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**DRAINAGE CHANNEL UPGRADING
WORKS IN DD129, DEEP BAY ROAD,
LAU FAU SHAN, YUEN LONG.**

PROJECT PROFILE

Report Prepared by:
Allied Environmental Consultants Ltd.

COMMERCIAL-IN-CONFIDENCE

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1 INTRODUCTION

Under the Environmental Impact Assessment Ordinance, the proposed upgrading works of a section of the existing drainage channel in DD129 along Deep Bay Road is a designated project. An environmental permit shall be required for its construction and operation. Allied Environmental Consultants Limited was commissioned by the project proponent, Wisdom Concept Development Limited to prepare a Project Profile for the application for an EIA Study Brief.

This Project Profile is prepared in accordance with the Technical Memorandum on Environmental Impact Assessment Process (Environmental Impact Assessment Ordinance, Cap.499, S.16).

2 BASIC INFORMATION

2.1 PROJECT TITLE

The project title for this Project Profile is “*Drainage Channel Upgrading Works in DD129, Deep Bay Road, Lau Fau Shan, Yuen Long*”.

2.2 PURPOSE AND NATURE OF THE PROJECT

This project involves upgrading works of an approximately 130m long section of the existing drainage channel located in the northern part of Lau Fau Shan to improve the stormwater drainage facilities in the area.

The proposed upgraded channel will receive runoff from the surrounding sub-catchments and will be discharging to Deep Bay Area finally. As the proposed upgraded channel falls within and discharges into an area zoned “Coastal Protection Area” on the approved Lau Fau Shan and Tsim Bei Tsui Outline Zoning Plan No. S/YL-LFS/7, Environmental Protection Department (EPD) has advised that the proposed upgrading works of drainage channel is a Designated Project under the terms of Item I.1, Part 1, Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) and an environmental permit shall be required for its construction and operation.

2.3 NAME OF PROJECT PROPONENT

The name of project proponent is “*Wisdom Concept Development Limited*”.

2.4 LOCATION AND SCALE OF PROJECT AND HISTORY OF SITE

Existing and Proposed Drainage Channel

An existing drainage channel located in the northern part of Lau Fau Shan will be upgraded to collect the increased stormwater runoff from the underground drainage pipe via the manhole under the proposed access road.

The existing open channel is concrete lined and runs along approximately northward alongside Deep Bay Road for about 130m before making a sharp turn and running for about 160m westward discharging into Deep Bay. While this drainage channel is not found in DSD's drainage plan and its maintenance responsibility is not clear, it is believed the channel was built along with the existing Deep Bay Road as part of local road works. It was observed during site inspection. The existing drainage channel is not in a well-maintained condition and the channel flow was found to be septic under low-flow condition. [Figure 1](#) shows the site location of the proposed channel upgrading works and [Figure 2](#) gives the photos illustrating the conditions of the existing channel.

The existing channel serves the catchment area in the northern part of Lau Fau Shan. In this area, stormwater runoff from the proposed development in DD129, existing village houses in Mong Tseng Tsuen, Mong Tseng Wai, as well as the surrounding catchment areas which will be discharged into the drainage channel are taken into considerations in the design of the proposed drainage channel.

In view of the fact, the estimated total drainage discharge from the surrounding catchments, taking into account the proposed residential development at DD129, is greater than the capacity of the existing channel, upgrading works of the existing drainage channel has been proposed to ensure adequate drainage facility for the area. In this proposal, the south-north section of the channel (along Deep Bay Road) shall be widened and upgraded. The proposed upgraded channel shall be in trapezoidal shape with base width of 1.7 m and depth of approximately 1.6 m. The gradient of the side slopes will be about 1 in 1. Environmental friendly and ecologically considerate design shall be adopted for the proposed upgraded channel.

The location and alignment of the existing channel and the proposed upgraded channel is given in [Figure 3](#), while [Figure 4](#) shows the layout and section of the proposed upgraded channel.

2.5 NUMBER AND TYPES OF DESIGNATED PROJECTS TO BE COVERED BY THE PROJECT PROFILE

The proposed upgraded channel will discharge into an area zoned “Coastal Protection Area” on the approved Lau Fau Shan and Tsim Bei Tsui Outline Zoning Plan No. S/YL-LFS/7. The proposed upgrading works of the existing drainage channel therefore constitutes a Designated Project under the terms of Item I.1, Part 1, Schedule 2 of the EIAO, which is to be covered in this Project Profile.

2.6 NAME AND TELEPHONE NUMBER OF CONTACT PERSON(S)

For any enquires or comments on this Project Profile, please contact the following personnel:

Project Proponent

Company: Wisdom Concept Development Limited
Name: Mr. Matthew Chow
Contact No.: 2414 3889

Environmental Consultant

Company: Allied Environmental Consultants Limited
Name: Ms. Grace Kwok
Contact No.: 2815 7028

3 OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

The upgrading works of drainage channel is being planned and designed by Wisdom Concept Development Limited and their appointed Consultants.

The upgrading works of the drainage channel involves construction of the upgraded channel and the decommissioning of the existing channel section along Deep Bay Road (south-north section). The planning and design of the upgrading works of the drainage channel is undertaken by the engineering consultant; while a contractor shall be employed at a later stage for the construction of the channel.

As the scale of the project is relatively small, the upgrading works of the drainage channel is anticipated to take approximately 6 months to complete and involves only minor excavation works. The preliminary construction sequence and duration for the construction of the proposed upgraded channel prepared by the engineering consultant is given in [Table 1](#) below.

Table 1. Construction Sequence and Duration

Stage	Activity	Duration (month)
1	Site clearance, setting out and other preparation works	0.25
2	Excavation of the proposed upgrading channel and disposal of the excavated materials	1.5
3	Construction of rubble channel bed and gabion channel side walls of the proposed upgrading channel	2.5
4	Permanent drainage diversion from the existing channel to the upgraded channel at both upstream and downstream ends	0.5
5	Backfilling of the existing trapezoidal channel	1
6	Site Cleaning Works	0.25

Total: 6

A detailed sequence of activities shall be proposed by the Main Contractor prior to the actual commencement of works.

4 POSSIBLE IMPACT ON THE ENVIRONMENT

This section describes the potential environmental impacts or issues that may arise during the construction and operation of the project. The potential impacts are assessed according to the criteria given in the Technical Memorandum on Environmental Impact Assessment Process (TMEIA). The potential impacts during the construction and operation phases of the upgrading works of the drainage channel are summarized in [Table 2](#) and [Table 3](#) respectively.

Table 2. Potential Environmental Impacts during Construction Phase of the Proposed Upgrading Works

Environmental Issues	Construction Phase Potential Impacts
Gaseous emissions	Unlikely to cause impact
Dust	Fugitive dust emissions from site clearance, rock-breaking, excavation and vehicle movement on unpaved road
Odour	Unlikely to generate odour
Noisy operations	Noise from operation of PME and prescribed construction works such as handling of steel bars, hammering and formworks
Night-time operation	No construction activities will be carried out during night-time
Traffic generation	Heavy vehicles for transportation of construction material may slightly increase the traffic flow in the vicinity
Liquid effluents, discharges, or contaminated runoff	Surface runoff and wastewater generation from construction activities.
Generation of waste or by-products	Construction waste, such as wood boards and excavated soil
Dangerous goods, hazardous material or wastes	Unlikely to store dangerous goods, or generate hazardous materials or wastes
Risk of accidents	Unlikely to cause risk of accidents which would result in pollution or hazard
Disposal of spoil material	Unlikely to cause impact

Disruption of water movement or bottom sediment	Unlikely to cause disruption of water movement or bottom sediment
Dredging of stream sediment	Unlikely to cause impact
Unsightly visual appearance	Unlikely to cause long term impact as the construction works only last for about 6 months
Ecological impacts	Potential impacts on fauna and flora

Table 3. Potential Environmental Impacts during Operational Phase of the Proposed Upgrading Works

Environmental Issues	Operational Phase Potential Impacts
Gaseous emissions	No chimney or gaseous emissions installation
Dust	Unlikely to cause impact
Odour	Unlikely to cause impact
Noisy operations	Unlikely to cause impact
Night-time operation	Unlikely to occur
Traffic generation	Unlikely to occur
Liquid effluents, discharges, or contaminated runoff	Unlikely to cause impact
Generation of waste or by-products	Unlikely to cause impact
Dangerous goods, hazardous material or wastes	Unlikely to store dangerous goods, generate hazardous materials or wastes
Risk of accidents	Unlikely to cause risk of accidents which would result in pollution or hazard
Disposal of spoil material	Unlikely to occur
Disruption of water movement or bottom sediment	Unlikely to occur
Dredging of stream sediment	Unlikely to occur
Unsightly visual appearance	Unlikely to occur
Ecological impacts	Potential impacts on fauna

In summary, the potential impacts associated with the proposed upgrading works include dust emission, noise impact, wastewater generation, waste generation and ecological impact during construction phase as well as ecological impact during operational phase. These potential impacts shall be fully assessed in the EIA study.

5 PRELIMINARY DESIGN OF UPGRADING CHANNEL

It is proposed to replace a section of the existing concrete channel which runs parallel alongside Deep Bay Road with a stepped gabion-lined channel, which is 1.7 m wide and approximately 1.6 m deep maximum with a 1:1 gradient. Upon completion of the upgraded channel, the existing channel will be decommissioned and backfilled.

In order to provide an environmentally friendly and ecologically considerate design of the proposed upgraded channel to replace the existing concrete-lined channel, it is proposed to form the replacement open channel using gabions to form the channel sides with the bottom formed using rip-rap bedding topped with a layer of gravel. The preliminary cross-sectional details of the proposed upgraded channel are given in [Figure 5](#). It is anticipated that with the upgraded channel not only the drainage condition shall be improved, but also the ecological value shall be enhanced.

6 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

The existing drainage channel is located in an area currently zoned as a ‘Coastal Protection Area’ on the Approved Lau Fau Shan and Tsim Bei Tsui Outline Zoning Plan (No. S/YL-LFS/7). The area is relatively flat abandoned grass land with scrub and abandoned plantations with limited fauna.

Adjacent land uses are mainly villages including Mong Tseng Tseun and Mong Tseng Wai, pigsty/chicken sheds and small scale agriculture. Some poultry huts and disused farmland turned container storage yards are also found in nearby areas. There is a proposed residential development at DD129 located to the south eastern side of the proposed upgraded channel.

Other major elements of the surrounding environment include the Mai Po Marshes, Mai Po Village, Pak Nai, Tsim Bei Tsui, Inner Deep Bay and Tsim Bei Tsui Egretty. These areas have all been designated as Sites of Special Scientific Interest (SSSI). A SSSI is designated according to the site’s special faunal, floral, ecological or geographical features. Three of the ecological SSSI’s are situated within 2km of the proposed development site, these being Inner Deep Bay, Tsim Bei Tsui and Tsim Bei Tsui Egretty. They are located to the north-east of the site beyond

Mong Tseng village. The proposed upgraded drainage channel is located at a distance of 220m from the closest boundary of the Wetland Buffer Area (WBA).

The proposed upgraded channel is located in a rural area in the northern part of Lau Fau Shan. Sensitive receivers identified within 500m of the subject site which is potentially affected by the construction and operation of the proposed upgraded channel are some village houses in the nearby Mong Tseng Tsuen and Mong Tseng Wai.

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

7.1 AIR QUALITY

In order to ensure that the potential dust emission impact during the construction phase of the proposed upgrading works of the drainage channel is minimised, the following dust control measures, as stipulated in the Air Pollution Control (Construction Dust) Regulation, shall be implemented during the construction.

- The area in which excavation takes place should be sprayed with water immediately prior to, during and immediately after the excavation to minimise dust generation.
- Any debris from the construction should be covered entirely by impervious sheeting or stored in a sheltered debris collection area.
- Any dusty material remaining after a stockpile of cement or other materials is removed should be wetted and removed from the surface of roads.
- Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting or placed in a sheltered area.
- Cement bags or any other dusty materials collected during the work should be disposed of in totally enclosed containers.
- All dusty materials should be sprayed with water immediately prior to any loading, unloading or transfer operation so as to minimise the emission of dust.
- Every belt-conveyor used for the transfer of dusty materials should be covered. Every transfer point between any two belt-conveyors should be totally enclosed.
- Any skip hoist for the transport of construction wastes should be properly enclosed.
- Vehicle washing facilities, including a high-pressure water jet, should be provided at the designated vehicle exit point. Every vehicle should be washed immediately before leaving the construction site to remove any dust materials from its wheels and body.
- The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point, as well as the main haul road to the construction site

should be paved with concrete, bituminous materials, hardcore or metal plates and kept clear of dusty materials.

- The main haul road to the site should be paved or sprayed with water frequently to keep the entire road surface wet and to minimise dust generation.

In view of the small scale of the proposed upgrading works and with the implementation of appropriate control measures, it is anticipated that the construction activities of the proposed upgrading works of drainage channel would not cause any adverse air quality impacts on nearby sensitive receivers.

On the other hand, no operational phase air quality impact as a result of the proposed upgraded channel is anticipated.

7.2 NOISE

To minimise the construction noise impact on the nearby NSRs, the following mitigation measures are recommended during the construction phase of the proposed upgrading works of the drainage channel:

Use of quiet alternative plant and working methods

The use of quiet plant as an at-source mitigation measures can result in a significant reduction of noise levels generated by the construction works. The degree of reduction achieved is dependent on actual construction method and work schedule.

Scheduling of work

Scheduling of work can reduce the noise impact on the NSRs. Good scheduling of works shall include minimising noisy operations; avoiding simultaneous operation of noisy equipment; making use of the existing physical barrier. It should be ensured that works will only be carried out within non-restrictive hours.

Siting of facilities

PME should be sited as far as practicable from noise sensitive receivers. Consideration should also be given to using structures such as site offices and stores as noise barriers.

It is anticipated that with the adoption of appropriate mitigation measures, the construction of proposed upgrading works would not cause any adverse noise impacts on nearby sensitive receivers.

Moreover, detailed design of appropriate noise mitigation measures should be proposed by the Contractor prior to the commencement of work in order to ensure the potential construction noise impacts on nearby sensitive receivers are reduced to acceptable levels.

On the other hand, no operational phase noise impact as a result of the proposed upgraded channel is anticipated.

7.3 ECOLOGY

To ensure that impacts to the ecology is minimized as a result of the proposed upgrading works, any loss of trees and any risk of construction stage sediment discharge can be avoided by, respectively:

- Minor adjustments to the alignment at the detailed design stage and replacement of any unavoidable tree loss; and
- Restricting works to the dry season and constructing the new channel in parallel to the existing one and only connecting the new channel to the stream flow once construction is complete.

7.4 WASTE

Good waste management practices will be implemented on site, including proper waste handling within the site, removal of waste material generated from the construction works, and implementation of any mitigation measures to avoid or minimize potential adverse impacts associated with waste arising from the upgrading works. In addition, waste minimisation and recycling practices will be employed wherever practicable on site to reduce generation of construction wastes. Disposal of waste shall be on a regular basis to avoid accumulation on site. Waste storage points shall be located away from the existing dwellings and other municipal facilities where possible.

The various waste management options can be categorized in terms of preference from an environmental viewpoint. The options considered to be more preferable have the least impacts and are more sustainable in the long term. Hence, the hierarchy is as follows:

- avoidance and minimization, i.e. not generating waste through changing or improving practices and design;
- reuse of materials, thus avoiding disposal (generally with only limited reprocessing);
- recovery and recycling, thus avoiding disposal (although reprocessing may be required);
- treatment and disposal, according to relevant laws, guidelines and good practice; and

- disposal, the release of wastes to air, water, or land in properly controlled or safe ways or so as to render them harmless.

Construction and Demolition (C&D) Material

The Contractor shall recycle C&D material on-site wherever practical. Proper segregation of wastes on site will increase the feasibility for recycling certain components of the waste stream by the recycling contractors.

The use of wooden hoardings shall not be allowed except where noise barriers are needed, and then these shall be of 20mm thick wood/ply. For elsewhere, alternative materials which can be reused or recycled, such as metal (aluminium, alloy, etc) hoarding, shall be used.

Different areas of the worksite shall be designated for such waste segregation and storage wherever site conditions permit.

Trip-ticket system should be established to monitor the disposal of C&D material and solid wastes at public filling facilities and landfills, in order to control fly-tipping.

Chemical Waste

For chemical waste produced from a process, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, a 'Chemical Waste Producer' register should be made with EPD.

Chemical waste will be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Waste. Some requirements of the Code of Practice are outlined as follows.

Containers used for the storage of chemical waste will:

- be suitable for the substance they are holding, resistant to corrosion, maintained in good condition, and securely closed;
- have a capacity of less than 450 litres unless the specification have been approved by the EPD; and
- display a label in English and Chinese in accordance with instruction prescribed in Schedule 2 of the Regulations.

The storage area for chemical wastes will:

- be clearly labelled and used solely for the storage of chemical waste;
- be enclosed on at least three sides;

- have an impermeable floor and bunding, 110% capacity of the largest container or 20% of the storage capacity, whichever is the greatest;
- have adequate ventilation;
- be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste if necessary); and
- be arranged so that incompatible materials are adequately separated.

Chemical waste will be disposed:

- via a licensed waste collector; and
- to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Facility; or
- to a reuser of the waste, under the approval from the EPD.

General refuse

General refuse including food wastes, such as lunch box, and domestic wastes generated on-site will be stored in enclosed bins or compaction units separate from construction and chemical wastes. A waste collector listed in the Environmental Protection Department's waste collectors directory will be employed to remove general refuse from the site, separately from construction and chemical wastes, on a daily or every second day basis to minimize odour, pest and litter impacts. No burning of refuse on site will be permitted.

On the other hand, no operational phase waste impact as a result of the proposed upgraded channel is anticipated.

7.5 WATER

To reduce the generation of silt-laden discharge and prevent uncontrolled runoff from the construction site, the following recommended mitigation measures shall be implemented on site during the proposed upgrading works:

- Wheels of all vehicles and plants will be washed before they leave the site to prevent deposition of mud, debris, etc. on roads by them. Water used for wheel washing shall be recycled. Thus, the wastewater can be reused.
- If possible, excavation works shall be planned to avoid rainy season so as to minimise the runoff and reduce the amount of soil that could be carried off site.
- The site shall be kept clean and tidy to avoid construction material and waste being washed off site.
- The hoarding gaps shall be tightly sealed to avoid the seepage of wastewater to outside the site.

- Perimeter channels shall be provided at site boundaries (where necessary) to intercept storm-water runoff from outside the site so that it does not wash across the site.
- Silt trap design shall conform to the guidelines laid down in Appendix A1 of ProPECC PN 1/94.
- Temporarily exposed slope surfaces and construction material stockpiles shall be covered with tarpaulin or similar fabric to prevent erosion.
- Wastewater likely to be contaminated with oil or grease shall be passed through an oil separator or grease trap before entering the site drainage system.
- Wastewater from toilets, kitchen, etc., if any, shall be discharged into a foul sewer or a sewage treatment facility. Alternatively, chemical toilets may be used for reducing wastewater discharge.
- Any special works areas which may be provided for material storage should be surrounded by bunds.
- Reduce the amount of water used to dampen any surfaces or stockpiles.

It is anticipated that no operational phase water quality impact associated with the proposed upgrading channel with enhanced drainage capacity.

8 USE OF PREVIOUS APPROVED EIA REPORTS

No previous EIA report has been approved or submitted for the subject development.



Site Location of Proposed Channel Upgrading Works


Drainage Channel Upgrading Works in DD129, Deep Bay Road, Lau Fau Shan, Yuen Long
 Site Location of Proposed Channel Upgrading Works

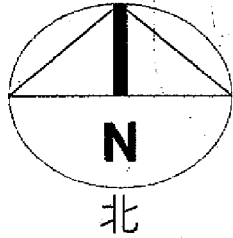
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Drainage Channel Upgrading Works in DD129, Deep Bay Road, Lau Fau Shan, Yuen Long

Conditions of the Existing Channel

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EXISTING CHANNEL OPEN
現有的雨水渠

PROPOSED UPGRADED
CHANNEL
改善後的雨水渠

PROPOSED CATCHPIT
擬建的集水坑

SECTION OF EXISTING CHANNEL TO
BE DECOMMISSIONED AND BACKFILLED
此段雨水渠稍後作廢及填平

DEEP BAY ROAD
深灣路

E817400

E817500

Drainage Channel Upgrading Works in DD129, Deep Bay Road, Lau Fau Shan, Yuen Long

Location and Alignment of Existing Channel and Proposed Upgraded Channel

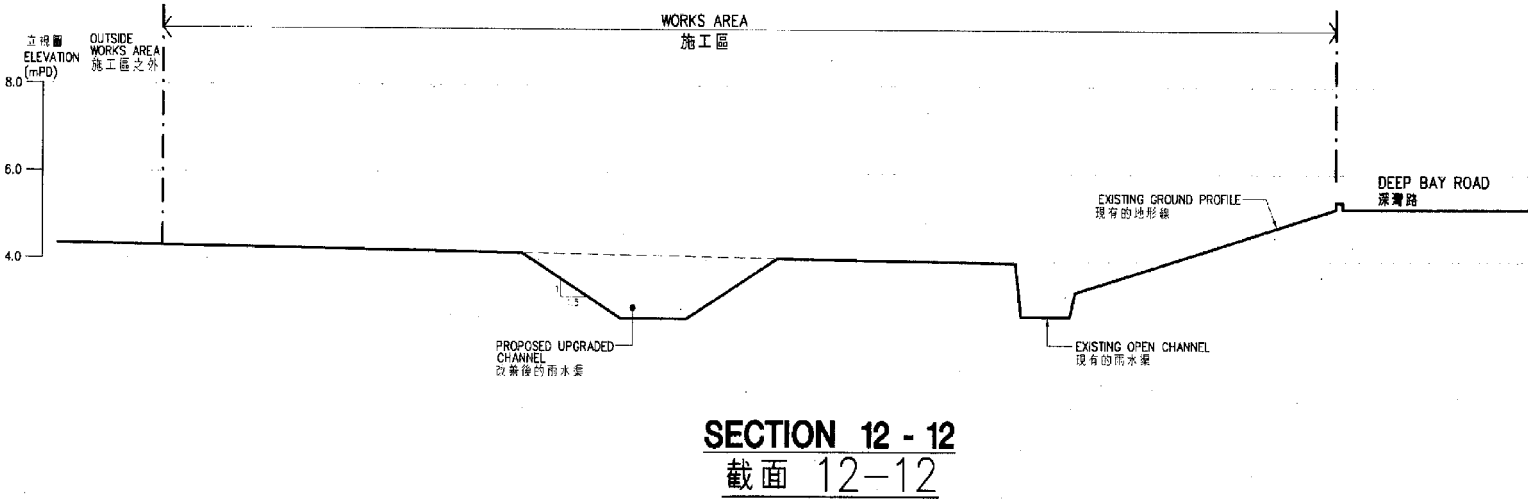
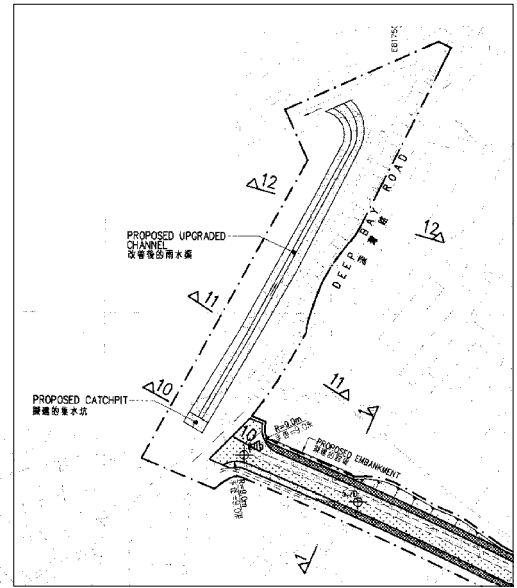
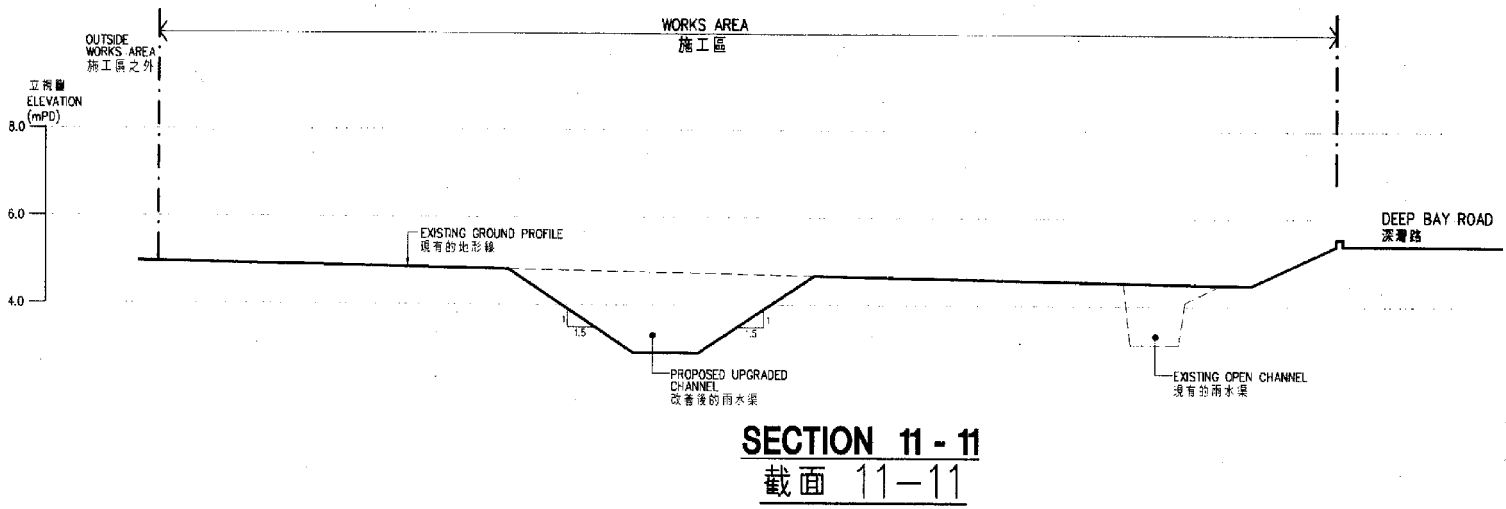
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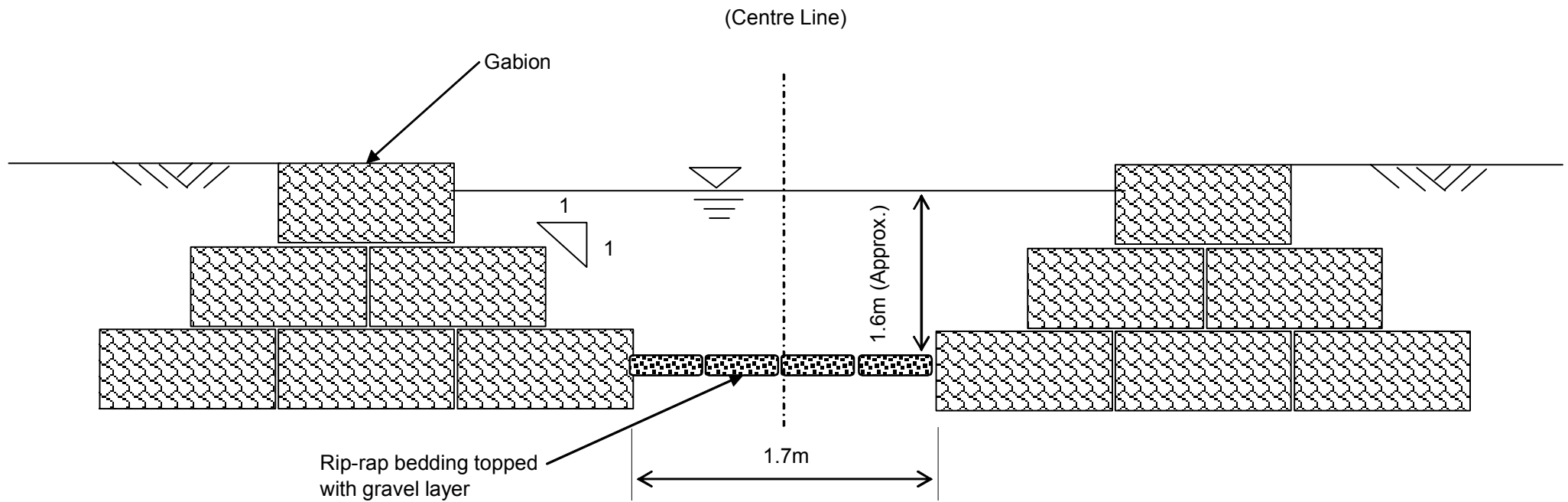


Drainage Channel Upgrading Works in DD129, Deep Bay Road, Lau Fau Shan, Yuen Long

Layout and Section of Proposed Upgraded Channel

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Drainage Channel Upgrading Works in DD129, Deep Bay Road, Lau Fau Shan, Yuen Long

Preliminary Cross-sectional Details of Proposed Upgraded Channel

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