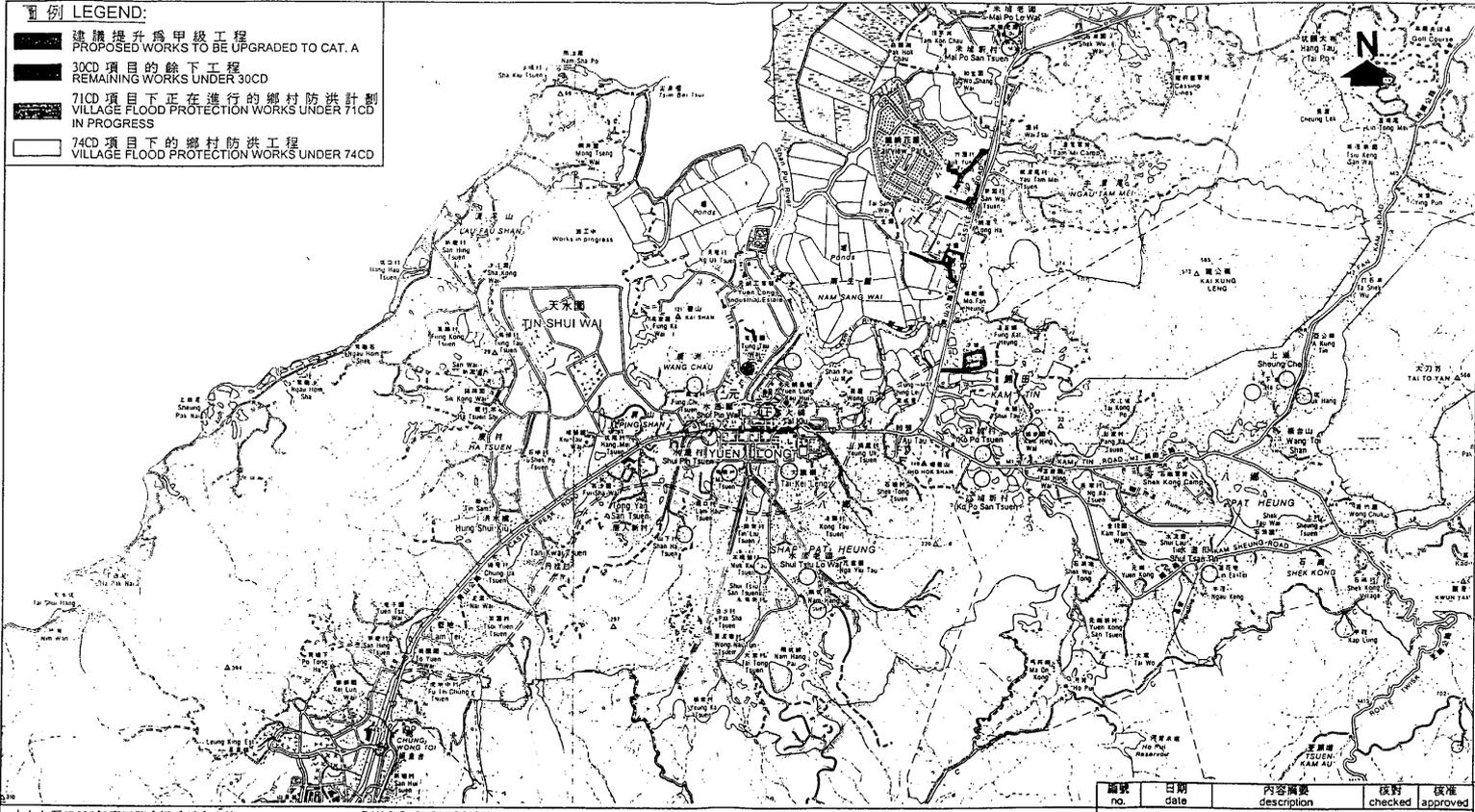
圖號 no.	日期 date	內容摘要 description	核對 checked	核准 approved
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修訂 REVISION

圖則名稱 drawing title 新界西北部元朗、錦田及牛潭尾的鄉村防洪計劃 VILLAGE FLOOD PROTECTION FOR YUEN LONG, KAM TIN AND NGAU TAM MEI, NORTH WEST NEW TERRITORIES 建議的橫洲雨水截流明渠 PROPOSED STORMWATER INTERCEPTING DRAIN FOR WANG CHAU	繪圖 drawn K.H. CHAN	簽署 initial <i>[Signature]</i>	日期 date 13.3.99	項目編號 item no. 30CD	辦事處 office 新界北拓展處 NEW TERRITORIES NORTH DEVELOPMENT OFFICE
	核對 checked W.K. HO	簽署 initial <i>[Signature]</i>	日期 date 13.3.99	比例 scale 1:3000	
	核准 approved H.Y. WONG	簽署 initial <i>[Signature]</i>	日期 date 26.3.99	圖則編號 drawing no. NTN 2038	拓展署 TERRITORY DEVELOPMENT DEPARTMENT

圖例 LEGEND:

-  建議提升為甲級工程  
PROPOSED WORKS TO BE UPGRADED TO CAT. A
-  30CD 項目的餘下工程  
REMAINING WORKS UNDER 30CD
-  71CD 項目下正在進行的鄉村防洪計劃  
VILLAGE FLOOD PROTECTION WORKS UNDER 71CD IN PROGRESS
-  74CD 項目下的鄉村防洪工程  
VILLAGE FLOOD PROTECTION WORKS UNDER 74CD



一九九至二〇〇〇年度工務小組委員會文件 P.W.S.C. SUBMISSION 1999/2000

圖名 drawing title

新界西北部元朗、錦田及牛潭尾的鄉村防洪計劃  
 VILLAGE FLOOD PROTECTION FOR YUEN LONG,  
 KAM TIN AND NGAU TAM MEI, NORTH WEST NEW TERRITORIES

繪圖 drawn	簽署 Initial	日期 date
K. S. LO	<i>[Signature]</i>	13.05.99
核對 checked	簽署 Initial	日期 date
W. K. HO	<i>[Signature]</i>	13.05.99
核准 approved	簽署 Initial	日期 date
H. W. CHEUNG	<i>[Signature]</i>	17.05.99

編號 no.	日期 date	內容摘要 description	核對 checked	核准 approved
修訂 REVISION				
項目編號 item no.		30 CD	辦事處 office 新界北拓展處 NEW TERRITORIES NORTH DEVELOPMENT OFFICE	
比例 scale		1 : 50 000		
圖則編號 drawing no.		NTN 2043		
			拓展署 TERRITORY DEVELOPMENT DEPARTMENT	