

2.1 CHANNEL ALIGNMENT

The TELADFLOCOSS-2 Study identified and recommended the current alignment of the Eastern MDC, which was finalised and supported in previous public consultations with the Yuen Long Provisional District Board and San Tin Rural Committee. The Eastern MDC alignment has been committed in the San Tin Outline Zoning Plan (OZP, No. S/YL-ST/1, 1994, see *Figure 2.5a*). The construction of the Eastern MDC work will benefit the local residents in the San Tin basin from the present recurrent flooding problems, with reduced threat of flood hazards, economic loss and disruption. The channel alignment, given in the EIA Study Brief is hydraulically constrained and formed the basis of the assessment of this report. The alignment, running parallel and next to the San Sham Road, is farthest possible from the ecologically sensitive Ramsar site and minimises fragmentation of the existing San Tin fish pond areas.

2.2 PRELIMINARY CHANNEL DESIGN

The proposed channel are constructed for the purpose of flood protection, approximately 2.2km long and 45m wide. The design of the channel basically follows the DSD Stormwater Design Manual. The channel will be designed to have adequate capacity to cater for a 1 in 50 years storm combined with a 1 in 10 years tide with 300 mm freeboard, and the 1 in 200 years event should also be retained within the channel.

Figure 2.2a & Figure 2.2b show the preliminary general layout and typical cross section of the Eastern MDC. The connection to the existing trapezoidal channel upstream at Castle Peak Road is at 180 degrees (which is hydraulically preferable). The connection at the Shenzhen River is streamlined at about 60 degrees to minimize head loss. The proposed channel consists of two river embankments at about 4.9 mPD, with channel bed varying from 0.65 mPD to 1.5 mPD. The side slopes of the channel are 1 in 2, both internal and external. The proposed trapezoidal channel is about 30 m wide (river bed) and will hold about 4.5 m depth of water.

The following design features have been specifically adopted for the Eastern MDC, providing an ecologically and aesthetically friendly solution, and taking into account hydraulic performance and operational requirements of the channel:

- The inner lining of the channel will all be grasscreted with perennial vegetation, except the dry weather flow interceptor.
- The external slope of the channel will be general fill slope with planting of suitable vegetation.
- There will only be one maintenance access roads on top of the western channel embankment, approximately 3.5 m wide.

In addition to the channel, there will be one inflatable dam, one air blower house and pumping station as shown in *Figures 2.2a & 2.2b*, for the purpose of preventing backflow of sediment rich waters from Shenzhen River during high tide, as well as removing water to Shenzhen River during low flow condition.

2.3

CONSTRUCTION

For the 73CD Eastern MDC works, the construction is tentatively scheduled to commence in June 2001 for a period of 30 months up to December 2003 with provision of extension of time. The construction programme is planned as follows:

- first 4 months - setting up of site office, environmental monitoring baseline exercise, application of permits such as Noise Control Permit and Close Area Permit and forming haul road;
- next 24 months - construction of pumping station, inflation dam, bridge, box culverts, embankment, landscaping and constructed wetland; and
- last 2 months - connection of channel to Shenzhen River and tidying up the site, outstanding landscape and constructed wetland.

The main construction activities will include excavation and filling, followed by grasscreting of channel linings and the access road construction. The plant used for the construction of the channels will be common types used for civil engineering works in Hong Kong, for example, dump trucks, excavators, loaders, etc. The major plant used will be the earth moving plant for the construction of the earth embankment.

There will be temporary occupation of fish pond areas which will be drained during the construction phase, but will be re-instated after completion of construction works and returned to the original owner.

Marine access is not available because of the presence of the Border Fence. The invert levels of the proposed channels (from 0.15 mPD to 1.5 mPD) all lie within the tidal range which is not deep enough for marine plant. Construction will therefore be carried out by land plant. Land access is readily available at the Castle Peak Road.

Suitable excavated soft materials such as pond sediments will be re-used on-site such as for landscaping. Depending on the detailed design of the channels, imported materials including soft fill materials, rockfills or rubbles would be required. In view of the size of the channels, the construction traffic will be limited.

2.4

OPERATION

Maintenance is required for the channel, mainly involving the desilting of the channel to keep the channel under a free flow condition. Maintenance dredging of the Eastern MDC will be carried out by a land-based dredger on an ad hoc basis, in dry condition during low tide or when the inflatable dam constructed at

downstream of the channel is inflated to exclude the effect of tide. Disposal of the excavated materials will be by land transport to public fill area or landfill depending on the quality of the materials.

2.5

LAND USE CONTEXT

The San Tin MDC project area is situated in the northern part of the North West New Territories. The land use of the San Tin area is designated under the statutory San Tin OZP as shown in *Figure 2.5a*. The Eastern MDC alignment has been reserved in the OZP as the Drainage Reserve.

Residential developments are concentrated in two areas. One in the San Tin village areas (V zone) comprising seven villages and the other is the R(D) area to the west of San Tin villages within which new houses in low rise style (2 storeys) are encouraged to be constructed in permanent materials. There is a green belt to the southwest of the R(D) area.

The northern San Tin area is predominantly fish ponds and is designated as Conservation Area within which developments are strictly controlled. The planning intention is to retain the existing natural characteristics of the Conservation Area so as to give additional protection to the Mai Po Nature Reserve from incompatible development. A Wetland Conservation Area (WCA) and Wetland Buffer Area (WBA) have been designated around the Inner Deep Bay and the lower Shenzhen River in order to protect the important ecological resources of Mai Po Marshes and Inner Deep Bay from incompatible development, as stipulated in the Town Planning Board Guidelines for Application for Developments Within Deep Bay Area Under Section 16 of the Town Planning Ordinance (TPB PG-NO. 12B, Revised April 1999) (see Section 3.4.1.10 for more details). The northernmost three quarters of the Eastern MDC would lie within the WCA, and the remainder would lie within the WBA (see *Figure 2.5a*).

A Service Stations zone is located between San Sham Road and the San Tin village area, and serves to provide support service facilities such as petrol filling stations, restaurants, etc. for the cross-border traffic and the container related facilities. The area located to the immediate north of the San Tin villages zoned Container Back-up area has been designated as Wetland Conservation Area in accordance with the revised Town Planning Guidelines for Application for Development within Deep Bay Area recently released in April 1999. It should be noted that the Container Back-up area has been proposed to be rezoned as Conservation Area by the Town Planning Board on 23 April 1999.

Field visits observe that the container lorry parking and container yards scatter alongside the New Territories Circular Road in the southern part of the San Tin area. Some of these parking and storage areas actually impinge on the residential areas.

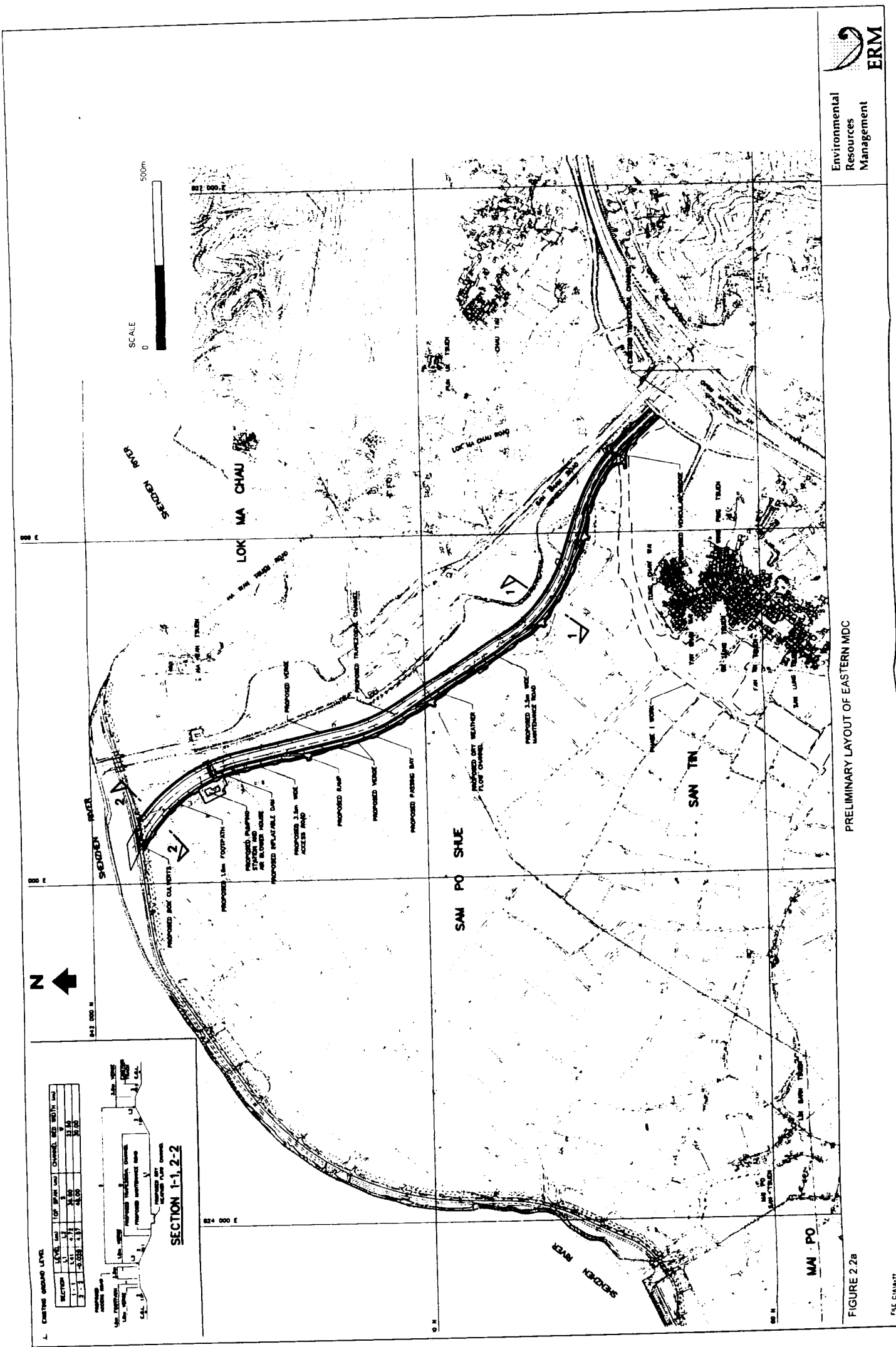
Based on the current information, it is understood that the following projects have been planned or under construction in the vicinity of the San Tin area, and may be concurrent with the San Tin Eastern MDC construction (mid 2001 to end 2003):

- *Expansion of Kiosks and Other Facilities at Lok Ma Chau Boundary Crossing*: mid 1999 to end 2002

- *KCRC East Rail - Sheung Shui to Lok Ma Chau Spur Line*: early 2001 to early 2004

The on-going *Shenzhen River Regulation Project (SRRP)*, Stage 2 at Lok Ma Chau would be completed in 2000, before commencement of the Eastern MDC. The Stage 3 work for the Lo Wu upstream section is scheduled from April 2001 to September 2004, but the work is over 4.5km from the San Tin MDC work.

The 35CD village flood protection works for Chau Tau Tsuen and San Tin villages will be completed in 1999, before the Eastern MDC work commences.



PRELIMINARY LAYOUT OF EASTERN MDC

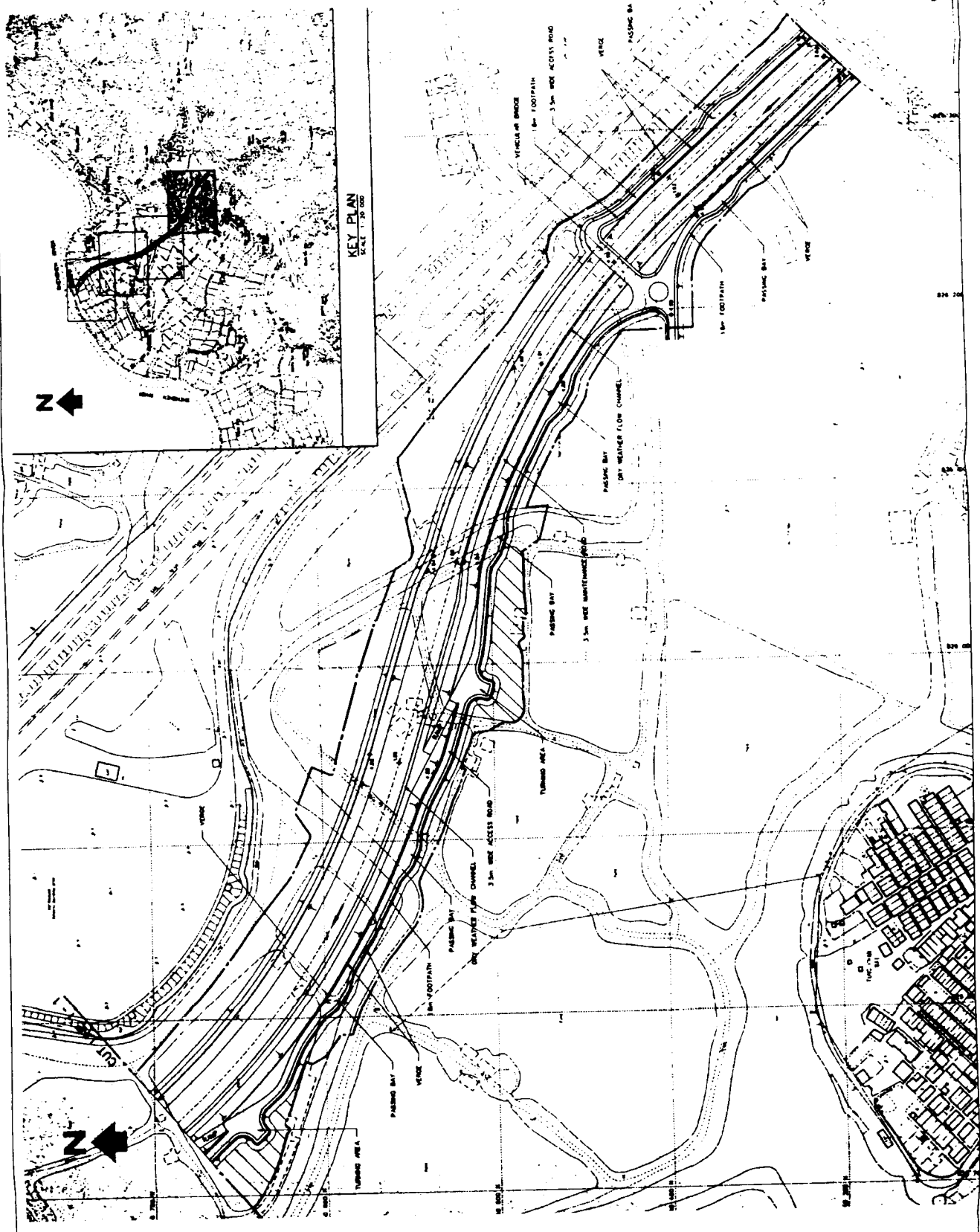
FIGURE 2.2b

1. EXISTING GROUND LEVEL

SECTION	LEVEL (m)	TOP OF BRIDGE (m)	CHANNEL BED WIDTH (m)
1-1	4.11	4.11	31.00
2-2	3.53	3.53	4.00

SECTION 1-1, 2-2

SCALE 0 100m

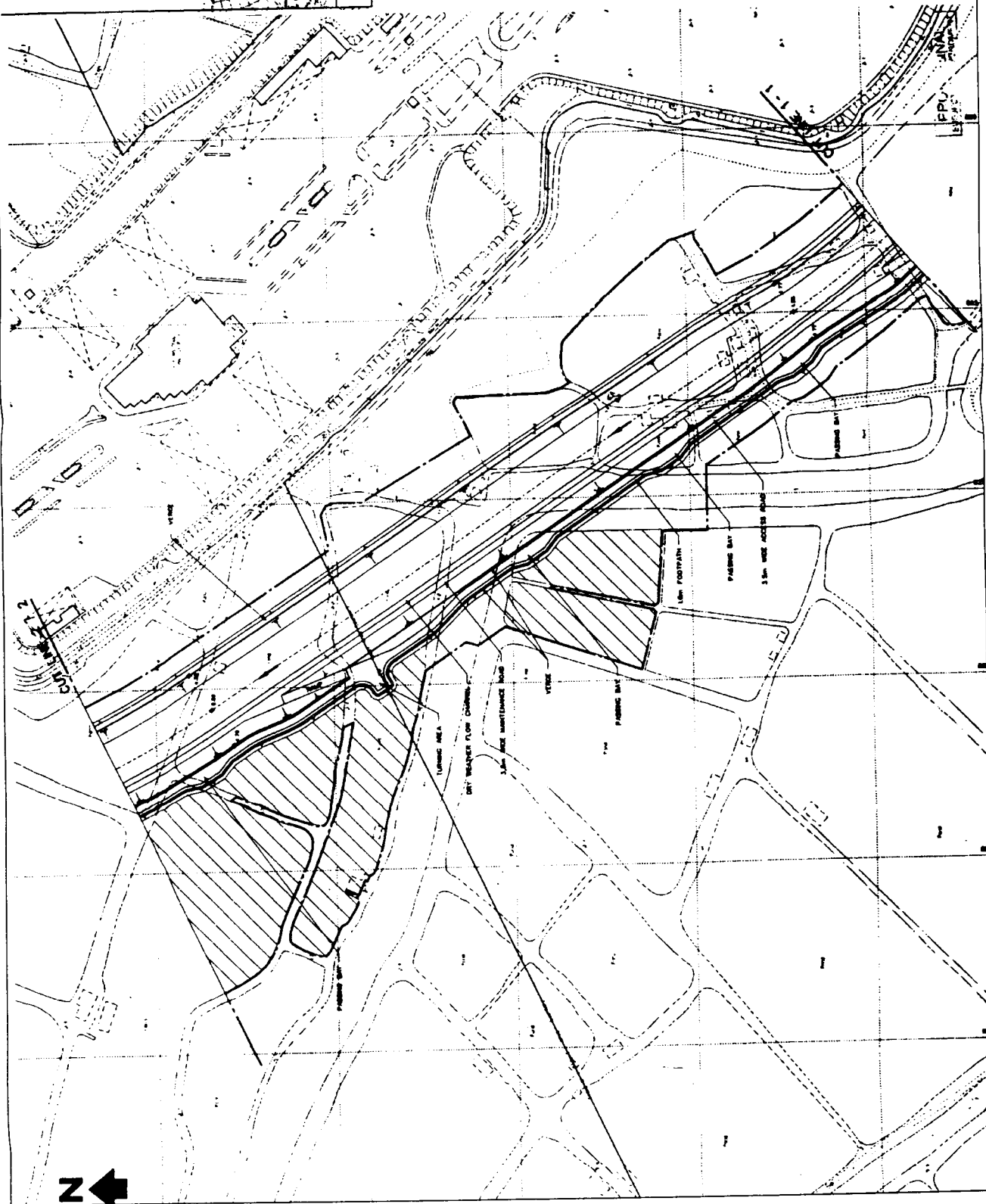
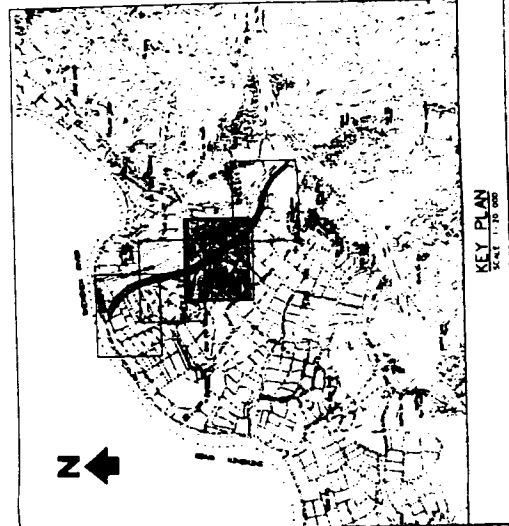


LAYOUT DETAILS

FIGURE 2.2b-1

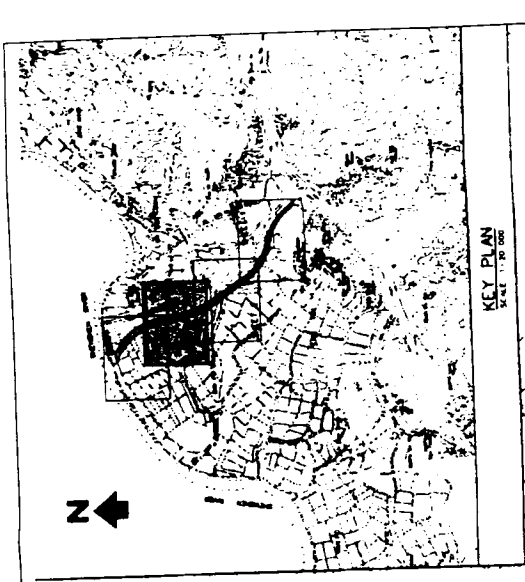
SCALE 0 100m

- LEGENDS:
- SITE LIMIT
 - PROPOSED SLOPE
 - USE OF MOST OF TEMPORARY OCCUPATION

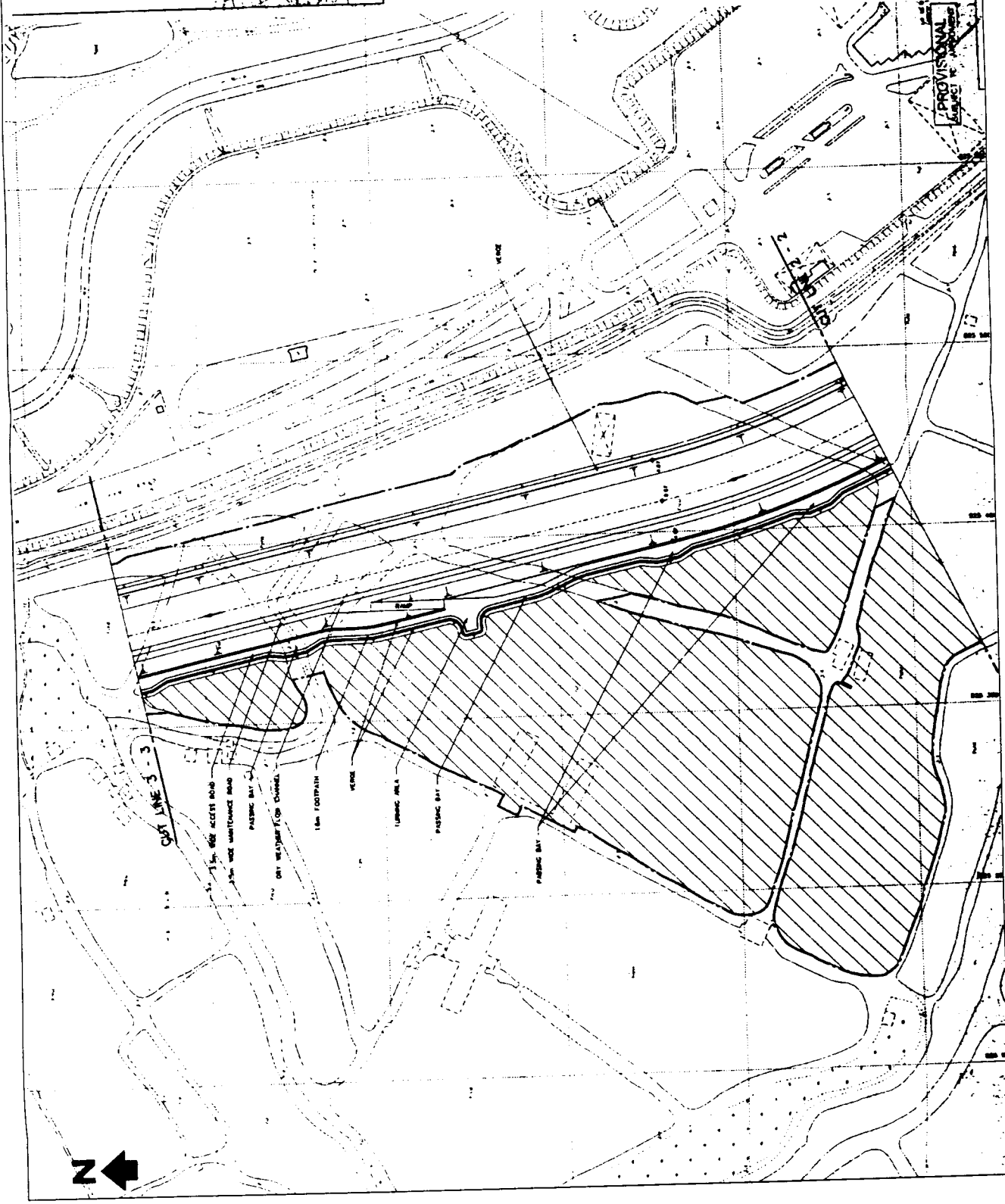


LAYOUT DETAILS

FIGURE 2.2b-2



- LEGENDS:
- SITE LIMIT
 - PROPOSED SLOPE
 - ▨ LIMIT OF RIGHT OF TEMPORARY OCCUPATION



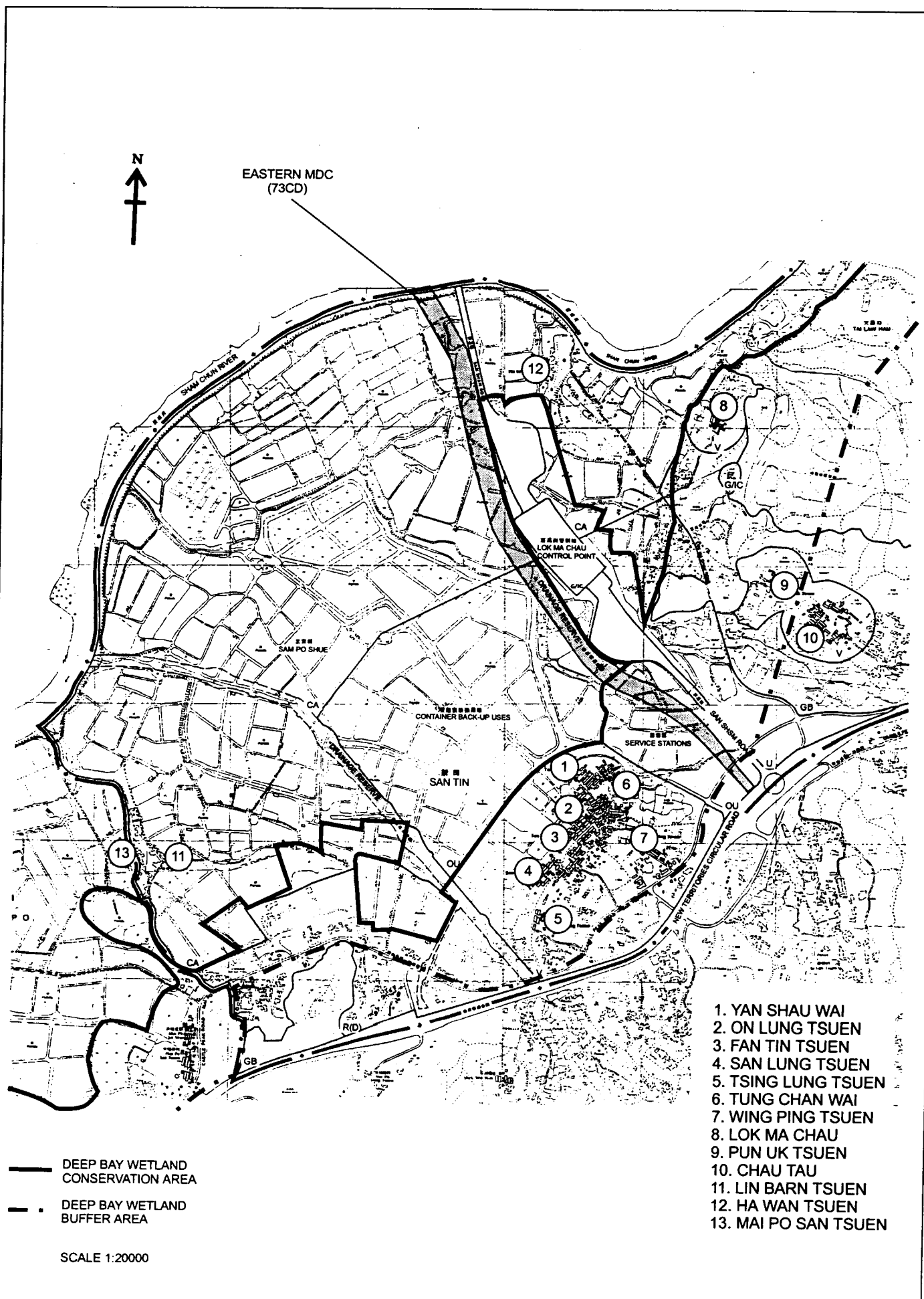
LAYOUT DETAILS

FIGURE 2.2b-3



LAYOUT DETAILS

FIGURE 2.2b-4



1. YAN SHAU WAI
2. ON LUNG TSUEN
3. FAN TIN TSUEN
4. SAN LUNG TSUEN
5. TSING LUNG TSUEN
6. TUNG CHAN WAI
7. WING PING TSUEN
8. LOK MA CHAU
9. PUN UK TSUEN
10. CHAU TAU
11. LIN BARN TSUEN
12. HA WAN TSUEN
13. MAI PO SAN TSUEN

FIGURE 2.5a

SAN TIN OUTLINE ZONING PLAN
(NO.S/YL-ST/1,1994)

FILE: C1618z89
DATE: 04/05/99

Environmental
Resources
Management

