

**For information**

**Legislative Council Panel on Planning, Lands and Works  
135CD – Drainage improvement works at Yung Shue Long New Village  
in Lamma Island, Tseng Lan Shue in Sai Kung  
and Shui Lau Hang in Ta Kwu Ling**

**PURPOSE**

This paper briefs Members on the Administration's proposal to upgrade **135CD** - "Drainage improvement works at Yung Shue Long New Village in Lamma Island, Tseng Lan Shue in Sai Kung and Shui Lau Hang in Ta Kwu Ling" to Category A at an estimated cost of about \$46 million in money-of-the-day (MOD) prices.

**BACKGROUND**

2. In 1989, the Government launched the Rural Planning and Improvement Strategy (RPIS) to improve the living environment of rural villages in the New Territories. The RPIS focuses on the implementation of a programme of infrastructure development, alleviation of local flooding problems and environmental improvement. Since October 1994, the Director of Home Affairs has been responsible for the administration and co-ordination of the RPIS Minor Works Programme.

3. To address local flooding problems, we engaged consultants in May 1998 to carry out the design and construction of drainage improvements at 11 locations as part of the RPIS programme mentioned in paragraph 2 above. The improvement works for eight items had been substantially completed. In 2002, the Director of Drainage Services has taken over the implementation of the remaining three RPIS items relating to local flooding problems, which are-

- a) drainage improvement at Yung Shue Long New Village, Lamma Island;
- b) drainage improvement at Tseng Lan Shue - Phase III, Sai Kung; and
- c) construction of drainage channel at Shui Lau Hang in Ta Kwu Ling.

The above proposed works have been included in Category B as **135CD** “Drainage improvement works at Yung Shue Long New Village in Lamma Island, Tseng Lan Shue in Sai Kung and Shui Lau Hang in Ta Kwu Ling” in October 2004.

## **PROJECT SCOPE**

4. The scope of the project comprises the following drainage improvement works at three locations –

- (a) construction of about 130 metres (m) of an approximately 2m wide rectangular drainage channel, deepening of about 44 m of existing drainage channel by 0.5m, provision of maintenance access and ancillary works at Yung Shue Long New Village, Lamma Island;
- (b) construction of about 140 m of a 4m wide box culvert, provision of maintenance access and ancillary works at Tseng Lan Shue, Sai Kung; and
- (c) construction of about 440 m of a 3.5m wide rectangular drainage channel, provision of maintenance access and ancillary works at Shui Lau Hang in Ta Kwu Ling.

Layout plans of the proposed works at Yung Shue Long New Village in Lamma Island, Tseng Lan Shue in Sai Kung and Shui Lau Hang in Ta Kwu Ling are at **Enclosures 1 to 3** respectively.

5. We plan to start the construction works in early 2006 for completion in early 2008.

## **JUSTIFICATION**

### **Yung Shue Long New Village**

6. Due to inadequate capacity of the existing drainage channel, Yung Shue Long New Village in Lamma Island is susceptible to flooding during heavy rainstorms. Moreover, as the only access road from Yung Shue Long New Village to the public pier is situated in the low-lying area, flooding in the past has adversely affected the local residents and caused economic losses and disruption to access and social activities in the Yung Shue Long New Village area. We

therefore propose to deepen the existing downstream section and extend the drainage channel upstream so as to increase the hydraulic capacity of the drainage system. Arising from the need to minimise land resumption and to retain the existing natural streamcourse as requested by villagers during consultation, we could only design the proposed drainage improvement works to withstand rainstorms with a return period<sup>1</sup> of one in 10 years. The protection level was highlighted in our consultation paper discussed in the meeting of the Lamma Area Committee on 23 May 2001 (paragraph 11 below refers). Members of the Lamma Area Committee had no objection to the design.

### **Tseng Lan Shue**

7. Owing to inadequate capacity of the existing natural streamcourse, Tseng Lan Shue in Sai Kung is susceptible to flooding during heavy rainstorms. To alleviate the flooding problem, we need to intercept the surface run-off by implementing the drainage improvement works in three phases. Phases I and II works, completed in June 1998 and April 2001 respectively under the RPIS programme, are for the upstream part north of Clear Water Bay Road, where the flooding problem was more critical because the streamcourse was narrow and heavily vegetated, and more village houses were affected by flooding. Since then, the risk of flooding at the upstream area has been substantially reduced. Phase III works to be carried out under this project include mitigation measures to provide flood relief to the downstream part south of Clear Water Bay Road and the adjacent areas. To avoid on-stream environmental disturbance, we propose to preserve the existing streamcourse by constructing a bypass box culvert alongside, which is well received by green groups. Whilst the surface run-off will flow in the existing streamcourse on normal days, excessive flood water will be diverted to the bypass box culvert during heavy rainstorms. The box culvert will support the maintenance access on its top, thereby eliminating the requirement for additional land resumption. Upon completion of the proposed drainage works, the flood protection level around the Tseng Lan Shue area will generally be raised to withstand rainstorms with a return period of one in 50 years, and the risk of flooding during heavy rainstorms will be substantially reduced.

### **Shui Lau Hang**

8. Shui Lau Hang in Ta Kwu Ling is mainly agricultural land with scattered residential premises. The surface run-off is collected and conveyed to Ping Yuen River in small ditches which are inadequate to cope with heavy rainstorms. With the change of land use and more agricultural land paved, rainwater which could previously dissipate naturally through ground filtration can

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<sup>1</sup> "Return period" is the average number of years during which a certain severity of flooding will occur once, statistically. A longer return period means a rarer chance of occurrence of a more severe flooding.

no longer do so. This has led to increase in surface run-off and flooding at low-lying areas during heavy rainstorms. We therefore propose to construct a proper drainage channel to convey the surface run-off. Stone mattress bedding will be provided intermittently to the invert of the drainage channel to create ecological habitats and conserve the existing environment in the vicinity of the watercourse. Upon completion of the proposed drainage works, the flood protection level around the Shui Lau Hang area will generally be raised to withstand rainstorms with a return period of one in 50 years, and the risk of flooding during heavy rainstorms be substantially reduced.

## FINANCIAL IMPLICATIONS

9. We estimate the cost of the proposed works to be about \$46 million at MOD prices, made up as follows –

	\$ million
(a) Drainage improvement works at –	35
i) Yung Shue Long New Village, Lamma Island	8
ii) Tseng Lan Shu, Sai Kung	15
iii) Shui Lau Hang, Ta Kwu Ling	12
(b) Consultant's fees	5
i) contract administration	1
ii) site supervision	4
(c) Environmental mitigation measures	2
(d) Contingencies	4
Total	46 (in MOD prices)

10. We estimate that the annual recurrent expenditure for operating and maintaining the proposed works would be about \$85,000.

## **PUBLIC CONSULTATION**

### **Yung Shue Long**

11. We consulted the Lamma Area Committee on 23 May 2001. Members of the Lamma Area Committee supported implementation of the proposed works in Lamma Island.

12. We gazetted the project under the Foreshore and Sea-bed (Reclamations) Ordinance on 17 and 24 January 2003. One objection from the World Wide Fund on the potential environmental impacts was received. After we had provided the environmental review report showing the detailed environmental impact assessment and the proposed mitigation measures, the objection was withdrawn unconditionally.

### **Tseng Lan Shue**

13. We consulted the Food and Environmental Hygiene Committee of Sai Kung District Council on 29 June 2000. Members of the Committee supported implementation of the proposed works at Tseng Lan Shue.

14. We gazetted the road scheme under the Roads (Works, Use and Compensation) Ordinance on 28 March and 4 April 2002. One objection was received and remained unresolved after clarification with the objectors. The objectors claimed themselves as trustee of the subject lot. The objectors were concerned that the potential development of his land would be undermined by the proposed works and the villagers' belief of "Pak Kung" and "Fung Shui" of the area would be adversely affected. The objectors suggested shifting the proposed drainage channel by 500 metres. This was considered not feasible because the position of the proposed channel would have to match with the channels at the upstream. After considering the objection, the Chief Executive in Council authorized the proposed works without modification and authorization was published in the Gazette on 17 and 25 April 2003.

### **Shui Lau Hang**

15. We consulted the North District Council on 19 March 2002. Members of the District Council supported implementation of the proposed works.

## ENVIRONMENTAL IMPLICATIONS

16. The project items are not defined as designated project under the Environmental Impact Assessment Ordinance and will not cause long-term environmental impact. During construction period, we will control noise, dust and other site run-off nuisances to ensure compliance with the established guidelines and standards through the implementation of suitable pollution control and mitigation measures in the construction contract.

17. We have considered in the planning and design stages ways of reducing construction and demolition (C&D) materials as far as possible. The alignments of the proposed drainage systems have been designed to minimise excavation and demolition of existing structures. Furthermore, typical sections of reinforced concrete structures have been adopted to minimise the use of formwork. We will require the contractor to submit a waste management plan (WMP) for approval, with appropriate mitigation measures, including the allocation of areas for waste segregation. We will ensure that the day-to-day operations on site comply with the approved WMP. We will require the contractor to re-use the excavated material as filling material on site or on other construction sites as far as possible to minimise the disposal of public fill to public filling facilities. To further minimise C&D materials, we will encourage the contractor to use non-timber formwork and recyclable material for temporary works. We will also require the contractor to carry out on-site sorting to recover reusable/recyclable material from C&D materials to minimise disposal off site. We will control disposal of public fill and C&D waste to public filling facilities and landfills respectively through a trip-ticket system. We will require the contractor to separate public fill from C&D waste for disposal at appropriate facilities. We will record the disposal and reuse of C&D materials for monitoring purposes.

18. We estimate that about 14 860 cubic metres (m<sup>3</sup>) of C&D materials will be generated by the project. About 700m<sup>3</sup> (5%) will be reused on site, 12 000m<sup>3</sup> (80%) will be reused as fill in public filling areas<sup>2</sup> and 2 160m<sup>3</sup> (15%) will be disposed of at landfills. The notional cost<sup>3</sup> of accommodating C&D waste at landfill site is estimated to be \$270,000 for these projects (based on a

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<sup>2</sup> A public filling area is a designated part of a development project that accepts public fill for reclamation purposes. Disposal of public fill in a public filling area requires a licence issued by the Director of Civil Engineering and Development.

<sup>3</sup> This estimate has taken into account the cost for developing, operating and restoring the landfills after they are filled and the aftercare required. It does not include the land opportunity cost for existing landfill sites (which is estimated at \$90/m<sup>3</sup>), nor the cost to provide new landfills (which are likely to be more expensive) when existing ones are filled. The notional cost estimate is for reference only and does not form part of this project estimate.

notional unit cost of \$125/ m<sup>3</sup>).

19. We have consulted various green groups namely, the Green Powers, the Green Lantau Association, the Conservancy Association, the Friends of Earth, the World Wide Fund and the Able Charity of Lamma Island in June 2004 regarding the proposed works. They provided comments/suggestions to the design of the project so as to achieve environmentally friendly objectives. Their comments/suggestions have been critically reviewed and adopted wherever practicable. For example, we have reduced the scope of the project at Yung Shue Long New Village to preserve its natural upstream and adopted stone mattress bedding for the drainage channel in Shui Lau Hang so as to create ecological habitats.

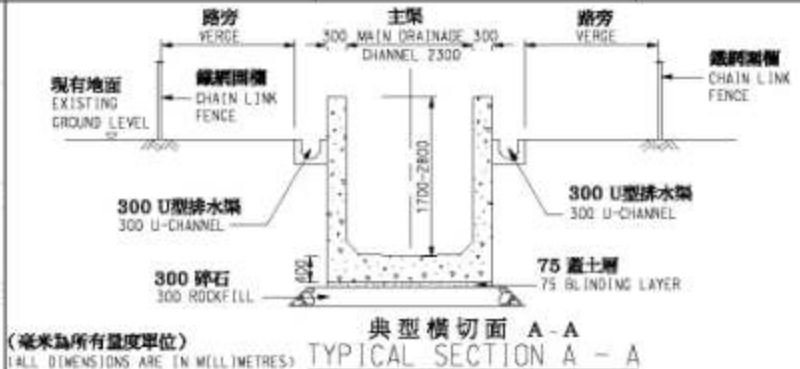
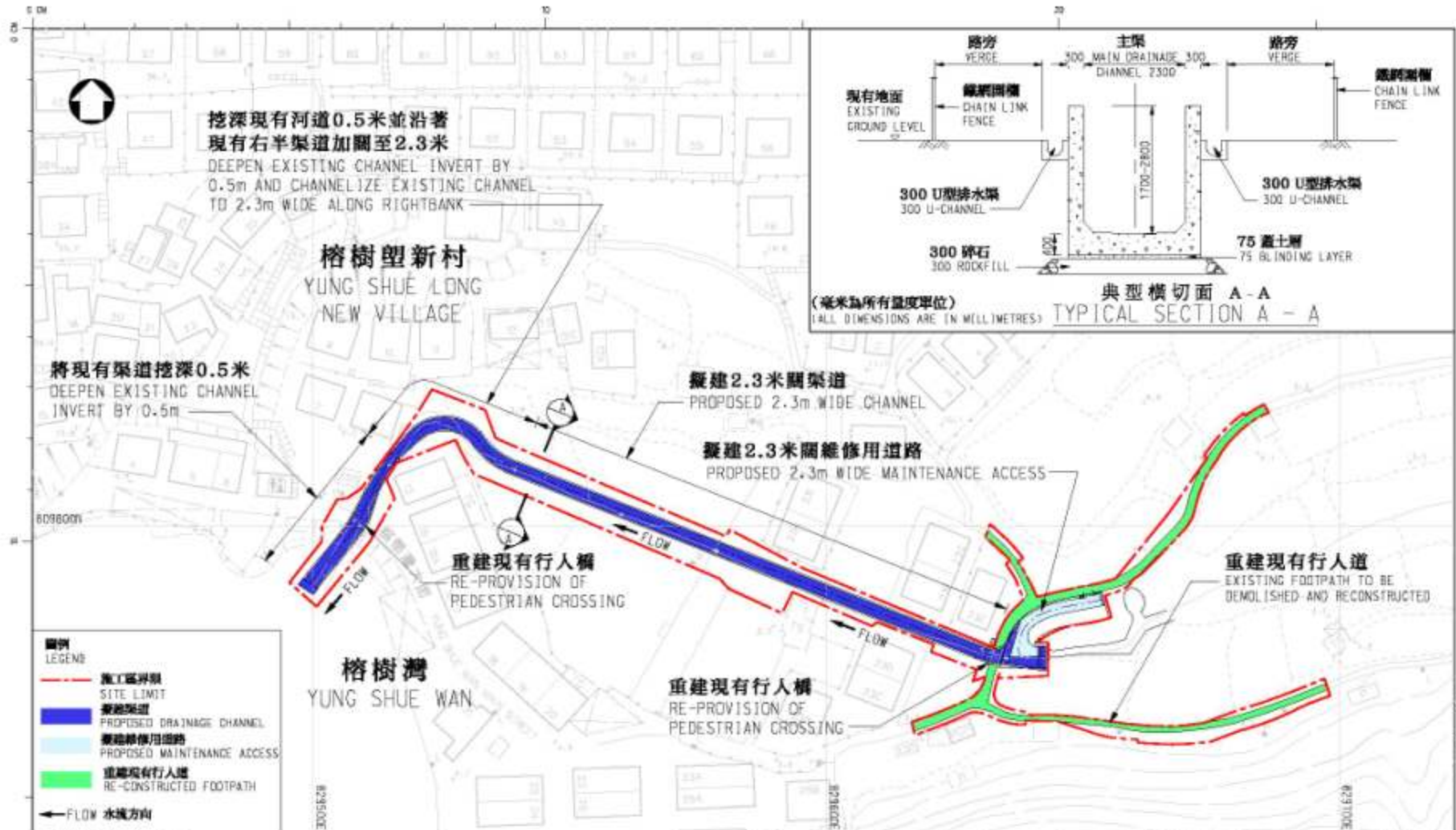
### **JOB CREATION**

20. We estimate that the proposed works will create about 38 jobs (30 for labourers and another eight for professional/technical staff) providing a total employment of 730 man-months.

### **WAY FORWARD**

21. We intend to submit our proposal of upgrading **135CD** to the Public Works Subcommittee in October/November 2005 with a view to seeking funding approval of the Finance Committee in November/December 2005.

**Environment, Transport and Works Bureau**  
**June 2005**



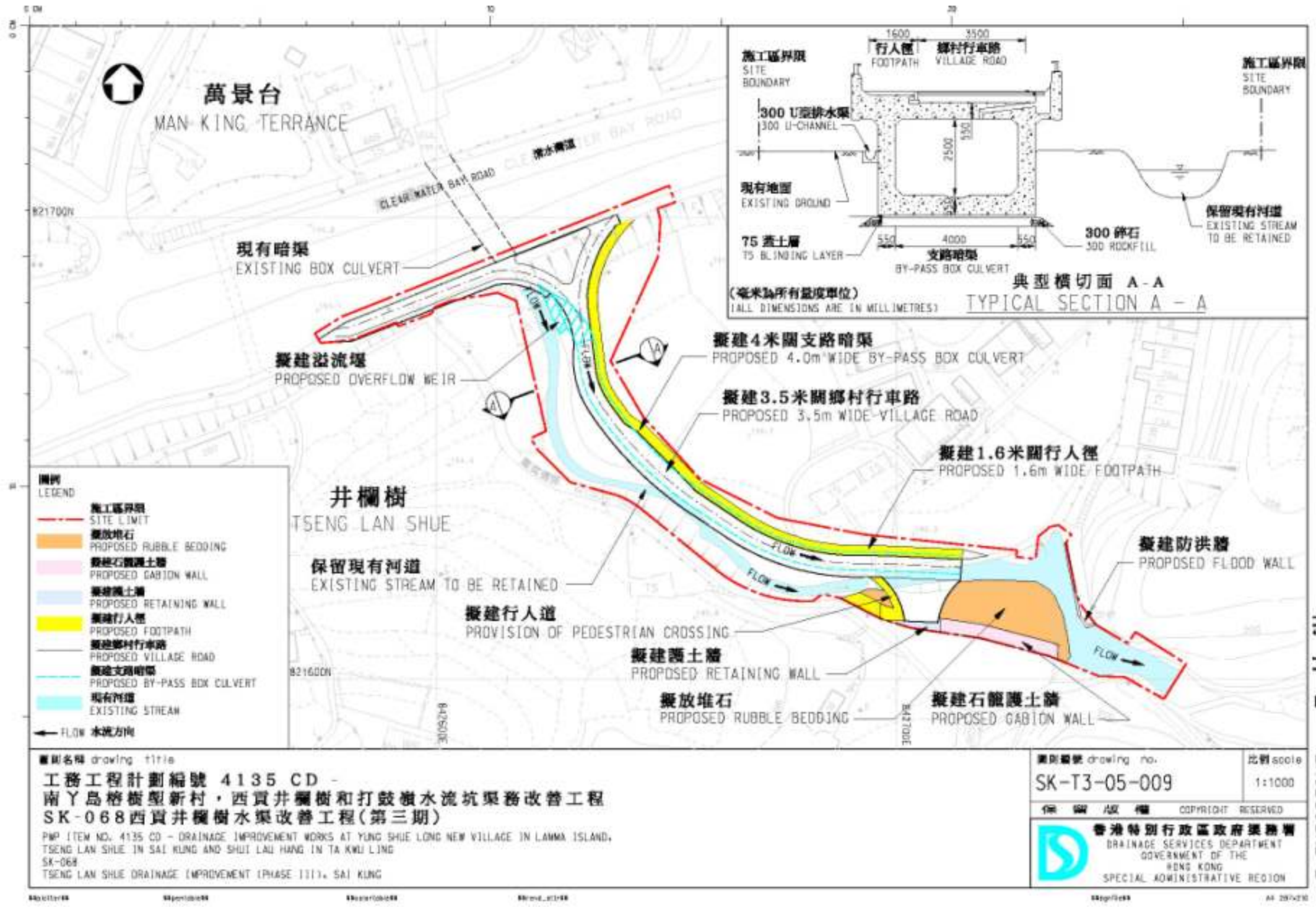
- 圖例 LEGEND**
- 施工區界限 SITE LIMIT
  - 擬建渠道 PROPOSED DRAINAGE CHANNEL
  - 擬建維修用道路 PROPOSED MAINTENANCE ACCESS
  - 重建現有行人道 RE-CONSTRUCTED FOOTPATH
- ← FLOW 水流方向

圖則名稱 drawing title  
 工務工程計劃編號 4135 CD -  
 南丫島榕樹壟新村，西貢井欄樹和打鼓嶺水流坑渠務改善工程  
 IS-020南丫島榕樹壟新村雨水渠改善工程  
 PMP (ITEM NO. 4135 CD - DRAINAGE IMPROVEMENT WORKS AT YUNG SHUE LONG NEW VILLAGE IN LAMMA ISLAND, TSUNG LAM SHUE IN SAI KUNG AND SHUI LAU HANG IN TA KWU LING IS-020 DRAINAGE IMPROVEMENT AT YUNG SHUE LONG NEW VILLAGE, LAMMA ISLAND)

圖則編號 drawing no. SK-T3-05-007 比例 scale 1:1000  
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 DRAINAGE SERVICES DEPARTMENT  
 GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

附件 1 ENCLOSURE 1





萬景台  
MAN KING TERRANCE

現有暗渠  
EXISTING BOX CULVERT

擬建溢流堰  
PROPOSED OVERFLOW WEIR

井欄樹  
TSENG LAN SHUE

保留現有河道  
EXISTING STREAM TO BE RETAINED

擬建行人道  
PROVISION OF PEDESTRIAN CROSSING

擬建護土牆  
PROPOSED RETAINING WALL

擬放堆石  
PROPOSED RUBBLE BEDDING

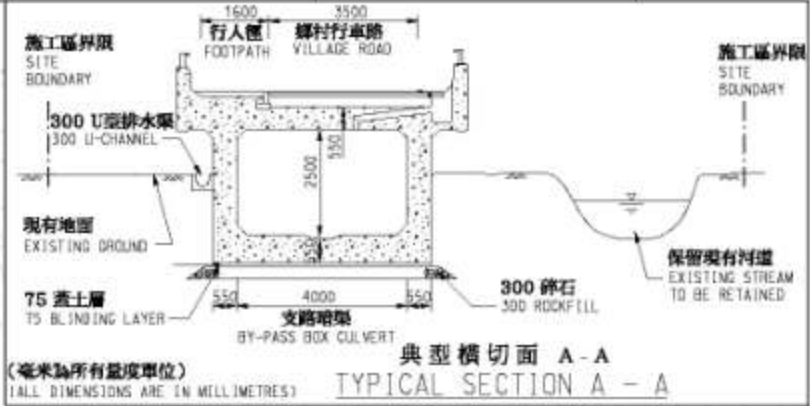
擬建4米闊支路暗渠  
PROPOSED 4.0m WIDE BY-PASS BOX CULVERT

擬建3.5米闊鄉村行車路  
PROPOSED 3.5m WIDE-VILLAGE ROAD

擬建1.6米闊行人徑  
PROPOSED 1.6m WIDE FOOTPATH

擬建防洪牆  
PROPOSED FLOOD WALL

擬建石籠護土牆  
PROPOSED GABION WALL



- 圖例  
LEGEND
- 施工區界限 SITE LIMIT
  - 擬放堆石 PROPOSED RUBBLE BEDDING
  - 擬建石籠護土牆 PROPOSED GABION WALL
  - 擬建護土牆 PROPOSED RETAINING WALL
  - 擬建行人徑 PROPOSED FOOTPATH
  - 擬建鄉村行車路 PROPOSED VILLAGE ROAD
  - 擬建支路暗渠 PROPOSED BY-PASS BOX CULVERT
  - 現有河道 EXISTING STREAM
- ← FLOW 水流方向

圖則名稱 drawing title  
工務工程計劃編號 4135 CD -  
南丫島榕樹型新村，西貢井欄樹和打鼓嶺水流坑渠務改善工程  
SK-068 西貢井欄樹水渠改善工程(第三期)  
PMP (TEM NO. 4135 CD - DRAINAGE IMPROVEMENT WORKS AT YUNG SHUE LONG NEW VILLAGE IN LAMMA ISLAND,  
TSENG LAN SHUE IN SAI KUNG AND SHUI LAU HANG IN TA KWU LING  
SK-068  
TSENG LAN SHUE DRAINAGE IMPROVEMENT (PHASE III), SAI KUNG

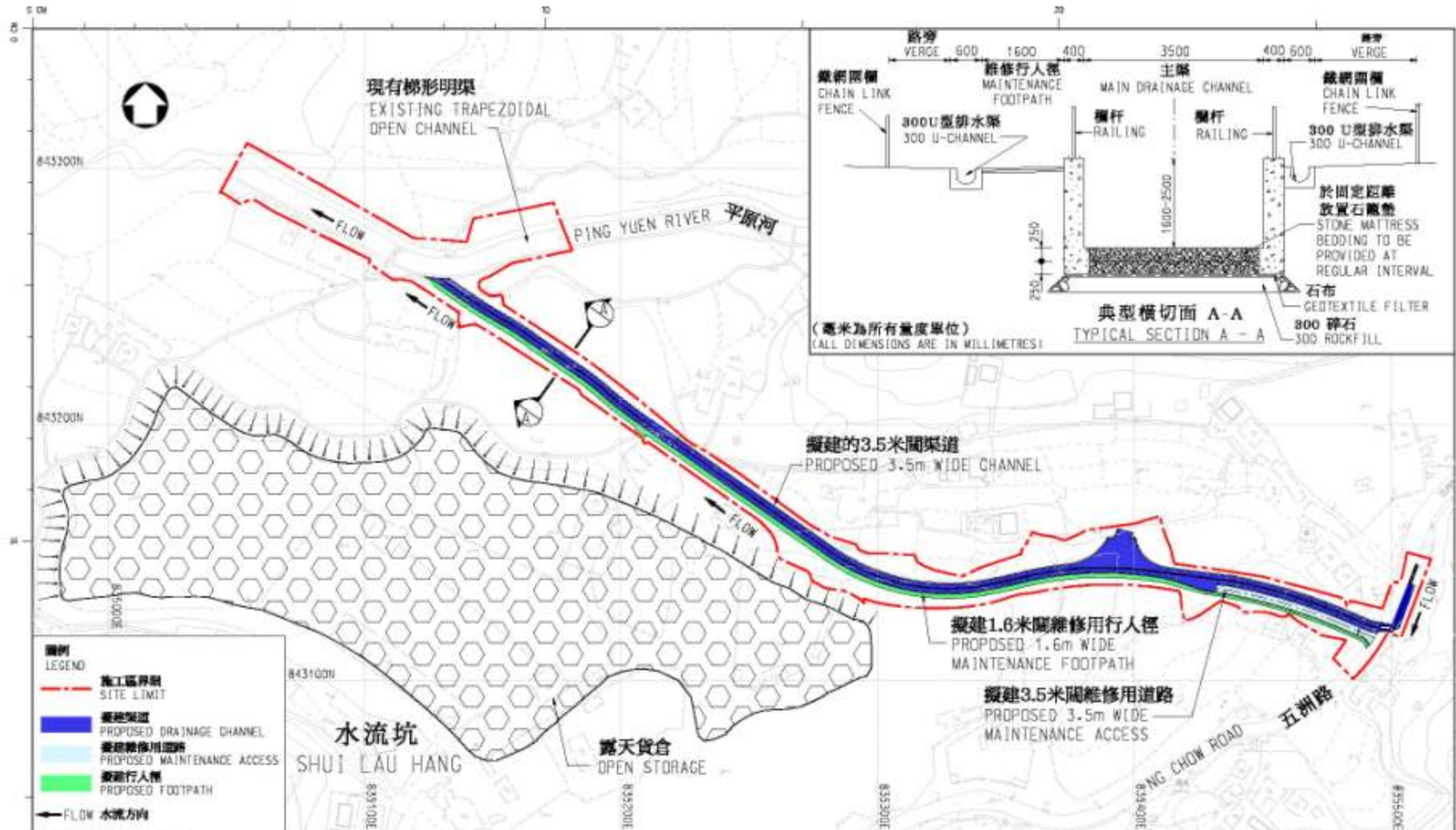
圖則編號 drawing no.  
SK-T3-05-009

比例 scale  
1:1000

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附件 2  
ENCLOSURE 2



圖則名稱 drawing title  
 工務工程計劃編號 4135 CD -  
 南丫島榕樹型新村，西貢井欄樹和打鼓嶺水流坑渠務改善工程  
 ND-005打鼓嶺水流坑排水渠建築工程  
 PMP (TEM NO. 4135 CD - DRAINAGE IMPROVEMENT WORKS AT YUNG SHUE LONG NEW VILLAGE IN LAMMA ISLAND,  
 TSENG LAN SHUE IN SAI KUNG AND SHUI LAU HANG IN TA KWU LING  
 ND-005  
 CONSTRUCTION OF DRAINAGE CHANNEL AT SHUI LAU HANG IN TA KWU LING

圖則編號 drawing no.  
 SK-T3-05-008

比例 scale  
 1:2000

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