Port Shelter Sewerage Stage 3
Sai Kung Area 4 Sewerage
Information Paper

1.0 Background

1.1 To control effectively the pollution in Port Shelter and to develop an effective and efficient sewerage system for Sai Kung, the Environmental Protection Department commissioned the Port Shelter Sewerage Master Plan Study in November 1989. The Study, completed in March 1991, recommended the provision of sewerage systems to cover the unsewered areas currently rely on private sewage treatment facilities and septic tank/soakways system for treating sewage. Upon completion of the sewerage system, the sewage collected will be conveyed to the nearby sewage treatment works for proper treatment and disposal. As a result, the discharge of treated sewage can be more effectively controlled and the water quality of Port Shelter can be improved. The locations of the project packages are shown in Enclosure 1.

1.2 The implementation of Port Shelter Sewerage Master Plan is carried out in three stages. The sewerage works in Sai Kung Old Town, Po Lo Che, Tui Min Hoi, Silverstrand, Tai Wan and Sha Ha under Stage 1 and part of Stage 2 works are now in operation. Meanwhile, the Sha Kok Mei village sewerage under Stage 2 works is near completion. As regards Stage 3 works, the design of Mang Kung Uk sewerage is in progress whilst the construction of Sai Kung Area 4 Sewerage is scheduled for commencement in early next year.

1.3 The Environmental Protection Department and the Drainage Services Department briefed the members of the Environmental Improvement Committee of the Sai Kung District Board on 14 September 1992 and 6 January 1994 for Stage 1 and Stage 2 works respectively. Furthermore, the Environmental Protection Department and the Drainage Services Department presented details of Port Shelter Sewerage Stage 3 works to members of the Sai Kung District Board in August 2001 and Sai Kung Rural Committee in September 2001. It is noted that members supported the implementation of the works.

2.0 The Proposed Port Shelter Sewerage Stage 3 – Sai Kung Area 4 Sewerage

The Sai Kung Area 4 Sewerage serves to provide a sewerage system to transfer the sewage collected from the planned developments in Sai Kung Area 4 and the nearby villages to Sai Kung Sewage Treatment Works for treatment and disposal. The proposed sewerage system can cater for an equivalent population of 18,700 capita. The proposed Sai Kung Area 4 works was gazetted under Water Pollution Control (Sewerage) Regulation in October 2001 and no objection was received from the public. The proposed Sai Kung Area Sewerage works comprise -

- approximately 700m long 600mm diameter gravity sewers and the associated manholes;
- approximately 2,200m long 450mm diameter twin rising mains; and
- a sewage pumping station of approximately 1,600m^2 in area with a peak design flow of 304 litre/second.

The location of the proposed works is shown in Enclosure 2. The location of the catchment area of the sewerage system is shown in Enclosure 3.

3.0 Implementation Programme

The construction of Sai Kung Area 4 sewerage shall start in early 2006 for completion in early 2009. Sectional completion will be specified in the Contract to enable a better control on the working sequence and duration in some sensitive areas such as the promenade area.

4.0 The Benefits of the Project

In accordance with the Sai Kung Town Outline Development Plan No. D/SK-T/2 of the Lands Department, Sai Kung Area 4 will be developed into an area of commercial, residential and tourism related uses (including hotels, carparks and open public recreation areas). Furthermore, according to the land sales programme of the Lands Department, the Lot 1950 in D.D. 221 in Sai Kung Area 4 can be disposed of for sale in March 2006 for commercial (including hotel)

uses. New infrastructures are therefore required for the proposed new developments. The proposed sewerage project will provide sewerage for the Sai Kung Area 4 and the nearby villages to abate pollution. Upon completion of the works, more areas will be served by the sewerage system which are of great benefit to both the long term development and environment of Sai Kung.

5.0 Environmental Impact

Long term improvement to the environment is the main purpose of the Sai Kung Area 4 Sewerage project.. Nonetheless, to minimize the visual impact brought by the new pumping station, it is designed to put a substantial part of the sewage pumping station underground with building nicely designed to blend well with the environment. Moreover, grass hydroseeding, planting of trees and shrubs will be made in the pumping station site. Odorous gases generated in the sewage pumping station will be diverted to the deodorization units for odour removal prior to being discharged into the atmosphere. The noise emitted from the pumping station will be kept to statutorily acceptable levels by using noise abatement measures.

During construction, adequate mitigation measures will be implemented to minimize the disturbance and impact caused. When laying gravity sewers and twin rising mains in public roads and open space, every endeavour will be made to minimize the nuisance to the nearby shops and residents by limiting the length of the pipe trench opening and the provision of hoarding, where appropriate, to fence off the pipe trench. Moreover, the restriction on daily working hours and working on Saturdays afternoon, Sundays and Public Holidays will be imposed.

6.0 Traffic Impact and Temporary Traffic Arrangement

Tempoary traffic management scheme will be implemented when working in public road. In formulating the temporary traffic management scheme, the concerned authorities and the parties will be consulted with a view to minimizing the possible traffic impact when the work proceeds. The length and number of road openings and the separation between workfronts will be properly controlled so as to minimize the delay caused to the traffic flow. Provision of temporary decking, where appropriate, over the excavated trench will be made.

7.0 Land Resumption

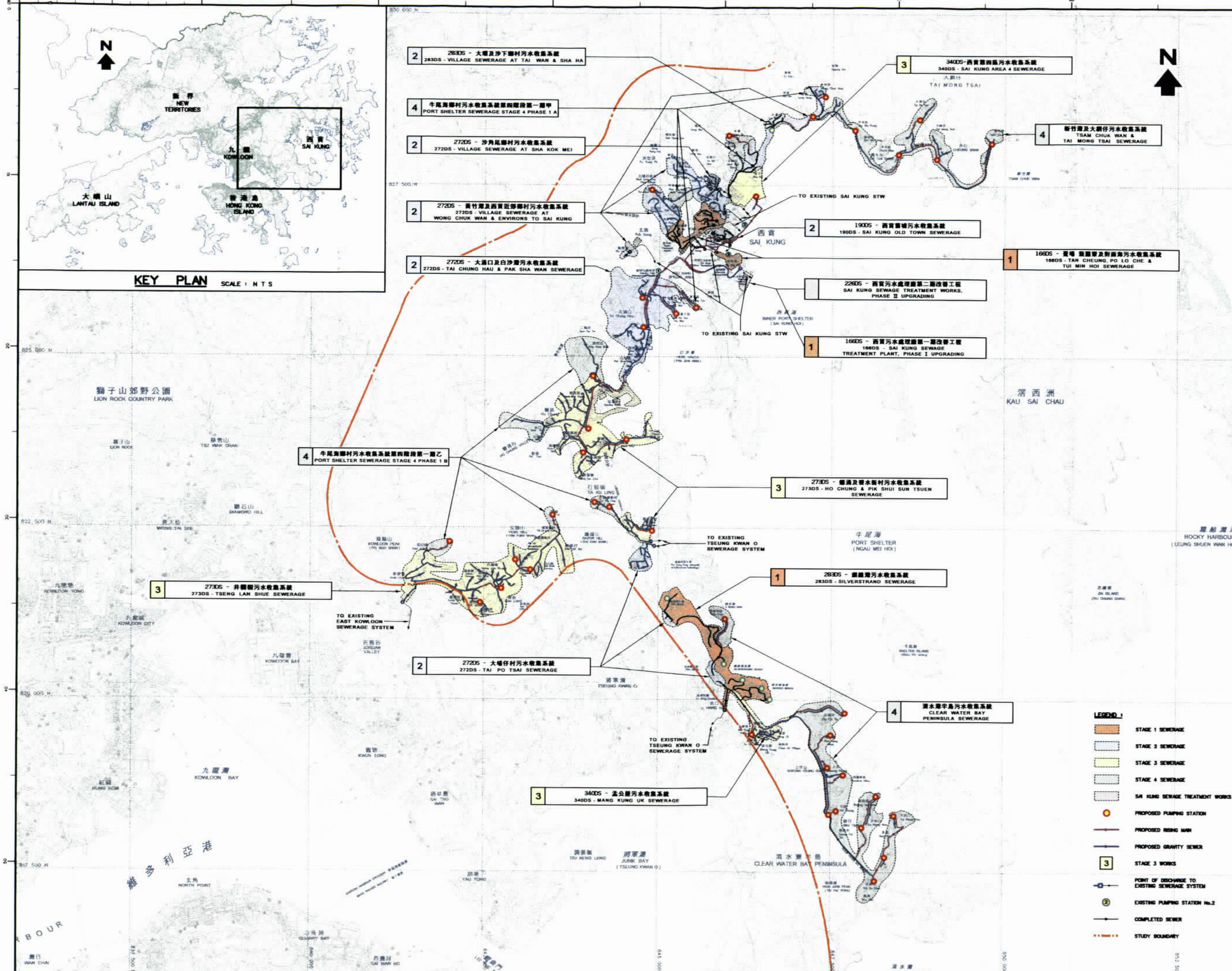
This project will be carried out on Government Land and there is no need to resume private land.

8.0 Concluding Remarks

The nuisance and inconvenience caused to the public during construction will be be temporary and localized. For the long term, the project will be beneficial to Sai Kung as a whole. With the development of Area 4, the overall image of Sai Kung will be enhanced and it will become a more vibrant commercial, residential and tourism area.

Sewerage Projects Division
Drainage Services Department
May 2005

附件1 ENCLOSURE 1


KEY PLAN
SCALE : N T S
NEW TERRITORIES
KOWLOON
SAI KUNG
LANTAU ISLAND
HONG KONG ISLAND
2 283DS - VILLAGE SEWERAGE AT TAI WAN & SHA HA
4 PORT SHELTER SEWERAGE STAGE 4 PHASE 1 A
2 272DS - VILLAGE SEWERAGE AT SHA KOK MEI
2 272DS - VILLAGE SEWERAGE AT WONG CHUK WAN & ENVIRONS TO SAI KUNG
2 272DS - TAI CHUNG HAU & PAK SHA WAN SEWERAGE
3 340DS - SAI KUNG AREA 4 SEWERAGE
4 TSAM CHUK WAN & TAI MONG TSAI SEWERAGE
TO EXISTING SAI KUNG STW
2 190DS - SAI KUNG OLD TOWN SEWERAGE
1 166DS - TAN CHEUNG, PO LO CHE & TUI MIN HOI SEWERAGE
226DS - SAI KUNG SEWAGE TREATMENT WORKS, PHASE II UPGRADING
1 166DS - SAI KUNG SEWAGE TREATMENT PLANT, PHASE I UPGRADING
TO EXISTING SAI KUNG STW
LION ROCK COUNTRY PARK
KAU SAI CHAU
4 PORT SHELTER SEWERAGE STAGE 4 PHASE 1 B
3 273DS - HO CHUNG & PIK SHUI SUN TSUEN SEWERAGE
TO EXISTING TSEUNG KWAN O SEWERAGE SYSTEM
PORT SHELTER
ROCKY HARBOUR
3 273DS - TSENG LAN SHUE SEWERAGE
TO EXISTING EAST KOWLOON SEWERAGE SYSTEM
1 283DS - SILVERSTRAND SEWERAGE
2 272DS - TAI PO TSAI SEWERAGE
4 CLEAR WATER BAY PENINSULA SEWERAGE
TO EXISTING TSEUNG KWAN O SEWERAGE SYSTEM
3 340DS - MANG KUNG UK SEWERAGE
KOWLOON BAY
JUNK BAY
CLEAR WATER BAY PENINSULA
LEGEND :
STAGE 1 SEWERAGE
STAGE 2 SEWERAGE
STAGE 3 SEWERAGE
STAGE 4 SEWERAGE
SAI KUNG SEWAGE TREATMENT WORKS
PROPOSED PUMPING STATION
PROPOSED RISING MAIN
PROPOSED GRAVITY SEWER
STAGE 3 WORKS
POINT OF DISCHARGE TO EXISTING SEWERAGE SYSTEM
EXISTING PUMPING STATION No.2
COMPLETED SEWER
STUDY BOUNDARY

NOTES :

1. SEWERAGE REFURBISHMENT OF STAGE 1 WORKS IN SAI KUNG TOWN AND ITS ENVIRONS IS NOT SHOWN.

No.	date	description	initial
A	19 MAY 2005	DRAWING VETTED AND GENERAL REVISION	SIGNED

REVISION

	name		date
designed	SIGNED	W. W. LAM	7. 9. 01
drawn	SIGNED	M. F. YEUNG	21. 9. 01
checked	SIGNED	W. K. CHU	24. 9. 01
vetted	SIGNED	T. Y. YUEN	19 MAY 2005
approved			

Chief Engineer — Date

contract no.

file no. SP / 8 / 4272DS

project no. 132DS, 166DS, 190DS, 226DS, 272DS, 273DS & 283DS

contract

PROVISIONAL
SUBJECT TO AMENDMENT

drawing title

牛尾海污水收集系統
PORT SHELTER SEWERAGE
施工範圍
SCOPE OF WORKS

drawing no. DDN/272DS/0012A

scale 1 : 25 000 OR AS SHOWN

office

SEWERAGE PROJECTS DIVISION

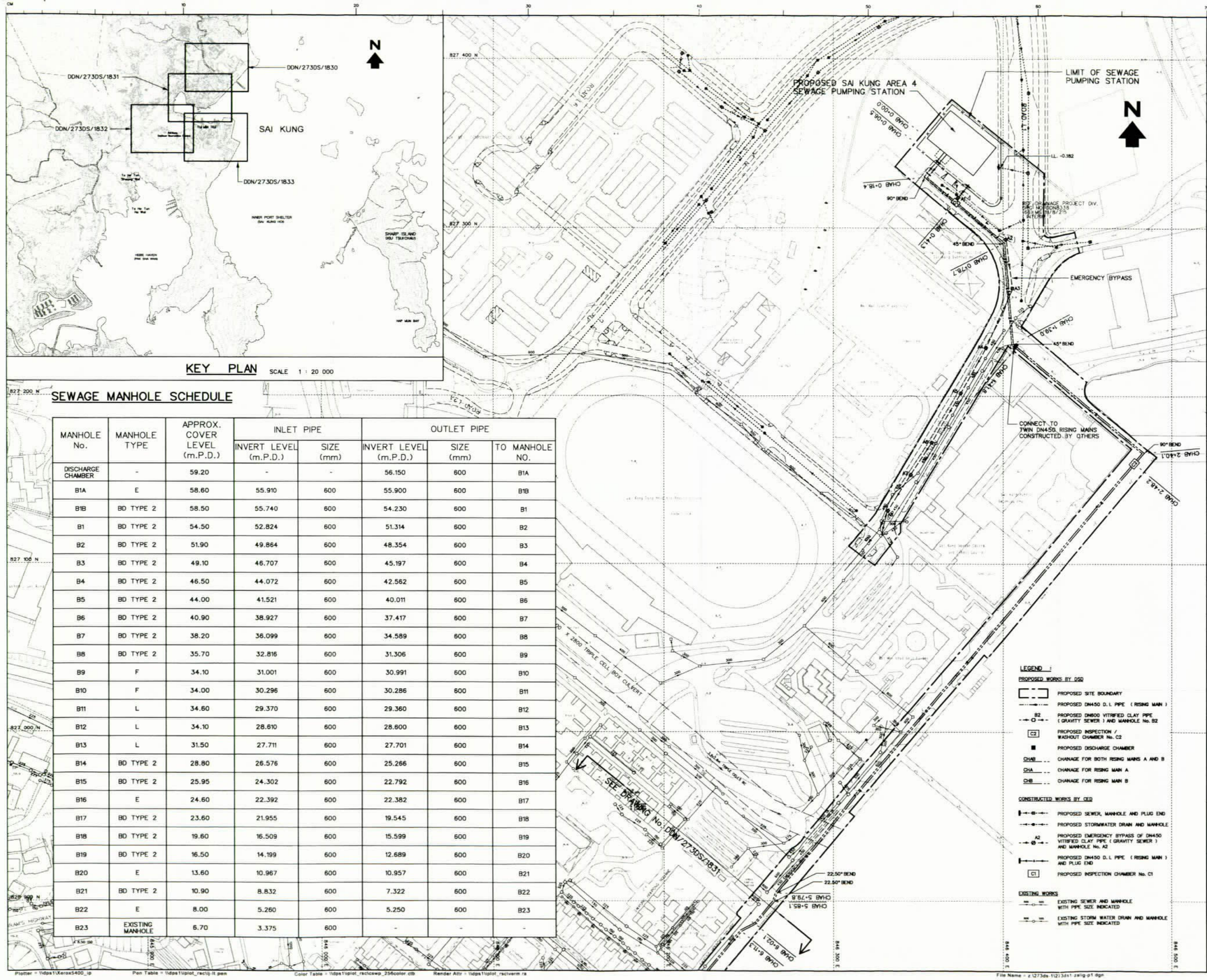
DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

REDUCED COPY A1 841x594

KEY PLAN SCALE 1 : 20 000

SEWAGE MANHOLE SCHEDULE

MANHOLE No.	MANHOLE TYPE	APPROX. COVER LEVEL (m.P.D.)	INLET PIPE		OUTLET PIPE		
			INVERT LEVEL (m.P.D.)	SIZE (mm)	INVERT LEVEL (m.P.D.)	SIZE (mm)	TO MANHOLE NO.
DISCHARGE CHAMBER	-	59.20	-	-	56.150	600	B1A
B1A	E	58.60	55.910	600	55.900	600	B1B
B1B	BD TYPE 2	58.50	55.740	600	54.230	600	B1
B1	BD TYPE 2	54.50	52.824	600	51.314	600	B2
B2	BD TYPE 2	51.90	49.864	600	48.354	600	B3
B3	BD TYPE 2	49.10	46.707	600	45.197	600	B4
B4	BD TYPE 2	46.50	44.072	600	42.562	600	B5
B5	BD TYPE 2	44.00	41.521	600	40.011	600	B6
B6	BD TYPE 2	40.90	38.927	600	37.417	600	B7
B7	BD TYPE 2	38.20	36.099	600	34.589	600	B8
B8	BD TYPE 2	35.70	32.816	600	31.306	600	B9
B9	F	34.10	31.001	600	30.991	600	B10
B10	F	34.00	30.296	600	30.286	600	B11
B11	L	34.60	29.370	600	29.360	600	B12
B12	L	34.10	28.610	600	28.600	600	B13
B13	L	31.50	27.711	600	27.701	600	B14
B14	BD TYPE 2	28.80	26.576	600	25.266	600	B15
B15	BD TYPE 2	25.95	24.302	600	22.792	600	B16
B16	E	24.60	22.392	600	22.382	600	B17
B17	BD TYPE 2	23.60	21.955	600	19.545	600	B18
B18	BD TYPE 2	19.60	16.509	600	15.599	600	B19
B19	BD TYPE 2	16.50	14.199	600	12.689	600	B20
B20	E	13.60	10.967	600	10.957	600	B21
B21	BD TYPE 2	10.90	8.832	600	7.322	600	B22
B22	E	8.00	5.260	600	5.250	600	B23
B23	EXISTING MANHOLE	6.70	3.375	600	-	-	-



LEGEND :

PROPOSED WORKS BY DSD

- PROPOSED SITE BOUNDARY
- PROPOSED DN450 D.I. PIPE (RISING MAIN)
- B2 — PROPOSED DN800 VITRIFIED CLAY PIPE (GRAVITY SEWER) AND MANHOLE No. B2
- C2 — PROPOSED INSPECTION / WASHOUT CHAMBER No. C2
- PROPOSED DISCHARGE CHAMBER
- CHAB — CHAINAGE FOR BOTH RISING MAINS A AND B
- CHA — CHAINAGE FOR RISING MAIN A
- CHB — CHAINAGE FOR RISING MAIN B

CONSTRUCTED WORKS BY CED

- PROPOSED SEWER, MANHOLE AND PLUG END
- PROPOSED STORMWATER DRAIN AND MANHOLE
- A2 — PROPOSED EMERGENCY BYPASS OF DN450 VITRIFIED CLAY PIPE (GRAVITY SEWER) AND MANHOLE No. A2
- PROPOSED DN450 D.I. PIPE (RISING MAIN) AND PLUG END
- C1 — PROPOSED INSPECTION CHAMBER No. C1

EXISTING WORKS

- EXISTING SEWER AND MANHOLE WITH PIPE SIZE INDICATED
- EXISTING STORM WATER DRAIN AND MANHOLE WITH PIPE SIZE INDICATED

NOTES :

1. ALL LEVELS REFER TO P.D.H.K AND ARE IN METRES.
2. ALL GRIDS REFER TO HONG KONG 1980 GRID.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
4. ALL CHAINAGES REFER TO HORIZONTAL DISTANCE MEASURED IN METRES ALONG THE CENTRE LINE OF THE RISING MAINS.
5. ALL VITRIFIED CLAY PIPES SHALL COMPLY WITH EN 295. DN450 PIPE SHALL BE OF CLASS No. 160 AND DN800 PIPE SHALL BE OF CLASS No. 120.
6. ALL RISING MAINS SHALL BE OF D.I. PIPES. ALL D.I. PIPES AND FITTINGS SHALL COMPLY WITH BS EN598.
7. DETAILS OF EXISTING SEWERS / DRAINS SHOWN ARE FOR INFORMATION ONLY AND SHALL BE CONFIRMED ON SITE BY THE CONTRACTOR WHEN NECESSARY FOR THE EXECUTION OF THE WORKS.
8. TESTING PRESSURE OF THE RISING MAIN SHALL BE 12 BAR.
9. THRUST BLOCKS SHALL BE PROVIDED AT BENDS AS SHOWN ON THE LOGITUDINAL PROFILE OF THE RISING MAINS.
10. FOR SCHEDULE OF REINSTATEMENT ABOVE RISING MAINS AND GRAVITY SEWER, SEE DRG. No. DDN/21DS/1861 & 1862.
11. FOR DETAILS OF THE WORKS TO BE CARRIED OUT BY CED, SEE DRG. No. DEV 4993 OF PWP ITEM No. 304CL " FORMATION, ROADS AND DRAINS FOR PACKAGE B REMAINDER - SAI KUNG PROPOSED SEWERAGE WORKS ".

No.	date	description	initial
D	20.8.02	GENERAL REVISION	SIGNED
C	25.6.02	1. ALIGNMENT OF RISING MAINS REVISED	SIGNED
B	4.7.01	1. ALIGNMENT OF RISING MAINS REVISED 2. TITLE BLOCK REVISED	SIGNED
A	11.5.01	NOTES No. 6 REVISED	SIGNED

REVISION

	name	date
designed	SIGNED M. L. LAI	23. 2. 01
drawn	SIGNED M. F. YEUNG	29. 3. 01
checked	SIGNED K. Y. MA	29. 3. 01
vetted		

approved

Chief Engineer Date

contract no.

file no. 4273DS/S3P3A

project no. 273DS

contract

PROVISIONAL
SUBJECT TO AMENDMENT

drawing title

PORT SHELTER SEWERAGE, STAGE 3 -SAI KUNG AREA 4 SEWERAGE

GENERAL LAYOUT

(SHEET 1 OF 4)

drawing no. DDN/273DS/1830D

scale 1 : 1 000 OR AS SHOWN

office

SEWERAGE PROJECTS DIVISION

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

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NOTES :

1. FOR GENERAL NOTES & LEGEND, REFER TO DRG. No. DDN/273DS/1830.

No.	date	description	initial
C	20.8.02	GENERAL REVISION	SIGNED
B	25.8.02	1. ALIGNMENT OF RISING MAINS REVISED	SIGNED
A	4.7.01	1. ALIGNMENT OF RISING MAINS REVISED 2. TITLE BLOCK REVISED	SIGNED

REVISION

	name	date
designed	SIGNED M. L. LAI	23. 2. 01.
drawn	SIGNED M. F. YEUNG	29. 3. 01.
checked	SIGNED K. Y. MA	29. 3. 01.
vetted		
approved	Chief Engineer	Date

contract no.

file no. 4273DS/S3P3A

project no. 273DS

contract

PROVISIONAL
SUBJECT TO AMENDMENT

drawing title

PORT SHELTER SEWERAGE, STAGE 3
-SAI KUNG AREA 4 SEWERAGE

GENERAL LAYOUT

(SHEET 2 OF 4)

drawing no. DDN/273DS/1831C

scale 1 : 1 000

office

SEWERAGE PROJECTS DIVISION

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION

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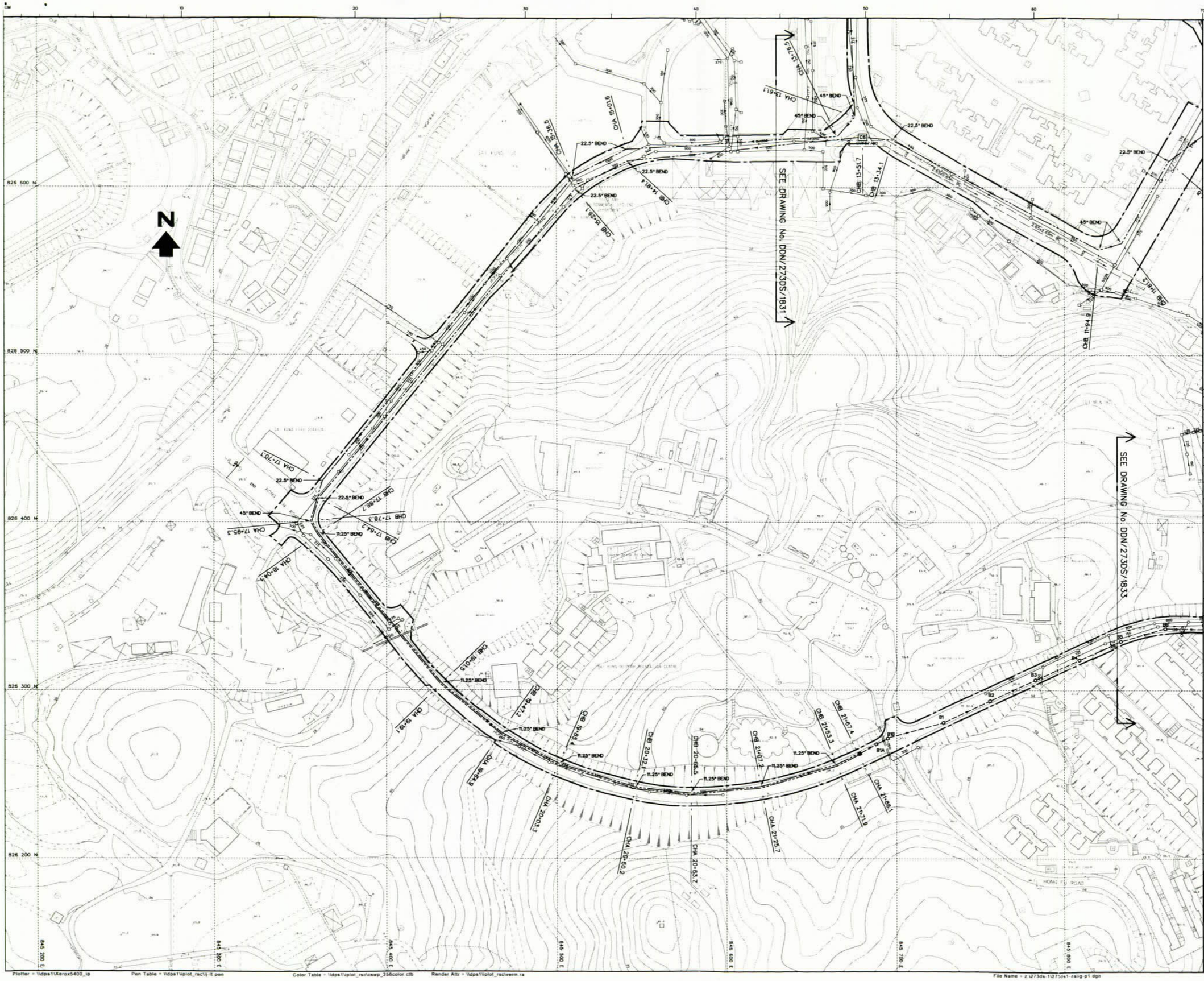

NOTES :

1. FOR GENERAL NOTES & LEGEND, REFER TO DRG. No. DDN/273DS/1830.

No.	date	description	initial
D	20.8.02	GENERAL REVISION	SIGNED
C	25.6.02	RISING MAIN D, MANHOLES B1A & B1B ADDED	SIGNED
B	4.7.01	1. ALIGNMENT OF RISING MAINS REVISED 2. TITLE BLOCK REVISED	SIGNED
A	11.5.01	FLOW DIRECTION NEAR CHA 15-00.0 REVISED	SIGNED

REVISION

	name	date
designed	*SIGNED* M. L. LAI	23. 2. 01.
drawn	*SIGNED* M. F. YEUNG	29. 3. 01.
checked	*SIGNED* K. Y. MA	29. 3. 01.
vetted		
approved		

Chief Engineer Date

contract no.

file no. 4273DS/S3P3A

project no. 273DS

contract

PROVISIONAL
SUBJECT TO AMENDMENT

drawing title

PORT SHELTER SEWERAGE, STAGE 3
-SAI KUNG AREA 4 SEWERAGE

GENERAL LAYOUT

(SHEET 3 OF 4)

drawing no. DDN/273DS/1832D

scale 1 : 1 000

office

SEWERAGE PROJECTS DIVISION

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION

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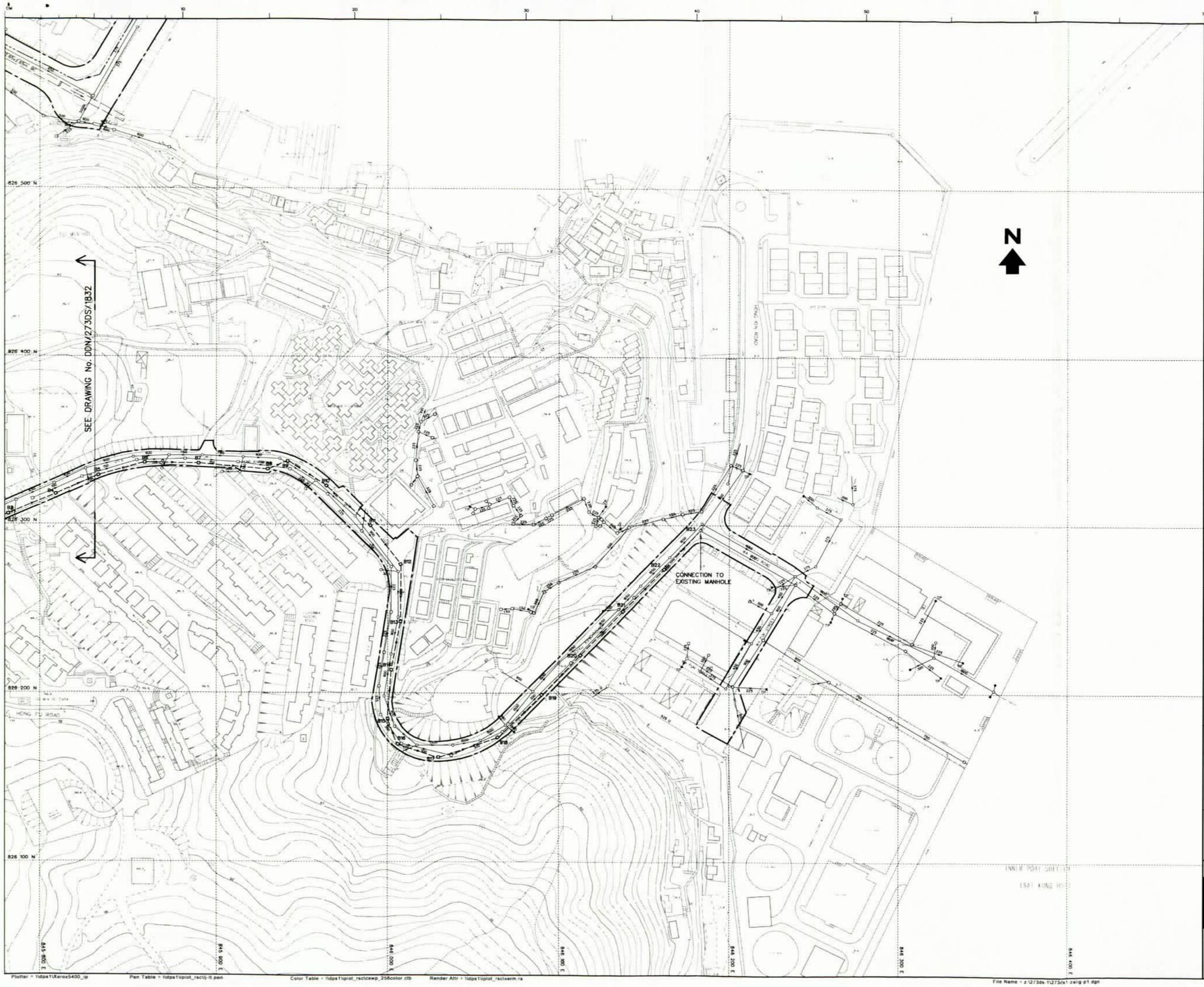

NOTES :

1. FOR GENERAL NOTES & LEGEND, REFER TO DRG. No. DDN/2730S/1830.

No.	date	description	initial
B	20.8.02	GENERAL REVISION	SIGNED
A	4.7.01	TITLE BLOCK REVISED	SIGNED

REVISION

	name	date
designed	SIGNED M. L. LAI	23. 2. 01.
drawn	SIGNED M. F. YEUNG	29. 3. 01.
checked	SIGNED K. Y. MA	29. 3. 01.
vetted		

approved

Chief Engineer Date

contract no.

file no. 4273DS/S3P3A

project no. 273DS

contract

PROVISIONAL
SUBJECT TO AMENDMENT

drawing title

PORT SHELTER SEWERAGE, STAGE 3
-SAI KUNG AREA 4 SEWERAGE

GENERAL LAYOUT

(SHEET 4 OF 4)

drawing no. DDN/273DS/1833B

scale 1 : 1 000

office

SEWERAGE PROJECTS DIVISION

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION

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索引圖 KEY PLAN 比例 SCALE 1 : 200 000

西貢 SAI KUNG

牛尾海 PORT SHELTER (NGAU MEI HOI)

蒲台灣 JUNK BAY (TSEUNG KWAN O)

北 N

西貢 SAI KUNG

西貢第四區污水泵房 SAI KUNG AREA 4 SEWAGE PUMPING STATION

現有西貢污水處理廠 EXISTING SAI KUNG STW

西貢 INNER PORT SHELTER (SAI KUNG HOI)

圖例 : LEGEND :

- 污水集水區 CATCHMENT AREA
- 擬建無壓污水渠 PROPOSED GRAVITY SEWER
- 擬建壓力管道 PROPOSED RISING MAIN
- 擬建污水泵房 PROPOSED SEWAGE PUMPING STATION

PROVISIONAL
SUBJECT TO AMENDMENT

C	11.7.01	DRAWING TITLE REVISED.	SIGNED
B	21.6.01	PROPOSED RISING MAIN ALIGNMENT REVISED.	SIGNED
A	19.4.01	DRAWING TITLE AND LEGEND REVISED.	SIGNED

圖則名稱 drawing title

牛尾海污水收集系統 — 第三階段

西貢第四區污水收集系統 - 集水區

PORT SHELTER SEWERAGE - STAGE 3

SAI KUNG AREA 4 SEWERAGE - CATCHMENT AREA

繪畫 drawn	SIGNED K. W. FONG	日期 date 12.3.01
核對 checked	SIGNED K. Y. MA	日期 date 12.3.01
批核 approved		日期 date
部門 office	污水工程部 SEWERAGE PROJECTS DIVISION	

圖則編號 drawing no. DDN/273DS/1825C

比例 scale 1 : 20 000 OR AS SHOWN

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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