

ANNEX E
SEWAGE IMPACT ASSESSMENT

E. SEWAGE IMPACT ASSESSMENTS

E1.1 Sewerage

E1.1.1 The sewage flows to be generated from the Preliminary Preferred Development Option are estimated in the Table E.1. This assessment is applicable to the Preferred Development Option, as the Preliminary Preferred Development Option is slightly more intensive than the Preferred Development Option.

Table E.1 Estimated Sewage Flows

Site	Use	Global Unit Flow Factor (m ³ /person/day)	No. of residents/ employees	ADWF (m ³ /day)
Site 1	Recreation			
<i>Water Recreation Centre</i>		0.35	30	11
<i>Open Coach Parking</i>			Nominal	5
<i>Adventurous Cycle Park</i>		0.35	30	11
<i>Public Carpark</i>			Nominal	5
<i>Visitor/Heritage/Ecological Centre</i>		0.35	20	7
<i>Themed Restaurant Park</i>		0.35	1,000	350
<i>Botanical Garden</i>		0.06	50	3
Site 2	R3	0.37	518	192
Site 3	R3	0.37	458	170.46
School Site	E			
<i>Primary School</i>		0.025	1,250	31
<i>Secondary School</i>		0.025	1,420	36
IRC	G	0.35	15	5
Lok Wo Sha	R2	0.3	10,008	3,003
	C	0.35	400	140
Wu Kai Sha Station	R1/2	0.24	7,560	1,815
	C	0.35	140	49
				5,833

E1.1.2 The sewerage strategy for the development should be in line with the regional sewerage strategy for Ma On Shan New Town, that is to discharge the sewage flow generated from the proposed development through the sewerage network in Ma On Shan New Town to Sha Tin Sewage Treatment Works. The existing sewerage networks is shown on Figure E.1.

E1.1.3 The Study Area is located at the upstream end of the existing sewerage network for Ma On Shan New Town which has not been designed to cater for the development.

E1.1.4 In 2000, TDD commissioned a Feasibility Study Assignment on Additional Sewerage and Sewage Treatment Works in Sha Tin and Ma On Shan. The study recommended:

- (i) to reconstruct the Ma On Shan Area 108 Sewage Pumping Station (by May 2007 tentatively);

- (ii) additional new sewers to be laid in the similar alignment to the existing trunk sewers in Ma On Shan district;
- (iii) installation of one additional pump at Ma On Shan Main Pumping Station; and
- (iv) minimisation of transient effect on Sha Tin Sewage Treatment Works by modification of the existing fixed speed sewage pumps to a variable speed pump.

E1.1.5 The above works have taken into account the proposed population of the Base Scheme considered in Technical Report No. TR1 & 2 for this Study. Since the population quantum for the Preferred Development Option is significantly less than that for the Base Scheme, review of the findings in the above assignment is not required.

E1.1.6 The Stage III extension to Sha Tin Sewage Treatment Works is under construction and will be completed by 2007. Similar to the situation explained in the preceding paragraph, the treatment works upon expansion will have sufficient capacity to serve the Preferred Development Option.

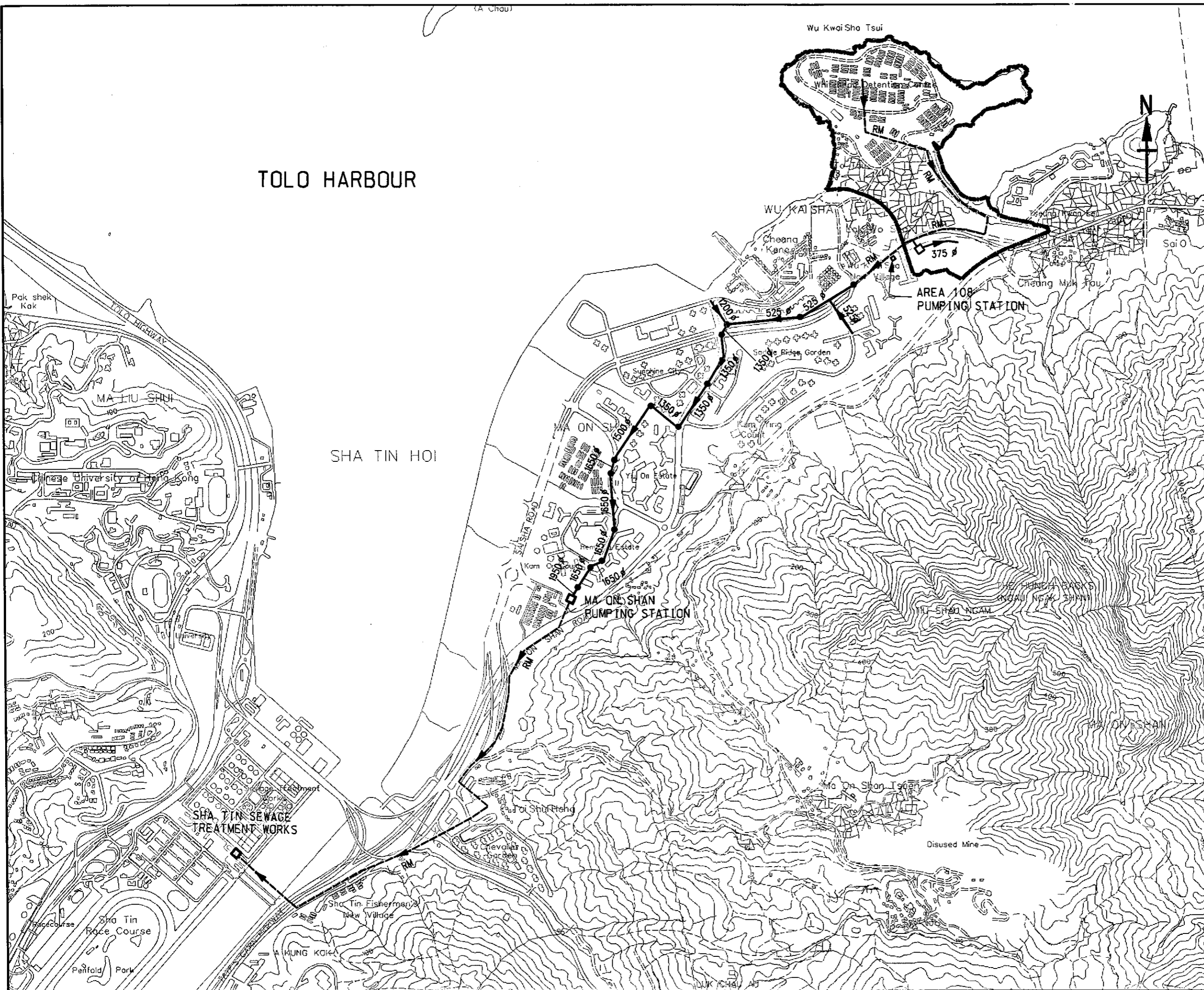
Sewerage Works within Study Area

E1.1.7 Based on the above, only gravity sewers would need to be laid to Area 108 Sewage Pumping Station (SPS) as local improvement works to serve the proposed development to the north of Sai Sha Road. A short connection would be required for the Wu Kai Sha Station development which is located to the south of the road and next to Area 108 SPS.

E1.1.8 A network of gravity sewers is proposed beneath roads within the development to connect to Area 108 Pumping Station, as conceptually shown on Figure E.2. Two gravity sewers are proposed to run from the north of Whitehead along Roads L1 & L2, Road D1(W) and Road D1(E) to collect sewerage generated from proposed development. A stretch of footpath along Sai Sha Road adjacent to Lok Wo Sha development will be widened to accommodate the proposed sewer by constructing a retaining wall along the existing slope. The sewage collected will be conveyed to Ma On Shan Area 108 Sewage Pumping Station for discharge via the Ma On Shan sewerage network to the Sha Tin STW.

TOLO HARBOUR




SHA TIN HOI



© Copyright by Binnie Black & Veatch Hong Kong Limited

Notes

LEGEND :

-  BOUNDARY OF STUDY AREA
-  EXISTING SEWERAGE NETWORK
-  EXISTING RISING MAINS

Designed FL	Date 10/01	Checked CYH	Date 10/01
----------------	---------------	----------------	---------------

AGREEMENT NO. CE 16/99

SHA TIN DEVELOPMENT

FEASIBILITY STUDY FOR
HOUSING DEVELOPMENT
AT WHITEHEAD & LEE ON
IN MA ON SHAN, SHA TIN

Figure title

EXISTING
SEWERAGE NETWORKS

Figure no.

E.1

Scale

NTS

Binnie

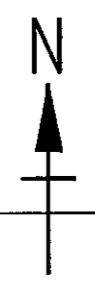
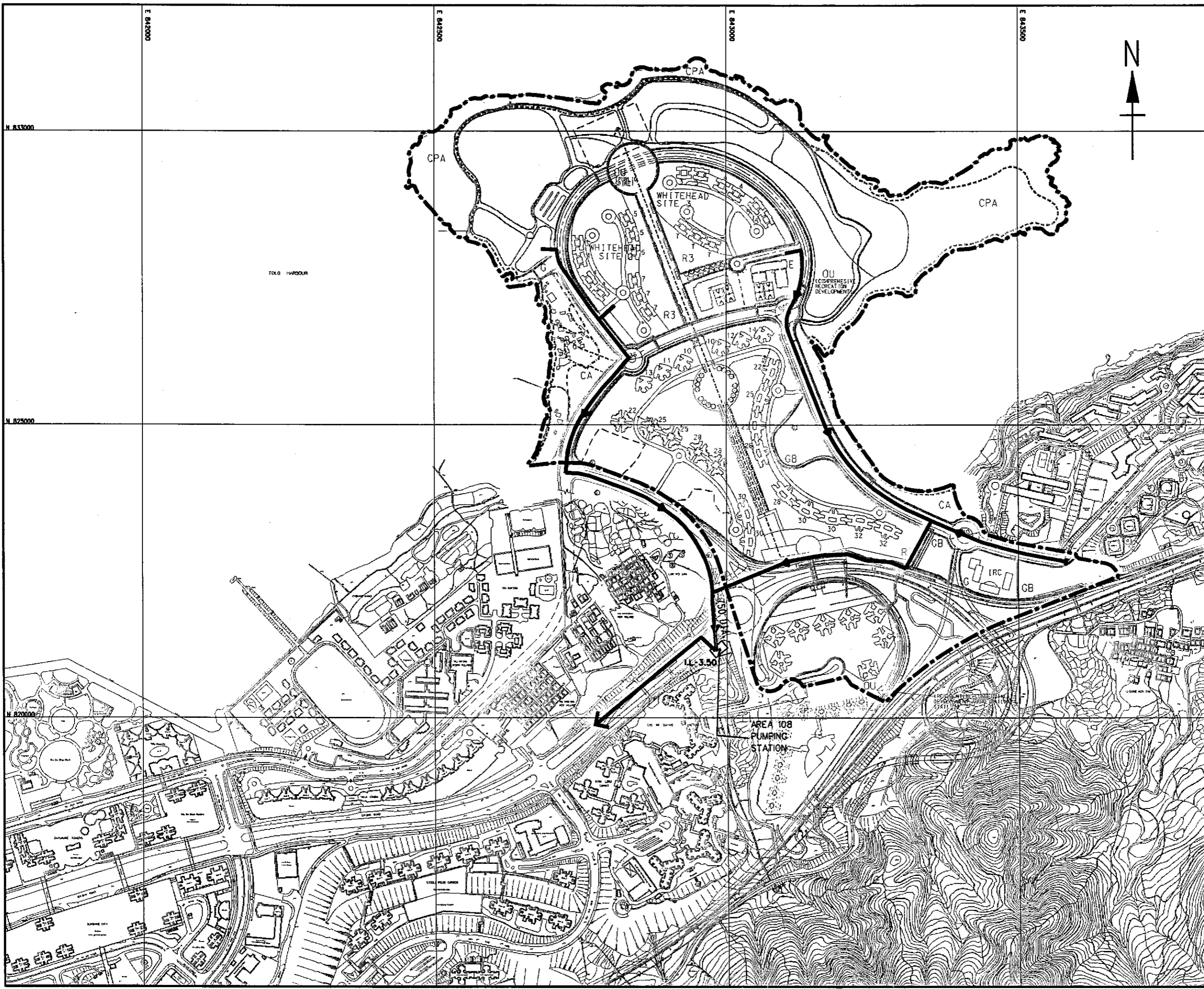
Binnie Black & Veatch Hong Kong Limited
博誠工程顧問有限公司
Engineers and Architects

In association with
CITY PLANNING CONSULTANTS LTD
MVA HONG KONG LTD
RONALD LU & PARTNERS (HK) LTD
URBIS LIMITED
LARRY H.C. TAM & ASSOCIATES LTD

Office

新界東拓展處
NEW TERRITORIES EAST
DEVELOPMENT OFFICE

 拓展署
Territory Development
Department, Hong Kong



© Copyright by Binnie Black & Veitch Hong Kong Limited

- Notes:
1. ALL LEVELS ARE IN METRES ABOVE PRINCIPAL DATUM.
 2. GRID LINES ARE HONG KONG METRIC GRID 1980.

- LEGEND:
- BOUNDARY OF STUDY AREA
 - 750 DIA PROPOSED DRAIN OF 750mm DIAMETER
 - I.L. 2.44 PROPOSED DRAIN AT INVERT LEVEL 2.44 mPD

Designed	Date	Checked	Date
HT	12/01	CYH	12/01

AGREEMENT NO. CE 16/99

SHA TIN DEVELOPMENT

FEASIBILITY STUDY FOR HOUSING DEVELOPMENT AT WHITEHEAD & LEE ON IN MA ON SHAN, SHA TIN

Figure title

CONCEPTUAL SEWERAGE LAYOUT

Figure no.	Scale
E.2	1: 6000

Binnie Black & Veitch
 Binnie Black & Veitch Hong Kong Limited
 博威工程顧問有限公司
 Engineers and Architects
 In association with
 CITY PLANNING CONSULTANTS LTD
 MVA HONG KONG LTD
 RONALD LU & PARTNERS (HK) LTD
 URBIS LIMITED
 LARRY H.C. TAM & ASSOCIATES LTD

Office
 新界東拓展處
 NEW TERRITORIES EAST DEVELOPMENT OFFICE

拓展署
 Territory Development Department, Hong Kong