PWP Items XXXXCD: Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvement, Stage 1

Construction of Drainage Channel in Kam Tin

BASIC INFORMATION

1. Project Title

   PWP Item XXXXCD - Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvement, Stage 1

2. Purpose and Nature of Project

   Under the Stage 1 of the drainage improvement works proposed by the Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Master Plan Study, 800m of drainage channel will have to be constructed in the vicinity of Ho Pui and Ma On Kong.

   The drainage channel is required to alleviate flooding problems in the secondary and local drainage systems. Engineering consultants will be employed to take up the detailed design and to supervise the construction. The operation and maintenance will be the responsibility of the Drainage Services Department.

3. Name of Project Proponent

   Client Department : Drainage Services Department
   Works Department : Drainage Services Department

4. Location and Scale of Project and History of Site

   The proposed location and scale of the drainage channel are shown on the attached drawing no. 0023/PRD/P313A.

5. Designated Project Under EIA Ordinance

   The drainage channel will discharge into an area which is less than 300 m from the nearest boundary of an existing conservative area and is therefore considered a designated project under Part I of Schedule 2 of the EIA Ordinance.

6. Name and telephone of Contact Person

OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

7. Programme of Implementation

   The project will be implemented by consultants to be engaged and managed by the Drainage Services Department. The project programme is summarized in Table 1.

POSSIBLE IMPACTS ON THE ENVIRONMENT

8. An Environmental Review (ER) was undertaken as part of the Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Master Plan Study. According to the ER, an environmental impact assessment will be required to further address the environmental issues associated with the construction and operation of the proposed drainage improvement works.

9. Environmental Impacts during Construction Phase

Construction activities will include earthworks, concrete structure constructions and associated landscaping works. During the detailed design and construction stage, the following aspects in relation to the environmental impacts will be considered:

(a) Aesthetic

Construction works could give rise to temporary visual and landscape impacts through the erection of temporary structures, stockpiles of earth/construction materials and establishment of works areas. However, the impacts are not considered severe and can be minimized by proper site management practices to be specified in the associated works contracts.

(b) Ecological

Excavation and filling work within and adjacent to existing stream courses could result in loss of aquatic, riparian, woodland and wetland habitats, and deterioration in water quality due to sedimentation and re-suspension of pollutants. Adverse impact can be kept to a minimum by minimizing construction activities over areas of conservation value, reducing the contamination and sedimentation levels in site runoff, minimizing land clearance and destruction of natural habitats, and timing the works to coincide with dry seasons and to avoid breeding seasons.

(c) Water Quality

The sites are located in the Deep Bay Water Control Zone, which is subject to considerable water quality problems. Potential impacts on water quality could result from construction runoff, disturbances to natural processes of siltation, flows and water velocity, and re-suspensions of sediments. In this connection, appropriate site management practice will be specified in the associated works contract to ensure that construction impacts on water quality are kept to a minimum. For the handling and disposal of construction site discharges, the requirements stipulated in the ProPECC Paper (PN 1/94) on *Construction Site Drainage* will be followed.

(d) Noise

Temporary noise impacts during construction will be associated with powered mechanical equipment. To abate the noise impacts, the ProPECC papers (PN 1/93) on *Noise from Construction Activities - Statutory* and (PN 1/94) on *Noise from Construction Activities - Non-statutoryControls* will be followed.

(e) Air Quality

The major likely impact on air quality during construction arises from dust generation due to earthworks and construction traffic. Relevant clauses will be incorporated into

the associated works contract so that appropriate measures will be adopted to suppress dust generation. The Air Pollution Control Ordinance will be followed.

(f) Waste and Spoil

Materials potentially contaminated with agricultural and industrial wastes may need to be removed for the construction of the drainage channel. Prior to the construction, the location, degree and extent of potential contaminated materials will be identified according to the Technical Circular No. 1-1-92 and Works Branch Technical Circular No. 22/92. Contaminated mud will be side cast into shallow lagoons before being disposed of. Appropriate measures will be adopted to prevent any leaching of pollutants to the environment through surface runoff or soil dispersion underground. Other excavated materials which are suitable for reuse in landscaping will be tested for contamination in accordance with the ProPECC Paper (PN 3/94) on *Contaminated Land Assessment and Remediation*. Depending on the extent of contamination, the remedial measures as described in PN3/94 Appendix III will be implemented. Used lubricants and waste oil will be collected and stored in accordance with the Code of Practice in the Packing, Labelling and Storage of Chemical Waste. The Code provides guidance for complying with the requirements of the Waste Disposal Ordinance (Chemical Waste) (General) Regulations on the packaging, labelling and storage of chemicals.

(g) Socioeconomic and Cultural Heritage Impacts

Construction of the drainage channel could result in temporary or permanent disruption to irrigation supplies to active agricultural areas. This will be mitigated through ensuring that alternative water supplies are made available to those areas affected prior to the commencement of the works. An investigation during the detailed design stage will be conducted to determine the current usage of stream water for irrigation, to assess the potential disruption involved and to recommend appropriate mitigation measures. According to site visits during the preliminary design stage, no disturbance to cultural heritage is expected.

10. Environmental Impacts during Operation Phase

The following aspects in relation to the environmental impacts during the operation phase of the proposed drainage channel have been considered:

(a) Aesthetics

The proposed drainage channel works involve transformation of agricultural land, fish ponds, vegetated riparian strips and existing stream courses into trapezoidal channels with grasscrete side slopes. Landscape and visual impacts could be mitigated through sensitive landscaping design. The landscape quality could also be enhanced by introducing attractive planting and amenity facilities wherever feasible.

(b) Ecological

The proposed drainage channel may result in loss of aquatic, riparian, wetland and woodland habitats. However, implementation of appropriate mitigation measures will reduce the potential ecological impacts. Appropriate measures will be employed to create eco-corridors, to create pools and riffles within the low flow channel as

replacement wetlands, and to maintain water supply for cutoff meanders and affected fishponds.

(c) Water Quality

Operation of the drainage channel will give rise to a number of potential operational impacts both beneficial and negative. Channel straightening and widening will give rise to a beneficial impact through allowing greater flow and flushing during flood periods. Greater flushing will result in pollutants being carried downstream and river straightening will increase natural aeration thus increasing the dissolved oxygen content in waters currently experiencing very low dissolved oxygen. The increased potential for pollutants to be transferred downstream could have a negative impact on the quality of Inner Deep Bay. To reduce the potential for pollutants being transported downstream, Drainage Services Department will remove accumulated sediments in the channel during routine maintenance.

MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

11. Sensitive receivers in the surrounding environment of the proposed drainage channel include nearby residential developments, agricultural lands, fish ponds, existing stream courses and the Ho Pui Egretry.

ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN AND ANY FURTHER ENVIRONMENTAL IMPLICATIONS

12. The overall project is not anticipated to have significant impacts on the existing environment in respect of air, noise, water quality, landscape and general waste management issues. However, necessary mitigation measures will be proposed through an EIA and implemented accordingly.

13. During the construction stage, routine environmental site inspections will be undertaken - by site supervisory staff to check the implementation status of the contractual mitigation measures. Details of site inspection procedures including scope, frequency, staffing, lines of communication, reporting, deficiency follow-up and review will be documented in an Environmental Management Plan which is to be prepared during the detailed design stage.

14. Land adjacent to the proposed drainage channel may have been polluted by hazardous substances as a result of industrial operations. Where works are likely to cut through such an area, a contamination assessment will be carried out in accordance with ProPECC notes PN3/94. Sediments in the channel bed may be contaminated as a result of the discharges of industrial and/or agricultural waste. Where removal of mud from the channel bed is an essential component of the works, the mud will be assessed according to EPD Technical Circular 1-1-92, and where required, disposed of safely.

15. In regard to ecological impacts this project could involve loss and/or temporary destruction of habitats. The criteria for determining " important habitats" and the need for

ecological assessment will be devised according to the Technical Memorandum on Environmental Impact Assessment Process Annex 16 Note 2.

16. The socioeconomic impacts of the project in respect of the potential impacts on water supply to active agricultural areas will be addressed during the detailed design stage. Similarly investigations will be carried out to identify areas of cultural, historical, or archeological importance that could be affected by the project. Where necessary, mitigation measures will be devised to ensure that there will be no unacceptable impacts.

17. Further environmental assessment, monitoring and auditing to be conducted during the detailed design stage are summarized in Table 2.

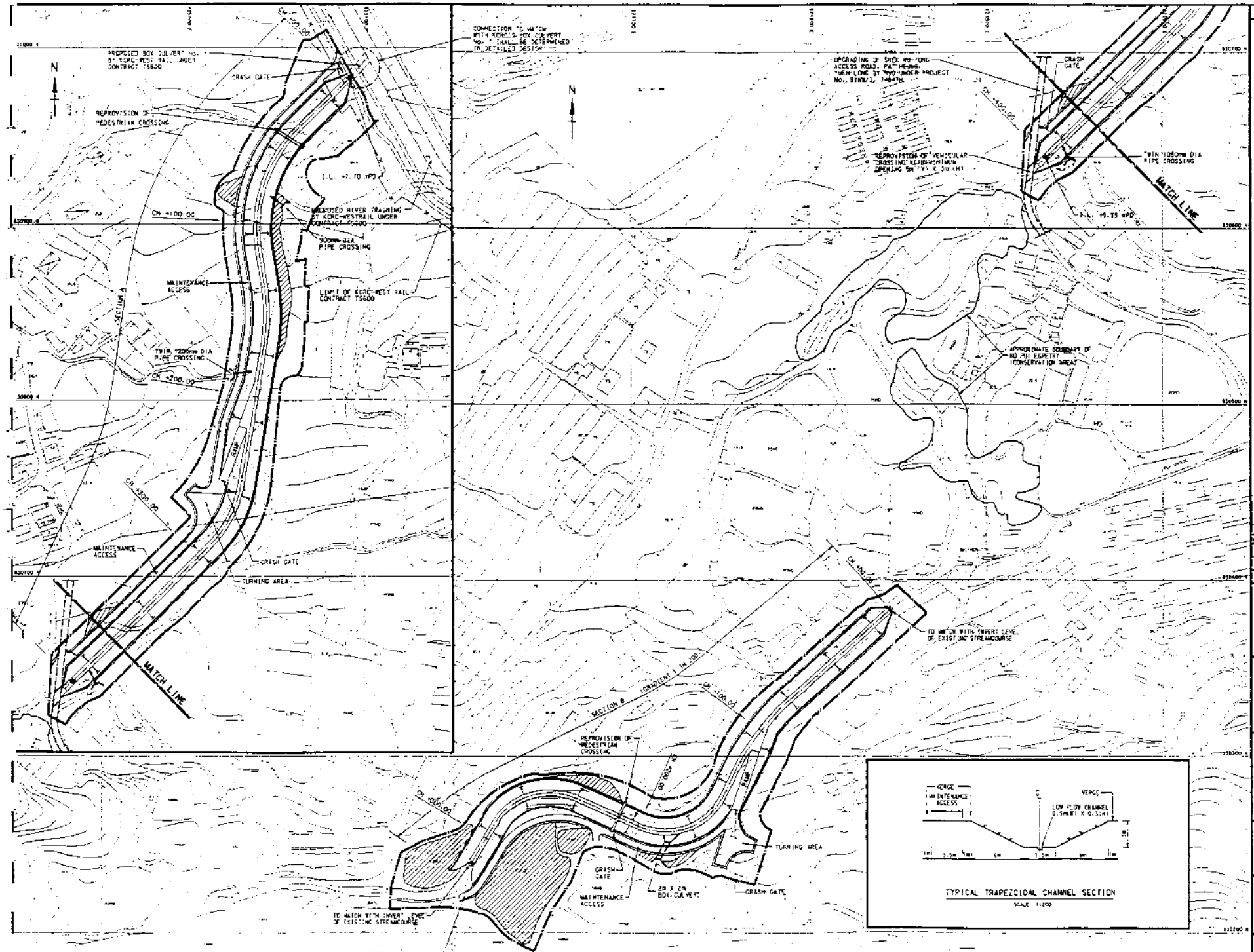
Table 1. Project Programme

Appointment of Consultants	9/98	to	4/99
Design, EIA, Site Supervision... etc.	4/99	to	6/06
Tendering	7/02	to	12/02
Construction	12/02	to	6/06

Table 2. Further Environmental Assessment, Monitoring and Auditing

Parameter	EIA Required	EM&A
Noise	No	Audit contractual compliance
Air Quality	No	Audit contractual compliance
Water	No	Audit contractual compliance
Contaminated Mud	Yes (in accordance with EPD's Technical Circular 1-1-92 and Works Branch Technical Circular 22/92)	To be determined in EIA
Contaminated Land	Yes (in accordance with ProPECC Paper PN 3/94)	To be determined in EIA
Ecology	Yes (in accordance with Annex 16 of the Technical Memorandum on Environmental Impact Assessment Process)	To be determined in EIA
Socioeconomic Issue	Yes (for potential impacts on agricultural and cultural, historical and/or archeological sites)	To be determined in EIA

- End -



NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS STATED OTHERWISE.
2. GRID LINES ARE HONG KONG METRIC GRID 1980.
3. THE BOTTOM OF THE CHANNEL SHALL BE LINED WITH CONCRETE SUITABLE FOR OPERATION & MAINTENANCE PLANT.
4. SIDE SLOPES OF THE CHANNEL SHALL BE LINED WITH GEOTEXTILE REINFORCED GRASS EXCEPT OTHERWISE STATED.
5. DETAILS OF CROSSINGS SHALL BE DETERMINED IN DETAILED DESIGN.
6. DETAILS OF INTERFACING ISSUES WITH KCRC'S CONTRACT SHALL BE DETERMINED IN DETAILED DESIGN.
7. TYPE 2 RAILING WITH DEBRIS TRAP BAR AND GENERAL MESH FILL SHALL BE PROVIDED AT BOTH SIDES OF THE CHANNEL BANKS.

LEGEND :

- SITE BOUNDARY
- PROPOSED CHANNEL
- PROPOSED SLOPE
- PROPOSED RIVER TRAINING (BY OTHERS)
- AREA TO BE FILLED TO ADJACENT GROUND LEVEL
- BOX CULVERT

no.	date	description	by/du
4	11/97	Minor revisions	TS

	designed	checked	drawn	checked
initial	TS	ECO	SY	ECO
date	07/97	07/97	07/97	07/97

approved

project

AGREEMENT NO. CE 57/95
YUEN LONG, KAM TIN,
NGAU TAM MEI AND TIN SHUI WAI
DRAINAGE MASTER PLAN STUDY

drawing title

PRELIMINARY SECONDARY CHANNEL DESIGN IN KAM TIN

CHANNEL KT13
GENERAL LAYOUT

drawing no.	scale
0023/PRD/P313A	1:1000

DRAINAGE SERVICES DEPARTMENT

BINNIE CONSULTANTS LIMITED
賓尼工程顧問有限公司
ENGINEERS AND SCIENTISTS