**For information**

# Legislative Council Panel on Planning, Lands and Works

## 119CD – Drainage improvement in Northern New Territories – package C

## PURPOSE

This paper briefs Members on the Administration's proposal to upgrade part of **119CD** entitled "Drainage improvement in Northern New Territories – package C" to Category A, at an estimated cost of about $154.7 million in money-of-the-day (MOD) prices, for the drainage improvement works in Tai Po Tin, Ping Che, Man Uk Pin and Lin Ma Hang in the Northern New Territories.

## PROJECT SCOPE

2. The scope of the part of **119CD** which we propose to upgrade to Category A comprises the construction of–

(a) about 0.8 kilometres (km) drainage channel of width ranging from 5 metres (m) to 8 m and provision of ancillary works at Tai Po Tin;

(b) about 0.7 km drainage channel of width ranging from 5 m to 8 m, about 150 m twin-cell box culvert with internal cell dimensions of 4 m wide by 3 m high and provision of ancillary works at Ping Che;

(c) about 1.7 km drainage channels of width ranging from 1 m to 45 m, about 80 m single-cell box culvert with internal cell dimensions ranging from 3 m wide by 1 m high to 4 m wide by 2 m high and provision of ancillary works at Man Uk Pin; and

(d) bank improvement works about 0.2 km long at the existing stream courses and provision of ancillary works at Lin Ma Hang.

We plan to commence construction in end 2007 for completion in mid 2011. A site plan and typical sections showing the proposed works are at **Enclosure 1**.

## JUSTIFICATION

3. Owing to developments and extensive changes in land use in the Northern New Territories over the years, large tracts of natural ground have been paved over and become impermeable. Rainwater can no longer dissipate naturally through ground infiltration as in the past. This has led to a significant increase in surface run-off and overloading of the existing drainage systems and streamcourses. As such, many areas of the Northern New Territories are susceptible to flooding during heavy rainstorms.

4. Upon completion of the proposed works, the risk of flooding during heavy rainstorms in the areas concerned will be reduced. The drainage systems in Tai Po Tin, Ping Che, Man Uk Pin and Lin Ma Hang will be generally improved to withstand rainstorms with a return period [1] of one in ten years.

## FINANCIAL IMPLICATIONS

5. We estimate the cost of the proposed works to be about $154.7 million in MOD prices, made up as follows –

| | | | **$ million** | |
|---|---|---|---|---|
| (a) | Construction of drainage and ancillary works in - | | | 125.9 |
| | (i) | Tai Po Tin | 24.6 | |
| | (ii) | Ping Che | 35.4 | |
| | (iii) | Man Uk Pin | 60.3 | |
| | (iv) | Lin Ma Hang | 5.6 | |
| (b) | Environmental mitigation measures | | | 5.3 |
| (c) | Consultants' fees for - | | | 10.9 |
| | (i) | contract administration | 0.7 | |
| | (ii) | site supervision | 10.2 | |

[1] "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.

| | | **$ million** | |
|---|---|---|---|
| (d) | Contingencies | 12.6 | |
| | Total | 154.7 | (in MOD prices) |

6. We estimate the additional annual recurrent expenditure arising from this proposed works to be about $0.7 million.

## PUBLIC CONSULTATION

7. We consulted the North District Council District Development & Environmental Improvement Committee, the Sha Tau Kok Rural Committee and the Ta Kwu Ling Rural Committee on 23 May, 4 and 28 February 2005 respectively for the proposed works. Members supported the implementation of the proposed works.

8. We gazetted the proposed works under the Roads (Works, Use and Compensation) Ordinance on 13 April 2006 and received a total of nine objections. The objectors were concerned about land resumption and clearance and corresponding impacts on their living environment and business operations. Upon revision of the scheme to reduce resumption and clearance of lands and structures, all of the objectors have agreed to withdraw their objections. We therefore gazetted the amendment plans and scheme on 2 March 2007 and did not receive any further objection.

## ENVIRONMENTAL IMPLICATIONS

9. The proposed drainage improvement works in Loi Tung near Man Uk Pin and Lin Ma Hang are designated projects under the Environmental Impact Assessment (EIA) Ordinance due to the proximity of a Conservation Area in Loi Tung and a planned Site of Special Scientific Interest in Lin Ma Hang. We completed an EIA report for the proposed works at these locations and obtained an environmental permit on 9 July 2007. The proposed drainage improvement works in Tai Po Tin, Ping Che and other areas in Man Uk Pin are not designated projects. We have also completed an Environmental Study (ES) for the proposed works at these locations. Both the EIA report and ES concluded that the environmental impacts arising from the proposed works could be mitigated within established standards and guidelines upon implementation of the recommended mitigation measures. We will implement the mitigation measures as recommended.

10. For short-term impacts caused by the works during construction, we will control noise, dust and site run-off within established standards and guidelines through implementation of mitigation measures such as the use of temporary noise barriers and silenced construction equipment to reduce noise generation, water-spraying to reduce emission of dust, and working in dry environment with barriers to control water pollution during excavation. We will also carry out regular site inspections to ensure that these recommended mitigation measures and good site practices will be properly implemented on site. We have included $5.3 million in the project estimate for implementing the environmental mitigation measures.

11. We have considered ways in the planning and design stages to reduce the generation of construction and demolition (C&D) materials where possible. For example, we have determined the alignments of the proposed drainage channels such that excavation and demolition of existing structures would be minimised. 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 of C&D materials and waste. In addition, we will require the contractor to reuse inert C&D materials (e.g. the excavated material as filling material) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of C&D materials to public fill reception facilities [2]. We will encourage the contractor to maximise the use of recycled and recyclable C&D materials to further minimise the generation of construction waste.

12. We will also require the contractor to submit a waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures (e.g. allocation of an area for waste segregation) to avoid, reduce, reuse and recycle C&D materials. We will ensure that the day-to-day operations on site comply with the approved WMP. We will control disposal of public fill and C&D waste to public fill reception facilities and landfills respectively through a trip-ticket system. We will require the contractors to separate public fill from C&D waste for disposal at appropriate facilities. We will record the disposal, reuse and recycling of C&D materials for monitoring purposes.

13. We estimate that the project will generate about 123 150 tonnes of C&D materials. Of these, we will reuse about 37 970 tonnes (31%) on site and deliver about 79 980 tonnes (65%) to public fill reception facilities for subsequent reuse. In addition, we will dispose of about 5 200 tonnes (4%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be about $2.8 million for this project (based on a unit cost of $27/tonne

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[2] Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of public fill in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

for disposal at public fill reception facilities and $125/tonne at landfills [3]).

## TRAFFIC IMPACT

14. We have carried out a traffic impact assessment for the proposed works, which concluded that the proposed works would not cause unacceptable traffic impact.

## BACKGROUND INFORMATION

15. In October 1999, we completed a comprehensive review of the drainage systems in the Northern New Territories under **55CD** "Drainage Master Plan Study in the Northern New Territories" with an approved project estimate of $37.3 million. The Study has identified that some existing upstream and local drainage systems are inadequate to meet the required flood protection standard and future development needs. The Study recommends a three-package programme of drainage improvement works to tackle the flooding problems in the areas. Package A covers works in San Tin North, Fanling, Sheung Shui and Tai Po North. Package B covers works in San Tin South, Kwu Tung, Ma Tso Lung and Fu Tei Au, whereas Package C covers works in Ta Kwu Ling, Lung Yuek Tau, Man Uk Pin and Ling Ma Hang.

16. In November 2001, we included **119CD** "Drainage improvement in Northern New Territories – package C" in Category B.

17. In June 2002, we part-upgraded **119CD** to Category A as **130CD** "Drainage improvement in Northern New Territories – package C – consultants' fees and investigations", with an approved project estimate of $15.4 million, for engaging consultants to undertake site investigations and surveys, impact assessments and design for the drainage improvement works for the whole project. The consultancy commenced in July 2003 for completion in November 2007.

18. Taking into account the phasing of land resumption and clearance for lands required in different locations, we implement the drainage improvement works under **119CD** in phases.

19. We upgraded part of **119CD** to Category A as **151CD** entitled "Drainage improvement works in Lung Yeuk Tau, Kwan Tei South and Leng Tsai, Fanling" on

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[3] The 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 $90/m$^3$), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled

11 May 2007, at an approved project estimate of $120.3 million, for carrying out the drainage improvement works at Lung Yeuk Tau, Kwan Tei South and Leng Tsai in Fanling. The construction works commenced in June 2007 for completion in June 2010.

20. We have substantially completed the design of the proposed works in paragraph 2 above. Upon the upgrading of the proposed works, there remains the improvement of a section of river in Ta Kwu Ling to be implemented. Planning and design of the remaining works is in progress.

21. Of the 761 trees within the project boundary, our latest estimate is that 533 trees will be preserved. The proposed works will involve the removal of 228 common trees including 195 trees to be felled and 33 trees to be replanted within the project site. All trees to be removed are not important trees [4]. We will incorporate planting proposal as part of the project, including the planting of about 750 trees, 11 000 shrubs and 9 000 $m^2$ of grassed area.

22. We estimate that the proposed works will create about 80 jobs (65 for labourers and 15 for professional/technical staff) providing a total employment of 2 550 man-months.

## WAY FORWARD

23. Members are invited to support our proposal for part-upgrading of **119CD** for consideration by the Public Works Subcommittee in October 2007 and for funding approval by the Finance Committee in November 2007.

**Development Bureau**
**July 2007**

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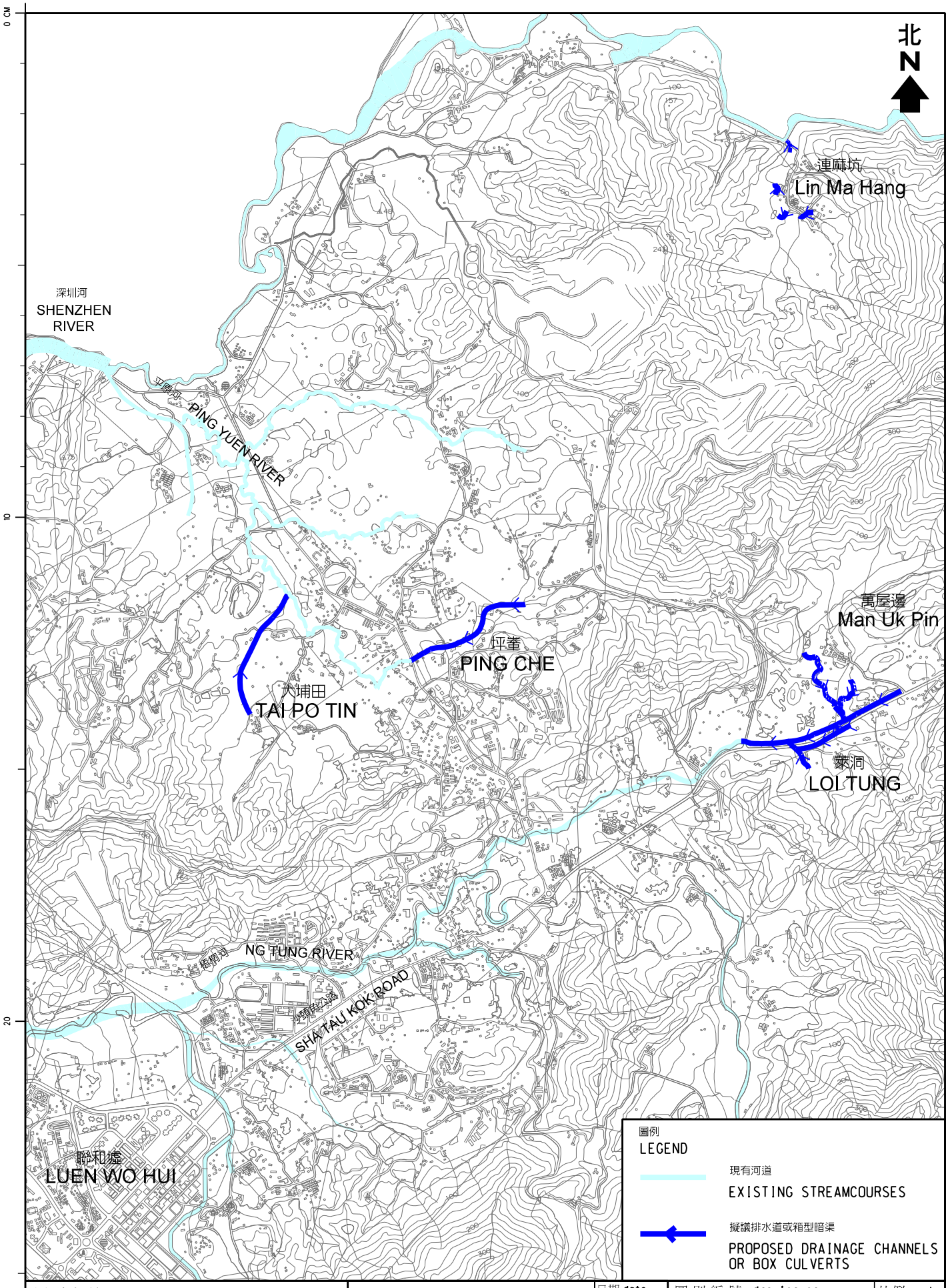
[4] "Important trees" refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

(a) trees over 100 years old or above;
(b) trees of cultural, historical or memorable significance e.g. Fung Shui trees, trees as landmark of monastery or heritage monument, and trees in memory of important persons or event;
(c) trees of precious or rare species;
(d) trees of outstanding form (taking account of overall tree sizes, shape and any special features) e.g. trees with curtain like aerial roots, trees growing in unusual habitat; or
(e) trees with trunk diameter equal or exceeding 1.0 m (measured at 1.3 m above ground level), or with height/canopy spread equal or exceeding 25m.




圖則名稱 drawing title

工務工程計劃編號119CD
新界北部雨水排放系統改善計劃 - C部分
PWP ITEM NO. 119CD
DRAINAGE IMPROVEMENT
IN NORTHERN NEW TERRITORIES
- PACKAGE C

| | | |
|---|---|---|
| 繪畫 drawn | S.Y. WONG | 日期 date 15 MAY.07 |
| 核對 checked | S.K. CHUI | 日期 date 15 MAY.07 |
| 批核 approved | B. K. KWOK | 日期 date 15 MAY.07 |

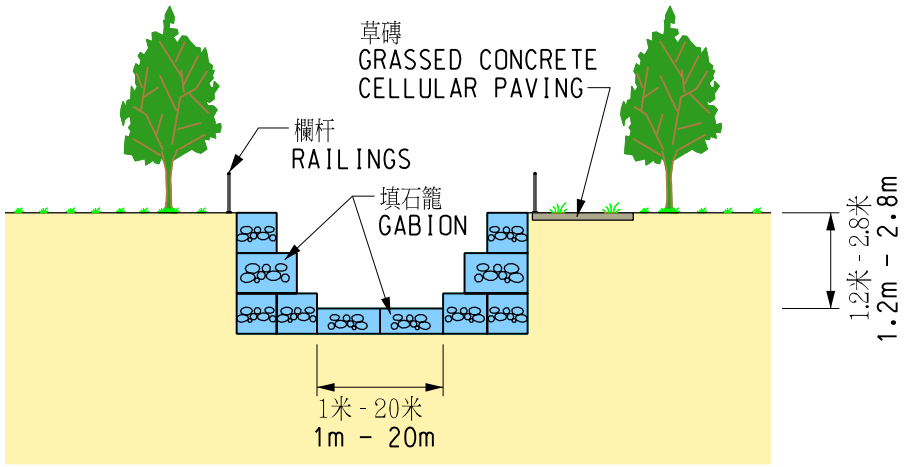
部門 office 排水工程部
DRAINAGE PROJECTS DIVISION

圖則編號 drawing no. DDN/119CD1/8018

比例 scale 1:30000



香港特別行政區政府渠務署
DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

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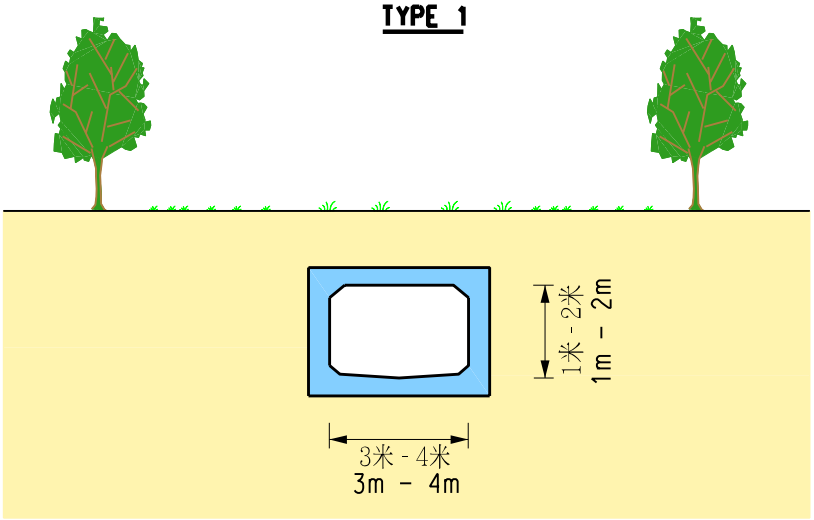
**TYPE 1**

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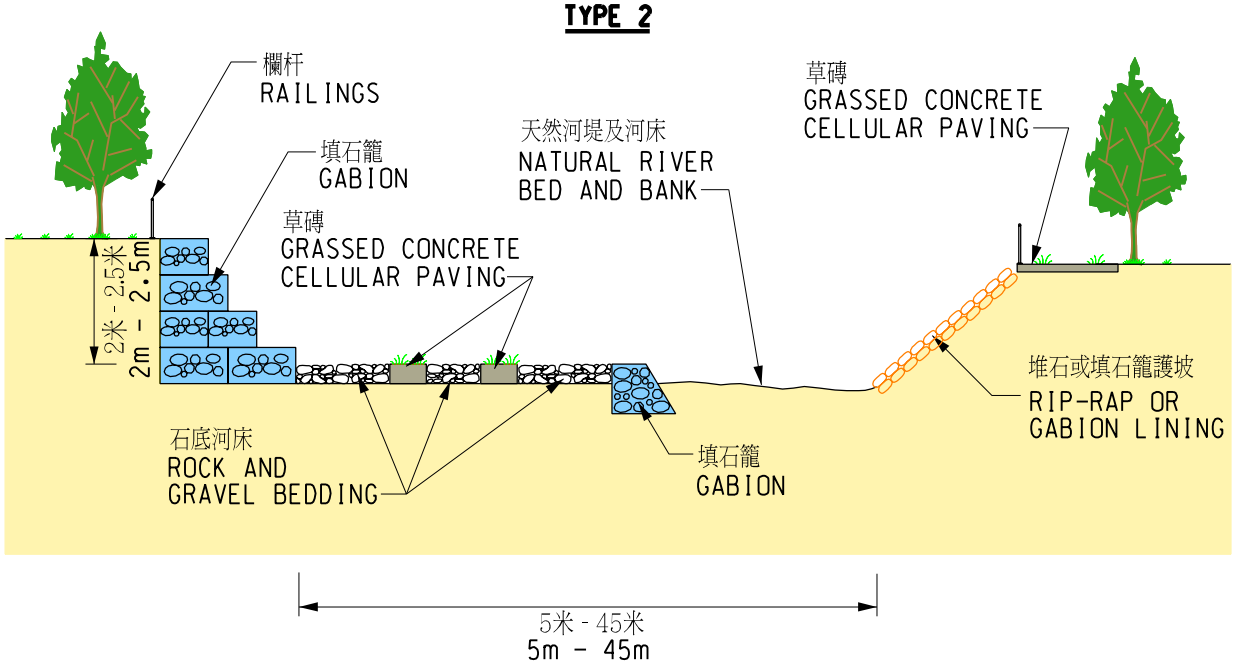
**TYPE 2**




類型三
**TYPE 3**

| | | | |
|---|---|---|---|
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| | 核對 checked | S. K. CHUI | 日期 date 15 MAY.07 |
| | 批核 approved | B. K. KWOK | 日期 date 15 MAY.07 |
| | 部門 office | 排水工程部<br>DRAINAGE PROJECTS DIVISION | |

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