For information

Legislative Council Panel on Planning, Lands and Works

127CD - Drainage improvement in Northern Hong Kong Island - Sheung Wan stormwater pumping station and the associated intercepting drains

PURPOSE

This paper briefs Members on the Administration's proposal to abate the flooding problem in the low-lying areas of Sheung Wan and upgrade **127CD** "Drainage improvement in Northern Hong Kong Island - Sheung Wan stormwater pumping station and the associated intercepting drains" to Category A in two packages for phased implementation of the project. The estimated cost of the project is about $214 million in money-of-the-day (MOD) prices.

BACKGROUND

2. The local areas bounded by Rumsey Street, Queen's Road Central/ West, Queen Street and Connaught Road Central/West in the Sheung Wan district are low-lying and susceptible to frequent flooding during heavy rainstorms, particularly at high tidal levels. **127CD** was included in Category B with an aim to abate the flooding problem in the above areas.

PROPOSAL

3. We propose to construct drains stretching from Lok Ku Road to Gilman's Bazaar to intercept some of the stormwater runoff, and divert it to the drainage system in the Central district. This would reduce about 30% of the surface runoff from getting into the Sheung Wan low-lying areas. Furthermore, we plan to construct a stormwater pumping station with an underground storage tank at the downstream end of the existing drainage system to store and pump the surface runoff collected in Sheung Wan to the Victoria Harbour. As the proposed site for the pumping station is on Chung Kong Road, we also need to construct new drains along Chung Kong Road to divert the surface runoff from the existing drainage system in Sheung Wan to the proposed pumping station and to convey the stormwater from the proposed pumping station to the Victoria Harbour.

4. To bring about early improvement, we plan to implement the project in phases. We will start the phase 1 works in March 2006 comprising the

construction of the intercepting drains along Lok Ku Road, Queen's Road Central and Gilman's Bazaar. There will be progressive improvement made to the drainage system prior to completion of the phase 1 works in October 2008. The construction of the proposed stormwater pumping station and the associated drains along Chung Kong Road are grouped under the remaining works in order to accommodate the lead time required for public consultation on the proposed site of the pumping station and its design to complete. The remaining works are scheduled to start in late 2006 for completion in late 2009.

5. We have deployed our in-house resources and specialist input from other relevant government departments to carry out the design. We will deploy in-house staff to supervise the works. The construction of the Stormwater pumping station in Chung Kong Road in the remaining works is being selected as a pilot scheme for the Government to assess the suitability of adopting contractual partnering aiming to achieve better efficiency and cost-effectiveness. Legal consultants will be required to assist with the implementation of the pilot scheme.

6. The scope of the project comprises -

Phase 1

(a) construction of about 530 metres (m) of stormwater drains ranging from 900 millimetres (mm) to 1 500 mm along Lok Ku Road and Queen's Road Central; and

(b) construction of 130 m of single cell drainage box culvert of internal size 2 250 mm wide and 1 250 mm high along Gilman's Bazaar;

Remaining works

(c) construction of about 350 m of stormwater drains ranging from 1 200 mm to 2 100 mm along Chung Kong Road; and

(d) construction of a stormwater pumping station in Chung Kong Road.

A site plan of the proposed works is at **Enclosure**.

JUSTIFICATION

7. Sheung Wan is one of the earliest settlements in Hong Kong. Most of the infrastructures including the existing drains were designed and constructed decades ago to meet the flow requirements and standards at that time. Although we have been making local improvements to the drainage systems to cater for

developments from time to time, the low-lying areas of about 10 hectares including Bonham Strand, Wing Lok Street and Man Wa Lane are susceptible to flooding during heavy rainstorms and high tide with a return period[1] of one in two years. As the lowest ground level in this area is only slightly above the mean high tide level, the flooding situation would become worse with high tide surge because the existing drainage system could not effectively drain the runoff away due to the small difference in ground and sea levels. The situation would be worse during extreme high tides, when the sea level is higher than the ground level in Sheung Wan causing seawater to flow back and overflow from manholes and gratings.

8. Upon completion of the whole scheme, we could generally raise the flood protection level in Sheung Wan to withstand a rainstorm with a return period of one in 50 years and thus substantially reduce the risk of flooding during heavy rainstorms.

FINANCIAL IMPLICATIONS

9. We estimate the cost of the proposed works to be about $214 million in MOD prices, made up as follows –

		$ million	
(a)	Construction of stormwater drains including drainage box culvert (phase 1 works)	43	
(b)	Construction of Sheung Wan stormwater pumping station and the associated drains (remaining works)[2]	150	
(c)	Environmental mitigation measures	2	
(d)	Contingencies	19	
		214	(in MOD prices)

10. We estimate that the annual recurrent expenditure arising from this project is about $1.4 million.

[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.

[2] Inclusive of legal consultants fee estimated to be $1.5M.

PUBLIC CONSULTATION

11. On 4 November 2004, we consulted the Traffic and Transport Committee of the Central and Western District Council (C&WDC) on the proposed stormwater drains intercepting the surface runoff entering into the drainage system in the low-lying areas of Sheung Wan. Members supported the implementation of the proposed works.

12. On 23 May 2002, we consulted the Food, Environment, Hygiene and Works Committee (the FEHW Committee) of C&WDC on the proposed pumping station for discharging the surface runoff during heavy rainstorms. Members supported the implementation of the proposed works. On 28 July 2005, we further consulted the FEHW Committee on the design of the proposed pumping station including the revised location of the proposed pumping station to the western part of the site next to the seawater pumping station of the Water Supplies Department. Members supported the proposal and requested us to expedite the progress of the project.

13. As the site for the proposed pumping station is currently zoned as "Open Space", we consulted the Harbour Planning Review (HPR) Subcommittee of the Harbour-front Enhancement Committee on 15 June 2005. At the request of the HPR Subcommittee, we revised the scheme of the pumping station to minimise the visual impact on the harbour front and made a re-submission on 10 August 2005 in order to have its support on our application for permission under section 16 of the Town Planning Ordinance to construct the proposed pumping station within the site. Members of the HPR Committee had no adverse comments on the location of the proposed pumping station but considered that there was still room to further refine the pumping station design. Members of the HPR Subcommittee also concluded that they had thorough discussion on this project and would forward their comments to the Town Planning Board when we submitted the application to the Town Planning Board. Submission of the application is in process and the result is expected in December 2005.

ENVIRONMENTAL IMPLICATIONS

14. The proposal is not a designated project under the Environmental Impact Assessment Ordinance. We have completed a Preliminary Environmental Review which concluded that there would not be any long term adverse environmental impacts arising from the proposed works. 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, quieter construction equipment and frequent water-spraying on site. We will also carry

out regular site inspections to ensure that these recommended mitigation measures and good site practices would be properly implemented on site.

15. At the design stage, we have considered ways to optimise the size and shape of the proposed underground drainage works in order to minimise the generation of construction and demolition (C&D) materials. We will require the contractor to submit a waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures to reduce, reuse and recycle C&D materials. We will ensure that the day-to-day operations on site comply with the approved WMP. To further minimise C&D materials, we will encourage the contractor to use non-timber formwork and recyclable material for temporary works and require the contractor to reuse the excavated material as filling material on site or on other construction sites as far as possible. We will also control disposal of public fill and C&D waste to designated public filling facility and landfills respectively through a trip-ticket system, and require the contractor 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.

16. We estimate that the project will generate about 35 000 cubic metres (m^3) of C&D materials. Of these, we will reuse about 5 250 m^3 (15%) on site and about 29 400 m^3 (84%) as fill in public filling areas[3], and dispose of about 350 m^3 (1%) at landfills. The notional cost of accommodating C&D waste at landfill sites is estimated to be $ 43,750 for this project (based on a notional unit cost[4] of $125/$m^3$).

TRAFFIC IMPLICATIONS

17. We have completed a traffic impact assessment and worked out mitigation measures to minimise possible disruption to traffic during construction of the drains. To minimise the traffic impacts, the proposed works on public roads will be divided into a number of sections, each generally not exceeding 50 metres. Each section will normally require the closure of one traffic lane. We will maintain smooth traffic flow through temporary traffic management measures, and the proposed works will not affect the existing public transport routes. We

[3] A public filling area is a designated part of a development project that accepts public fill for reclamation purpose. Disposal of public fill in a public filling facility requires a licence issued by the Director of Civil Engineering and Development.

[4] 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 per m^3), 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.

will also display notice boards on site to explain the reason for the temporary traffic arrangements and to show the expected completion date of the concerned section. We will set up a telephone hotline for the public to make enquiries or lodge complaints. We have carefully selected the alignment of the proposed drains and avoided the busy road sections or pedestrian pavements in Queen's Road Central near Morrison Street and along Wing Wo Street. We will maintain all existing vehicular entry and exit points, pedestrian routes and pedestrian crossing facilities, and also design temporary traffic arrangements according to prevailing site constraints and up to the required standards. To expedite works progress without inducing unacceptable nuisance to the public, we will use the trenchless method to construct drains at critical locations such as the junction of Wellington Street and Queen's Road Central, and along Gilman's Bazaar.

18. During the construction period, we will establish a Traffic Management Liaison Group to discuss, scrutinise and review the proposed temporary traffic arrangements. We will maintain close contact with the Transport Department, various public transport operators, the Hong Kong Police Force and relevant government departments to review the situation so as to minimise any disruption caused.

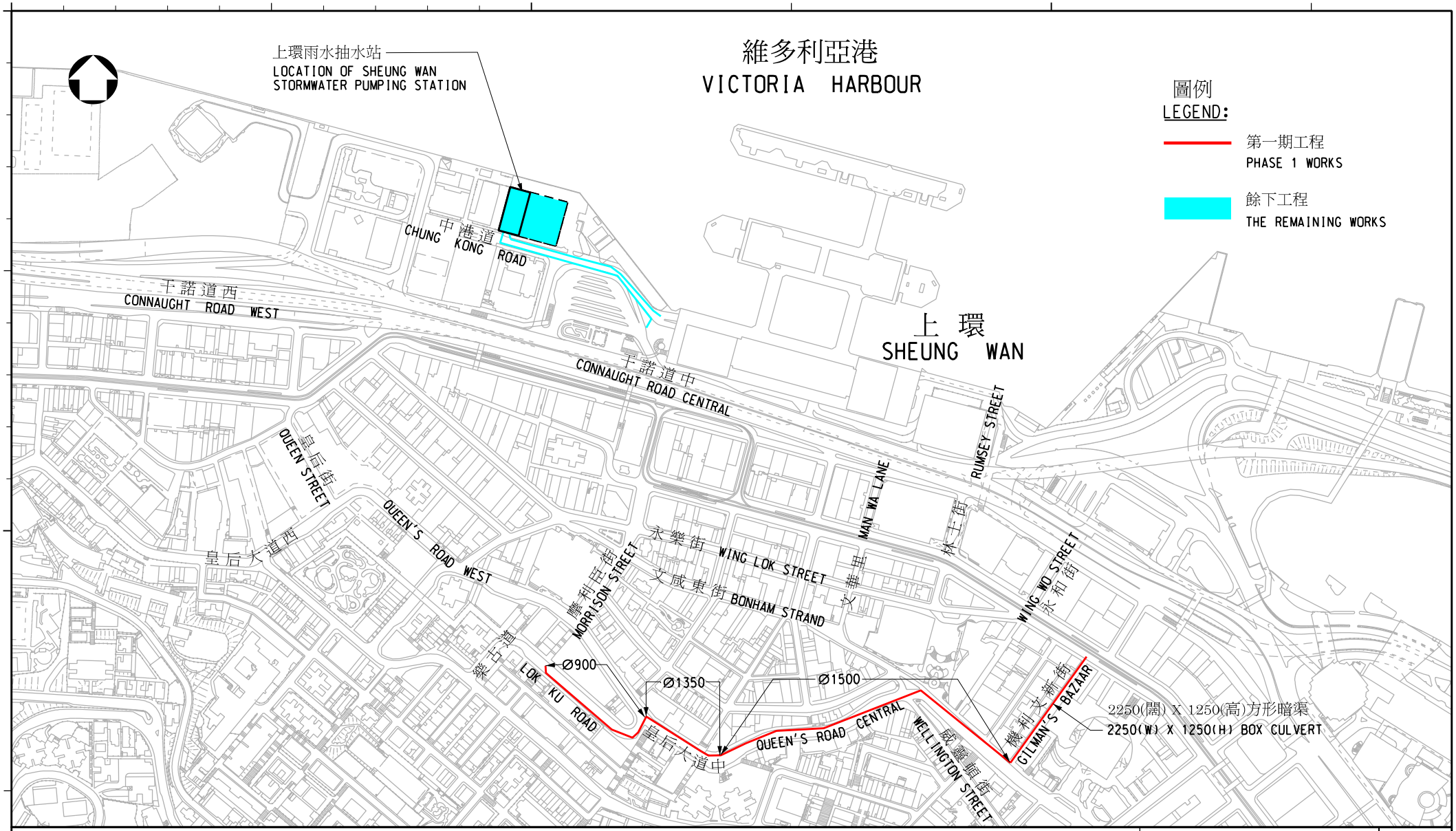
JOB CREATION

19. We estimate that the proposed works will create about 175 jobs (150 for labourers and another 25 for professional/technical staff) providing a total employment of 5 000 man-months.

WAY FORWARD

20. Members are invited to support our proposal of upgrading the phase 1 and the remaining works of **127CD,** which we plan to submit to the Public Works Subcommittee for their consideration in January and June 2006 respectively with a view to seeking funding approval from the Finance Committee in February and July 2006 respectively.

Environment, Transport and Works Bureau
November 2005



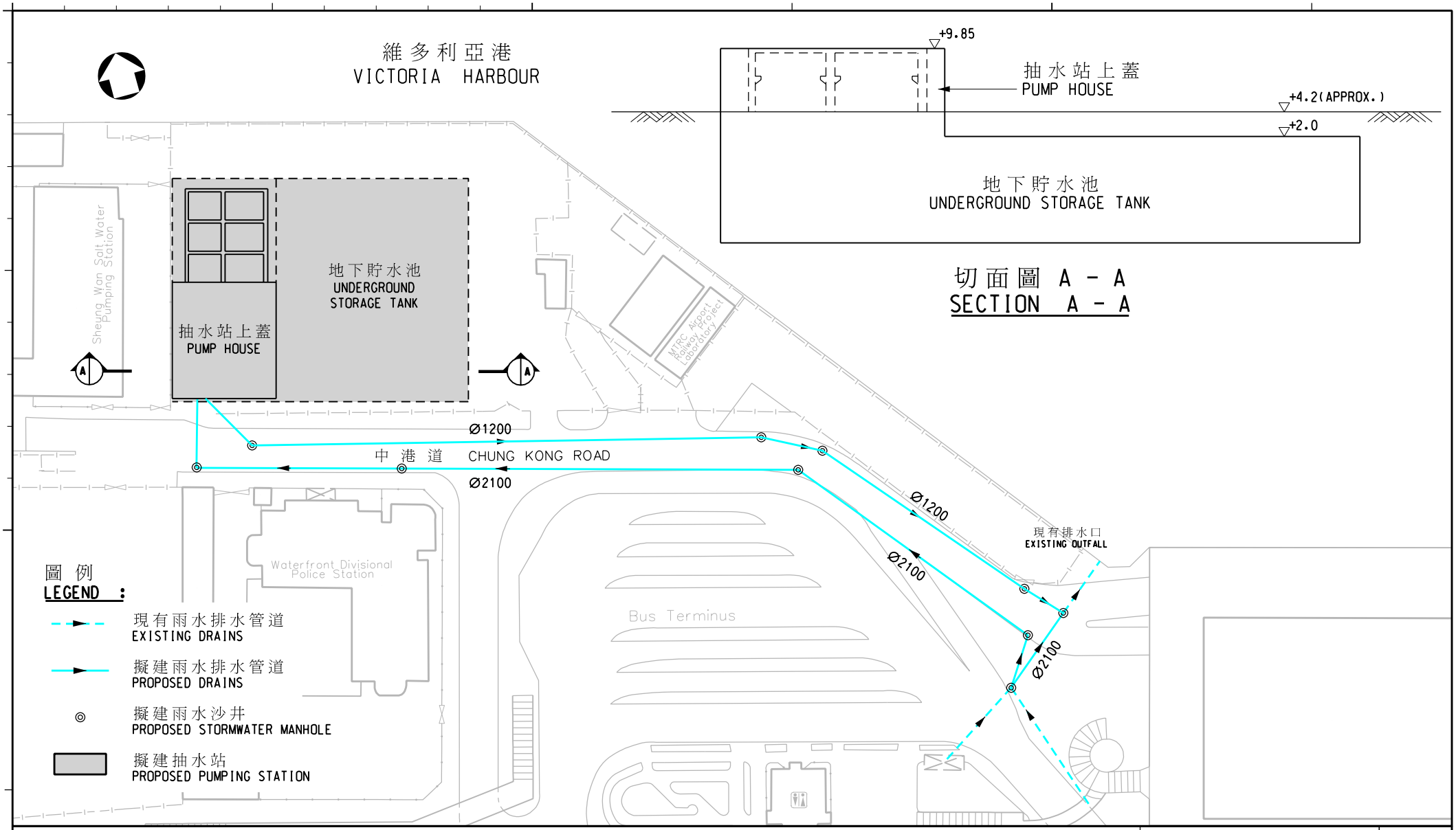
圖則名稱 drawing title

港島北部雨水排放改善計劃 - 擬建的上環雨水抽水站及相關截流渠
DRAINAGE IMPROVEMENT IN NORTHERN HONG KONG ISLAND - SHEUNG WAN STORMWATER PUMPING STATION AND THE ASSOCIATED INTERCEPTING DRAINS

圖則編號 drawing no.	比例 scale
127CD-SK-04	N.T.S.

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

(SHEET 1 OF 2) 附件 ENCLOSURE



圖則名稱 drawing title

港島北部雨水排放改善計劃 - 擬建的上環雨水抽水站及相關截流渠
DRAINAGE IMPROVEMENT IN NORTHERN HONG KONG ISLAND - SHEUNG WAN STORMWATER PUMPING STATION AND THE ASSOCIATED INTERCEPTING DRAINS

圖則編號 drawing no. 127CD-SK-06

比例 scale N.T.S.

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

(SHEET 2 OF 2) 附件 ENCLOSURE