

BASIC INFORMATION

1. Project Title

PWP Item 4272DS - Port Shelter Sewerage, Stage 2 Phase 4 - Tai Chung Hau and Pak Sha Wan Sewerage

2. Purpose and Nature of Project

The Port Shelter Sewerage Master Plan (SMP) Study completed in March 1991 identified that a number of existing private sewage disposal facilities leading to Port Shelter had design or operation problems. In order to improve the water quality of Port Shelter, the SMP recommended replacing these facilities by public sewerage systems in four stages. The proposed sewerage works under this project is the Stage 2 Phase 4 of the Port Shelter Sewerage works packages. In the areas of Tai Chung Hau and Pak Sha Wan, there is no public sewerage system and the existing sewerage facilities in these areas are either private septic tanks or sewage treatment plant. This sewerage project will provide a new sewerage system to convey sewage from households in the unsewered areas of Tai Chung Hau, Pak Sha Wan, Kau Sai San Tsuen, Ta Ho Tun and some other small catchment areas in Port Shelter to the existing Sai Kung Sewage Treatment Works.

3. Name of Project Proponent

Drainage Services Department (DSD)

4. Location and Scale of Project

The proposed sewerage works will be constructed along a section of Hiram Highway and in the villages of Tai Chung Hau, Pak Sha Wan, Ta Ho Tun and some other small catchment areas as shown on the general alignment drawing nos. DDN/132DS/10892C, 10898C, 10899C, 10900B and 10901B in Appendix I. The scope of works under this project includes the following: -

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- (a) Construction of village sewerage at Pak Sha Wan, Tai Chung Hau, Ta Ho Tun and some other small catchment areas. Approximately 4,300m gravity sewers and 560m rising main will be laid in trench by open trench method along roads, footways, alleys and open space.
- (b) Construction of approximately 2,150m gravity sewers and 1,950m rising mains along Hiram's Highway and Hong Kin Road. The proposed gravity sewers/rising mains will be laid in trenches excavated by open trench method. The works will be carried out in stages with implementation of temporary traffic arrangement so as to minimize traffic impacts to Hiram's Highway. In this regard, a TIA report had been submitted to Transport Department and the Commissioner of Police and they both confirmed no objection in principle to the TIA report.

- (c) Construction of a section of approximately 300m long 600mm diameter gravity sewer pipeline by pipe jacking method. In order to convey sewage from the area of Pak Sha Wan to the proposed Mang Kung Wo Road sewage pumping station over an uphill section of Hiram's Highway between Pak Sha Wan carpark and Mang Kung Wo Road, it was originally proposed to construct an intermediate sewage pumping station at the carpark of Kau Sai San Tsuen. However, since the site of the proposed intermediate pumping station would reduce the number of car parks in Pak Sha Wan, this proposal was objected by Transport Department. As a result, a section of approximately 300m long 600mm diameter gravity sewers between Pak Sha Wan carpark and Mang Kung Wo Road will need to be constructed with a cover depth ranging from 4.0m to 11.0m. In order to minimize possible impacts on the existing traffic and to avoid deep excavation along Hiram's Highway, this section of gravity sewers will be constructed by pipe jacking method.
- (d) Construction of three sewage pumping stations and the associated rising mains at Tai Chung Hau, Ta Ho Tun and Mang Kung Wo Road as shown on Drawing Nos. DDN/132DS/10803C in Appendix I. Each pumping station will comprise an underground pump sump and a single-storey superstructure.

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Upon completion of the works, operation and maintenance of the gravity sewers, pumping stations and rising mains will be undertaken by DSD. Breakdowns of the proposed sewerage works are given as follows: -

Village Sewerage

Location	Length of gravity sewer (m)	Dia. of gravity sewer (mm)	Length of rising main (m)	Dia. of rising main (mm)
Ta Ho Tun	900	225-300	450	150
Tai Chung Hau	800	225 to 300	60	250
Mang Kung Wo	1,550	225 to 300	50	450
Pak Sha Wan	1,050	225 to 300	-	-
Total	4,300		560	

Table 1 - A break down of village sewerage

Gravity Sewers on Rural Roads

Location	Length of gravity sewer (m)	Dia. of gravity sewer (mm)	Length of rising main (m)	Dia. of rising main (mm)
Hiram's Highway	1,400	300 to 750	1,500	250 to 450
Hong Kin Road	750	750	450	450
Total	2,150		1,950	

Table 2 - A break down of gravity sewers on rural roads

Gravity Sewers by Pipe Jacking Method

Location	Length of gravity sewer (m)	Dia. of gravity sewer (mm)	Length of rising main (m)	Dia. of rising main (mm)
Hiram's Highway	300	600	-	-

Table 3 - A break down of gravity sewers by pipe jacking method

Sewage Pumping Stations

Pumping Station	Installed Capacity (cu.m/day)
Tai Chung Hau Sewage Pumping Station	945
Ta Ho Tun Sewage Pumping Station	190
Mang Kung Wo Road Sewage Pumping Station	4820

Table 4 - A break down of sewage pumping stations

5. **Number and Types of Designated Projects to be covered by this Project Profile**

Under category F.3, Part I, Schedule 2 of the EIAO, a sewage pumping station shall be regarded as a Designated Project if its installed capacity (Average Dry Weather Flow, ADWF) is more than 2000 cu.m/day and a boundary of which is less than 150m away from an existing or planned area/receiver type (i) to (x). Since the estimated installed capacity of the proposed Mang Kung Wo Road sewage pumping station is 4820 cu.m/day and the boundary of which is less than 150m away from nearby residential village houses, the proposed Mang Kung Wo Road sewage pumping station will be a Designated Project and therefore environmental permit conditions are required for its construction and operation.

6. **Name and Telephone Number of Contact Person**

OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

7. The planning, design, preparation of contract documents and tendering of this project will be undertaken by in-house staff of DSD while the construction works will be contracted out. Details of the tentative implementation programme are as follows: -

Planning and Design	06/1993 - 06/2000
Tender Stage	07/2000 - 11/2000
Construction and E&M Installation	12/2000 - 06/2003

App.II A copy of the tentative implementation programme is also attached in Appendix II.

POSSIBLE IMPACT ON THE ENVIRONMENT

8. Having considered all possible impacts on the environment as listed in Annex I of the Technical Memorandum on EIA Process (EIAO TM), possible environmental impacts that may be caused during the construction stage of the proposed sewerage works are described as follows: -

Construction Stage - Village Sewerage

- (a) Approximately 4,300m gravity sewers and 560m rising mains will be laid in trench by open trench method. Pneumatic breaker, backhoe, vibrating plate, concreting plant and the likes will be employed for trench excavation, pipe laying, backfilling, compaction and concrete casting. In the case of pipe laying along narrow alleys, the trenches will be excavated by hand. It is anticipated that only minor dust and noise nuisances will be caused. Appropriate environmental protection measures to be included in the design and/or contract are detailed in para. 13(a).
- (b) In narrow alleys, certain existing septic tanks may need to be decommissioned and demolished to make way for the proposed sewer pipeline. As such, odour problem may be caused during demolishing of septic tanks. Appropriate environmental protection measures to be included in the design and/or contract are detailed in para. 13(b).
- (c) Traffic flow along certain local village access roads will be affected by road opening for the construction of the proposed gravity sewers/rising mains. Appropriate environmental protection measures to be included in the design and/or contract are detailed in para. 13(c).

Construction Stage - Gravity sewers/ Rising Mains on rural roads

- (d) Approximately 2,150m gravity sewers and 1,950m rising mains will be laid in trench by open trench method. Pneumatic breaker, backhoe, vibrating plate, concreting plant and the likes will be employed for trench excavation, pipe laying, backfilling, compaction, concreting casting, etc. In the case where sheet piles are used as trench support, hydraulic vibrating hammer will be employed for installation of the sheet piles. It is anticipated that only minor dust and noise nuisances will be caused. Appropriate environmental protection measures to be included in the design and/or contract are detailed in para. 13(a).
- (e) The existing Hiram's Highway is a two-lane two-way carriageway. The construction of the proposed gravity sewers/rising mains along Hiram's Highway and Hong Kin Road will involve road opening giving rise to potential impact to traffic flow. Appropriate environmental protection measures to be included in the design and/or contract are detailed in para. 13(d).

Construction Stage - Gravity Sewers by Pipe Jacking Method

- (f) A section of approximately 300m long gravity sewer pipeline with a diameter of 600mm will be constructed by pipe jacking method. By using hydraulic jacks and a hydraulic pumping unit, pipeline will be jacked directly into the ground from a temporary jacking pit to a temporary receiving pit. To facilitate the successive jacking operations, temporary jacking pits and receiving pits will be constructed along the alignment of that 300m long

section of gravity sewer pipeline. For the construction of the temporary jacking and receiving pits, constructional plant including backhoe, excavator, vibrating hammer, concreting plant and the likes will be used for excavation, sheet piling, backfilling, concrete casting, etc. It is anticipated that only minor dust and noise nuisances will be caused. Appropriate environmental protection measures to be included in the design and/or contract are detailed in para. 13(a).

Construction Stage – Sewage Pumping Stations

- (g) Three sewage pumping stations will be constructed under this project, namely Tai Chung Hau sewage pumping station, Ta Ho Tun sewage pumping station and Mang Kung Wo Road sewage pumping station. Constructional plant including backhoe, excavator, vibrating hammer, concreting plant and the likes will be used for excavation, sheet piling, backfilling, concrete casting, etc. It is anticipated that minor dust and noise nuisances will be caused. Appropriate environmental protection measures to be included in the design and/or contract are detailed in para. 13(a).
- (h) During the course of construction, muddy underground water will be pumped away from the excavation pit into a silt removal facility before discharging into nearby streamcourses or water receiving bodies. If the underground water is found to be contaminated, appropriate environmental protection measures as detailed in para. 13(e) will be taken.

A summary of possible environmental impacts that may be caused during construction of the proposed sewerage works is given below: -

Works	Possible Environmental Impacts	Standard / Specific Environmental Protection Measures
Village sewerage	minor dust, noise and odour nuisances, traffic impact on village access roads	See para. 13(a), (b) & (c)
Gravity sewers/rising mains on rural roads	minor dust and noise nuisances, traffic impact on rural roads	See para. 13(a) & 13(d)
Gravity sewers by pipe jacking	minor dust and noise nuisances	See para. 13(a)
Sewage Pumping Stations	minor dust and noise nuisances, discharge of underground water into nearby streamcourses.	See para. 13(a) & (e)

Table 5 – Possible Environmental Impacts may be caused during Construction

- 9. During the operational stage, sewage collected in the area of Ta Ho Tun will be gravitated to the proposed Ta Ho Tun sewage pumping station via underground gravity sewers. The collected sewage will then be pumped/gravitated to the proposed Tai Chung Hau sewage pumping station via underground rising mains/gravity sewers along Hiram’s Highway. Together with sewage collected from Tai Chung Hau area via gravity sewers, sewage collected in the proposed Tai Chung Hau

sewage pumping station will be pumped/gravitated to the proposed Mang Kung Wo Road sewage pumping station via rising mains/gravity sewers along Hiram's Highway. Together with sewage collected from Pak Sha Wan, Kau Sai San Tsuen and other small catchment areas in the vicinity, all the sewage collected by the proposed Mang Kung Wo Road sewage pumping station will be transferred to the existing Sai Kung Sewage Treatment Works via rising mains and gravity sewers along Hiram's Highway and Hong Kin Road.

Having considered all possible impacts on the environment as listed in Annex I of the EIAO TM, possible environmental impacts that may be caused during the operational stage of the proposed sewerage works are described as follows: -

Operational Stage – Village Sewerage

- (a) Since the gravity sewers are buried underground and their basic function is to convey sewage instead of for storage or treatment, no environmental impact is envisaged during operation and hence no mitigation measure will be required.

Operational Stage – Gravity Sewers/Rising Mains on Rural Roads

- (b) Since the gravity sewers and rising mains are buried underground and their basic function is to convey sewage instead of for storage or treatment, no environmental impact is envisaged during operation and hence no mitigation measure will be required.

Operational Stage - Gravity sewers by pipe jacking method

- (c) Since the gravity sewers are buried underground and their basic function is to convey sewage instead of for storage or treatment, no environmental impact is envisaged during operation and hence no mitigation measure will be required.

Operational Stage – Sewage Pumping Stations

- (d) Sewage collected in Ta Ho Tun will first be delivered to the Tai Chung Hau sewerage pumping station. Together with those collected from Tai Chung Hau and Pak Kong areas, sewage will then be pumped from the Tai Chung Hau sewerage pumping station to the Mang Kung Wo Road sewerage pumping station. Being the main pumping station of the proposed system, the Mang Kung Wo Road sewerage pumping station will then convey all the sewage so collected to the existing Sai Kung Sewage Treatment Works for treatment and disposal.

Sewage enters a pumping station will first pass through a screening chamber where a screen will be installed to remove large objects in the sewage. The screened sewage will then enter into a wet well where the sewage will be pumped by centrifugal pumps out the pumping station to its designated location via a rising main. Noise generated from the sewage pumps, odour released from the sewage inside the wet well, and visual impact of the superstructures could be possible impacts on the environment. Appropriate environmental protection measures to be included in the design and/or contract are detailed in para. 13(g).

A summary of possible environmental impacts that may be caused during operation of the proposed sewerage works is given below: -

Works	Possible Environmental Impacts	Standard / Specific Environmental Protection Measures
Village sewerage	No environmental impact	Not Required
Gravity sewers/rising mains on rural roads	No environmental impact	Not Required
Gravity sewers by pipe jacking	No environmental impact	Not Required
Sewage Pumping Stations	Noise, Odour, Visual impact	See para. 13(g)

Table 6 – Possible Environmental Impacts may be caused during Operation

10. Maintenance of gravity sewers and rising mains involves mainly CCTV inspection, clearance of blockage and repair of damaged or collapsed sewers/rising main. Having considered all possible impacts on the environmental as listed in Annex I of the EIAO TM, possible environmental impacts that may be caused during the maintenance stage of the proposed sewerage works are described as follows: -

Maintenance Stage – Village Sewerage

- (a) It is anticipated that only minor and short-term noise and odour nuisances may arise but the impact will be insignificant and within established standards and guidelines. Nonetheless, appropriate environmental protection measures to be included in the design and/or contract are detailed in para. 13(h).

Maintenance Stage – Gravity Sewers/Rising Mains on Rural Roads

- (b) It is anticipated that only minor and short-term noise and odour nuisances may arise but the impact will be insignificant and within established standards and guidelines. Nonetheless, appropriate environmental protection measures to be included in the design and/or contract are detailed in para. 13(h).

Maintenance Stage – Gravity Sewers by Pipe Jacking Method

- (c) It is anticipated that only minor and short-term noise and odour nuisances may arise but the impact will be insignificant and within established standards and guidelines. Nonetheless, appropriate environmental protection measures to be included in the design and/or contract are detailed in para. 13(h).

Maintenance Stage – Sewage Pumping Stations

- (d) Most E&M equipment will be installed either inside the underground pump pit or the superstructure and therefore will be under an enclosed condition. As a result, maintenance of the pumping stations will not cause any detrimental impact on the environment. However, in the cases of power failure and failure of certain major E&M equipment such as sewage pumps, normal operation of the pumping station could be affected leading to emergency sewage bypass into nearby streamcourses or water receiving bodies. Appropriate environmental protection measures to be included in the design and/or contract are detailed in para. 13(i). Proposed locations of the emergency overflow bypass outlets of these three pumping stations are shown on Drawing Nos. DDN/132DS/10885, 10915 and 10916 in Appendix I.

A summary of possible environmental impacts that may be caused during maintenance of the proposed sewerage works is given below: -

Works	Possible Environmental Impacts	Standard / Specific Environmental Protection Measures
Village sewerage	Minor and short-term noise and odour nuisances	See para. 13(h)
Gravity sewers/rising mains on rural roads	Minor and short-term noise and odour nuisances	See para. 13(h)
Gravity sewers by pipe jacking	Minor and short-term noise and odour nuisances	See para. 13(h)
Sewage Pumping Stations	Emergency overflow bypass	See para. 13(i)

Table 7 – Possible Environmental Impacts may be caused during Maintenance

MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

Sensitive Receivers

11. Based on the Outline Zoning Plan nos. S/SK-PK/I and S/SK-HH/I, the Outline Development Plan no. D/SK-T/1 and repeated site inspections, all major elements of the surrounding environment listed in Annex I of EIAO TM had been checked. Sensitive receivers which might be affected by this project are described as follows: -

Village Sewerage

- (a) The proposed gravity sewers/rising mains will be laid in trench along rural access roads, footways, alleys and open space. Sensitive receivers that might be affected are nearby village houses.

Gravity Sewers / Rising Mains on Rural Roads

- (b) The proposed gravity sewers/rising mains will be laid in trench along Hiram's Highway. Sensitive receivers that might be affected are nearby village houses.

Gravity Sewers by Pipe Jacking Method

- (c) The proposed gravity sewers/rising mains will be constructed by pipe jacking method along a section of Hiram's Highway. Sensitive receivers that might be affected are nearby village houses.

Sewage Pumping Station

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- (d) For the proposed Mang Kung Wo Road sewage pumping station, it will fall in a green belt zone. Sensitive receivers of this pumping station are nearby village houses and streamcourses as shown on sketch no.1 in Appendix III.

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- (e) For the proposed Tai Chung Hau sewage pumping station, it will fall in a recreation zone. Sensitive receivers of this pumping station are nearby village houses and streamcourse as shown on sketch no.2 in Appendix III.

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- (f) For the proposed Ta Ho Tun sewage pumping station, it will fall in a Coastal Protection zone. Sensitive receivers of this pumping station are nearby village houses and water receiving body as shown on sketch no.3 in Appendix III.

Sensitive Part of Natural Environment

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12. Based on the Outline Zoning Plan nos. S/SK-PK/I and S/SK-HH/I, the Outline Development Plan no. D/SK-T/1 and repeated site inspections, the proposed sewerage works under this project will not be constructed inside any Country Parks, Special Areas, Marine Reserves, Marine Parks, Ramsar Site, Sites of Special Scientific Interest, ecologically significant area or Sites of cultural heritage. Therefore, no sensitive part of the natural environment will be affected by this project. In this regard, confirmations from relevant authorities that the proposed sewerage works will not lie within any of the parks/sites/area set out under Clause Q.1, Part 1, Schedule 2 of the EIAO are attached in Appendix IV.

For the Ta Ho Tun sewage pumping station that will be sited within a Coastal Protection Area, the overall height of its superstructure will be reduced to about 3.3m and landscaping works around the pumping station will be provided. In this regard, the Landscaping Unit of Highways Department has undertaken the design of the landscaping works. Furthermore, professional advice from Architectural Services Department on the design of the superstructure such that it could blend with the surrounding environment.

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A drawing no. DDN/132DS/10922 showing the zoning information extracted from the Outline Zoning Plan nos. S/SK-PK/I and S/SK-HH/I and Outline Development Plan no. D/SK-T/1 is attached in Appendix V.

A summary of sensitive receivers and sensitive parts of the natural environment that might be affected by the project is given below: -

Proposed Sewage Work	Sensitive Receiver	Sensitive Part of Natural Environment
Village Sewerage	Nearby village houses	Nil
Gravity sewers/ rising main on rural roads	Nearby village houses	Nil
Gravity sewers by pipe jacking method	Nearby village houses	Nil
Sewage Pumping Stations	Nearby village houses, streamcourses, water receiving bodies	Nil

Table 8 – Sensitive Part of Natural Environment might be affected by the Proposed Sewerage Works

STANDARD / SPECIFIC ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN

13. Having considered the possible environmental impacts identified in para. 8, 9 and 10 above and possible environmental protection measures listed in Annex 1 of the EIAO TM, specific environmental protection measures to be incorporated in the design are described as follows: -

Construction Stage

- (a) Referring to the possible minor noise and dust impacts mentioned in para. 8(a), 8(d), 8(f) and 8(g) above, environmental protection measures to be included in the design are as follows: -

Noise - Relevant pollution control clauses will be included in the construction contract so as to minimize environmental nuisance to nearby sensitive receivers. The contractor will be required to comply with the Noise Control Ordinance and its subsidiary regulations in force as well as other non-statutory noise control.

Dust – Relevant pollution control clauses will be included in the construction contract under which the contractor will be required to prevent dust nuisance as a result of his construction activities.

Details of the pollution control clauses will be forwarded to EPD for comments. Upon finalization of these clauses, SP/DSD will incorporate these pollution control clauses into the construction contract under which the contractor will be responsible for the implementation of these measures. With these pollution control clauses, it is considered that both dust and noise pollution could be controlled and minimized to an acceptable level.

- (b) Referring to the possible odour impact mentioned in para. 8(b) above, the contractor will be required to demolish septic tanks in accordance with the following sequence of working sequence: Pumping out sewage/sludge from the septic tank, diversion of sewage from the house, breaking up the septic tank, laying of sewer and backfilling. Since all sewage/sludge will be pumped out from the septic tank, odour problem to be encountered during subsequent demolition of the septic tank will be minor and acceptable.
- (c) Referring to the possible traffic impact on local village access roads mentioned in para. 8(c) above, certain local village access roads will need to be temporarily closed for a few hours during daytime to facilitate the laying of gravity sewers/rising main. However, a thoroughfare of 3.5m wide shall always be maintained for emergency vehicular access (EVA) during the construction stage. It was proposed that if certain rural access roads are too narrow that this minimum thoroughfare cannot be achieved, the opened trenches will be decked over immediately or alternatively filled up with sand bags immediately for the emergency passage of fire appliance when it is necessary. Sufficient stockpile of steel plates and/or sand bags will be kept adjacent to the opened trenches.
- (d) Referring to the possible traffic impact on rural roads mentioned in para. 8(e) above, the proposed gravity sewers/rising main will be laid in trenches excavated by open trench method. The construction of sewers along Hiram's Highway will be carried out in stages with implementation of temporary traffic arrangement so as to minimize traffic impacts. In addition, since Hiram's Highway has been regarded as a traffic sensitive route, a TIA report had been submitted by the Sewerage Projects Division, DSD, to Transport Department and the Commissioner of Police and they both confirmed no objection in principle to the TIA report. Under close supervision by DSD, the contractor will be responsible for the temporary traffic management on site and for obtaining necessary approvals from relevant authorities.
- (e) Referring to the possible water quality impact mentioned in para. 8(h) above, the contractor will be required to provide, where necessary, a silt removal facility on site so as to remove the silt before discharging into nearby streamcourses or water receiving bodies. Such a silt removal facility will be provided by the contractor on site before commencement of excavation. If the underground water is found to be contaminated, the contractor will be required under appropriate contractual provisions to dispose of the contaminated underground water at an approved site.

Operational Stage

- (f) Referring to para. 9(a), 9(b) and 9(c) above, no environmental impacts is envisaged during the operation of the village sewerage, gravity sewers and rising mains. Therefore, no specific environmental measure is required.
- (g) Referring to the possible noise, odour and visual impacts of the sewage pumping stations mentioned in para. 9(d) above, environmental protection measures to be included in the design of the pumping stations are as follows: -

Noise - The proposed pumping stations will be designed and operated by DSD to meet the noise criteria stipulated in Hong Kong Planning Standards and Guidelines (HKPSG) and Noise Control Ordinance (NCO) such that the expected noise level measured at the nearest sensitive receiver will not exceed the acceptable noise levels stipulated in the "Technical Memorandum for the Assessment of Noise from Places Other than Domestic Premises, Public Places or Construction Sites". In order to reduce noise from the moving parts of the E&M equipment that is considered the major sources of noise, submersible pumps, where appropriate, will be used. In addition, most of the E&M equipment including the pumps, mechanical screen and lifting crane will be housed within a superstructure such that potential noise nuisance to nearby village houses can be reduced to an acceptable level.

Odour – The wet well, inlet chamber, screening chamber and valve chamber will be enclosed by the superstructure of the pumping station. The estimated odour level in terms of H₂S concentration in the wet well of the pumping station will normally less than 10 ppm. In order to remove odour from the air, a deodourizer will be provided, operated and maintained by DSD in each of the pumping stations such that the odour level measured at the nearest receiver of the pumping station will not exceed 5 odour units. The deodorizers may be placed inside or outside the superstructures of the pumping stations depending on availability of space inside the pumping stations. Care will be taken by the Operations and Maintenance Teams of DSD during removal of screening to avoid causing odour nuisance.

Visual impact - The visual impact is minimized by a principle that structures above ground level will be coherent with the surrounding environment. For the Tai Chung Hau sewage pumping station and the Mang Kung Wo Road sewage pumping station, the appearance of their superstructures will be coherent with their surrounding modern village houses. For the Ta Ho Tun sewage pumping station that will be sited within a Coastal Protection Area, the overall height of its superstructure will be reduced to about 3.3m and landscaping works around the pumping station will be provided. In this regard, the Landscaping Unit of Highways Department has undertaken the design of the landscaping works. Furthermore, DSD will seek professional advice from Architectural Services Department on the design of the superstructure such that it could blend with the surrounding environment.

Maintenance Stage

- (h) Referring to the para. 10(a), 10(b) and 10(c) above, only minor and short-term noise and odour nuisances are anticipated during maintenance of the village sewerage, gravity sewers and rising mains. Due care will be taken by the Operations and Maintenance Teams of DSD during maintenance to further minimize these minor nuisances.
- (i) Referring to the possible water quality impact by the emergency overflow bypass mentioned in para. 10(d) above, each of the pumping stations will have an emergency overflow chamber and overflow pipe such that sewage overflow bypass can be discharged into nearby streamcourses or water receiving bodies in emergency only. In order to reduce substantially the chance of emergency overflow bypass, the following environmental protection measures will be incorporated by DSD in the design of the pumping stations:

- Standby pump and standby screen, where practicable, will be provided in each of the pumping stations to facilitate routine maintenance and repairing of equipment.
- For small pumping stations (DWF not more than 1500 cu m/day) including Tai Chung Hau and Ta Ho Tun sewage pumping stations, a two-hour storage capacity for incoming sewage at 1xDWF will be incorporated in the design volume of the wet well to account for emergency such as prolonged power failure.
- For the proposed Mang Kung Wo Road sewage pumping station (DWF more than 1500 cu m/day), a two-hour storage capacity for incoming sewage at 1xDWF will be incorporated for maintenance purposes. In addition, DSD's contractor will construct a transformer room where CLP will supply and install a transformer and a 11 kV switchgear for supplying electricity at 3 phase 4 wire 380/220 V 50 Hertz to the pumping station. CLP confirmed that the 11 kV cable to this pumping station is designed in a ring circuit that caters for loss of one infeed supply without power interruption to the customers.
- A telemetry system will be provided for sending all fault signals from the pumping stations to the existing Sai Kung Sewage Treatment Works such that necessary actions could be taken promptly.
- With a view to standardizing the emergency procedures and contingency plans adopted at various sewage treatment facilities including sewage pumping stations in dealing with different types of incidents, which have a potential of generating an environmental nuisance and possibly polluting the streamcourses, harbour or beach water, a "Handbook on General Contingency Plan for Incidents Commonly Encountered in Sewage Treatment Facilities with a Potential of Generating an Environmental Nuisance (GCP)" is being formulated by a DSD Departmental Task Force for Preparation of General Contingency Plan for Sewage Treatment Facilities.

With these environmental protection measures incorporated in the design, emergency overflow bypass will occur only in very extreme cases such as prolonged power failure. Nonetheless, in order to minimize further the impact on the environment when emergency overflow bypass does occur, the following additional measures will also be incorporated in the design:

- A bar screen will be installed in each overflow chamber to prevent the discharge of large floating solids into the streamcourses or water receiving bodies.
- The discharge point of overflow bypass will be kept below the low water mark level.
- The discharge point of overflow bypass will be kept away from sensitive receivers such as gazetted beaches, mariculture zones, seawater intakes, stream with water for human consumption, typhoon shelter, etc.

General Layout Drawings

- (j) General layouts of the pumping stations and details of their emergency overflow bypass are shown on the attached Drawing Nos. DDN/132DS/10885, 10915 and 10916 in Appendix I.

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OTHER ENVIRONMENTAL EFFECT

14. Upon completion of the works, sewage from the currently unsewered areas of Pak Sha Wan, Kau Sai San Tsuen, Tai Chung Hau, Ta Ho Tun, Mang Kung Wo will be collected and conveyed to the new sewerage system leading to the existing Sai Kung Sewage Treatment Works for treatment. As a result, water quality of Port Shelter can be improved.

PREVIOUS PUBLIC CONSULTATION AND ENVIRONMENTAL REVIEW

15. Public consultation with District Board and villager representatives had been carried out in 1994 and 1995 respectively. In this regard, no objection has been received.
16. The general layout drawings of this project had been circulated to relevant Government Departments and utility undertakings for comments and no major objection has been received. A copy of the relevant memo ref. (2) in SP/8/4132DS/S2P4 II dated 30.4.1997 and letter ref. (4) in SP/8/4132DS/S2P4 III dated 1.5.1997 showing the Government Departments and the utility undertakers to whom the drawing had been circulated is attached in Appendix VI. An Environmental Review on this project had also been conducted by EPD. DEP advised vide his memo ref. (34) in EP2N8/49 dated 12.11.1997 that no Environment Impact Assessment (EIA) was required subject to compliance with the requirements mentioned in his memo. As a result, no EIA study had been conducted for this project. A copy of the said DEP's memo is attached in Appendix VII.

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SCHEDULE OF RECOMMENDED MITIGATION MEASURES

17. All the above-mentioned mitigation measures for activities in the construction stage, the operational stage and the maintenance stage will be in place before actual commencement of the corresponding activities.

Village Sewerage, Gravity Sewers on Rural Roads, Gravity Sewers by Pipe Jacking Method

- (a) Based on the above assessment, no significant long-term environmental impacts would be caused during the construction stage, the operational stage, and the maintenance stage of the proposed village sewerage, gravity sewers on rural road, and gravity sewers by pipe jacking method. As regards short-term environmental impacts that may be caused, DSD/DSD's contractor will implement standard/appropriate environmental pollution measures to control the noise, dust, and site runoff to within established guidelines and standards. As such, no environmental permit condition is required for the construction, operation and maintenance of these sewerage works.

Tai Chung Hau Sewage Pumping Station and Ta Ho Tun Sewage Pumping Station

- (b) Both the installed capacities of these sewage pumping stations are less than 2,000 cu.m/day. Based on the above assessment, no significant long-term environmental impact would be caused during the construction stage, the operational stage, and the maintenance stage of these two small pumping stations. As regards short-term environmental impacts that may be caused, DSD/DSD's contractor will implement standard/appropriate environmental pollution measures to control the noise, dust, and site runoff to within established guidelines and standards. Therefore, no environmental permit condition is required for the construction, operation and maintenance of these sewerage works.

Mang Kung Wo Road Sewage Pumping Station

- (c) Short-term environmental impact during construction stage - DSD will implement standard/appropriate environmental pollution measures to control the noise, dust, and site runoff to within established guidelines and standards.
- (d) Long-term environmental impact during operation and maintenance stages - The installed capacity of the proposed Mang Kung Wo Road sewage pumping station is 4,820 cu.m/day and the boundary of which is less than 150m away from an existing receiver. A schedule of the recommended specific mitigation measures to control the long-term environmental impacts of this pumping station is given as follow: -

Environmental Impacts	Recommended Mitigation Measures	Requirements to be achieved by the Mitigation Measures	Where the Mitigation to be installed	When the Mitigation Measures to be implemented	Parties Responsible for Implementation of the Mitigation Measures
Noise	<ul style="list-style-type: none"> - The pumping station will be enclosed by a superstructure. - The screening chamber, wet well, and dry well of the pumping station will be underground. - E&M equipment including mechanical screen, lifting crane, etc. will be housed inside the superstructure while the sewage pumps will be installed inside the underground dry well. 	Noise criteria stipulated in Hong Kong Planning Standards and Guidelines and Noise Control Ordinance – Technical Memorandum for the Assessment of Noise from Places Other than Domestic Premises, Public Places or Construction Sites.	At the location of the proposed Mang Kung Wo Road Sewage Pumping Station.	Before commissioning of the proposed Mang Kung Wo Road Sewage Pumping Station.	DSD/DSD's Contractor

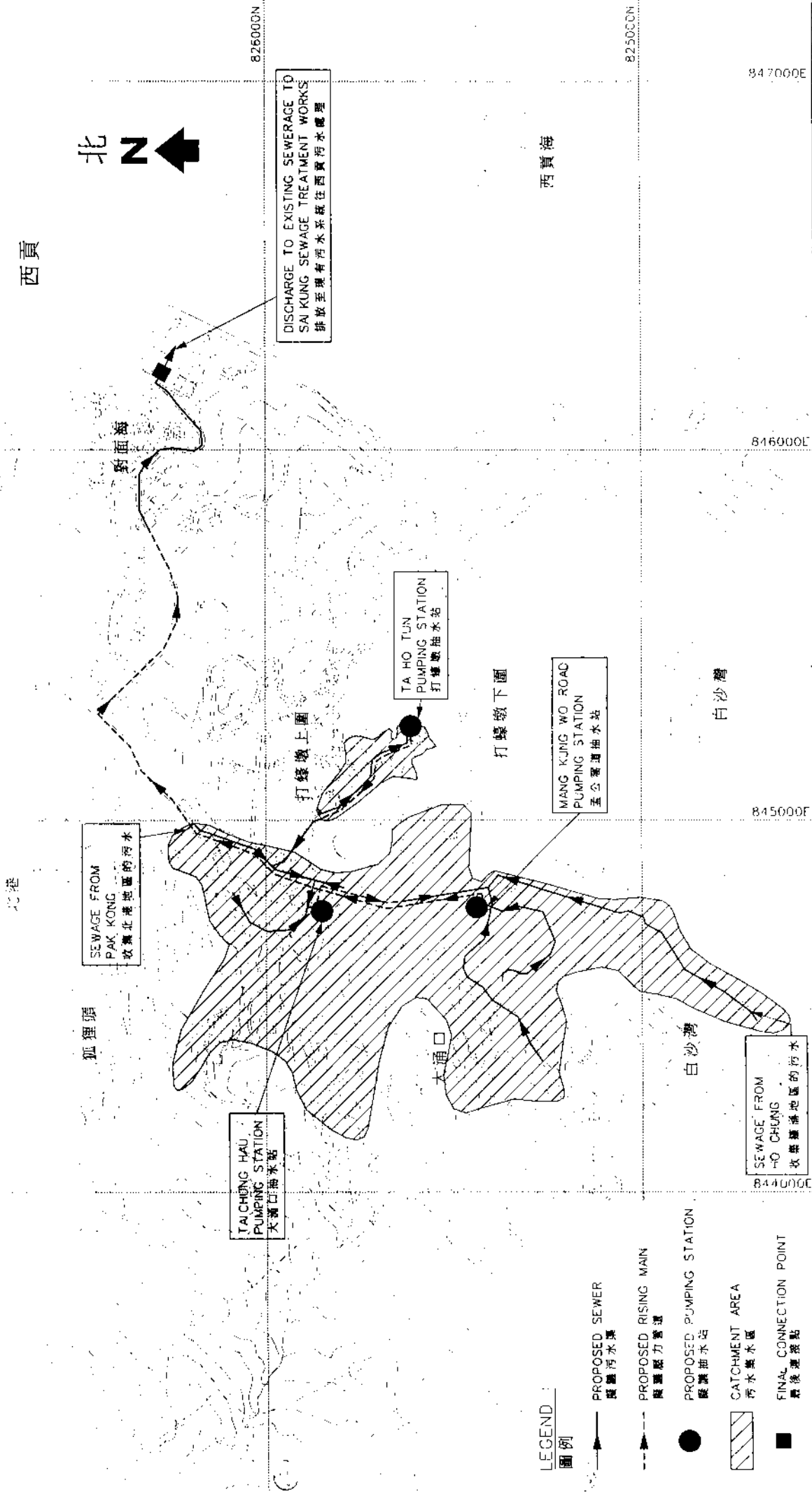
Environmental Impacts	Recommended Mitigation Measures	Requirements to be achieved by the Mitigation Measures	Where the Mitigation to be installed	When the Mitigation Measures to be implemented	Parties Responsible for Implementation of the Mitigation Measures
<p>Emergency Overflow Bypass</p>	<ul style="list-style-type: none"> - A standby pump and a standby screen will be provided to facilitate maintenance - A two-hour storage capacity for incoming sewage at 1xDWF will be incorporated. - A transformer house will be constructed where CLP will supply and install a transformer and 11 kV switchgear for supplying electricity in the format of ring main to the pumping station. - A telemetry system will be provided for sending all fault signals from the pumping station to the existing Sai Kung Sewerage Treatment Works. - A bar screen will be installed in the overflow chamber to prevent the discharge of large floating solids into the streamcourse. - The discharge point of overflow bypass will be kept below the low water mark level. - The discharge point of overflow will be kept away from sensitive receivers including gazetted beaches, mariculture zones, seawater intakes, stream with water for human consumption, typhoon shelter, etc. 	<p>To minimize the chance of emergency overflow bypass as far as practicable.</p>	<p>At the location of the proposed Mang Kung Wo Road Sewage Pumping Station.</p>	<p>Before commissioning of the proposed Mang Kung Wo Road Sewage Pumping Station.</p>	<p>DSD/DSD's Contractor</p>

Environmental Impacts	Recommended Mitigation Measures	Requirements to be achieved by the Mitigation Measures	Where the Mitigation Measures to be installed	When the Mitigation Measures to be implemented	Parties Responsible for Implementation of the Mitigation Measures
<p>Odour</p>	<ul style="list-style-type: none"> - The pumping station will be enclosed by a superstructure. - The inlet chamber, screening chamber, wet well of the pumping station will be underground. - A deodorizer will be installed to remove odour from the air. 	<p>Odour level measured at the nearest receiver of the pumping station shall not exceed 5 odour units.</p>	<p>Deodorizer shall be installed inside or outside the superstructure of the pumping station on availability of space.</p>	<p>Before commissioning of the proposed Mang Kung Wo Road Sewage Pumping Station.</p>	<p>DSD/DSD's Contractor</p>

* * * * * END * * * * *

List of Drawings attached to this Project Profile

Drawing No.	Title
DDN/132DS/10803C	Location Plan
DDN/132DS/10892C	General Layout (sheet 1 of 5)
DDN/132DS/10898C	General Layout (sheet 2 of 5)
DDN/132DS/10899C	General Layout (sheet 3 of 5)
DDN/132DS/10900B	General Layout (sheet 4 of 5)
DDN/132DS/10901B	General Layout (sheet 5 of 5)
DDN/132DS/10885	Layout Plan of Tai Chung Hau Pumping Station
DDN/132DS/10915	Layout Plan of Ta Ho Tun Pumping Station
DDN/132DS/10916	Layout Plan of Mang Kung Wo Road Pumping Station



北
N

西貢

北港

狐狸頭

SEWAGE FROM
PAK KONG
收集北港地區的污水

TAICHUNG HAU
PUMPING STATION
大涌口抽水站

打螺墩上圍

TA HO TUN
PUMPING STATION
打螺墩抽水站

打螺墩下圍

MANG KUNG WO ROAD
PUMPING STATION
孟公潭道抽水站

大涌口

白沙灣

白沙灣

對面海

西貢海

DISCHARGE TO EXISTING SEWERAGE TO
SAI KUNG SEWAGE TREATMENT WORKS
排放至現有污水系統往西貢污水處理

圖例

- PROPOSED SEWER
擬議污水渠
- PROPOSED RISING MAIN
擬議壓力管渠
- PROPOSED PUMPING STATION
擬議抽水站
- CATCHMENT AREA
污水集水區
- FINAL CONNECTION POINT
最後連接點

SEWAGE FROM
HO CHUNG
收集離港地區的污水

PORT SHELTER SEWERAGE - STAGE 2
PROPOSED SEWERAGE WORKS AT TAI CHUNG HAU AND PAK SHA WAN
牛尾海污水系統—第二階段
擬議在大涌口及白沙灣之污水工程

847000E
846000E
845000E
844000E

826000N
825000N

SCALE 1 : 10 000
Drg. No. DDN/132DS/10803C
Z:\M&E\A112024-10\10803.dgn

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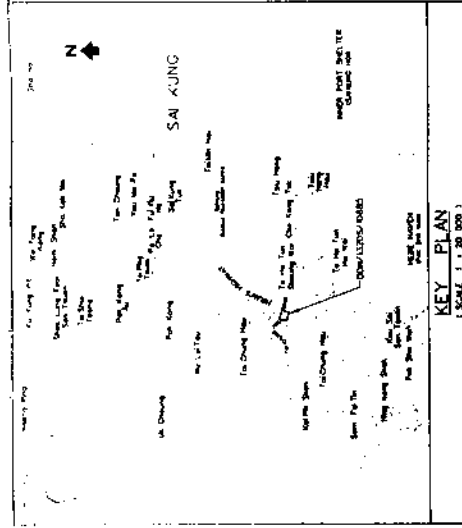
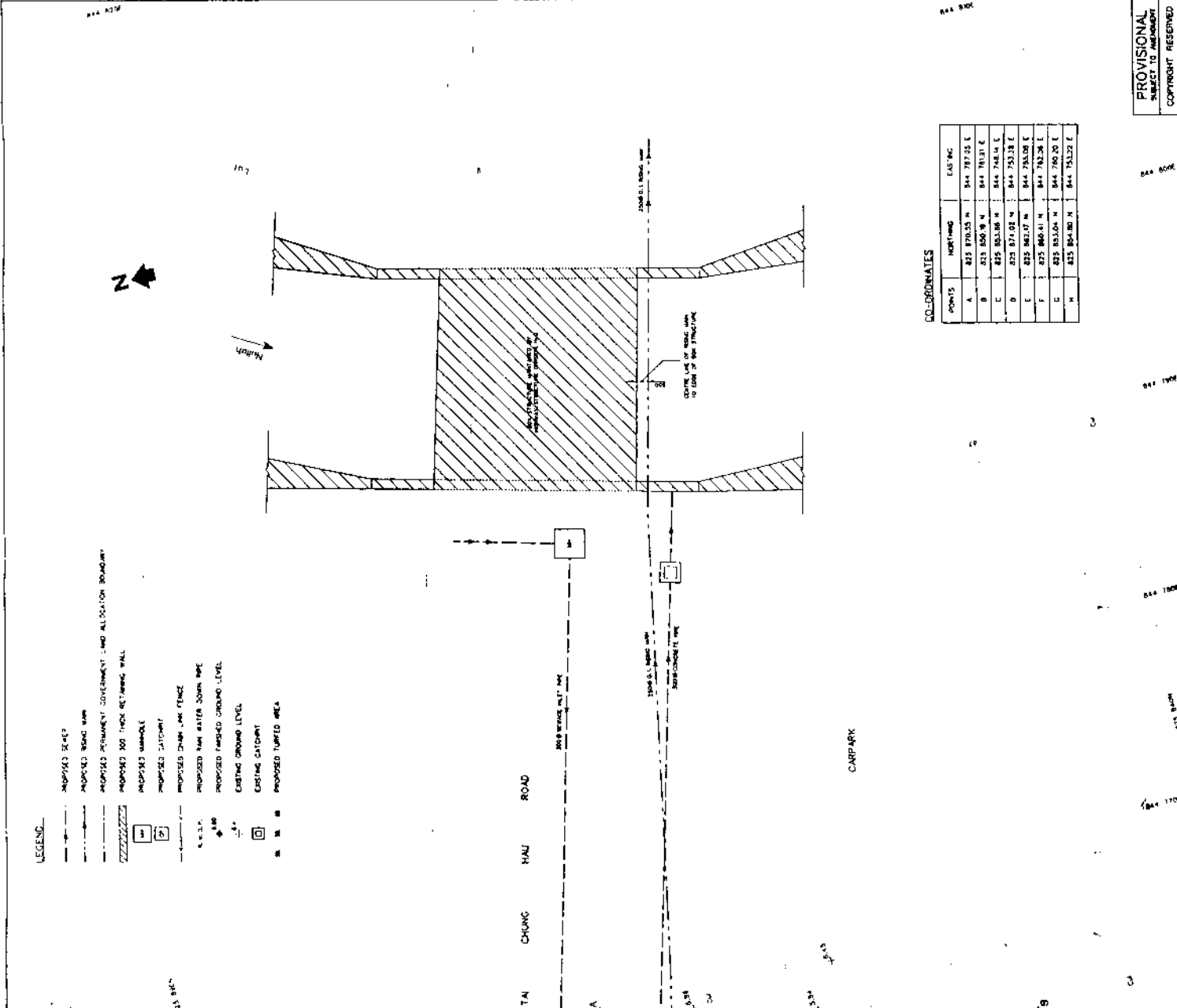
1. ALL DIMENSIONS ARE IN METERS.
2. ALL LEVELS ARE IN METERS REFERRED TO P.A.M.S. (HONG KONG MEAN SEA LEVEL) UNLESS OTHERWISE STATED.
3. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE STATED.

NO.	DATE	REVISION	BY	CHECKED
1	10/11/00	ISSUED FOR TENDER	M. Y. AU	E. L. YIP
2	10/11/00	REVISED	M. Y. AU	E. L. YIP
3	10/11/00	REVISED	M. Y. AU	E. L. YIP
4	10/11/00	REVISED	M. Y. AU	E. L. YIP
5	10/11/00	REVISED	M. Y. AU	E. L. YIP
6	10/11/00	REVISED	M. Y. AU	E. L. YIP
7	10/11/00	REVISED	M. Y. AU	E. L. YIP
8	10/11/00	REVISED	M. Y. AU	E. L. YIP
9	10/11/00	REVISED	M. Y. AU	E. L. YIP
10	10/11/00	REVISED	M. Y. AU	E. L. YIP

PROJECT NO: SP/8/413205/52P4
 PROJECT NAME: PORT SHELTER SEWERAGE STAGE 2
 TAI CHUNG HAU AND PAK SHIA WAN SEWERAGE
 DRAWING NO: DDN/13205/10885
 DATE: 10/11/00

DESIGNED BY: M. Y. AU
 CHECKED BY: E. L. YIP
 PROJECT NO: SP/8/413205/52P4
 PROJECT NAME: PORT SHELTER SEWERAGE STAGE 2
 TAI CHUNG HAU AND PAK SHIA WAN SEWERAGE
 DRAWING NO: DDN/13205/10885
 DATE: 10/11/00

SEWERAGE PROJECTS DIVISION
 DRAINAGE SERVICES DEPARTMENT
 GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION



COORDINATES

POINTS	NORTHING	EASTING
A	825 870.55 N	844 787.05 E
B	825 856.96 N	844 781.31 E
C	825 853.06 N	844 748.14 E
D	825 871.02 N	844 753.18 E
E	825 862.17 N	844 754.08 E
F	825 860.41 N	844 742.36 E
G	825 853.04 N	844 740.20 E
H	825 854.80 N	844 753.22 E

PROVISIONAL
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NOTES:

- 1. ALL DIMENSIONS ARE IN METERS.
- 2. ALL LEVELS ARE TO CENTERLINE UNLESS OTHERWISE STATED.
- 3. ALL MANHOLE DEPTHS ARE TO TOP OF MANHOLE COVER UNLESS OTHERWISE STATED.
- 4. ALL STRUCTURES, INCLUDING BUT NOT LIMITED TO, MANHOLES, CHAMBERS, PIPES, AND STRUCTURAL ELEMENTS, SHALL BE CONSTRUCTED TO THE STANDARD SPECIFICATIONS FOR SEWERAGE AND DRAINAGE WORK.

LEGEND:

- Proposed Sewer Pipe
- Proposed Sewer Manhole
- Proposed Sewer Chamber
- Proposed Sewer Valve
- Proposed Sewer Access Point
- Proposed Sewer Inlet
- Proposed Sewer Outlet
- Proposed Sewer Junction
- Proposed Sewer Crossing
- Proposed Sewer Tunnel
- Proposed Sewer Bridge
- Proposed Sewer Culvert
- Proposed Sewer Trench
- Proposed Sewer Vault
- Proposed Sewer Chamber
- Proposed Sewer Manhole
- Proposed Sewer Valve
- Proposed Sewer Access Point
- Proposed Sewer Inlet
- Proposed Sewer Outlet
- Proposed Sewer Junction
- Proposed Sewer Crossing
- Proposed Sewer Tunnel
- Proposed Sewer Bridge
- Proposed Sewer Culvert
- Proposed Sewer Trench
- Proposed Sewer Vault

NO.	DESCRIPTION	DATE
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2	REVISED TO SHOW PROPOSED WORK	11/11/01
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5	REVISED TO SHOW PROPOSED WORK	02/12/02

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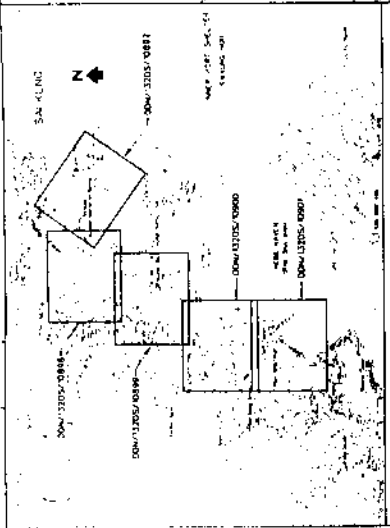
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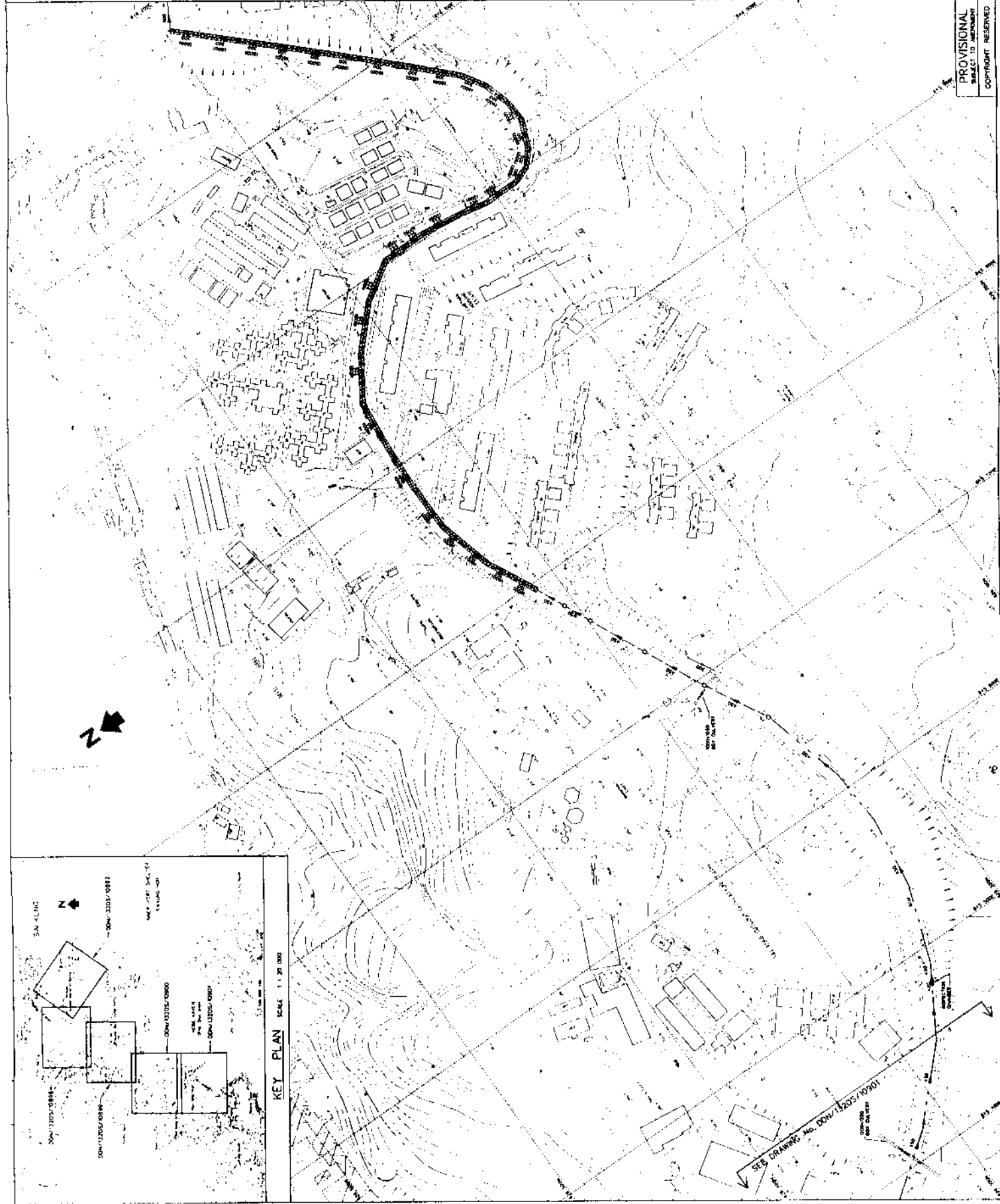
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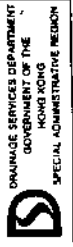
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5	REVISED TO SHOW PROPOSED WORK	02/12/02



KEY PLAN
SCALE: 1:20,000



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SEWERAGE PROJECTS DIVISION

DDN/13205/10892C
AS SHOWN

SCALE: 1:1000
OR
AS SHOWN

DATE: 10/11/01

PROJECT NO: 13205

DRAWING NO: SP/8/413205/5284

DATE: 10/11/01

PROJECT NO: 13205

DATE: 10/11/01

PROJECT NO: 13205

DATE: 10/11/01

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PROJECT NO: 13205

DATE: 10/11/01

PROJECT NO: 13205

DATE: 10/11/01

PROJECT NO: 13205

DATE: 10/11/01

NO. 13

FOR NOTES AND LEGEND REFER TO DRAWING NO. DDN/13205/10899

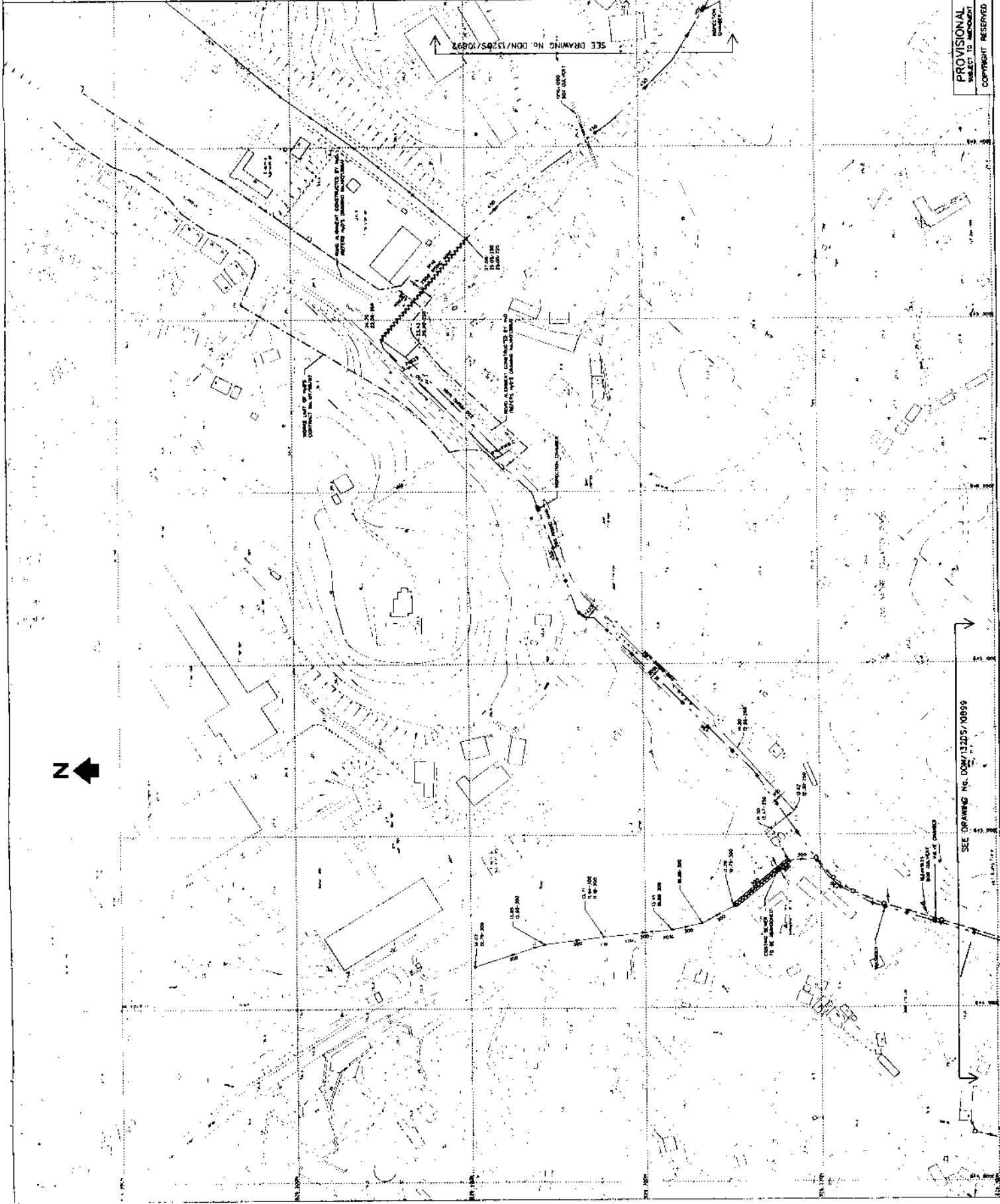
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2	14.08.14	FOR INFORMATION	W. T. HO	W. T. HO
3	14.08.14	FOR INFORMATION	W. T. HO	W. T. HO
4	14.08.14	FOR INFORMATION	W. T. HO	W. T. HO
5	14.08.14	FOR INFORMATION	W. T. HO	W. T. HO

DESIGNED BY: W. T. HO
 CHECKED BY: W. T. HO
 DATE: 14.08.14

PROJECT NO: DDN/13205/10899
 SHEET NO: 1 OF 3

SCALE: 1:1000
 PROJECT DIVISION: SEWERAGE PROJECTS DIVISION

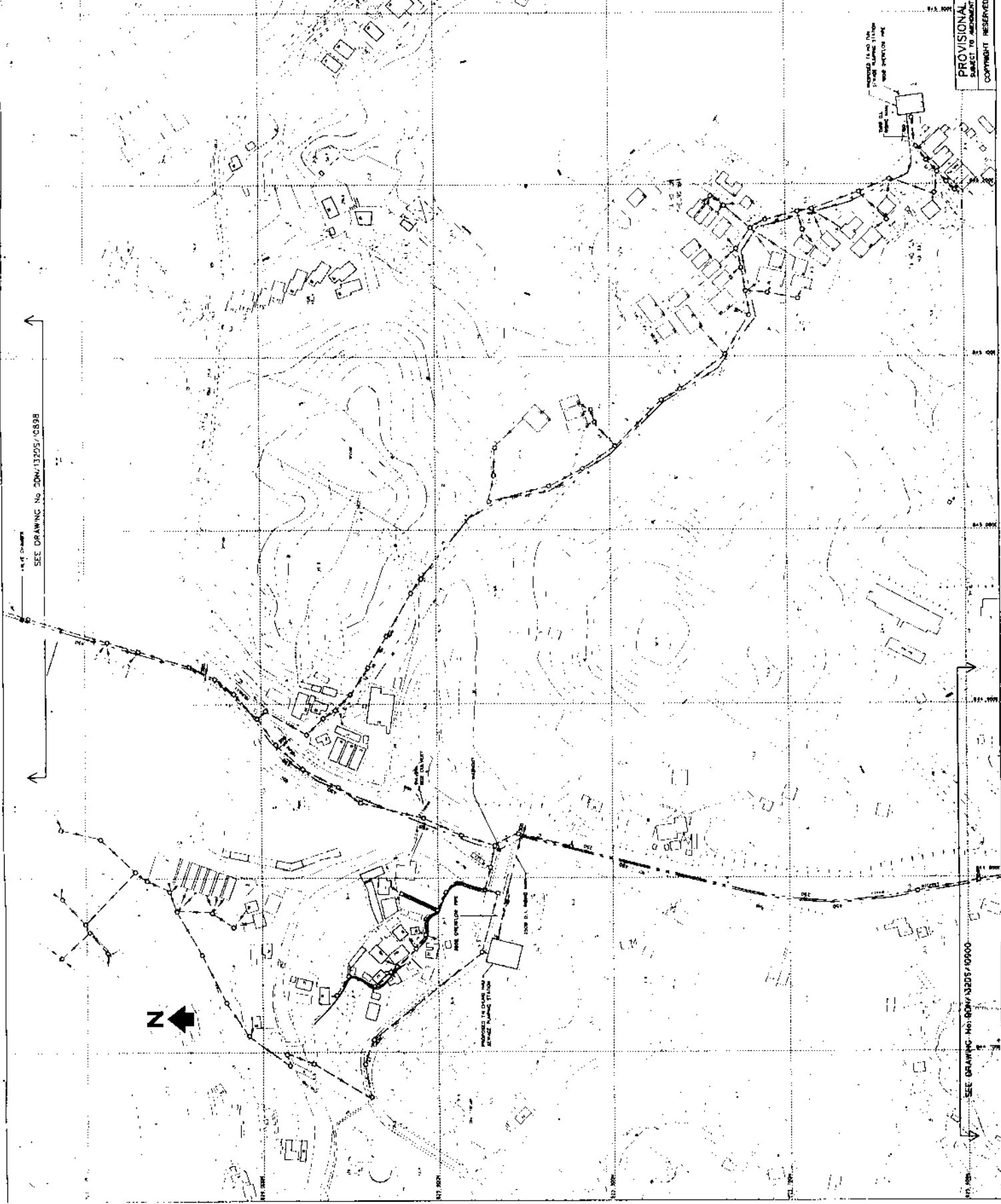
DRAINAGE SERVICES DEPARTMENT
 GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION



NOTES:

FOR NOTES, SEE DRAWING NO. DDN/13205/0898

SEE DRAWING NO. DDN/13205/0898



NO.	DATE	REVISION
1	14.11.11	ISSUED FOR TENDER
2	14.11.11	REVISED TO SHOW PROPOSED SEWERAGE LAYOUT
3	14.11.11	REVISED TO SHOW PROPOSED SEWERAGE LAYOUT
4	14.11.11	REVISED TO SHOW PROPOSED SEWERAGE LAYOUT
5	14.11.11	REVISED TO SHOW PROPOSED SEWERAGE LAYOUT

DESIGNED BY	DATE
SOON HEE	24.7.87
SOON HEE	4.8.87
SOON HEE	5.8.87
SOON HEE	5.8.87

PROJECT NO. SP/B/413205/0204
 13205
 CONTRACT

ISSUED FOR TENDER
 PORT SHELTER SEWERAGE, STAGE 2
 - TIN CHUNG HAU AND PAK SHA WAN
 SEWERAGE
 GENERAL LAYOUT
 SHEET 1 OF 31
 DRAWING NO. DDN/13205/10899C
 SCALE 1 : 1000
 S
 DRAINAGE SERVICES DEPARTMENT
 GOVERNMENT OF THE
 HONG KONG
 SPECIAL ADMINISTRATIVE REGION
 SEWERAGE PROJECTS DIVISION

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SEE DRAWING NO. DDN/13205/0898

NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS OF THE HONG KONG S.W.P.

SEE DRAWING NO. DON/132DS/10900B



NO.	REVISION	DATE
1	ISSUED FOR CONSTRUCTION	24.7.87
2	ISSUED FOR CONSTRUCTION	24.7.87
3	ISSUED FOR CONSTRUCTION	24.7.87
4	ISSUED FOR CONSTRUCTION	24.7.87
5	ISSUED FOR CONSTRUCTION	24.7.87
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9	ISSUED FOR CONSTRUCTION	24.7.87
10	ISSUED FOR CONSTRUCTION	24.7.87

PROJECT NO. SP719/4132DS/52P4
 PROJECT NAME 132DS
 DRAWING NO. 10900B

DATE

SCALE: 1:1000

PORT SHELTER SEWERAGE, STAGE 2
 - TM CHUNG HAU AND PAK SHA WAN
 SEWERAGE
 GENERAL LAYOUT

DATE: 24.7.87
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]

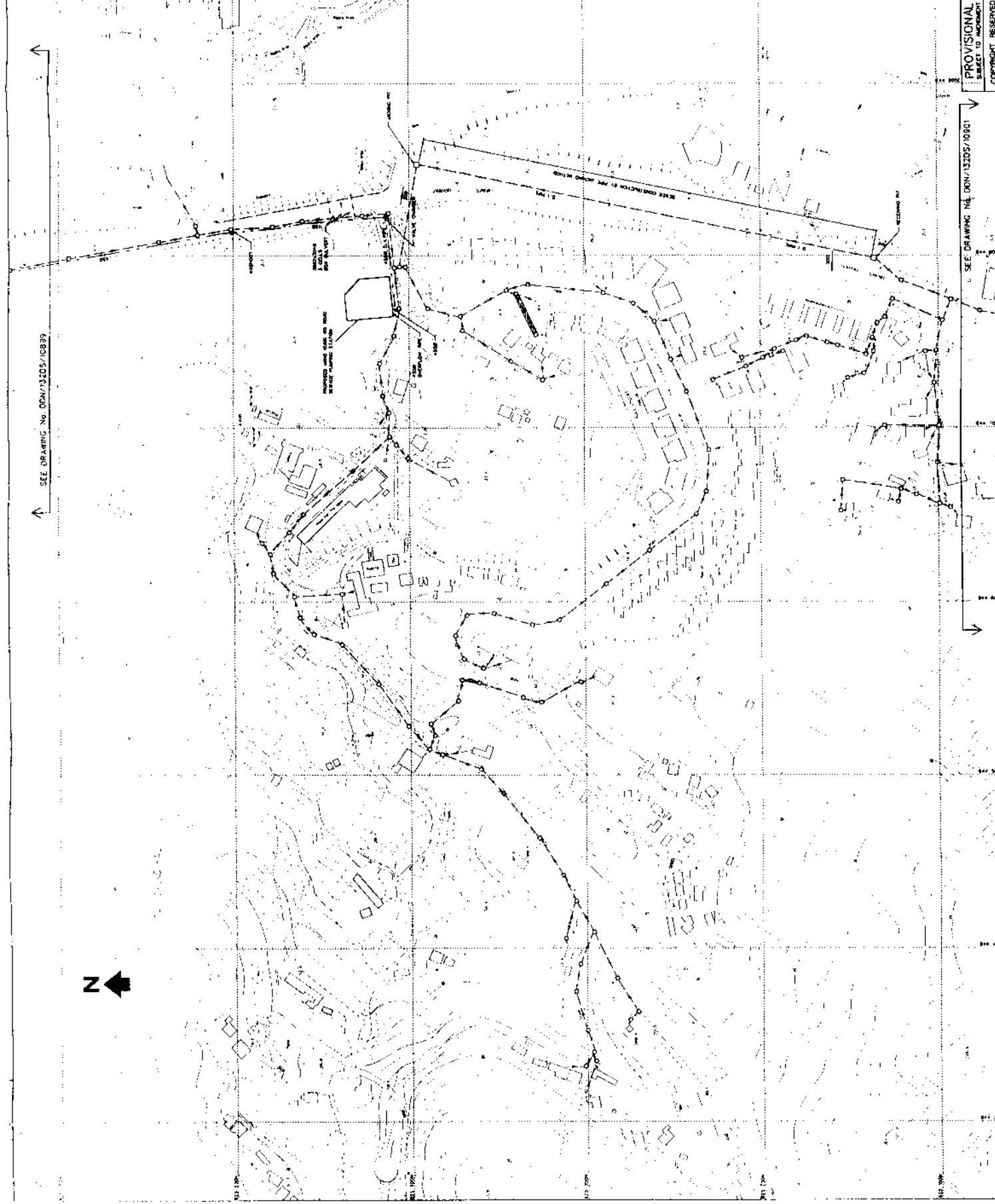
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DOON/132DS/10900B

SEWERAGE PROJECTS DIVISION



DRAINAGE SERVICES DEPARTMENT
 GOVERNMENT OF THE HONG KONG
 SPECIAL ADMINISTRATIVE REGION



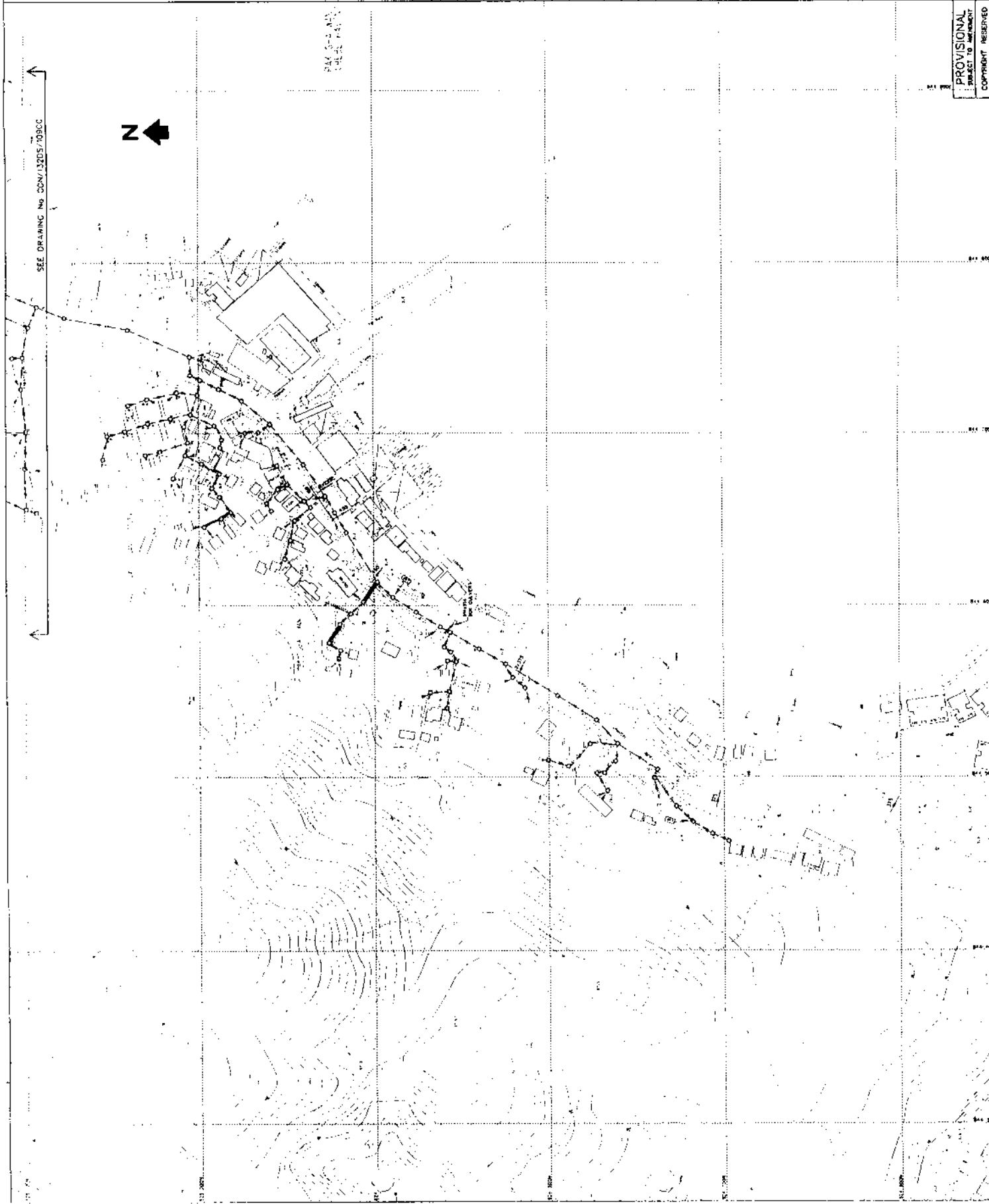
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SEE DRAWING NO. DON/132DS/10901

NOTES

1. THE 4115 AND 10348 WITH A.D. NO. 13205/10900

SEE DRAWING NO. CON/13205/10900



NO.	REVISION	DATE	BY	CHECKED
1	ISSUED			
2	ISSUED	24.7.87	M. Y. AU	
3	ISSUED	4.8.87	H. T. SIU	
4	ISSUED	5.8.87	W. C. MOK	

PROJECT NO. 13205

SP/B/413205/S204

GENERAL LAYOUT

PORT SHULTER SEWERAGE STAGE 2
TAI CHUNG HAU AND PAK SHA WAN
SEWERAGE

SEWERAGE PROJECTS DIVISION

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG

SPECIAL ADMINISTRATIVE REGION

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DDN/13205/10900B

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SEWERAGE PROJECTS DIVISION

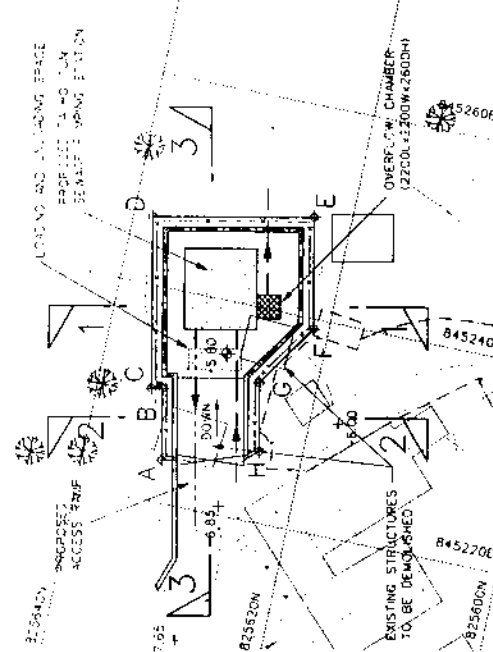
DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG

SPECIAL ADMINISTRATIVE REGION

PROVISIONAL
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NOTES

1. ALL DIMENSIONS ARE IN METRES AND REFERRED TO P.D.M.
2. ALL LEVELS ARE IN METRES AND REFERRED TO P.D.M.
3. EXTERNAL SURFACES OF PUMPING STATION SHALL BE FINISHED WITH GRANITE TILES.
4. ALL LEVELS ARE IN METRES AND REFERRED TO P.D.M.



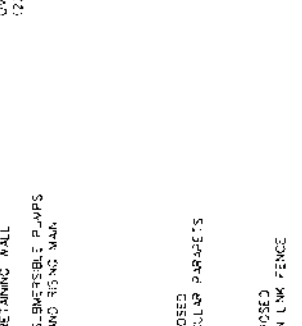
KEY PLAN
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LEGEND

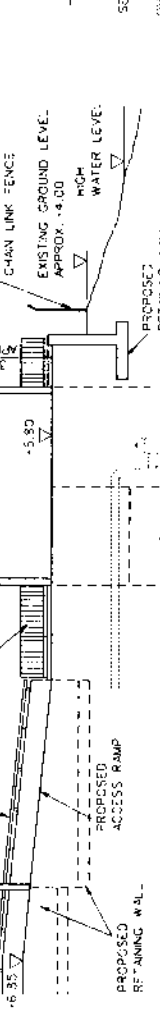
- PROPOSED SEWER
- PROPOSED RISING MAIN
- PROPOSED P.S.A. BOUNDARY
- PROPOSED CHAIN LINK FENCE
- PROPOSED HAND RAILING
- PRIVATE LOT BOUNDARY
- + FINISHED GROUND LEVEL
- + EXISTING GROUND LEVEL
- + EXISTING MANGROVE

CO-ORDINATES

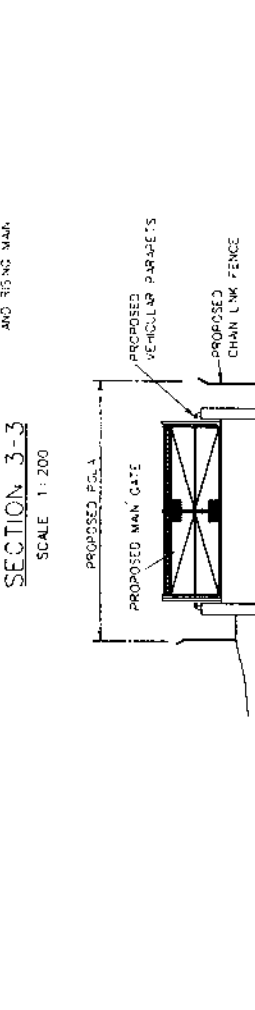
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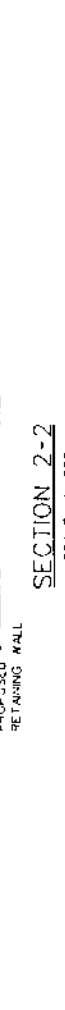
SECTION 1-1
SCALE 1:200



SECTION 2-2
SCALE 1:200



SECTION 3-3
SCALE 1:200



SECTION 1-1
SCALE 1:200

PROPOSED CHAIN LINK FENCE, OVERFLOW CHAMBER AND VEHICULAR PARAPETS SHALL BE FINISHED WITH GRANITE TILES.

PROPOSED CHAIN LINK FENCE SHALL BE FINISHED WITH GRANITE TILES.

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REVISION

no.	date	description	initial

drawn H.T. TANG

checked W.C. MOK

approved

contract no.

file no. SP/8/4132DS/S2P4

project no. 132DS

contract

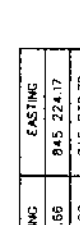
drawing title
PORT SHELTER SEWERAGE, STAGE 2
- VILLAGE SEWERAGE AT
TAI CHUNG HAU AND PAK SHA WAN
PROPOSED TA HO TUN
SEWER PUMPING STATION

drawing no. DDN/132DS/10915 AS SHOWN

office

SEWERAGE PROJECTS DIVISION

DRAINAGE SERVICES
DEPARTMENT
HONG KONG



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2. ALL DIMENSIONS ARE TO FACE UNLESS SPECIFIED OTHERWISE.
3. ALL DIMENSIONS ARE TO FACE UNLESS SPECIFIED OTHERWISE.
4. ALL DIMENSIONS ARE TO FACE UNLESS SPECIFIED OTHERWISE.

LEGEND:

- PROPOSED RETAINING STRUCTURE
- PROPOSED WALL
- PROPOSED GROUND LEVEL
- PROPOSED ROAD
- PROPOSED CONCRETED SLAB
- PROPOSED EXISTING WALL
- PROPOSED EXISTING ROOF
- PROPOSED EXISTING DOOR
- PROPOSED EXISTING WINDOW
- PROPOSED EXISTING STAIR
- PROPOSED EXISTING PLUMBING
- PROPOSED EXISTING ELECTRICAL
- PROPOSED EXISTING PAVEMENT
- PROPOSED EXISTING FENCE
- PROPOSED EXISTING LIGHTING
- PROPOSED EXISTING UTILITIES
- PROPOSED EXISTING TREES
- PROPOSED EXISTING PLANTS
- PROPOSED EXISTING LANDSCAPE

PROPOSED KUNG WO ROAD SEWAGE PUMPING STATION

PROPOSED TRANSFORMER HOUSE
 PROPOSED STAFF HOUSE
 PROPOSED CONTROL BUILDING
 PROPOSED ELECTRIC CONTROL BUILDING
 PROPOSED ELECTRICAL CONTROL BUILDING
 PROPOSED WATER TOWER
 PROPOSED ROOF TOP TANK
 PROPOSED STAIR

S7705

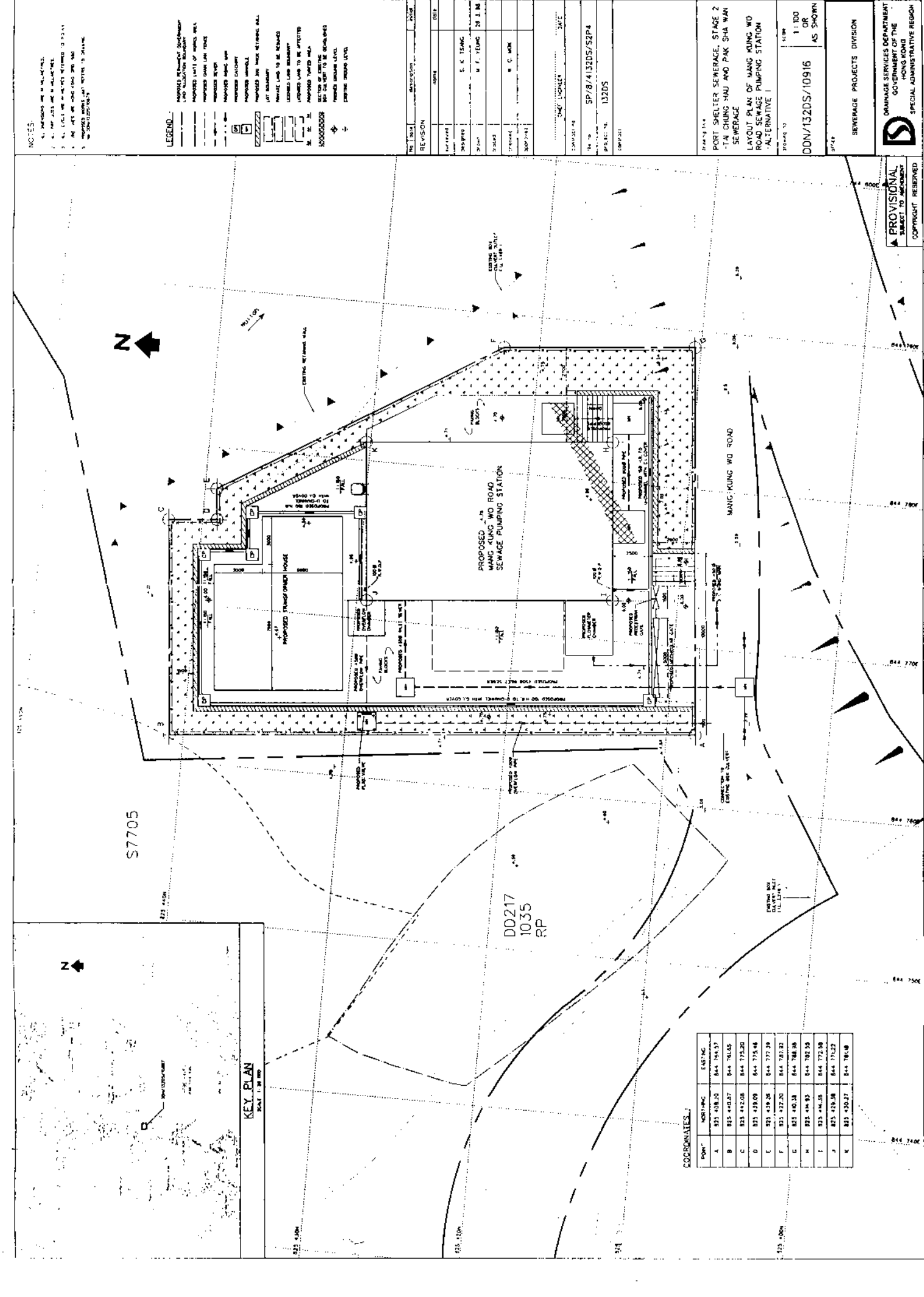
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RP**

COORDINATES

POINT	NORTHING	EASTING
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B	825 440.87	844 344.65
C	825 422.08	844 373.20
D	825 429.09	844 375.44
E	825 439.25	844 377.19
F	825 427.20	844 381.32
G	825 400.38	844 388.36
H	825 406.93	844 392.35
I	825 406.36	844 372.99
J	825 429.38	844 374.27
K	825 420.77	844 384.69



KEY PLAN
SCALE 1:2000



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DRAINAGE SERVICES DEPARTMENT
 GOVERNMENT OF THE
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SP-48

SCALE: 1:100
 OR
 AS SHOWN

DDN/132DS/10916

PROJECT NO: 132DS
 DRAWING NO: SPWP-211

PROJECT: SP/8/4132DS/52P4
 SHEET: 132DS

DESIGNER: [Name]

DATE: [Date]

4272DS Sport Shelter Sewerage, Stage 2 - Tai Chung Ha and K Sha Wan Sewerage

Task Name	Action	Start	Finish
Review of preliminary layout plan	SP	01/01/98	15/09/98
Ground Investigation & TIA		15/10/98	15/06/99
Land matters		23/11/95	16/06/00
Submit CAF to DLO	SP/PM	23/11/95	23/11/95
Finalize clearance plan by DLO	DLO	24/11/95	14/09/98
Land acquisition/clearance process by DLO	DLO	18/10/99	15/06/00
Obtain planning approval for Tai Ho Tun P/S (s16 applicat	SP/PM	15/06/98	17/08/98
Apply for PCLEA and TGLA sites	SP/PM	15/09/98	16/06/00
TIA Ordinance procedures (obtain EP under s5(11))	SP	01/06/98	15/12/98
Prepare and submit project profile	SP	01/06/98	14/08/98
Obtain EP under s5(11) of the EIA Ordinance	SP/PM/EPD	17/08/98	15/12/98
Gazetteal under WFC (SJR)		15/09/98	15/10/99
Draft gazetteal document	SP	15/09/98	15/10/98
Circular gazetteal document	PM	15/10/98	15/01/99
First Gazette date	EPD	15/01/99	15/01/99
Objection period/Resolve objection (9 months)	SP/PM	18/01/99	15/10/99
Authorization of Scheme	EPD	15/10/99	15/10/99
Public Consultation		06/01/94	15/05/95
PR Consultation	SP	06/01/94	06/01/94
VR Consultation	SP/PM	15/03/95	15/03/95
Funding Approval		16/08/99	15/06/00
Prepare PWSC and CURE submission	SP	16/08/99	12/11/99
CURE meeting	PM	15/11/99	15/11/99
Submit PWSC paper to PELB	PM/HQ	14/01/00	14/01/00
PWSC Meeting / EC Meeting	SP/EL/FB	15/03/00	15/06/00
Detailed Design and Tendering		15/07/98	15/12/00
Detailed design & prepare tender documents	SP	15/07/98	17/07/00
Approve design and documents	PM	17/03/00	17/07/00
Tendering & award	SP/PM	17/07/00	15/12/00
Construction		18/12/00	18/06/03

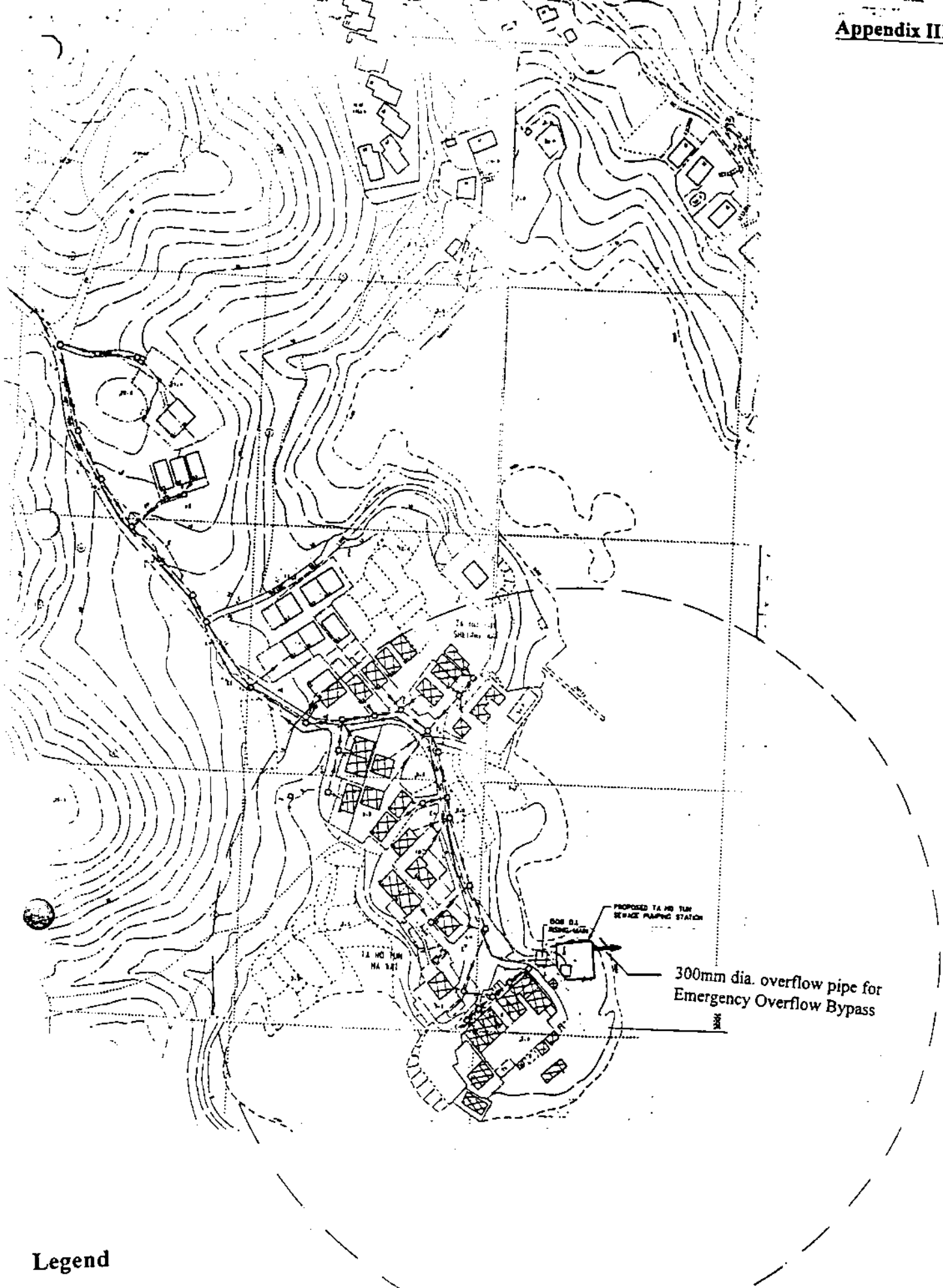
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1998
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Legend



- Village House

circle of 150m
away from the
pumping station

Scale 1:2000

SKETCH NO. 3



300mm dia. overflow pipe for
Emergency Overflow Bypass

PROPOSED 150mm dia. overflow pipe
SERVICE RAMPING STATION

Streamcourse

circle of 150m
away from the
pumping station

(see sketch no. 1)

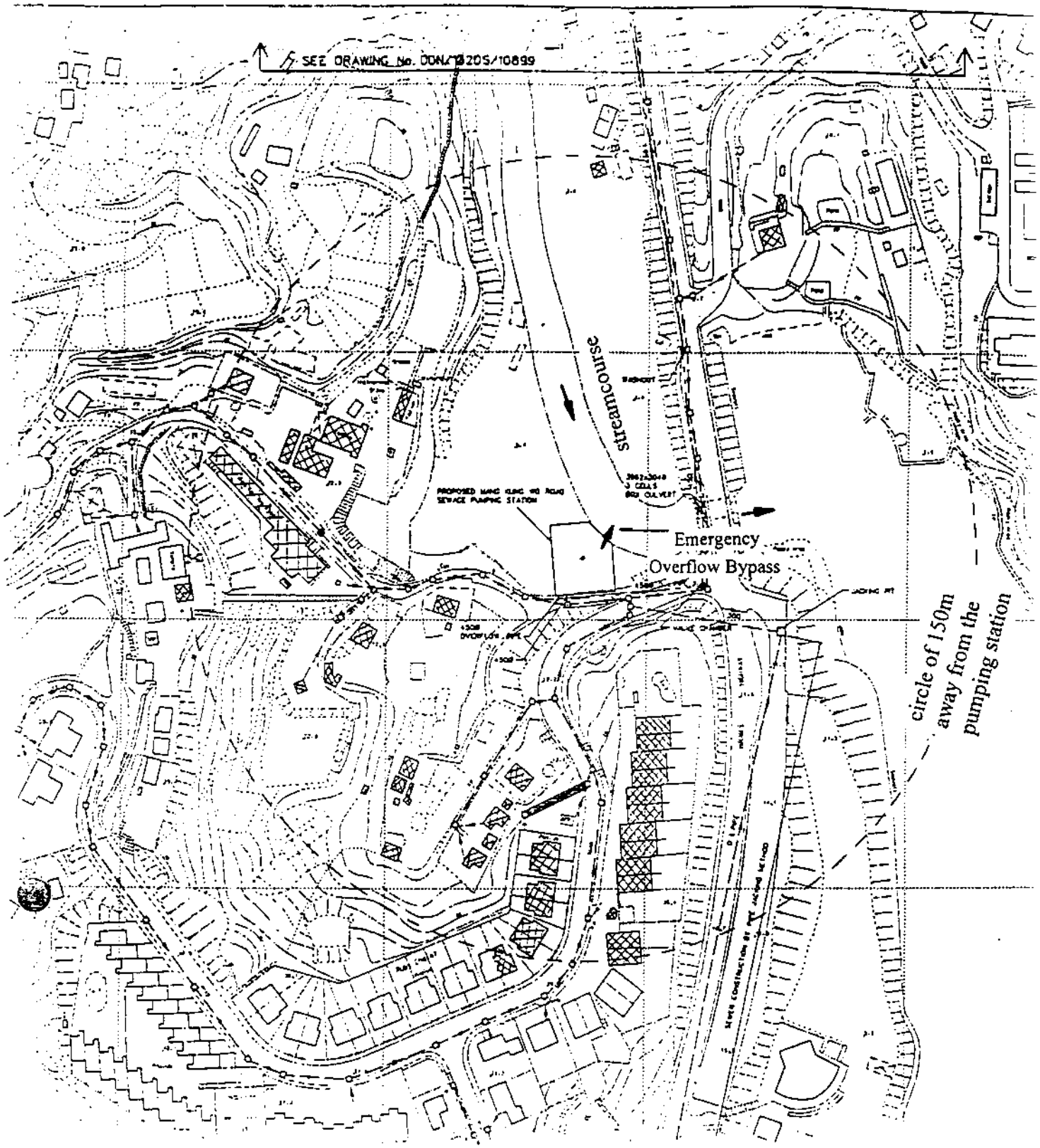
Legend




- Village House

Scale 1:2000

SKETCH NO. 2



Legend

 - Village House

Scale 1:2000
SKETCH NO. 1

by Fax only

MEMO

From Director of Agriculture and Fisheries
 Ref. (14) in AF DVL 01/68 IX
 Tel No. 2733 2660
 Fax No. 2311 3731
 Date 31 August 1998

To Chief Engineer/Sewerage Projects, DSD
 (Attn. W. C. MOK)
 Your Ref. () in SP/8/4132DS/S2P4
 dated 18 August 1998 Fax No. 2827 8700
 Total Pages 1

PWP Item 4272DS - Port Shelter Sewerage Stage 2
 (i) Tai Chung Hau and Pak Sha Wan Sewerage
 (ii) Tai Po Tsai and Mang Kung Uk Sewerage
 (iii) Village Sewerage at Sha Kok Mei

Environmental Impact Assessment Ordinance (Cap 499)

I refer to your memo under reference.

2. Please note that the captioned sewerage projects are outside any of the existing or gazetted proposed Country Parks or Special Areas, existing or gazetted proposed Marine Parks or Marine Reserve and Sites of Special Scientific Interest.



(Eric Y.H. WONG)
 for Director of Agriculture & Fisheries

MEMO

F A X

Appendix IV

From District Planning Officer/
Sai Kung & Islands
Ref. (75) in SKT 4/6/2 IX
Tel. No. 2301 1253
Fax. No. 2367 2976
Date 31 August 1998

To CE/SP, DSD
(Attn.: Mr W C Mok) (Sgd. by)
Your Ref: () in SP/8/4132DS/S2P4
dated 18.8.98 Fax No. 2827 8700
Total Pages 1

PWP Item 4272DS - Port Shelter Sewerage Stage 2

- (i) Tai Chung Hau and Pak Sha Wan Sewerage
- (ii) Tai Po Tsai and Mang Kung Uk Sewerage
- (iii) Village Sewerage at Sha Kok Mei

Environmental Impact Assessment Ordinance (Cap 499)

(75)A
Please be advised that the proposed sewage pumping station at Ta Ho Tun and part of the proposed sewers under Pak Sha Wan Sewerage as indicated on drawing no. DDN/132DS/10899C fall within an area zoned 'Coastal Protection Area' on the draft Hebe Haven Outline Zoning Plan No. S/SK-HH/1 (see Plan 1) and may be classified as a "designated project" under the EIAO.

(75)B
2. You may also wish to note that the planning application for the proposed sewage pumping station at Ta Ho Tun (Application No. A/SK-HH/12, see Plan 2) was approved with conditions by the Town Planning Board on 14.8.98.



(Miss Stella Y NG)
for District Planning Officer/
Sai Kung & Islands
Planning Department

c.c. DAF
DLO/SK

Internal

TPB/A/SK-HH/12

SN/qy

[a:\stella\4-6-2.doc]

→ SP/8/4132 DS/S2P4
 CC SP/8/4132 P/S-24/17

Appendix IV

MEMO

From	<u>Secretary for Home Affairs</u>	To	<u>Chief Engineer/Sewerage Projects, DSD</u>
Ref.	<u>(6) in HAB AM 81/3/20</u>	(Attn. :)	<u>Mr. W. C. MOK</u>
Tel. No.	<u>2594 5686</u>	Your Ref.	<u>() in SP/8/4132DS/S2P4 V</u>
Fax No.	<u>2721 6216</u>	Dated	<u>24.9.98</u> Fax No. <u>2827 8700</u>
Date	<u>9 October 1998</u>	Total Pages	<u></u>

Port Shelter Sewerage, Stage 2

- i) **Tai Chung Hau and Pak Sha Wan Sewerage**
- ii) **Tai Po Tsai and Mang Kung Uk Sewerage**
- iii) **Village Sewerage at Sha Kok Mei**
- iv) **Village Sewerage at Wong Chuk Wan and Environs to Sai Kung**

Environmental Impact Assessment Ordinance (Cap 499)

I refer to your memo under reference.

2. I would like to inform you that the captioned projects are out of any known site of cultural heritage. The Antiquities and Monuments Office of this Bureau has no objection to the captioned projects provided that our staff will be admitted to the site to conduct site monitoring.

3. I should be grateful if you could inform us two weeks prior to the commencement of such works so as to let us time to arrange the monitoring visit required.

Tsang Chi-hung

(TSANG Chi-hung)
 for Secretary for Home Affairs

NOTES:

- 1. ALL DIMENSIONS OF THE DRAINAGE ARE SHOWN UNLESS OTHERWISE SPECIFIED.
- 2. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
- 3. ALL DIMENSIONS ARE TO THE CENTERLINE UNLESS OTHERWISE SPECIFIED.

LEGEND:

- PROPOSED SEWER
- PROPOSED WATER MAIN
- EXISTING SEWER
- EXISTING WATER MAIN
- PROPOSED SEWER PUMPING STATION
- ELECTRIC SUB-STATION
- WATER TOWER
- LAND USE CODE
- ROAD
- RAILWAY
- WATERWAY
- BOUNDARY
- CONTAMINATION AREA
- CONTAMINATION ZONE 1
- CONTAMINATION ZONE 2
- CONTAMINATION ZONE 3
- CONTAMINATION ZONE 4
- CONTAMINATION ZONE 5
- CONTAMINATION ZONE 6
- CONTAMINATION ZONE 7
- CONTAMINATION ZONE 8
- CONTAMINATION ZONE 9
- CONTAMINATION ZONE 10
- CONTAMINATION ZONE 11
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- CONTAMINATION ZONE 50

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50	10/10/22

PROPOSED TAI CHEUNG HAU SEWER PUMPING STATION

PROPOSED HONG KONG ROAD SEWER PUMPING STATION

PROPOSED TAI CHEUNG HAU SEWER PUMPING STATION

PROPOSED HONG KONG ROAD SEWER PUMPING STATION

PROPOSED TAI CHEUNG HAU SEWER PUMPING STATION

PROPOSED HONG KONG ROAD SEWER PUMPING STATION

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PROPOSED TAI CHEUNG HAU SEWER PUMPING STATION

PROPOSED HONG KONG ROAD SEWER PUMPING STATION

PROPOSED TAI CHEUNG HAU SEWER PUMPING STATION

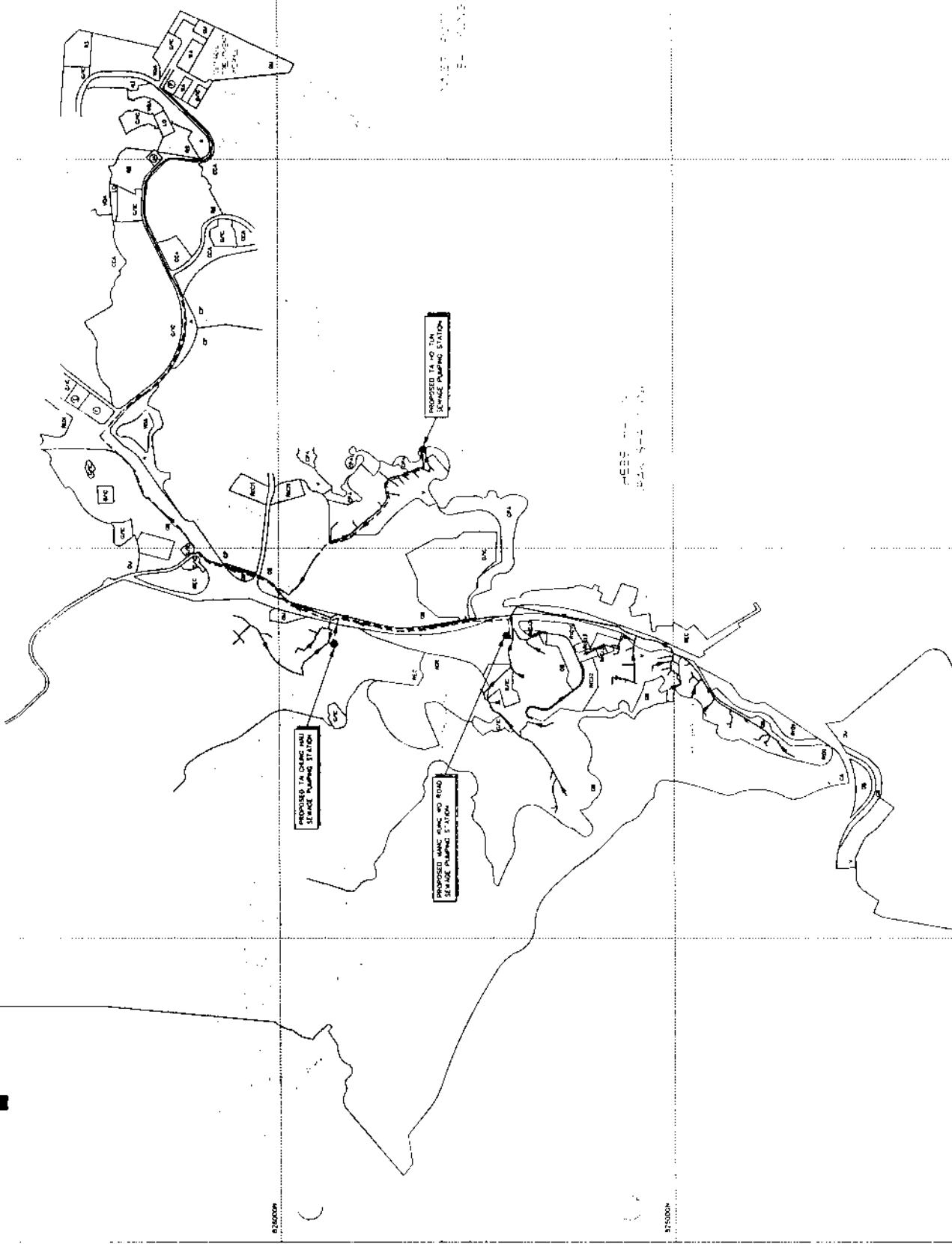
PROPOSED HONG KONG ROAD SEWER PUMPING STATION

PROPOSED TAI CHEUNG HAU SEWER PUMPING STATION

PROPOSED HONG KONG ROAD SEWER PUMPING STATION

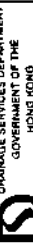
PROPOSED TAI CHEUNG HAU SEWER PUMPING STATION

PROPOSED HONG KONG ROAD SEWER PUMPING STATION



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DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
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DDN/132DS/10922

1:1.5 000

PORT SHELTER SEWERAGE, STAGE 2
- TAI CHEUNG HAU AND PAK SHA WAN
SEWERAGE
SEWER ALIGNMENTS AND LOCATIONS
OF SEWER PUMPING STATIONS

PROJECT NO: 132DS
DATE: 10/10/22

SEWER ENGINEER

PROJECT NO: 132DS

DATE: 10/10/22

PROJECT NO: 132DS

DATE: 10/10/22

PROJECT NO: 132DS

DATE: 10/10/22

PROJECT NO: 132DS

DATE: 10/10/22

PROJECT NO: 132DS

DATE: 10/10/22

PROJECT NO: 132DS

DATE: 10/10/22

PROJECT NO: 132DS

DATE: 10/10/22

MEMO

From CE/SP, DSD
 Ref. (2) in SP/8/4132DS/S2P4 II
 Tel.No. 2594 7457
 Fax.No. 2827 8700
 Date 30 April 1997

To Distribution
 (Attn.: _____)
 Your Ref. _____
 dated _____ Fax.No. _____
 Total Pages _____

**272DS - Port Shelter Sewerage Stage 2
 Tai Chung Hau and Pak Sha Wan Sewerage**

Circulation of Revised General Layout Drawings

I enclose herewith, for your comments, one set of the general layout drawings (as listed in attached Appendix I) showing the proposed sewerage works in Tai Chung Hau and Pak Sha Wan areas. The general layout was initially circulated on 14.9.1994 and second circulation was made on 28.2.1996. A summary of reply is attached at Appendix II for your easy reference. By taking into account the addressees' comments, the sewerage layout has been revised. The proposed sewerage construction works is tentatively scheduled to commence in late 1998 and to complete in late 2000.

2. As compared with the second circulation, the general layout of the proposed sewerage works has the following major revisions:

(a) The alignment in the section of Hong Tsuen Road for the laying of the proposed rising main/gravity sewer is deleted. Instead the rising mains/gravity sewer is proposed to be laid along Hong Kin Road as shown on Drawing no. DDN/132DS/10892.

(b) In order to minimise the resumption of private land recommended by DLO/SK, works limit and sewer alignment are revised accordingly.

3. At the early stage, a pumping station was proposed at Kau Sai San Tsuen carpark for the conveyance of the sewage collected from the houses/developments there to the existing Sai Kung Sewage Treatment Works for proper treatment and disposal. However, Transport Department raised objection to this location as it would take away some existing carpark spaces. With a view to preserving parking space, a no-dig method involving pipe jacking will be adopted to eliminate the need for the construction of the pumping station. In this connection, a pipe jacking pit will be constructed at the carpark opposite Mang Kung Wo Road as shown on the attached sketch no.1 (part print of Drawing no. DDN/132DS/10828). An area of 15m x 10m will be occupied within the carpark by the pipe jacking pit and several parking spaces will be temporarily suspended for a period of about 6 months during construction stage. To facilitate our works, I should be grateful if the addressees, in particular, AC for T/NT, DO/SK, DLO/SK, RHE/NT and C of P (CSP Traffic), would comment on the above proposal.

4. In view of the urgency of the captioned sewerage project, I should be grateful if you could make your reply on or before 20.5.97. A nil return is required please. Grateful if you would send me your updated existing/proposed underground utilities drawings, if any, to facilitate our design works.



(S. K. WONG)
for Chief Engineer/Sewerage Projects
Drainage Services Department



Distribution :

with 1 copy of Drawings listed in the Appendix I :-

CE/MS, DSD
CE/DP, DSD
CE/PM, DSD
DLO/SK, Lands D
DEP, EPD (Liquid Waste Projects Group)
DEP, EPD (Local Control Office (Territory East))
AC for T/NT, TD
PM(NTE), TDD
DPO/SK & Is, Planning D
CE/D&A, CED
D of A&F
CBS/NT, Building D
DO/SK
CHE(D&M)/NT, Hyd
D of RS
C of P, (CSP Traffic)
D of FS
CGE/Mainland East, GEO, CED
CE/Lighting, HyD
CE/MSE, WSD

CLK/



Drainage Services Department
Sewerage Projects Division
 44th floor, Revenue Tower, 5 Gloucester Road,
 Wan Chai, Hong Kong.

Appendix VI
 附錄 VI
 A 類水工圖冊
 香港灣仔告士打道 5 號
 稅務大樓 44 樓

本署檔號 Our Ref: (4) in SP/8/4132DS/S2P4 III
 來函檔號 Your Ref:
 電話 Telephone: (852) 2594 7457
 圖文傳真 Fax: (852) 2827 8700

May 1, 1997

Distribution

Dear Sirs,

Port Shelter Sewerage, Stage 2, Phase 4
Tai Chung Hau and Pak Sha Wan Sewerage

Utilities/Services

I enclose herewith one copy each of drawing nos. DDN/132DS/10887 and DDN/132DS/10888 showing the locations of the proposed drillholes at Ta Ho Tun and a section of Hiram's Highway where site investigation work is scheduled to be carried out in August 1997 to facilitate the detailed design of Ta Ho Tun Pumping Station and pipe jacking along a section of Hiram's Highway.

In order to avoid any damage to the underground utilities during the site investigation works, please send me a copy of your existing underground utilities records in the vicinity of the proposed drillhole locations or mark on the attached drawings showing the location of your underground utilities.

In view of the tight programme, your reply on or before 23.5.97 will be much appreciated.

Yours faithfully,

(S.K. WONG)

for Chief Engineer/Sewerage Projects
 Drainage Services Department

Distribution

- China Light & Power Co. Ltd.
- Hong Kong and China Gas Co. Ltd.
- Hong Kong Telecom
- Rediffusion (Hong Kong) Ltd.
- Wharf Cable Ltd.
- Commander, Royal Signals
- Hutchison Communications Ltd.
- New T & T Hong Kong Ltd.
- New World Telephone Company Ltd.
- Kowloon Motor Bus Co. Ltd. (Traffic Dept.)
- Electricity Advisory Services Ltd. (Public Light Office)

MYA/

- iv) For pumping stations handle DWF up to 1500 m³/day, ring main power supply should be provided as far as practicable. The discharge points of the overflows from these facilities should be located more than 150 m from sensitive receivers such as bathing beaches, mariculture zones, seawater intakes, marinas, boat parks, nature reserves, sites of special scientific interests and marine parks/marine reserves. Otherwise, two hours storage capacity, measured from pump cut-in level, and under average DWF should be provided. For those sewerage systems with spare capacities can be used to make up the two-hour storage requirement, but the availability of such spare capacities would have to be demonstrated;
- v) For unmanned pumping stations, provide telemetry system to the nearest manned station/plant so that swift actions could be taken in the case of malfunction of the unmanned facilities;
- vi) For both manned and unmanned facilities, provide a hand-cleaned bar screen to cover the lower half of the opening of any overflow by pass. This will prevent the discharge of floating solids into receiving waterbodies as far as practical whilst ensuring flooding at the facilities will not occur should the screen be blocked. the clear spacing of bar screen should normally be about 25 mm;
- vii) Keep discharge point of overflow bypass below the low water marker, and
- viii) Keep discharge point of overflow bypass away from sensitive receivers such as gazetted beaches, mariculture zones, seawater intakes, water gathering grounds, stream with water for human consumption, etc., and waters with low assimilative capacitive such as typhoon shelter or embayed waters.

D. Construction Impacts

Suitable pollution control measures should be implemented to control dust, noise and site runoff nuisance during construction. A list of standard environmental pollution control clauses is enclosed for your selective incorporation into the relevant contract documents.

(Tony W.K. CHEUNG)

Ag. Senior Environmental Protection Officer
for Director of Environmental Protection

c.c. Internal(w/o encl)

S(AP)2, S(NP)3, S(WP)4, S(SI)2, E(UA)8

I.D. No. MEMO1211.97 [E(UA)8-5]/WP

25278788 P.02

ENVIRONMENTAL PROTECTION DEPARTMENT