

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 704 – DRAINAGE

Civil Engineering – Drainage and erosion protection

112CD – Drainage improvement in Northern New Territories - package A

Members are invited to recommend to Finance
Committee –

- (a) the upgrading of part of **112CD**, entitled “Drainage improvement in Northern New Territories - package A - consultants' fees and investigations”, to Category A at an estimated cost of \$23.4 million in money-of-the-day prices; and
- (b) the retention of the remainder of **112CD** in Category B.

PROBLEM

Many areas in the Northern New Territories are susceptible to frequent flooding during heavy rainstorms due to the inadequacies of the existing drainage system and natural streamcourses.

/PROPOSAL

PROPOSAL

2. The Director of Drainage Services (D of DS), with the support of the Secretary for Works, proposes to upgrade part of **112CD** to Category A at an estimated cost of \$23.4 million in money-of-the-day (MOD) prices for engaging consultants to undertake site investigations, impact assessments and preliminary design for drainage improvement works in San Tin North, Fanling and Sheung Shui.

PROJECT SCOPE AND NATURE

3. The scope of works of **112CD** includes -
- (a) construction of about 7 kilometres of drainage channels in San Tin, Fanling and Sheung Shui; and
 - (b) upgrading and rehabilitation of about 12.5 kilometres of stormwater drains in the town areas of Fanling and Sheung Shui.

----- The site plans showing the works under **112CD** are at Enclosures 1 and 2.

4. We propose to upgrade part of **112CD** to Category A for investigation works and a consultancy on the following -
- (a) site investigations and surveys,
 - (b) traffic impact assessment,
 - (c) environmental impact assessment,
 - (d) water mains impact assessment,
 - (e) heritage impact assessment, and
 - (f) preliminary design.

5. We plan to start the proposed investigations and consultancy in October 2001 for completion by the end of 2003.

/JUSTIFICATION

JUSTIFICATION

6. Owing to rapid developments and extensive changes in land use in the Northern New Territories over the years, more and more natural ground has been paved over and become impermeable. Rainwater which would previously dissipate naturally through ground filtration can no longer do so. This has led to significant increase in surface run-off and overloading of the existing drainage system and streamcourses. As such, many areas of Northern New Territories are susceptible to flooding during heavy rainstorms.

7. To tackle the flooding problem in the Northern New Territories, we have planned and implemented a comprehensive drainage improvement programme in phases starting at the downstream end. Since 1995, we have started training of the major downstream rivers including the Shenzhen River, River Indus and River Beas. With the progressive delivery of the major river training works, we carried out a drainage master plan study for the Northern New Territories to assess the adequacy of the drainage capacity of upstream rivers and local drainage systems. The study was completed in October 1999 and recommended a three-stage programme (namely packages A, B and C) of drainage improvement works to tackle the flooding problems in the areas. Package A covers works for areas in San Tin North, Fanling and Sheung Shui with higher flooding risks whereas packages B and C cover works for areas in San Tin South, Kwu Tung, Ma Tsao Lung, Fu Tei Au, Ta Kwu Ling, Man Uk Pin, Lung Yeuk Tau and Lin Ma Hang.

Package A

8. The study reveals that the inadequate drainage capacity of the existing streamcourses at San Tin North and Ping Kong, Kau Lung Hang and Nam Wa Po is the main cause of the flooding problems in Sha Tin North, Fanling and Sheung Shui. In particular, the study identifies that some existing stormwater drains in the town areas of Fanling and Sheung Shui are inadequate in capacity. To relieve the flooding problems in the areas concerned, we propose to carry out the drainage improvement works as detailed in paragraph 3 above.

9. Owing to a lack of in-house staff resources, D of DS proposes to employ consultants to carry out impact assessments, preliminary design and necessary site investigations and surveys to facilitate the implementation of the proposed drainage improvement works under **112CD**.

/FINANCIAL

FINANCIAL IMPLICATIONS

10. We estimate the cost of the proposed investigations and consultancy to be \$23.4 million in MOD prices (see paragraph 11 below), made up as follows -

	\$ million	
(a) Site investigations and surveys	14.1	
(b) Consultants' fees –	7.4	
(i) supervision of site investigations and surveys	1.4	
(ii) environmental impact assessment	2.5	
(iii) traffic impact assessment	1.1	
(iv) water mains impact assessment	0.6	
(v) heritage impact assessment	0.6	
(vi) preliminary design	1.2	
(c) Contingencies	2.2	
	<hr/>	
Sub-total	23.7	(in September 2000 prices)
(d) Provision for price adjustment	(0.3)	
	<hr/>	
Total	23.4	(in MOD prices)
	<hr/>	

----- A breakdown by man-months of the estimate for consultants' fees is at Enclosure 3.

/11.

11. Subject to approval, we will phase the expenditure as follows –

Year	\$ million (Sept 2000)	Price adjustment factor	\$ million (MOD)
2001 – 2002	1.0	0.98000	1.0
2002 – 2003	8.5	0.97976	8.3
2003 – 2004	9.7	0.98759	9.6
2004 – 2005	4.5	0.99549	4.5
	23.7		23.4

12. We have derived the MOD estimate on the basis of the Government's latest forecast of trend labour and construction prices for the period 2001 to 2005. We will invite tenders for the proposed consultancy as a lump sum contract with provision for price adjustment because the project duration will exceed 12 months.

13. The proposed investigations and consultancy will not give rise to any recurrent expenditure.

PUBLIC CONSULTATION

14. We presented the findings and recommendations of the “Drainage master plan study in the Northern New Territories” to the Yuen Long District Council on 14 December 2000, the North District Council on 9 January 2001 and the Tai Po District Council on 12 January 2001. All supported the implementation of the package A works for drainage improvement in the Northern New Territories.

15. We consulted the LegCo Panel on Planning, Lands and Works on 23 April 2001. Members generally supported the implementation of the project. Nevertheless, some Members requested the Administration to provide an overview of the flood control and prevention strategy for tackling the flooding problem in the territory and to provide more details about the project. We have already submitted a supplementary paper to the Panel, as set out in Enclosure 4 of paper PWSC(2001-02)28.

/ENVIRONMENTAL

ENVIRONMENTAL IMPLICATIONS

16. The proposed consultancy for impact assessments, preliminary design, and site investigations and surveys will not cause any adverse environmental impacts. As for the project itself, the proposed works at the San Tin Western Channel are a designated project under Schedule 2 of the Environmental Impact Assessment Ordinance and an environmental permit is required for this part of the project. We will carry out an environmental impact assessment and will incorporate all the measures recommended in the assessment into the detailed design and relevant works contract.

17. The proposed consultancy will not generate any materials and the proposed site investigations will only generate an insignificant amount of construction and demolition (C&D) materials. For the construction stage of this project, we will require the consultants to fully consider and propose measures in the preliminary design for minimising the generation of materials and for reusing/recycling materials as much as possible.

LAND ACQUISITION

18. The proposed consultancy does not require land acquisition.

BACKGROUND INFORMATION

19. We commissioned the drainage master plan study in the Northern New Territories under **55CD** in October 1997 and completed the study in October 1999.

Package A

20. We included **112CD** "Drainage improvement in Northern New Territories - package A" in Category B in September 2000. The project is estimated to cost about \$710 million (in September 2000 prices). We plan to start the proposed consultancy in October 2001 for completion by the end of 2003. Using in-house resources, we will then carry out the detailed design of the proposed works with a view to starting construction in October 2004 for completion in October 2008.

/Other

Other packages

21. Packages B and C of the proposed drainage improvement works cover other secondary and local drainage systems in San Tin, Kwu Tung, Ping Che and Fanling North. We are carrying out the preliminary project feasibility studies for the works under these packages.

Job opportunities

22. We estimate that the proposed investigations and consultancy will create about 25 new jobs. These will comprise ten professional/technical staff and 15 labourers, totalling 560 man-months.

Works Bureau
May 2001

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112CD - Drainage improvement in Northern New Territories - package A

Breakdown of estimate for consultants' fees

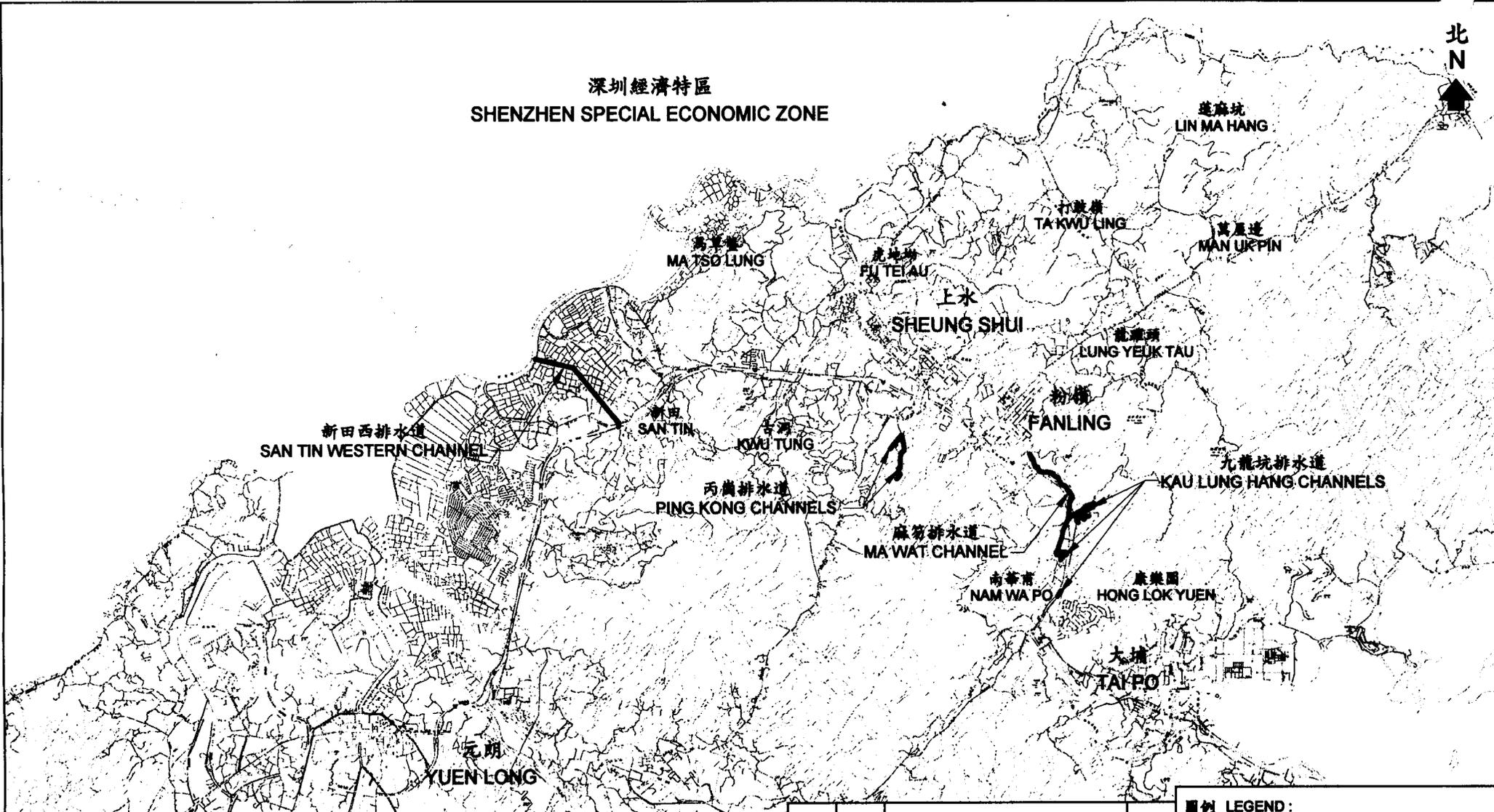
Consultants' staff costs		Estimated man- months	Average MPS* salary point	Multiplier factor	Estimated fee (\$ million)
(a) Supervision of site investigations and surveys	Professional	8	38	1.7	0.8
	Technical	17	14	1.7	0.6
(b) Impact assessments	Professional	25	38	2.4	3.5
	Technical	29	14	2.4	1.3
(c) Preliminary design	Professional	7	38	2.4	1.0
	Technical	4	14	2.4	0.2
Total consultants' staff costs					7.4

* MPS = Master Pay Scale

Notes

1. A multiplier factor of 2.4 is applied to the average MPS point to arrive at the full staff costs including the consultants' overheads and profit, as the staff will be employed in the consultants' offices. (At 1.4.2000, MPS pt. 38 = \$57,525 per month and MPS pt. 14 = \$19,055 per month). A multiplier of 1.7 is applied in case of site staff supplied by the consultants.
2. The figures given above are based on estimates prepared by the Director of Drainage Services. We will only know the actual man-months and actual fees when we have selected the consultants through the usual competitive lump sum fee bid system.

深圳經濟特區
SHENZHEN SPECIAL ECONOMIC ZONE



工務計劃項目第4112CD號
PWP ITEM NO. 4112CD

圖則名稱 drawing title

新界北部雨水排放系統改善計劃 - A部分 (排水道工程)
DRAINAGE IMPROVEMENT IN NORTHERN NEW TERRITORIES -
PACKAGE A (DRAINAGE CHANNEL WORKS)

A	23.04.2001	LEGEND REVISED	簽名 SIGNED
版 no.	日期 date	修改項目 description	簡簽 Initial
繪畫 drawn		SIGNED C.W. CHAN	日期 date 10-04-2001
核對 checked		SIGNED S.C. MA	日期 date 10-04-2001
批准 approved		SIGNED C.M. CHUNG	日期 date 10-04-2001
部門 office	工程管理部 PROJECT MANAGEMENT DIVISION		

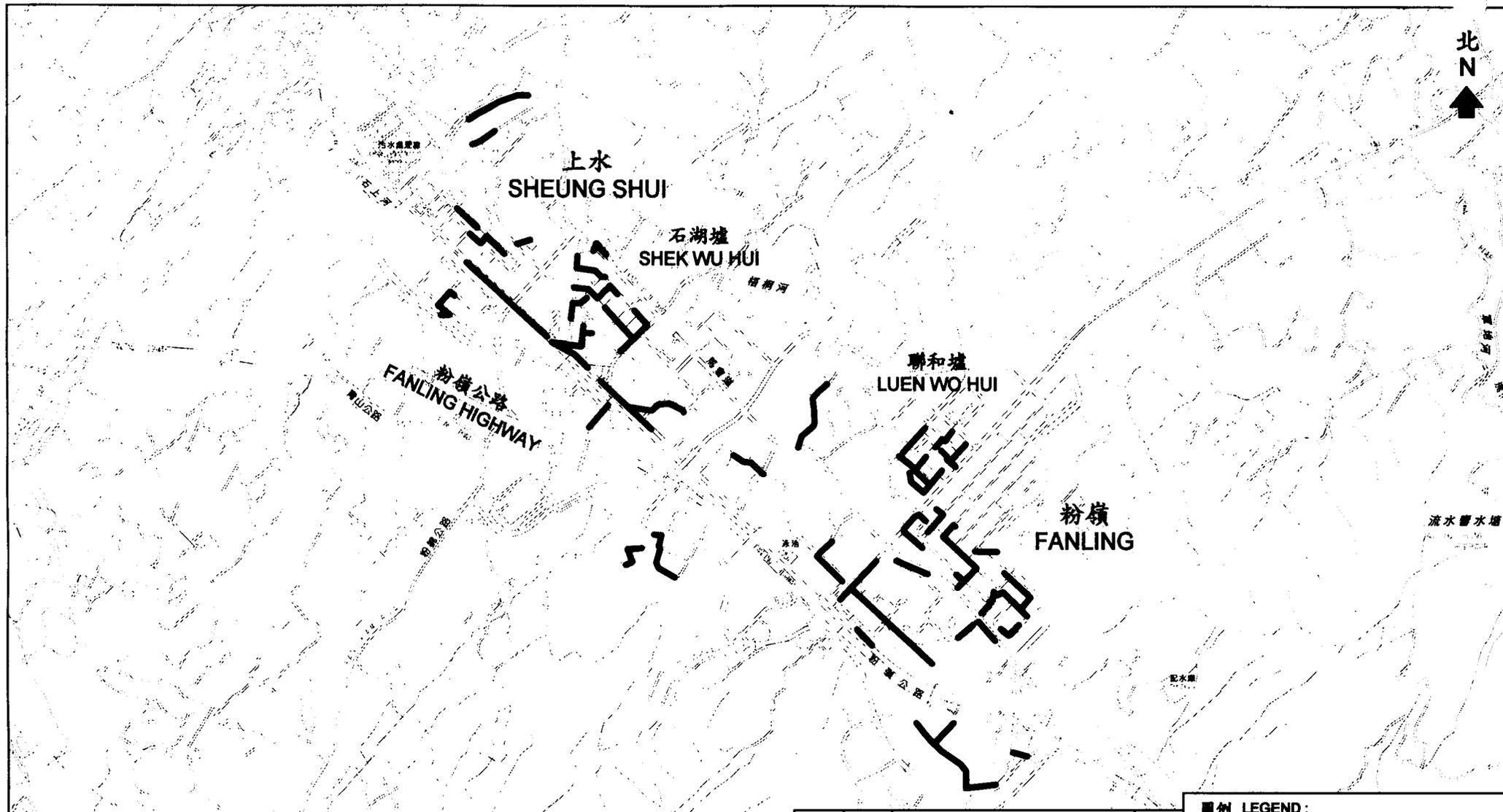
圖例 LEGEND:

擬建的排水道
PROPOSED DRAINAGE CHANNEL

圖則編號 drawing no. **DPM/0008A** 比例 scale N.T.S.

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DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION



工務計劃項目第4112CD號
PWP ITEM NO. 4112CD

圖則名稱 drawing title
新界北部雨水排放系統改善計劃 - A部分(雨水渠改善及修復工程)
DRAINAGE IMPROVEMENT IN NORTHERN NEW TERRITORIES -
PACKAGE A (UPGRADING AND REHABILITATION OF STORMWATER DRAINS)

A	23.04.2001	TITLE REVISED	SIGNED
版 no.	日期 date	修改項目 description	簡簽 initial
繪畫 drawn	SIGNED C.W. CHAN		日期 date 10-04-2001
核對 checked	SIGNED S.C. MA		日期 date 10-04-2001
批核 approved	SIGNED C.M. CHUNG		日期 date 10-04-2001
部門 office	工程管理部 PROJECT MANAGEMENT DIVISION		

圖例 LEGEND:
 擬建的雨水排放系統改善及修復工程
 PROPOSED DRAINAGE UPGRADING AND REHABILITATION WORKS

圖則編號 drawing no. **DPM/0009A** 比例 scale N.T.S.

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