DETAILED EMERGENCY RESPONSE PLAN TO DEAL WITH SPILLAGE OF CHEMICALS CAUSED BY TRAFFIC INCIDENTS ON HONG KONG-ZHUHAI-MACAO BRIDGE - HONG KONG LINK ROAD

1 Background and Objectives

1.1 Under the Environmental Impact Assessment Ordinance, the Environmental Impact Assessment (EIA) Report (Register No.: AEIAR-144/2009) for the "Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road" (the project) has been approved by the Environmental Protection Department (EPD), and an Environmental Permit (Permit No.: EP-352/2009/D) has been issued for the project. Pursuant to the recommendation in Section 9.94 of the EIA Report and the Condition 3.16 of the Environmental Permit (EP), the Permit Holder shall prepare an Emergency Response Plan to prevent and handle oil and chemical spillages caused by traffic incidents on the carriageway from entering into the waterbody.

1.2 This document presents the Emergency Response Plan (ERP) to deal with chemical spillage due to vehicle accident that may occur on the Hong Kong-Zhuhai-Macao Bridge (HZMB) Hong Kong Link Road (HKLR) during the operational stage. The objectives of this ERP are to ensure:

(1) A timely and effective response to any spill incidents occurred on the HKLR;

(2) The coordination of the relevant government departments to deal with the spill; and

(3) Minimal impacts to the aquatic environment and ecological system in North Lantau.

1.3 The priorities for control of the spill are as follows:

(1) The primary aim is to control the spreading of spill on the road surface of the HKLR and prevent release of spills into waters of North Western Water Control Zone and North Western Supplementary Water Control Zone, either through the road drainage system or by other means; and

(2) The secondary aim is to clean up the spill and re-open any affected area of HKLR carriageway to traffic as soon as possible.

2 Chemicals of Concern

2.1 There are wide varieties of chemicals. Oils, fertilizers, corrosive or poisonous chemicals will pose serious threat to the ecology of waters in North Western Water Control Zone and North Western Supplementary Water Control Zone. However, other chemicals, when poured to the waters in vast quantities, may also affect the ecology to certain extent. This ERP therefore deals with general chemical spillage instead of restricting itself to only certain categories of chemicals.

2.2 Chemicals in liquid state or chemicals soluble in water are of most concern because there is a higher risk of these of chemicals to release into the seawater through the road drainage system.

3 Sensitive Areas

3.1 The HKLR is located in North Western Water Control Zone and North Western Supplementary Water Control Zone, which is an ecologically sensitive area. The highest dolphin density in Hong Kong is found in the Northwest Lantau waters and some ecologically sensitive areas inside the Airport Channel. The road drainage system collecting the road runoff would be directly discharged into the waters of North Western Water Control Zone and North Western Supplementary Water Control Zone. In case of a vehicle

accident on the bridge, it may cause the spillage of chemicals that would have potential impacts to the ecology in the waters if the spillage were not dealt with properly.

3.2 There are a number of water sensitive areas in the vicinity (Figure 9.5 Location of Water Quality and Ecological Sensitive Receivers of the EIA Report for HKLR refers). Some of them are located in the close proximity to the HKLR. The following gives a list of the key sensitive areas in North Western Water Control Zone and North Western Supplementary Water Control Zone:

(1) Tai O
(2) Sham Wat
(3) Sha Lo Wan
(4) Hau Hok Wan
(5) San Tau SSSI
(6) Tai Ho Wan Inlet
(7) Artificial Reef in NE Airport
(8) Sha Chau and Lung Kwu Chau Marine Park
(9) The Brothers Marine Park
(10) Gazettal beaches in Tuen Mun
(11) Butterfly Beach
(12) Proposed Southwest Lantau Marine Park
(13) The marine ecology sensitive receivers as shown in the Figure 9.5 of the EIA Report

3.3 **Figure 1** shows the locations of these sensitive areas.

4 Drainage System on HKLR

4.1 Two types of drainage systems are adopted on HKLR viaducts:

(1) Type A – comprising conventional road side gullies with carrier drains inside the bridge deck and discharge down pipes;
(2) Type B – comprising road side gullies with overflow weir only without carrier drains and discharge down pipes.

The as-built drawings of the drainage systems are enclosed in **Appendix B**.

5 Response Organizations and Emergency Response Plan

5.1 In a chemical spillage incident, a prompt action to prevent the spillage from releasing into the waters is the major task. A quick response time is therefore crucial in dealing with the spillage incident. The main response departments and the relevant emergency response plans being implemented are given below. A flow chart depicting the procedures in dealing with chemical spillage incidents on HKLR, briefly listing out the respective responsibilities of various parties, is shown in **Appendix A**:

Highways Department (HyD)

5.2 HyD, as the controller of this ERP, is responsible for the overall co-ordination with other government departments in dealing with the spill incident on HKLR.

5.3 HyD is the maintenance authority of the HKLR.

5.4 The *Highways Department Emergency Handbook* defines the responsibilities of HyD and provides detailed procedures to deal with emergency situations that may occur on roads. In case of chemical spillage on the HKLR, HyD will follow the procedures specified in the Handbook. In particular, in accordance with Clause 2.1 of the Handbook, HyD is responsible for informing the contractor to mobilize emergency plants/materials (e.g. sandbags) to confine chemical spills, upon identification of the incident by emergency parties i.e. HKPF and FSD.

5.5 Within the resources of the department or through the term maintenance contractors, HyD will be responsible for the following duties:

(1) Assist HKPF and TD in the setting up of traffic contra-flow by removal/opening of the water-filled barriers/drop gates at the cross-overs at the East Portal of Tunnel SHT, West Portal of Tunnel SHT and the Turnaround Facility at HLKR Viaduct (Pier No. 56), and to reinstate/close the barriers/drop gates prior to resuming normal traffic operation of the HKLR when directed by TD;

(2) Assist other departments to control the situation, assist to confine the chemical spillage by transporting sandbags to the spot as far as possible, assist to block the gullies (e.g. with sandbags) if required at those areas which are safe from the chemicals, assist to recover/handle spilled oil, using sawdust or dry sand under the supervision of EPD or other relevant departments. In addition, provide vacuum tanker vehicle in case it is necessary, the usage of which is under the direction of EPD/GL.

(3) When necessary, provide equipment and manpower to assist EPD's licensed chemical waste collector to collect the spilled chemical on HKLR immediately after the incident with the advice provided by EPD;

(4) Reinstate/repair any damaged road surface, essential viaduct structure and street furniture immediately after the affected area is cleaned up to enable the earliest resuming of the affected area on the HKLR to traffic;

(5) Assign licensed chemical waste contractor to collect and transport the chemical wastes which are non-treatable at the Chemical Waste Treatment Centre (CWTC) (including sand bags soaked with chemicals) to the landfills, and to clear the chemicals/chemical wastes and flushing water etc. remained at the scene;

(6) Regularly update this ERP, as necessary, to improve the ERP in response to deficiencies;

(7) In case grey areas are identified, trigger the horizontal communication across departments so as to ensure speedy resolution of these grey areas; and

(8) Update all the concerned departments of any revised versions of ERP for their incorporation of the specific requirements into their own plans and drills, and to liaise with individual department as regards the compatibility of this ERP with their drills.

(9) Notify Airport Authority Hong Kong (AAHK) and Drainage Services Department (DSD) about the incident if the affected area is fall within their jurisdiction.

Transport Department (TD)

5.6 In case of vehicle accident with, or with likelihood of, chemical spillage on HKLR, TD and HKPF's "Regional Command and Coordination Centre" will monitor the traffic conditions within Hong Kong portions of HKLR and in its vicinity through the 24-hour Traffic Control and Surveillance System (TCSS) operated by TD.

5.7 TD will assist HKPF to ascertain the necessity of traffic diversion and control, and whether partial or total road closure is required. TD will assist the temporary traffic management / arrangement including contra-flow traffic arrangement if necessary by controlling the TCSS. TD, in consultation with Police Public Relations Branch (PPRB), will be responsible for disseminating traffic diversion and lane/road closure as well as other related traffic and transportation information for motorists through the media and to other parties if necessary. Regarding cross-boundary coach services on HKLR, TIMS duty officers will arrange publicity on the closure of HKLR, inform THB duty officer, and inform the cross-boundary coach associations that the HKLR is to be closed. TIMS duty officer will request them to adjust service level / suspend service as appropriate.

Hong Kong Police Force (HKPF)

5.8 The "New Territories Regional Command and Control Centre (RCCC NT)" of HKPF operates 24 hours in parallel with "Fire Services Communications Centre (FSCC)" of FSD. Upon receiving the report of vehicle accident with, or with likelihood of, chemical spillage

on the HKLR from TD or other sources, RCCC NT will immediately activate this ERP and inform the relevant government departments including but not limited to those departments identified under this ERP to take immediate actions to deal with the (potential) chemical spillage.

5.9 As HKPF and FSD are usually the first emergency services to arrive at the scene, they will carry out a preliminary assessment as to the likelihood of chemical spillage from vehicle, and if spillage has occurred, the likelihood of the spill entering into the drainage system of HKLR. HKPF should keep RCCC NT informed of the seriousness of the incident and provide RCCC NT with regular updated situation reports.

5.10 In the event of traffic congestion brought about by a chemical spillage incident, HKPF will inform the Mainland/Macao Authorities through the established border liaison channel for any incidents which may cause serious disruption to the operation of the HZMB and HKLR. They may request the Mainland/Macao Authorities for assistance from Mainland/Macao as and where necessary.

5.11 HKPF will be a key member of the ad hoc chemical spillage response team comprising representatives of all relevant departments to deal with (potential) chemical spillage from vehicle. The duties of the response team are as follows:-

(1) To assess the seriousness of the chemical spillage, the likelihood and the means to avoid the chemicals entering into the drainage gullies or waters of North Lantau, in order to determine the immediate actions to be undertaken by each department.

(2) To coordinate between different departments involved.

(3) To determine whether and what additional support and assistance from other departments not included in this ERP should be called upon directly or through policy bureaux.

5.12 Other duties of the HKPF in case of chemical spillage includes: -

(1) Protect life and property.

(2) Initiate a cordon of the area affected by the chemical spillage under the advice of FSD and EPD and implementing traffic management and control measures for people, vehicles or vessels at the scene. HKPF will also transport sawdust stored inside the HyD's workshop (See **Figure 2**) to a safe place near the scene.

(3) Assist in evacuation of the affected area, if necessary.

(4) Implementing traffic management and control measures on all roads leading to the scene.

(5) Provide escort to emergency/rescue vehicles and/or transports carrying plants and equipment to deal with the chemical spillage in case they are delayed by traffic jams.

Fire Services Department (FSD)

5.13 FSD is mainly responsible for fire-fighting and rescue. The fire station at the Hong Kong Boundary Crossing Facility will be supported by two nearby fire stations – Chek Lap Kok Fire Station and Tung Chung Fire Stations (See the location plan in **Figure 3**). It is expected that the response time to any accident/incident would be in terms of several minutes.

5.14 FSD has established procedures to deal with chemical spillage. FSD Officer-In-Charge (Oic) of the incident will appraise the situation and assess whether the accident/incident is a Major and/or Prolonged Chemical Incident. FSD will be responsible to take the following actions: -

(1) Protect life & property, and remove immediate danger.

(2) Identify the type of chemicals such as whether it would be poisonous / hazardous to human being in the vicinity through inhalation or contact, or whether it is flammable / explosive and determine whether evacuation of the area is necessary. FSD will advise HKPF the extent of the cordon area. In case the chemicals cannot be identified on the

scene, FSD will seek information from the consignee firm and/or call upon GL to identify the chemical.

(3) Control or secure the situation such as confining the spillage, the effect of chemical contamination and etc., by appropriate means, by turning off valves or removal from the sources, or by other method of inhibiting the reaction.

(4) Assistant to other Government Department may render upon request.

Marine Department (MD)

5.15 MD is the designated authority for the clean up of oil spillage at sea. When the chemical spill from a vehicle accident has been released from HKLR into the waters, MD will endeavour to regulate the marine traffic in and in the vicinity of the affected area, subject to available depth of water and a risk hazard assessment of the working environment confirmed that the prevailing environment is safe. In case of oil spillage into the marine waters, the response actions from MD will follow the *Maritime Oil Spill Response Plan* (MOSRP), which has been developed to deal with oil spill and their potential hazard to the waters of HKSAR, in order to provide a timely response to oil spillages.

5.16 The other responsibilities of MD include:

(1) Provide absorbents, booms and skimmers for controlling the spill at where and when practical and desirable;

(2) Assist to endeavour to regulate the marine traffic in and in the vicinity of the affected area, subject to available depth of water and a risk hazard assessment of the working environment confirmed that the prevailing environment is safe; and

(3) Monitor the spill situation and reporting extent of pollution.

Due to the remote waters in North Lantau, in order to provide timely and effective responses to the incidents, MD would solicit assistance from Marine Police as necessary.

5.17 In principle, either MD or the Zhuhai/Macao counterpart will not be responsible for any cross border cleaning up of the oil spillage at sea, unless request is made by the governing side of the incident scene to the other side. In such case, coordination will be through HKPF, who is the principal coordinating department with the Zhuhai/Macao Government through the established border liaison channel.

5.18 However, even if the oil spillage is confined to the waters of HZMB Main Bridge, MD will arrange a duty-officer to take in charge of the clean-up operation at sea and render assistance when the situation warrants. And the MD Patrol launch deployed at the scene/in vicinity main duty is to provide traffic regulating.

Environmental Protection Department (EPD)

5.19 EPD has plans responding to marine based and land based pollution incidents in the territory. EPD will follow these plans as appropriate in handling such incidents.

Government Laboratory (GL)

5.20 When requested by FSD, GL will provide assistance in chemical identification in a chemical spillage incident and advise the characteristics of the chemical so as to help FSD and HKPF to plan the operational strategy. If necessary, GL will send an officer to the scene to assist in locating/identifying the chemical, analyse the levels of toxic substances at scene and/or provide advice to stabilise/handle/dispose the chemical.

Agriculture, Fisheries and Conservation Department (AFCD)

5.21 AFCD will advise on the protection of ecologically sensitive areas in the waters; provide assistance and comments on the methods for cleaning up the substances/wastes/chemicals washed ashore in the nearby marine parks, especially their ecological impacts as recommended by relevant authorities; and monitor the ecological conditions and assess the potential ecological/fisheries impacts at the likely affected ecologically sensitive areas.

Leisure and Cultural Services Department (LCSD)

5.22 HyD will provide back up equipment and personnel to assist LCSD in removal of landed oil from gazetted beaches according MOSRP.

Food and Environmental Hygiene Department (FEHD)

5.23 In case of oil spillage incidents, FEHD will provide manpower to assist to manual removal of non-contaminated refuse not classified as chemical or hazardous waste on non-gazetted beaches and foreshores that are without land access if necessary. For non-gazetted beaches and foreshores where land access is available, HyD is responsible for providing equipment and personnel for the removal of landed oil.

District Office (Islands) and District Office (Tuen Mun)

5.24 DO(Islands) and DO(Tuen Mun) will inform the relevant District Council member(s) and Village Representative(s) in case of chemical spillage incidents in the waters as necessary.

Security Bureau

5.25 If coordination with the Zhuhai/Macao side is required in traffic control during the exercise/drills (if any), Security Bureau will help liaison work, particularly at the initial stage.

Maintenance Authority of Main Bridge of HZMB

5.26 The HZMB Authority is responsible for the operation, management and maintenance of the Main Bridge of HZMB. In principle, the HZMB Authority will be responsible for emergency response actions for chemical spillage on the Main Bridge of HZMB.

Owner of the Chemicals

5.27 In case of chemical spillage incidents, the responsibilities of the owner of the chemicals include the following:-

(1) Advise the type and characteristics of the chemicals;

(2) Remove the chemicals and those sand bags / absorbents which are soaked with chemicals, including the spilled chemicals on the road carriageway, in the waters and those washed ashore.

5.28 If the owner of the chemicals does not possess suitable plant and machinery for the removal, the owner could hire a contractor to do the job for himself, or alternatively the Government can do the job and then charge the owner accordingly. If the owner is reluctant to take action, relevant Government authorities could prosecute the owner according to the relevant laws of Hong Kong.

6 Emergency Response Actions

6.1 In the event of vehicle accident on the HKLR, the relevant government departments will implement the existing emergency response plans to deal with the incident.

6.2 It is important for the relevant government departments to confine the spill to be within the HKLR such that water quality and ecological impacts to the waters would be minimised.

6.3 At least 24 nos. dry sandbags and sawdust will be stored at HyD's workshop at HMA (See **Figure 2**). HyD (with the assistance from HKPF if necessary) will transport the materials to the scene to control the spreading of any spilled chemical and to prevent the spilled chemical from entering into waters near HKLR.

6.4 The general operational guidelines to deal with the spill to minimise water quality and ecological impacts include:

(1) Identify the type of chemicals if it would be poisonous/hazardous to human being in the vicinity through inhalation of / contact with them, or flammable / explosive which require immediate evacuation of the area;

(2) Evacuate the area as necessary;

(3) Stop the flow of spill from the source of the pollution;

(4) Confine the spill to a limited area and prevent the spill from entering the road drainage system of HKLR;

(5) Avoid spraying water or chemicals unless it is absolutely necessary; for oil spills to the waters, no oil dispersants should be used. For chemical spill, the measures to be taken will need to be decided case by case. Appropriate techniques and methods with careful study and assessment should be adopted. AFCD, EPD and/or GL should be consulted as needed.

(6) Remove the spilled chemical by using suitable equipment and materials; e.g. absorbent to absorb the oil on the road surface. The absorbent should be able to absorb oil material at a high ratio of oil to absorbent.

(7) Dispose of the collected spill and the used absorbent as chemical wastes once the spill has been removed from the road surface.

(8) Any flushing water (or other chemicals) for cleaning spilled chemical on HKLR should be retrieved by vacuum suction or equivalent means to suitable container for proper disposal. Flushing chemicals to the waters, either directly or via the road drainage system of HKLR, is strictly prohibited.

(9) Monitor the dispersion of the spilled chemicals in the waters.

6.5 Personnel responsible for the clean up operation should take safety precautions in accordance with the corresponding departmental guidelines and procedures.

6.6 According to the Height Restricted Areas and Special Areas for the Hong Kong Link Road and the Hong Kong International Airport Approach Restricted Areas under Fifth Schedule of Cap. 313A and Section 12 & 18B of Cap. 548F respectively, the relevant emergency responsible departments should deploy their emergency team and vessels in the vicinity to evaluate their vessel height in compliance with the height restriction under the law.

7 Liaison with Mainland Authority

7.1 HKPF will notify the Mainland Authority through the established border liaison channel for the accident and requesting for assistance from Mainland where necessary. TD/HKPF will also notify the Mainland Authority if any traffic diversion and lane/road closure are required to be implemented on the Main Bridge.

8 Training and Drill

8.1 In order to provide a prompt response to an emergency event, relevant government departments who are responsible for dealing with the spill incident must be familiar with the procedures and the operation of the essential equipment. Regular training should be provided to all designated personnel of all relevant government departments / non-government departments concerned to deal with the spill incident on HKLR. The areas that should be covered in the training include:

(1) Procedures to deal with spill incident

(2) Ordinance and regulations related to chemical waste control

(3) Awareness of chemical waste hazards and pollution

(4) Roles and responsibilities

(5) Precaution and safety measures

(6) Spill clean up

(7) Spill disposal

8.2 In addition, it is important to regular test-run to establish the effectiveness of this ERP. The aim is to ensure good coordination and prompt action amongst relevant government departments. Testing will take the form of an exercise or drill to practice responding to a spill on the HKLR. The exercise is aimed to build the sense of teamwork and familiarity from relevant government departments. It makes the response more effective and efficient

when an actual spill incident occurs. Details of the training and drill by each individual party should refer to their own standing practice that is currently in force in Hong Kong. HyD, as the controller of this ERP, is responsible for updating all the concerned departments of any revised versions of the ERP for their incorporation of the specific requirements in this ERP into their own drills. Liaison with individual departments as regards the compatibility of this ERP with their drills could be held as necessary.

9 Contact List for Spillage of Chemicals

Immediate Reporting of Incident		
Hong Kong Police Force (HKPF)	Emergency 24 hrs Hotline	999
Designated Response Departments		
Home Affairs Department (HAD)	Senior Liaison Officer (2), Islands District Office Senior Liaison Officer (1), Tuen Mun District Office	2852 4573 / 9380 7484 2451 3032
Highways Department (HyD)	HyD Emergency Control Centre (ECC)	2926 4333
Transport Department (TD)	Emergency Transport Co-ordination Centre (ETCC)	2410 0066 / 2410 0193
Hong Kong Police Force (HKPF)	Duty Officer (Tuen Mun) Duty Officer (Tung Chung) Duty Officer (Chek Lap Kok)	TBA 3661 1694 3661 1668
Fire Services Department (FSD)	Hong Kong-Zhuhai-Macao Bridge Fire Station cum Ambulance Depot	2516 0201
Marine Department (MD)	Vessel Traffic Centre (VTC)	2233 7801
Environmental Protection Department (EPD)	Mr. Alfred Lo (Environmental Protection Officer)	2516 1782
Government Laboratory (GL)	Duty Chemists	Responder 1: 6377 6591 Responder 2: 6377 6599
Agriculture, Fisheries and Conservation Department	Dr. YM Mak	3468 5742

(AFCD)	(Marine Conservation Officer)	
Leisure and Cultural Services Department (LCSD)	For gazetted beaches in Tuen Mun District:	
	1. Senior Leisure Manager (Aquatic Venues)	2601 8873 / 9195 1385
	2. Chief Leisure Manager (Aquatic Venues)	2601 8083 / 6291 0027
	3. District Leisure Manager (Tuen Mun)	2451 3102 / 9195 9170
Food and Environmental Hygiene Department (FEHD)	Chief Health Inspector (Operations)1	2867 5657
	Chief Health Inspector (Operations)3	2867 5644
	Chief Health Inspector (Cleansing & Pest Control)1	2867 5290
Islands District Council Member 離島區議會議員		
Chairman 主席	YU Hon Kwan 余漢坤	2984 7633 2984 7656
Tai O Rural Committee 大澳鄉事委員會		
Chairman 主席	HO Siu Kei 何紹基	9837 3283
Mui Wo Rural Committee 梅窩鄉事委員會		
Chairman 主席	WONG Man Hon 黃文漢	9079 6618
Village Representatives		
SAN TAU 磡頭		
Indigenous Inhabitant Representative 原居民代表	TSE King Till 謝擎天	9090 3696
Resident Representative 居民代表	HO Siu Kei 何紹基	9837 3283
SHA LO WAN 沙螺灣		
Indigenous Inhabitant Representative 原居民代表	LI Sau Mui 李秀梅	9022 4187
Resident Representative 居民代表	CHAN Chi Kuen 陳志權	6875 6262

SHAM SHEK 深石		
Resident Representative 居民代表	NG Fung-lin 吳鳳蓮	5668 9793
PAK MONG 白芒		
Indigenous Inhabitant Representative 原居民代表	KWOK Wai Man 郭偉文	9258 2406
Resident Representative 居民代表	KWOK Ma Keung 郭馬強	9252 9982
NGAU KWU LONG 牛牯塱		
Indigenous Inhabitant Representative 原居民代表	LUM Sai Ming 林世明	Not agree to disclose
Resident Representative 居民代表	LAM Hing Kwai 林慶貴	6159 1392
TAI HO 大蠔		
Indigenous Inhabitant Representative 原居民代表	CHOW Cheung Fuk 鄒長福	9497 0381
Resident Representative 居民代表	Vacant	-

Appendix A - Flow Chart for Responsibilities of Various Parties in case of Chemical Spillage Incidents

Agreement No. CE 36/2009 (HY)
Tender and Construction of Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Design and Construction
Emergency Response Plan

Appendix A – Flow Chart for Responsibilities of Various Parties in case of Chemical Spillage Incidents

Legend

List of key responsibilities (Not exhaustive)

XX	- Xxx

Responsible Party

Timeline

Immediate | Within pledged arrival time of emergency parties i.e. HKPF, FSD (15 minutes) | Within 30 minutes (for HyD) | Arrival time of non-emergency parties | **Long term cleanup**

Traffic incident occurred on HKLR

Incident reported to HKPF via:
1. "999" Centre
2. Phone call from TD CCTV etc.

RCCC NT notifies HyD ECC

HKPF+FSD arrive at incident scene and carry out assessment

No chemical spillage → Incident handled as normal traffic incident

Chemical spillage occurred → Activate this ERP

FSD (with advise from GL/ EPD/ Owner of the chemical as necessary) to assess if the chemical is hazardous or not

Overriding responsibilities for all emergency situations (Specific responsibilities are listed below)

HKPF	- Protect life and property - Keep traffic flowing quickly, smoothly and safely
FSD	- Protect life and property - Fire-fighting / Rescue
TD	- Overall monitoring of traffic and transport situation - Disseminate information about the incidents and traffic conditions to the Public - Assist traffic management (e.g. by controlling the TCSS)

Chemical is hazardous

Yes, chemical is hazardous and remained on carriageway

Remain on carriageway?

Both land and sea responses might be concurrent

HKPF	- Cordon off the scene - Carry out assessment of the situation - Control of land traffic - Transport sawdust to a safe place near the scene if necessary
FSD	- Remove immediate danger - Carry out assessment of the situation - Identify chemical types - Fire-fighting if necessary - Control or secure the situation such as confining the spillage, the effect of chemical contamination and etc., by appropriate means, by turning off valves or removal from sources, or by other method of inhibiting the reaction.
HyD	- Assist HKPF and TD in setting up traffic contra-flow - Assist to control the situation - Transport sandbags to the spot as near as safety permits (within 30 min. upon receipt of notification) - Assist to confine chemicals by sandbags - Notify AAHK and DSD if the affected area falls within their jurisdiction
GL	- Assist in chemical identification - Advise the characteristics of chemicals
Owner of the Chemical	- Advise the type and characteristics of the chemicals

After immediate danger is removed

Treatable at CWTC

EPD	- EPD will follow their generic plans to act accordingly and appropriately.
HyD	- Assign licensed chemical waste contractor to transport the sand bags soaked with chemicals to the landfills - Clear, reinstate and repair damaged roads / street furniture
Owner of the Chemical	- Assist in removing the chemicals and sand bags (See Remark 1)

Non-treatable at CWTC

HyD	- Assign licensed chemical waste contractor to collect and transport the non-CWTC-treatable chemical wastes (including sand bags soaked with chemicals) to the landfills, and to clear the chemicals / chemical wastes and flushing water etc. remained at the scene - Clear, reinstate and repair damaged roads / street furniture
Owner of the Chemical	- Assist in removing the chemicals and sand bags (See Remark 1)

No, chemical is hazardous and partly discharged to North Lantau

Remain in North Lantau

MD	- Clear up oil spillage in the sea - Assist in regulating marine traffic, subject to available depth of water in the affected area - Provide absorbents, booms and skimmers to control spreading of spill when practical and desirable
FSD	- Remove immediate danger - Fire-fighting if necessary - Assist in cleaning up chemical spillage at sea
GL	- Assist in chemical identification - Advise the characteristics of chemicals
EPD	- EPD will follow their generic plans to act accordingly and appropriately.
Owner of the Chemical	- Assist in removing the chemicals (See Remark 1)
DO (Islands) DO (Tuen Mun)	- Inform relevant DC member(s) & Village Representative(s) in case of chemical spillage incidents in the waters as necessary.

Remain in North Lantau / washed shore?

Washed ashore

EPD	- EPD will follow their generic plans to act accordingly and appropriately.
Owner of the Chemical	- Remove the chemicals (See Remark 1)
LCSD / FEHD	- Assist in cleaning the affected gazetted (LCSD) / non-gazetted (FEHD) beaches if necessary
DO (Islands) DO (Tuen Mun)	- Inform relevant DC member(s) & Village Representative(s) in case of chemical spillage incidents in the waters as necessary.
AFCD	- Provide assistance and comments on the methods for clearing up the chemicals especially their ecological impacts as recommended by relevant authorities, protect the ecologically sensitive areas of the marine parks etc., and monitor / assess the ecological and fisheries impacts at the likely affected ecologically sensitive areas if necessary

Chemical is not hazardous

Yes, chemicals remain on carriageway

HKPF	- Cordon off the scene - Carry out assessment of the situation - Control of land traffic - Transport sawdust to a safe place near the scene if necessary
HyD	- Transport sandbags to the spot as near as safety permits (within 30 min. upon receipt of notification) - Confine the chemicals using sand bags - Clear, reinstate and repair damaged roads / street furniture
FSD	- Control or secure the situation such as confining the spillage, the effect of chemical contamination and etc., by appropriate means
Owner of the Chemical	- Remove the chemicals (See Remark 1)

Both land and sea responses might be concurrent

Remain on carriageway?

No, chemicals partly discharged to North Lantau

MD	- Clear up oil spillage in the sea - Assist in regulating marine traffic, subject to available depth of water in the affected area - Provide absorbents, booms and skimmers to control spreading of spill when practical and desirable
FSD	- Assist in cleaning up chemical spillage at sea
EPD	- EPD will follow their generic plans to act accordingly and appropriately.
Owner of the Chemical	- Remove the chemicals (See Remark 1)
LCSD / FEHD	- Assist in cleaning the affected gazetted (LCSD) / non-gazetted (FEHD) beaches if necessary
DO (Islands) DO (Tuen Mun)	- Inform relevant DC member(s) & Village Representative(s) in case of chemical spillage incidents in the waters as necessary.
AFCD	- Provide assistance and comments on the methods for clearing up the chemicals especially their ecological impacts as recommended by relevant authorities, protect the ecologically sensitive areas of the marine parks etc., and monitor / assess the ecological and fisheries impacts at the likely affected ecologically sensitive areas if necessary

Remark:
1. If the owner of the chemical does not possess suitable plant and machinery for the removal, the owner could hire contractor to do the job, or alternatively Government can do the job and then charge the owner accordingly. If the owner is reluctant to take action, relevant government authorities could prosecute the owner according to the relevant laws of Hong Kong.

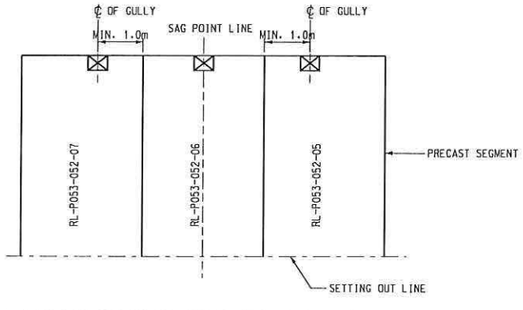
Appendix B – As-built Drawings of Drainage System of HKLR Viaducts

Drawing Number	Drawing Title
HKLR9/MMH/AB/PW/DN/00000	General Notes for Drainage
HKLR9/MMH/AB/PW/DN/00001	Proposed Viaduct Drainage System - Key Plan
HKLR9/MMH/AB/PW/DN/00002	Proposed Viaduct Drainage System Layout (Sheet 1 of 8)
HKLR9/MMH/AB/PW/DN/00003	Proposed Viaduct Drainage System Layout (Sheet 2 of 8)
HKLR9/MMH/AB/PW/DN/00004	Proposed Viaduct Drainage System Layout (Sheet 3 of 8)
HKLR9/MMH/AB/PW/DN/00005	Proposed Viaduct Drainage System Layout (Sheet 4 of 8)
HKLR9/MMH/AB/PW/DN/00006	Proposed Viaduct Drainage System Layout (Sheet 5 of 8)
HKLR9/MMH/AB/PW/DN/00007	Proposed Viaduct Drainage System Layout (Sheet 6 of 8)
HKLR9/MMH/AB/PW/DN/00008	Proposed Viaduct Drainage System Layout (Sheet 7 of 8)
HKLR9/MMH/AB/PW/DN/00009	Proposed Viaduct Drainage System Layout (Sheet 8 of 8)
HKLR9/MMH/AB/PW/DN/00102	Typical Drainage Details at Turnaround Facility
HKLR9/MMH/AB/PW/DN/00103	Typical Drainage Downpipe Arrangement- Pier P17
HKLR9/MMH/AB/PW/DN/00104	Typical Drainage Downpipe Arrangement- Pier P79
HKLR9/MMH/AB/PW/DN/00105	Typical Drainage Downpipe Arrangement- Pier P68
HKLR9/MMH/AB/PW/DN/00106	Typical Drainage Downpipe Arrangement- Pier P77
HKLR9/MMH/AB/PW/DN/00107	Typical Drainage Downpipe Arrangement- Pier P85
HKLR9/MMH/AB/PW/DN/00108	Typical Drainage Downpipe Arrangement- Pier P87, P88, P89, P90, P94, P95, P96, P97, P98, P101 and P103
HKLR9/MMH/AB/PW/DN/00109	Typical Drainage Downpipe Arrangement- Pier P107
HKLR9/MMH/AB/PW/DN/00110	Typical Drainage Downpipe Arrangement
HKLR9/MMH/AB/PW/DN/00111	Typical Drainage Downpipe Arrangement- Pier P113
HKLR9/MMH/AB/PW/DN/00112	Typical Drainage Downpipe Arrangement- Pier P110
HKLR9/MMH/AB/PW/DN/00113	Typical Drainage Downpipe Arrangement- Pier P100
HKLR9/MMH/AB/PW/DN/00114	Typical Drainage Downpipe Arrangement- Pier P93
HKLR9/MMH/AB/PW/DN/00115	Typical Drainage Downpipe Arrangement- Pier P86
HKLR9/MMH/AB/PW/DN/00116	Typical Drainage Downpipe Arrangement - Pier P91
HKLR9/MMH/AB/PW/DN/00117	Typical Drainage Downpipe Arrangement - Pier P20
HKLR9/MMH/AB/PW/DN/00118	Typical Drainage Downpipe Arrangement - Pier P18
HKLR9/MMH/AB/PW/DN/00119	Typical Drainage Downpipe Arrangement - Pier P69
HKLR9/MMH/AB/PW/DN/00120	Typical Drainage Downpipe Arrangement - Pier P71, P72, P73 & P75
HKLR9/MMH/AB/PW/DN/00121	Typical Drainage Details Interface Abutment
HKLR9/MMH/AB/PW/DN/00124	Typical Drainage Details - Hanger Support
HKLR9/MMH/AB/PW/DN/00125	Typical Drainage Details - Drainage Hopper and Rodding Eye
HKLR9/MMH/AB/PW/DN/00126	Typical Drainage Details - Gully connection Pipe
HKLR9/MMH/AB/PW/DN/00128	Typical Drainage Arrangement for Widening Section
HKLR9/MMH/AB/PW/DN/00130	Typical Drainage Details Drainage Hopper
HKLR9/MMH/AB/PW/DN/00132	Typical Drainage Downpipe Arrangement - Pier P76
HKLR9/MMH/AB/PW/DN/00133	Typical Drainage Downpipe Arrangement Pier P82 & P83
HKLR9/MMH/AB/PW/DN/00134	Typical Drainage Details Downpipe Arrangement - Pier P105
HKLR9/MMH/AB/PW/DN/00137	Typical Drainage Downpipe Arrangement Pier P80
HKLR9/MMH/AB/PW/DN/00150	TYPICAL DRAINAGE DOWNPIPE ARRANGEMENT PIER P87, P96, P98, P103

GENERAL NOTES FOR VIADUCT DRAINAGE

1. UNLESS NOTED OTHERWISE ON A PARTICULAR DRAWING, NOTES ON THIS DRAWING APPLY TO ALL OTHER DRAWINGS. SPECIFIC NOTES RETAINING TO PARTICULAR ELEMENT OF WORK ARE SHOWN ON EACH DRAWING.
2. ALL WORKS ARE IN ACCORDANCE WITH CURRENT EDITION OF HONG KONG GOVERNMENT GENERAL SPECIFICATIONS FOR CIVIL ENGINEERING WORKS AND THE ASSOCIATED CONSTRUCTION SPECIFICATIONS FOR THE CONTRACT.
3. ALL CO-ORDINATES ARE REFERRED TO HONG KONG (1980) METRIC GRID CO-ORDINATES SYSTEM.
4. ALL LEVELS SHOWN ARE IN METRES AND REFER TO THE PRINCIPAL DATUM (mPD).
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
6. NO DIMENSIONS ARE OBTAINED FROM SCALING DRAWING.
7. ALL CHAINAGES ARE IN METRE.
8. ALL GROUND PROFILES, SEABED LEVEL AND WATER LEVEL ARE INDICATIVE ONLY.
9. UNLESS SPECIFIED OTHERWISE INDICATED CROSS SECTIONS SHOW THE BRIDGE DECK LOOKING EAST.
10. THIS SET OF DRAWINGS DOES NOT NECESSARILY INDICATE THE FULL EXTENT OF PROPOSED SERVICES. ANY MODIFICATION TO THE PROPOSED SERVICES SHALL BE CONFIRMED WITH SOR AND DUE ALLOWANCE SHALL BE MADE IN THE CONSTRUCTION PROGRAMME.
11. DRAINAGE SYSTEM FOR VIADUCT COMPRISES:
    TYPE A: ROAD SIDE GULLY WITH CARRIER DRAINS AND DOWN PIPES
    TYPE B: ROAD SIDE GULLY WITH OVERFLOW PIPE ONLY WITHOUT CARRIER DRAINS AND DOWN PIPES
12. OUTLET PIPES FROM GULLIES TO LONGITUDINAL CARRIER PIPES SHALL HAVE A MIN. GRADIENT OF 1 IN 40 WHEN THE DECK SEGMENTS ARE INSTALLED IN THEIR FINAL POSITION. UNLESS SHOWN OTHERWISE LONGITUDINAL CARRIER PIPES SHALL HAVE A GRADIENT AS SHOWN ON DRAWING NOS. HKLR9/MMH/AB/PW/DN/00002 - DN/00009.
13. PIPEWORK SHALL BE UPVC, AND THE PIPES SHALL BE THOSE DESIGNATED AS CLASS B IN BS3506:1969 AND SHALL CONFORM TO THE RELEVANT REQUIREMENTS OF BS3506:1969.
    JOINTS IN UPVC DRAIN PIPES MAY TAKE THE FORM OF EITHER:
    (a) ELASTOMERIC SEALING RING JOINT ASSEMBLIES, OR
    (b) SOLVENT WELDED JOINT ASSEMBLIES
14. GULLY GRATINGS SHALL BE TYPE GA1-450 WITH DEEP FRAMES AS SHOWN ON HyD STD. DRG. NOS. H3117, H3118, UNLESS OTHERWISE SPECIFIED. FRAMES SHALL BE BEDDED ON 1:3 SAND CEMENT MORTAR.
15. INSTALLATION DETAILS SHOW THE GULLY SUMPS WITH THEIR PIPE OUTLETS INCORPORATED INTO THE DECK SEGMENTS DURING INITIAL CASTING.
16. GRADIENT FOR STORMWATER DRAINS ARE AS SHOWN ON THE DRAWINGS. MAXIMUM GRADIENT FOR STORMWATER DRAINS TO SUIT MAXIMUM VELOCITY LIMIT OF 6m/s.
17. ALL LOW OR SAG POINTS IN CARRIAGEWAY SHALL BE PROVIDED WITH THE REQUIRED NUMBER OF GULLIES AS SHOWN ON LAYOUT PLAN DRAWINGS, KERB OVERFLOW WEIRS WITH THE VERTICAL BARS SHALL BE PROVIDED ON EACH GULLY.
18. GULLY DETAILS AND SPACINGS SHALL REFER TO DRAWING NO. HKLR9/MMH/AB/PW/DN/00101.
19. KERB OVERFLOW SHALL BE PROVIDED AS INDICATED ON THE DRAWINGS. FOR DETAILS OF KERB OVERFLOW WEIR REFER TO HyD STD. DRG. NO. H3127.
20. THE LOCATION OF LOW POINTS SHALL BE IN ACCORDANCE WITH LONGITUDINAL PROFILE OF ROAD AS SHOWN ON DRAWING NOS. HKLR9/MMH/AB/PW/RW/00021 - 00029.
21. AT GRADE PETROL INTERCEPTOR NEAR SHT TUNNEL SHALL REFER TO DRAWINGS HKLR9/MMH/AB/PW/DN/00141 AND 00122 OF DDA20. FOR ANOTHER PETROL INTERCEPTOR AT TURNAROUND FACILITY PLEASE REFER TO DRAWINGS HKLR9/YWL/AB/TF/SP/06601, 06603 AND 06652 OF ML8.4 SUBMISSION PACKAGE.

TYPICAL GULLY ARRANGEMENT AT SAG POINT



1. GULLY SHALL BE PLACED AT THE SAG POINT AS FAR AS POSSIBLE.
2. THE MINIMUM CLEARANCE BETWEEN THE GULLY AND SEGMENT EDGE SHALL BE 1000mm.

LEGEND

- SITE BOUNDARY
- CARRIER DRAIN / DOWN PIPE / DISCHARGE POINT
- MANHOLE — GRAVITY STORMWATER DRAINAGE
- CATCHPIT — SUBSOIL DRAIN
- GULLY FOR TYPE A DRAINAGE SYSTEM
- GULLY FOR TYPE B DRAINAGE SYSTEM
- GULLY FOR WIDENED SECTIONS
- GULLY WITH OVERFLOW WEIR
- PETROL INTERCEPTOR
- CATCHPIT WITH DOWNPIPE
- FALL — DIRECTION OF CROSS FALL
- EXISTING BOX CULVERT
- EXISTING OUTFALL
- EXISTING GRAVITY STORMWATER DRAINAGE
- EXISTING GRAVITY DRAINAGE TO BE DEMOLISHED
- EXTENDED WALKWAY
- * VIADUCT SUB-SURFACE DRAINAGE

NOTES FOR LANDSIDE DRAINAGE AND SEWERAGE WORKS

1. MANHOLE COVER SHALL BE FLUSH OR NOT MORE THAN 5mm BELOW FINISHED ROAD SURFACE. COVER LEVEL SHOWN FOR MANHOLE IS APPROXIMATE ONLY. THE ACTUAL COVER LEVEL SHALL BE VERIFIED ON SITE.
2. CONCRETE FOR MANHOLE SHALL BE GRADE 30/20 UNLESS STATED OTHERWISE.
3. FOR MANHOLE DETAILS, REFER TO THE FOLLOWING DSD STD. DRGS.

MANHOLE TYPE	DSD STANDARD DRAWING NO. AND TYPE
D1	DS1079
E1	DS1080
F1	DS1081
G1	DS1082
H	DS1009
I	DS1011
J	DS1013
K	DS1015
L	DS1017

4. FOR DETAILS OF TOP TREATMENT TO MANHOLE, REFER TO DSD STD. DRG. NO. DS1032.
5. FOR DETAILS OF MANHOLE COVER AND FRAME, REFER TO DSD STD. DRG. NOS. DS1033, DS1034, DS1076 AND DS1077.
6. FOR DETAILS OF MANHOLE STEP IRON, REFER TO DSD STD. DRG. NO. DS1043.
7. UNLESS OTHERWISE STATED, PRECAST CONCRETE PIPES TO BS 5911 SHALL BE USED FOR STORMWATER DRAINS.
8. PRECAST CONCRETE PIPES AND FITTINGS SHALL HAVE FLEXIBLE SPIGOT AND SOCKET JOINTS AND COMPLYING WITH BS EN 1916:2002 AND BS 5911-1:2002.
9. FOR DETAILS OF FLEXIBLE JOINT, REFER TO DSD STD. DRG. NO. DS1050.
10. FOR DETAILS OF BEDDING CLASS A AND CLASS B AND CONCRETE SURROUND, REFER TO DSD STD. DRG. NOS. DS1048 AND DS1049.
11. ALL GULLY CONNECTION PIPE SHALL BE 150 DIAMETER CONCRETE UNLESS OTHERWISE SPECIFIED.
12. GULLY SHALL BE UNTRAPPED TYPE WITH COMPOUND MATERIALS GRATING GA1-450 AND KERB OVERFLOW WEIRS TYPE K1-450V IN ACCORDANCE WITH HyD STD. DRG NOS. H3109A, H3123M H3152 AND H3153.
13. STEP IRON SHALL BE PROVIDED FOR DRAINPIT WITH INTERNAL BOTTOM LEVEL TO GROUND LEVEL GREATER THAN 1m.
14. THE EXACT EXTENT OF PIPES./MANHOLES ABANDONMENT SHALL BE INVESTIGATED AND VERIFIED AND APPROVED BY THE SUPERVISING OFFICER ON SITE. OTHER EXISTING PIPES/MANHOLES SHALL BE MAINTAINED UNLESS INSTRUCTED BY THE SUPERVISING OFFICER.
15. MINIMUM COVER TO PIPE SHALL BE PROVIDED AS FOLLOWS UNLESS OTHERWISE SPECIFIED:
    1.2m IN ROAD, FOOTWAYS OR VERGES;
    0.9m IN OTHER AREAS
16. FOR DETAILS OF CATCHPIT, REFER TO CEDD STD. DRG. NO. C2405 AND C2407.
17. MANHOLE COVERS WITHIN CARRIAGEWAY AND VEHICLE ACCESS ROAD ARE HEAVY DUTY FOR TRAFFIC LOADING TO CL5.28 OF THE CONSTRUCTION SPECIFICATION AND G.S.Cl.5.28.
18. MANHOLE IDENTIFICATION TAGS AS SHOWN ON DSD STD. DRG. NO. DS1075 SHALL BE PROVIDED TO MANHOLES.
19. ALL PRECAST CONCRETE PIPES SHALL BE CLASS 120 UNIT TO BS 5911-1, UNLESS OTHERWISE STATED.
20. IDENTIFICATION TAPE AND MARKER POSTS SHALL BE PROVIDED TO ALL UTILITIES IN ACCORDANCE WITH THE SPECIFICATION.
21. THE MATERIAL OF THE DIVERTED SEWERAGE PIPE SHALL BE PRECAST CONCRETE PIPES.

ABBREVIATION

CU	COVERED U-CHANNEL
UC	U-CHANNEL
SMH01	STORMWATER MANHOLE 01
FMH01	FOULWATER MANHOLE 01
CP01	CATCHPIT 01
I.L.	INVERT LEVEL
C.L.	COVER LEVEL/GROUND LEVEL
D.I.	DUCTILE IRON
STG	SEALED TRAP GULLY
OTG	OPEN TRAP GULLY
V.P.	VENT PIPE
C.I.	CAST IRON
STD.	STANDARD
DRG.	DRAWING
A	CLASS A BEDDING
B	CLASS B BEDDING
H	PRECAST CONCRETE PIPS AND FITTING C CLASS HIGH STRANGTH SHALL COMPLY WITH BS 5911
GS	GENERAL SPECIFICATION PUBLISHED BY CEDD
US	UPSTREAM
DS	DOWNSTREAM
RM	RISING MAIN
HyD	HIGHWAY DEPARTMENT
DSD	DRAINAGE SERVICES DEPARTMENT
CEDD	CIVIL ENGINEERING DEVELOPMENT DEPARTMENT
Ex	VITRIFIED CLAY PIPES AND FITTINGS (CLASS 120) SHALL COMPLY WITH EN 295

As-built Drawing

Prepared by the Contractor "DCVJV"

23SEP2019

Mr. W.K.Poon (Project Director) Date

Checked by the Designer "Mott MacDonald"

23SEP2019

Dr. H.T.Cheng (Designer) Date

Endorsed by the Design Checker "AECOM"

23SEP2019

Ir. Charles Luk (Design Checker) Date

Main Contractor

Dragages - China Harbour - VSL Joint Venture 實基-中國海灣-威勝利聯營

Contractor's Designer

Mott MacDonald YWL Engineering

Consultant

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title

GENERAL NOTES FOR DRAINAGE

Drawing no.			Rev.
HKLR9/MMH/AB/PW/DN/00000			-
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Scale: N.T.S.		Approved: -	
Job No.: HKLR9		Sheet No.: 1 OF 1	
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路政署 HIGHWAYS DEPARTMENT

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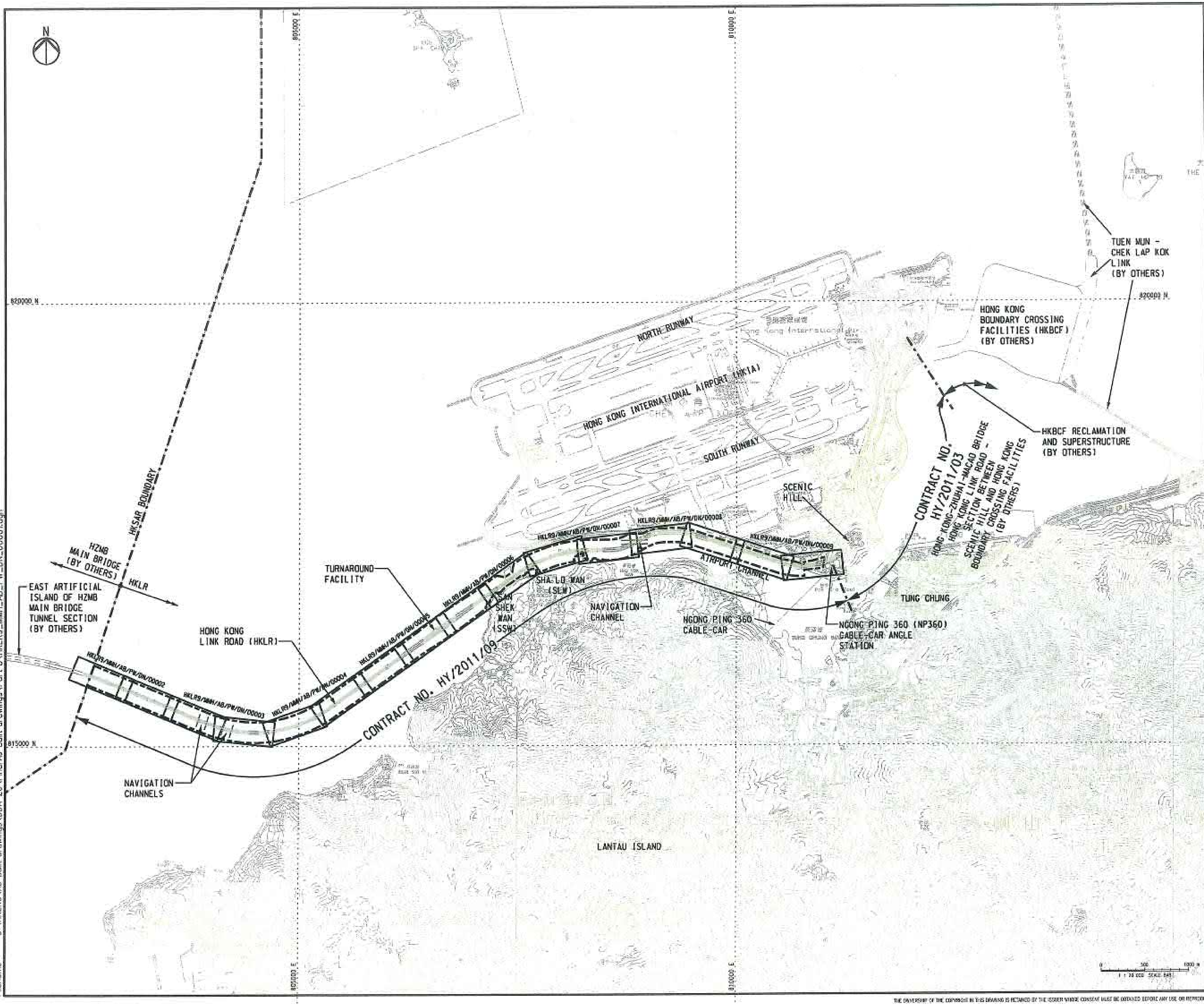

NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRG. NOS. HKLR9/MMH/AB/PW/DN/00002-00009.

LEGEND

SITE BOUNDARY

As-built Drawing

Prepared by the Contractor "DCVJV"
Mr. W.K.Poon (Project Director) — Date 11/01/19

Checked by the Designer "Mott MacDonald"
Dr. H.T.Cheng (Designer) — Date 11/01/19

Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) — Date 11/01/19

Main Contractor: Dragages - China Harbour - VSL Joint Venture

Contractor's Designer: Mott MacDonald; YWL Engineering

Consultant: ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title:
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title:
VIADUCT DRAINAGE SYSTEM
KEY PLAN

Drawing No. HKLR9/MMH/AB/PW/DN/00001			Rev. -
Design AL	Drawn PL	Approved HTC	Status AS-BUILT
Scale 1:20000 (IN A1)		Approved -	
Job No. HKLR9		Sheet No. 1 OF 1	
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Printed by: I 1/30/2019
Filename: D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 8\HKLR9_MMH_AB_PW_DN_00002.dgn

NOTES

1. THIS SET OF DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE KEY PLAN DRG. NO. HKLR9/MMH/AB/PW/DN/00001.
2. FOR GENERAL NOTES, PLEASE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.

As-built Drawing

Prepared by the Contractor "DCVJV"
Mr. W.K.Poon (Project Director) 11/01/19 Date

Checked by the Designer "Mott MacDonald"
Dr. H.T.Cheng (Designer) 11/01/19 Date

Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) 11/01/19 Date

Main Contractor
Dragages - China Harbour - VSL Joint Venture

Contractor's Designer
Mott MacDonald
YWL Engineering

Consultant
ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title
VIADUCT DRAINAGE SYSTEM
LAYOUT

Drawing no.			Rev.
HKLR9/MMH/AB/PW/DN/00002			-
Design AL	Drawn PL	Checked HTC	Status AS-BUILT
Scale 1:1000 (IN A1)		Approved -	
Job no. HKLR9		Sheet no. 1 OF 8	
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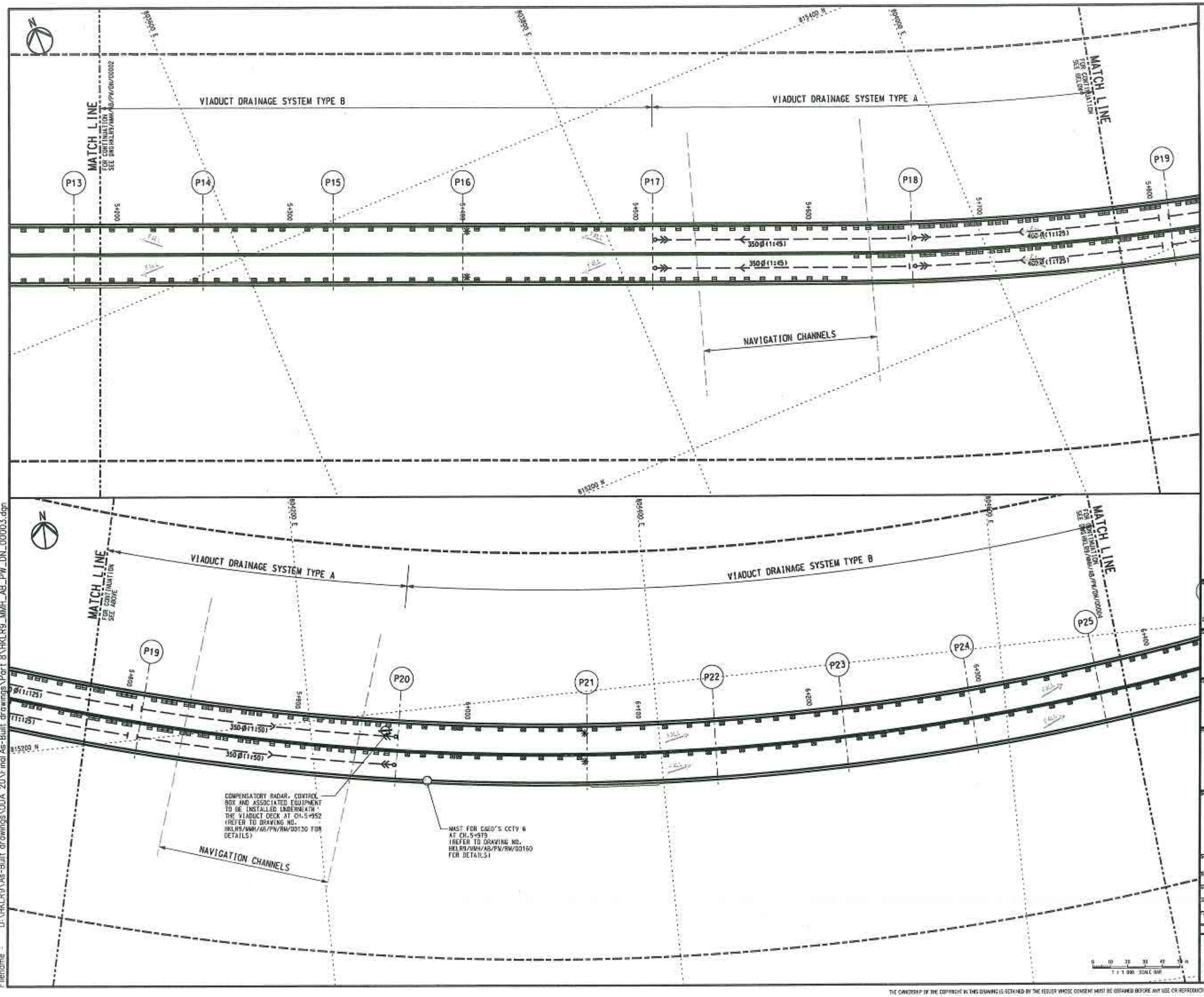
路政署
HIGHWAYS DEPARTMENT



COMPENSATORY RADAR, CONTROL BOX AND ASSOCIATED EQUIPMENT TO BE INSTALLED UNDERNEATH THE VIADUCT DECK AT CH.5+952 (REFER TO DRAWING NO. HKLR9/MMH/AB/PW/RM/00130 FOR DETAILS)

MAST FOR C&ED'S CCTV 6 AT CH.5+979 (REFER TO DRAWING NO. HKLR9/MMH/AB/PW/RM/00160 FOR DETAILS)

Printed by : 1/30/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 8\HKLR9_MMH_AB_PW_DN_00003.dgn

NOTES

1. FOR NOTES AND LEGEND, REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.

As-built Drawing

Prepared by the Contractor "DCVJV"
11/01/19
Mr. W.K.Poon (Project Director) Date

Checked by the Designer "Mott MacDonald"
11/01/19
Dr. H.T.Cheng (Designer) Date

Endorsed by the Design Checker "AECOM"
11/01/19
Ir. Charles Luk (Design Checker) Date

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald
YWL Engineering

ARUP 奧雅納工程顧問
Ove Arup & Partners Hong Kong Limited

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

VIADUCT DRAINAGE SYSTEM
LAYOUT

Drawing no. HKLR9/MMH/AB/PW/DN/00003			Rev. -
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Scale 1:1000 (IN A1)		Approved -	
Job No. HKLR9		Sheet No. 2 OF 8	
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路政署
HIGHWAYS DEPARTMENT

NOTES

1. FOR NOTES AND LEGEND, REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.

As-built Drawing

Prepared by the Contractor "DCVJV"

11/01/19

Mr. W.K.Koon (Project Director) Date

Checked by the Designer "Mott MacDonald"

11/01/19

Dr. H.T.Cheng (Designer) Date

Endorsed by the Design Checker "AECOM"

11/01/19

Ir. Charles Luk (Design Checker) Date

Dragages - China Harbour - VSL Joint Venture

Contractor's Designer: Mott MacDonald | YWL Engineering

Consultant: ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title: Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title: VIADUCT DRAINAGE SYSTEM LAYOUT

Drawing No.			Rev.
HKLR9/MMH/AB/PW/DN/00004			-
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Scale: 1:1000 (IN A1)		Approved: -	
CAD file: HKLR9		Sheet No.: 3 OF 8	
File name: HKLR9_MMH_AB_PW_DN_00004.dgn			

路政署 HIGHWAYS DEPARTMENT

Printed by : 1/30/2019
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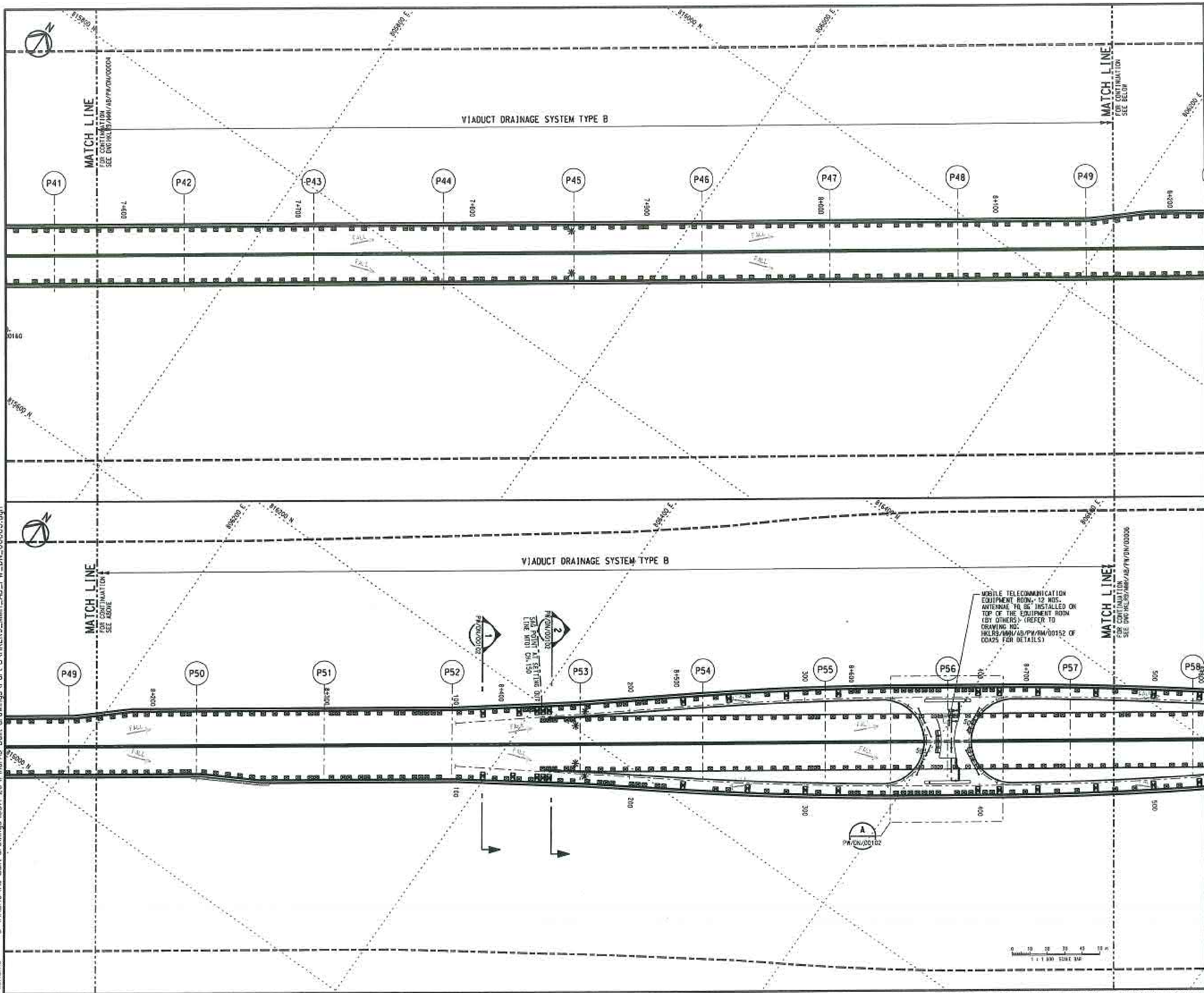

NOTES

1. FOR NOTES AND LEGEND, REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.

As-built Drawing

Prepared by the Contractor "DCVJV"

Mr. W.K.Poon (Project Director) — 11/01/19 Date

Checked by the Designer "Mott MacDonald"

Dr. H.T.Cheng (Designer) — 11/01/19 Date

Endorsed by the Design Checker "AECOM"

Ir. Charles Luk (Design Checker) — 11/01/19 Date

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald — YWL Engineering

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

VIADUCT DRAINAGE SYSTEM LAYOUT

Drawing No. HKLR9/MMH/AB/PW/DN/00005			Rev. -
Design AL	Drawn PL	Approved HTC	Status AS-BUILT
Scale 1:1000 (IN A1)		Approved -	
Job No. HKLR9		Sheet No. 4 OF 8	
File name HKLR9_MMH_AB_PW_DN_00005.dgn			

路政署 HIGHWAYS DEPARTMENT

Printed by : 1/30/2019
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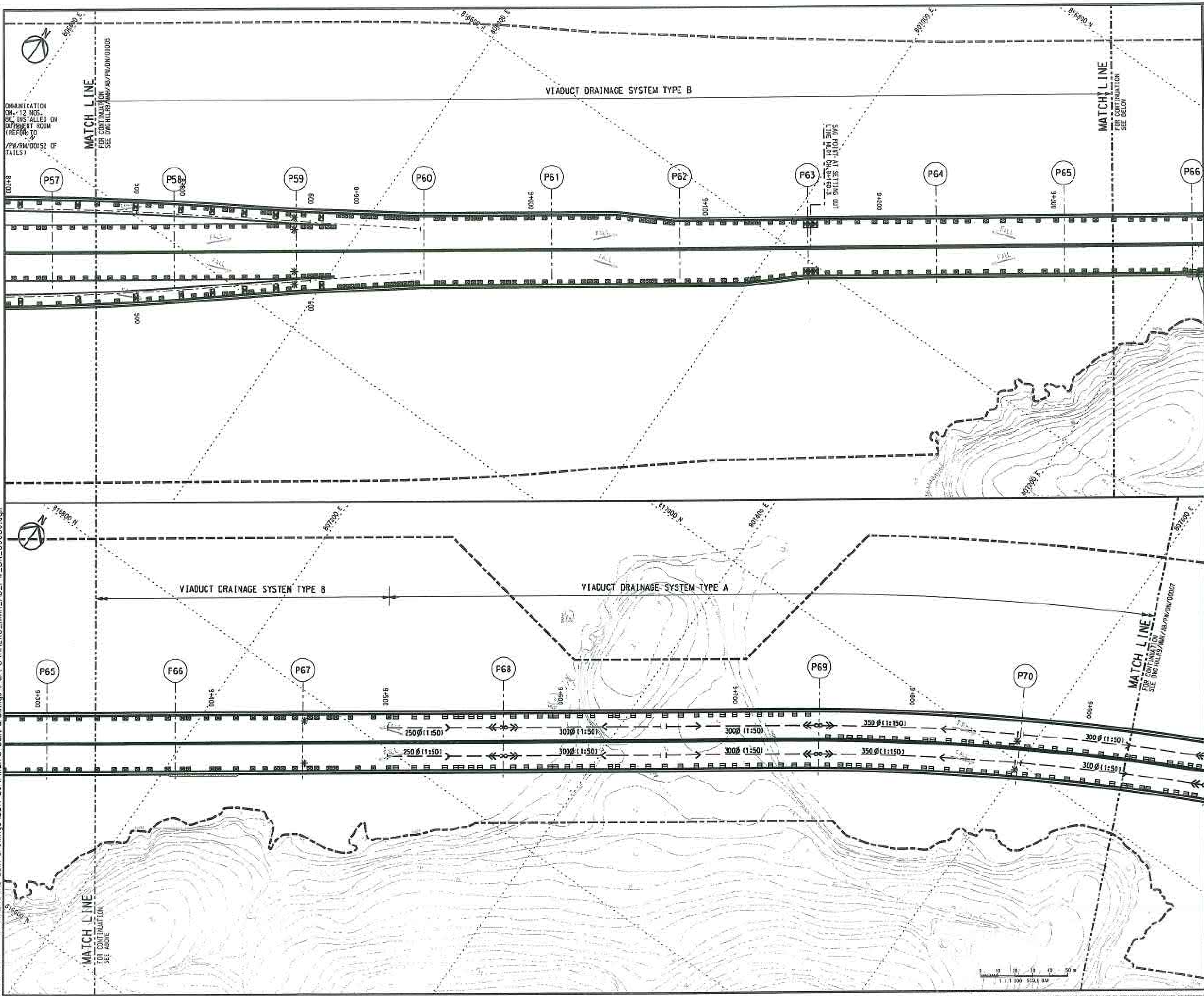

Printed by : 1/30/2019
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NOTES

1. FOR NOTES AND LEGEND, REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.

As-built Drawing

Prepared by the Contractor "DCVJV"

Mr. W.K.Poon (Project Director) — Date 11/01/19

Checked by the Designer "Mott MacDonald"

Dr. H.T.Cheng (Designer) — Date 11/01/19

Endorsed by the Design Checker "AECOM"

Ir. Charles Luk (Design Checker) — Date 11/01/19

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald — YWL Engineering

ARUP 奥雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

VIADUCT DRAINAGE SYSTEM LAYOUT

Drawing no. HKLR9/MMH/AB/PW/DN/00006			-
Design AL	PL	Approved HTC	AS-BUILT
Scale 1:1000 (IN A1)			-
HKLR9		Sheet 5 OF 8	
File name HKLR9_MMH_AB_PW_DN_00006.dgn			

路政署 HIGHWAYS DEPARTMENT

VIADUCT DRAINAGE SYSTEM TYPE A

MATCH LINE
FOR CONTINUATION
SEE DWG HKLR9/MMH/AB/PW/DN/00006

MATCH LINE
FOR CONTINUATION
SEE ABOVE

MATCH LINE
FOR CONTINUATION
SEE DWG HKLR9/MMH/AB/PW/DN/00008

P71 P72 P73 P74 P75 P76 P77 P78 P79

SETTING OUT POINT AT LINE NO.01 CH.10+040

HKO'S ANEMOMETER MAST ON HKLR VIADUCT AT CH.10+183 (REFER TO DRAWING NO. HKLR9/MMH/AB/PW/RW/00120 FOR DETAILS)

MAST FOR C&ED'S CCTV 4 AT CH.10+466 (REFER TO DRAWING NO. HKLR9/MMH/AB/PW/RW/00150 FOR DETAILS)

HKO'S ANEMOMETER MAST ON HKLR VIADUCT AT CH.10+956 (REFER TO DRAWING NO. HKLR9/MMH/AB/PW/RW/00120 FOR DETAILS)

PROPOSED NAVIGATION CHANNELS

CCTV 4 10+466 (REFER TO DRAWING NO. HKLR9/MMH/AB/PW/RW/00150 FOR DETAILS)

250Ø (1:50) 300Ø (1:50) 350Ø (1:100)

0 10 20 30 40 50 m
1 : 1 000 SCALE BAR

NOTES

1. FOR NOTES AND LEGEND, REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.

As-built Drawing

Prepared by the Contractor "DCVJV"
Mr. W.K.Poon (Project Director) — 11/01/19 Date

Checked by the Designer "Mott MacDonald"
Dr. H.T.Cheng (Designer) — 11/01/19 Date

Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) — 11/01/19 Date

Main Contractor: Dragages - China Harbour - VSL Joint Venture

Designer & Designer: Mott MacDonald YWL Engineering

Consultant: ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title:
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

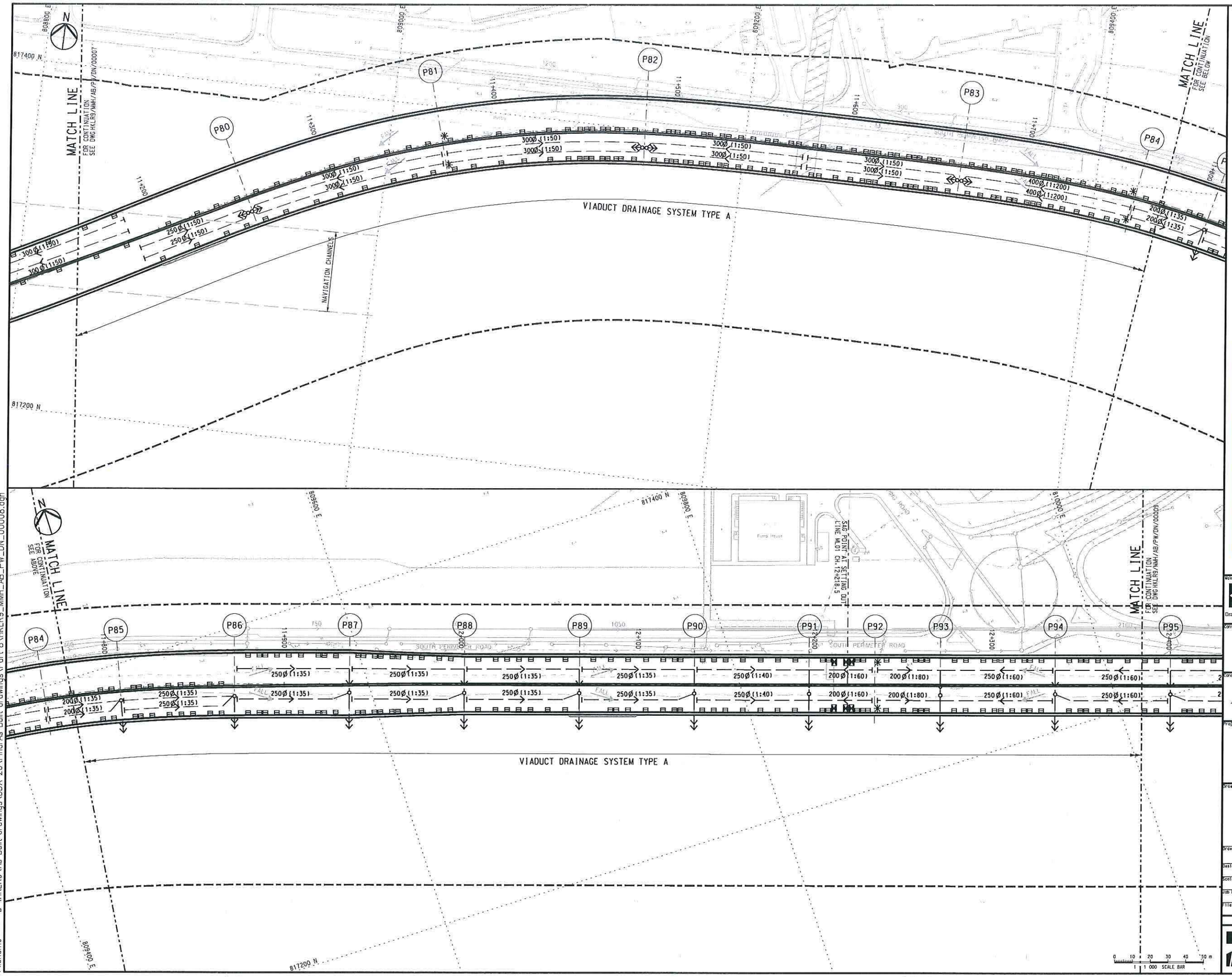
Drawing Title:
VIADUCT DRAINAGE SYSTEM LAYOUT

Drawing No.	Rev.
HKLR9/MMH/AB/PW/DN/00007	-

Design	Drawn	Approved	Status
AL	PL	HTC	AS-BUILT
Scale: 1:1000 (IN A1)		Approved	-
Job No.: HKLR9		Sheet No.: 6 OF 8	
File Name: HKLR9_MMH_AB_PW_DN_00007.dgn			

路政署 HIGHWAYS DEPARTMENT

Printed by : 1/30/2019
Filename : D:\HKLR9\As-Built drawings\20A 20\Final As-Built drawings\Port 8\HKLR9_MMH_AB_PW_DN_00007.dgn



NOTES

1. FOR NOTES AND LEGEND, REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.

As-built Drawing

Prepared by the Contractor "DCVJV"

04JUN2019

Mr. W.K.Poon (Project Director) Date

Checked by the Designer "Mott MacDonald"

04JUN2019

Dr. H.T.Cheng (Designer) Date

Endorsed by the Design Checker "AECOM"

04JUN2019

Ir. Charles Luk (Design Checker) Date

Main Contractor

Dragages - China Harbour - VSL Joint Venture 實嘉-中國海灣-威斯利聯營

Contractor's Designer

Mott MacDonald YWL Engineering

Consultant

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title

VIADUCT DRAINAGE SYSTEM LAYOUT

Drawing no.				Rev.
HKLR9/MMH/AB/PW/DN/00008				-
Design	Drawn	Approved	Status	
AL	PL	HTC	AS-BUILT	
Scale		Approved		
1:1000 (IN A1)		-		
Job No.		Sheet No.		
HKLR9		7 OF 8		

File name: HKLR9_MMH_AB_PW_DN_00008.dgn

路政署 HIGHWAYS DEPARTMENT

Printed by : 6/4/2019
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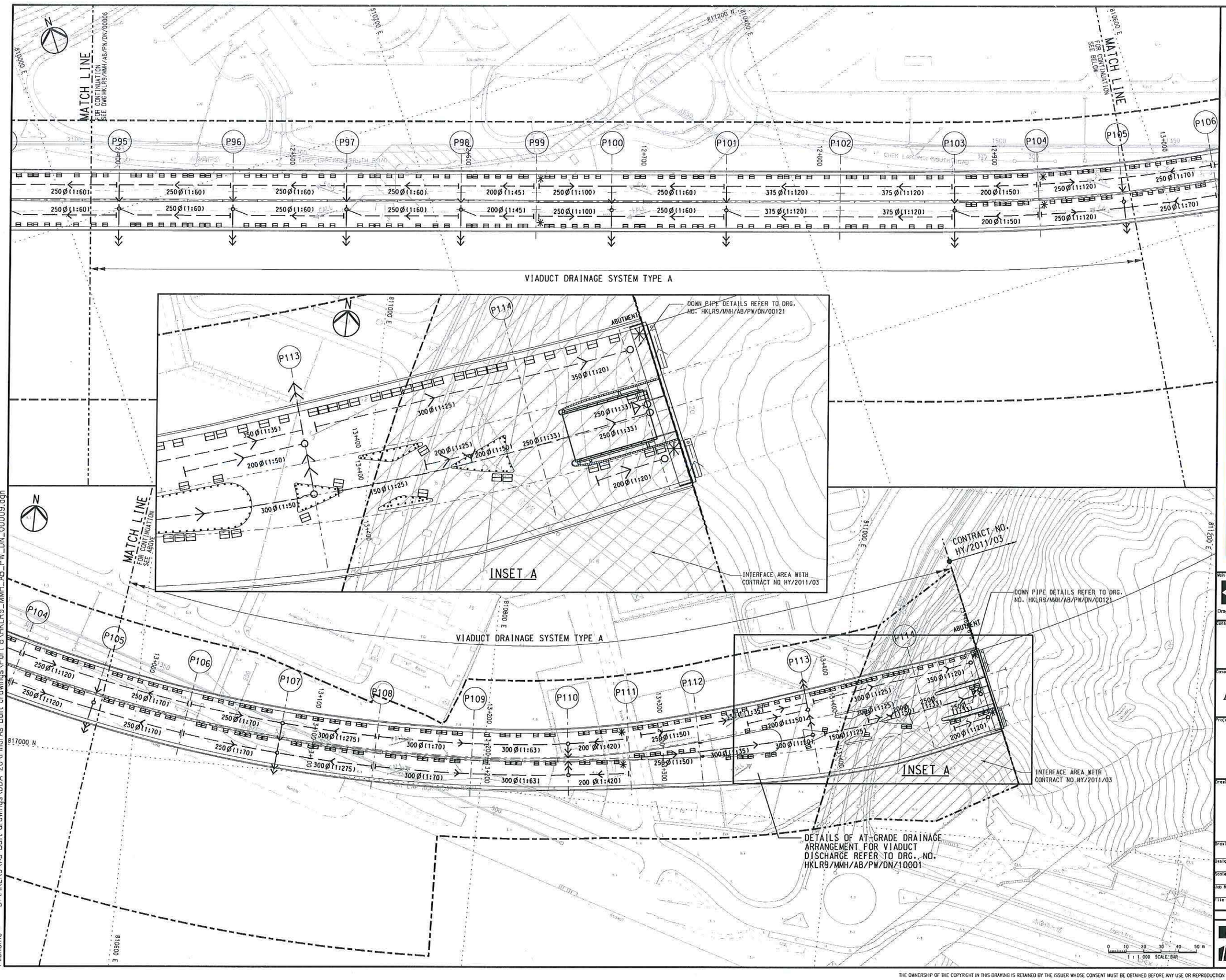

NOTES

1. FOR NOTES AND LEGEND, REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. DETAILS OF SUB-SOIL DRAIN REFER TO THE DRG. NO. HKLR9/MMH/AB/AI/LS/00551 UNDER LANDSCAPES DDA SUBMISSION.

LEGEND

INTERFACE AREA

As-built Drawing

Prepared by the Contractor "DCVJV"

04JUN2019

Mr. W.K.Poon (Project Director) Date

Checked by the Designer "Mott MacDonald"

04JUN2019

Dr. H.T.Cheng (Designer) Date

Endorsed by the Design Checker "AECOM"

04JUN2019

Ir. Charles Luk (Design Checker) Date

Main Contractor

Dragages - China Harbour - VSL Joint Venture 實嘉-中國海灣-威勝利聯營

Contractor's Designer

Mott MacDonald YWL Engineering

Consultant

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title

VIADUCT DRAINAGE SYSTEM LAYOUT

Drawing no.			Rev.
HKLR9/MMH/AB/PW/DN/00009			-
Design: AL	Drawn: PL	Approved: HTC	Status: AS-BUILT
Scale: 1:1000 (IN A1)		Approved: -	
Job No.: HKLR9		Sheet No.: 8 OF 8	
File name: HKLR9_MMH_AB_PW_DN_00009.dgn			

路政署 HIGHWAYS DEPARTMENT

Printed by : 6/4/2019
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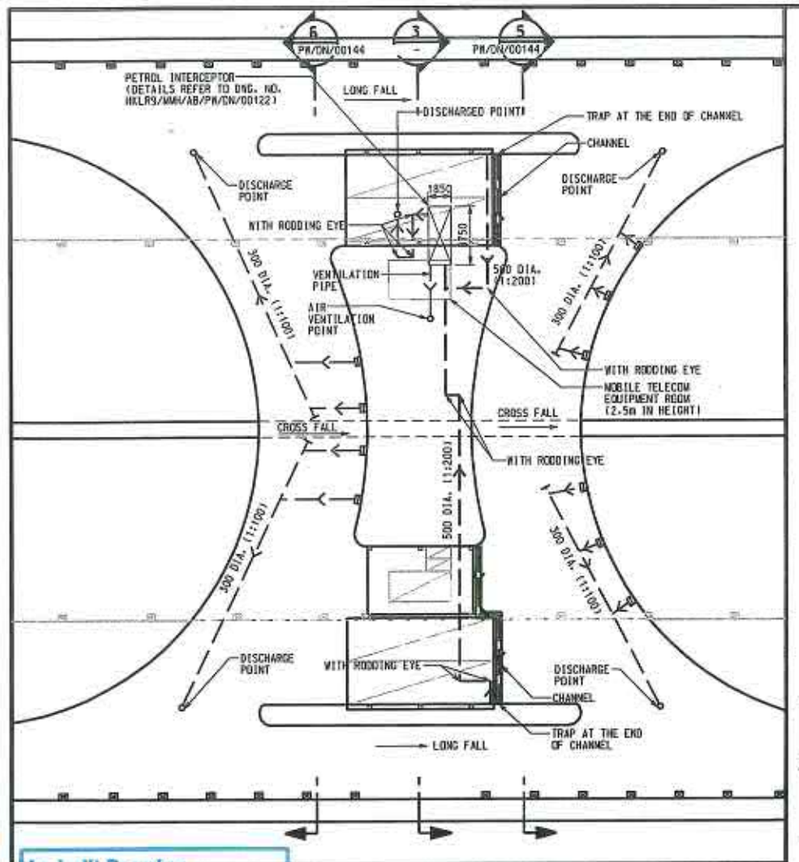
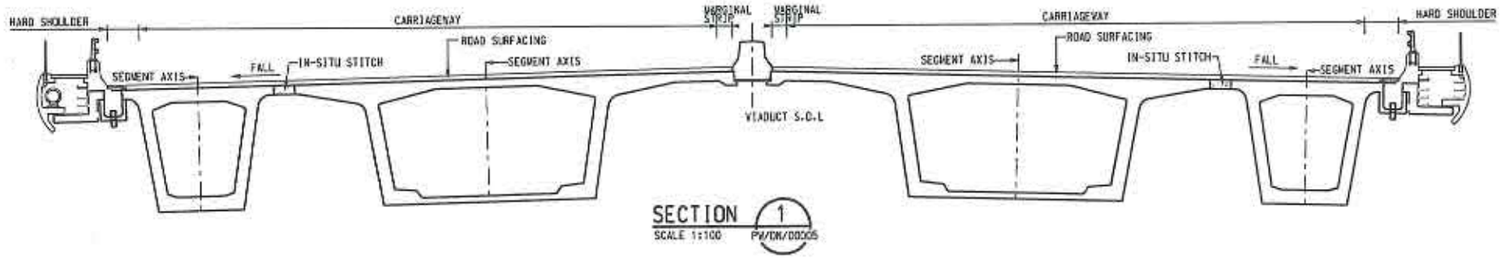
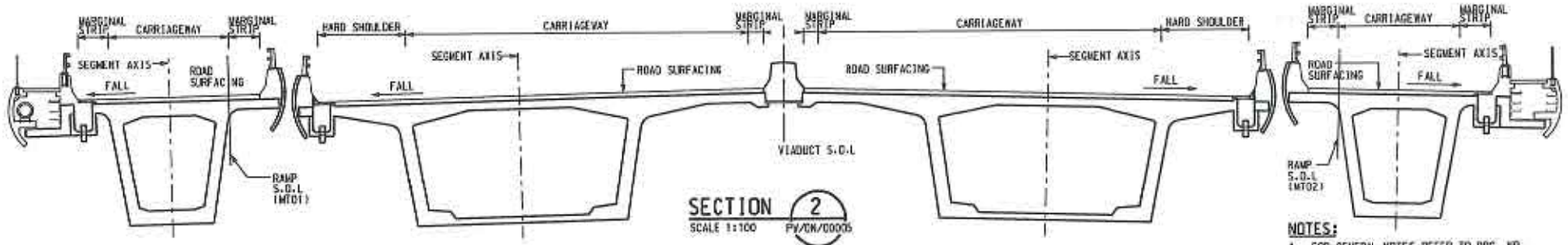




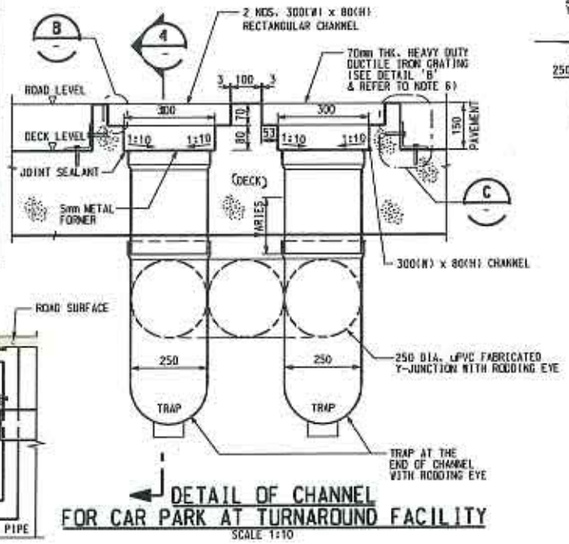
SECTION 1
SCALE 1:100 PW/DN/00005



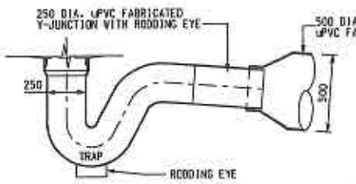
SECTION 2
SCALE 1:100 PW/DN/00005

NOTES:

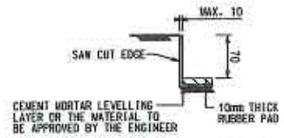
1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. DETAILS OF GRATING REFERS TO HIGHWAY STANDARD DRG. NO. H3155.
3. DETAILS OF TREATMENT TO THE TOP OF PETROL INTERCEPTOR REFER TO TO DSD STANDARD DRG. NO. DS1032.
4. DETAILS OF COVERS TO ACCESS OPENING AND DESILTING OPENINGS REFER TO DSD STANDARD DRG. NO. DS1034.
5. DETAILS OF ACCESS LADDER REFERS TO HIGHWAY STANDARD DRG. NO. H3139A.
6. U-CHANNEL COVERS SHALL BE HEAVY DUTY DUCTILE IRON WITH BLACK BITUMEN COATING COMPLYING WITH BS EN 124 CLASS D400.
7. GENERAL NOTES FOR STRUCTURAL, STAINLESS STEEL AND CONCRETE SHALL REFER TO HIGHWAY DEPARTMENT STANDARD DRAWING HS134A



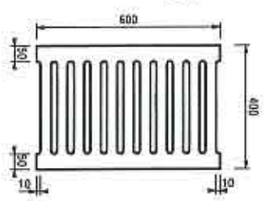
DETAIL OF CHANNEL FOR CAR PARK AT TURNAROUND FACILITY
SCALE 1:10



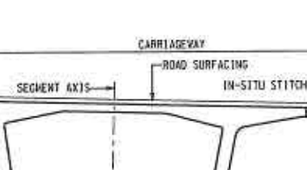
SECTION 4
SCALE N.T.S.



DETAIL B
SCALE 1:5

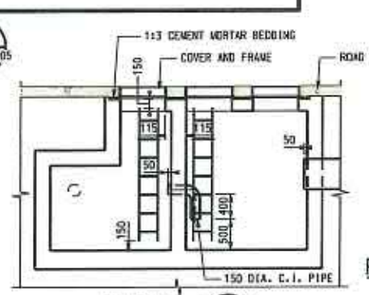


DETAIL 'B' - GRATING
SCALE 1:10

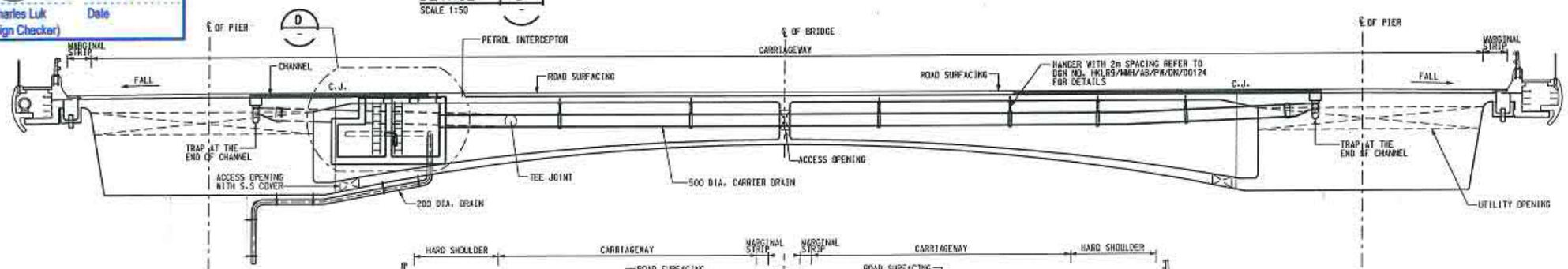


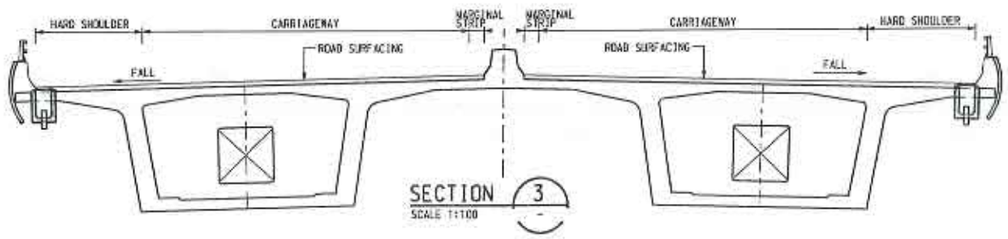
DETAIL C
SCALE 1:5

DETAIL A
SCALE 1:250 PW/DN/00005



DETAIL D
SCALE 1:50





SECTION 3
SCALE 1:100

As-built Drawing
Prepared by the Contractor "DCVJV"
11/01/19
Mr. W.K.Poon (Project Director) Date
Checked by the Designer "Mott MacDonald"
11/01/19
Dr. H.T.Cheng (Designer) Date
Endorsed by the Design Checker "AECOM"
11/01/19
Ir. Charles Luk (Design Checker) Date

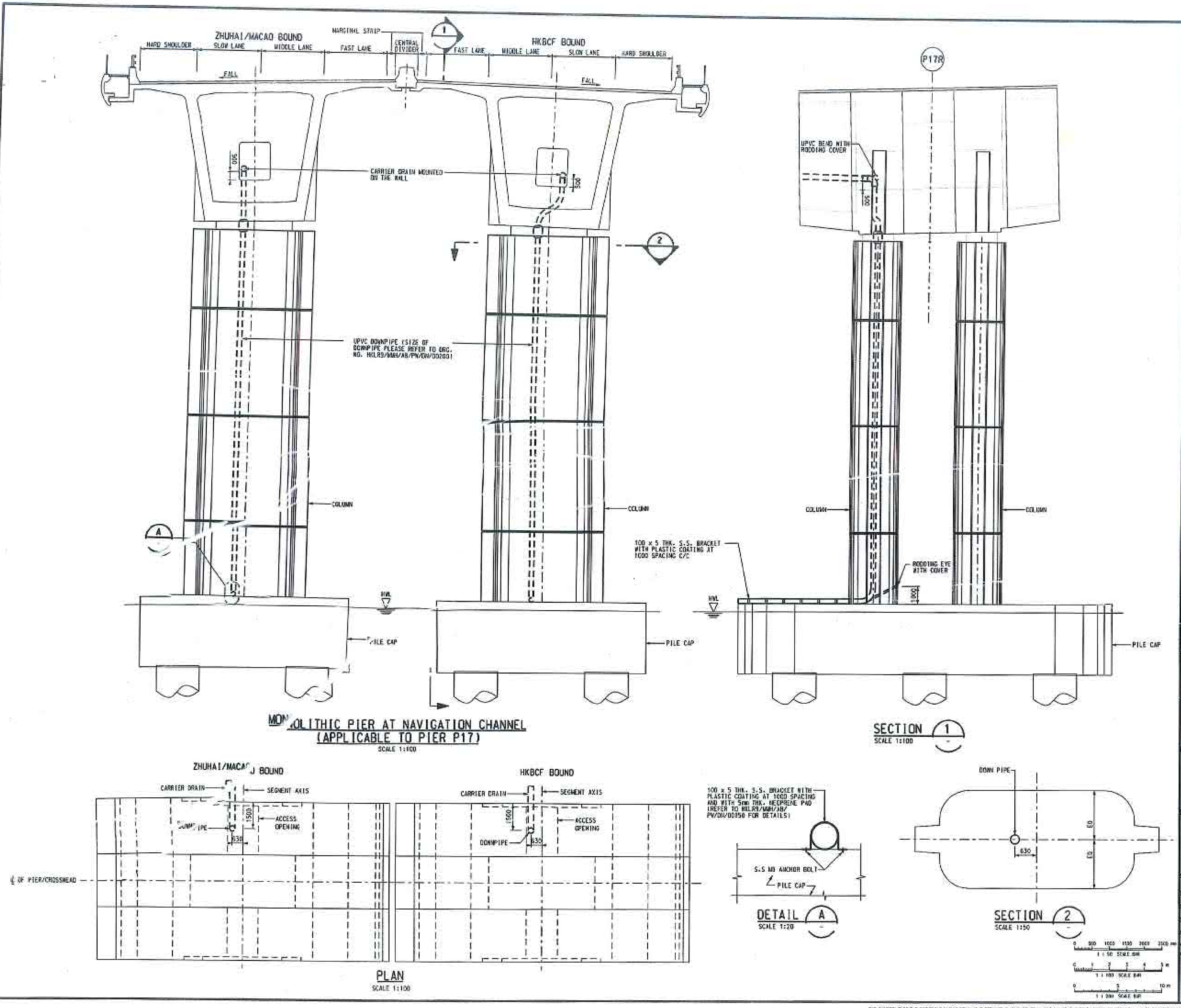
Contractor: Dragages - China Harbour - VSL Joint Venture
Contractor's Designer: Mott MacDonald; YWL Engineering
Consultant: ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title:
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title:
TYPICAL DRAINAGE DETAILS AT TURNAROUND FACILITY

Drawing no. HKLR9/MMH/AB/PW/DN/00102 Rev. -
Design AL Drawn PL Approved HTC Status AS-BUILT
Scale AS SHOWN (IN A1) Approved -
Job no. HKLR9 Sheet no. 1 OF 1
File name HKLR9_MMH_AB_PW_DN_00102.dgn

HIGHWAYS DEPARTMENT 路政署



NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIER P17.
3. DETAILS OF RODDING EYE REFERS TO DRG. NO. HKLR9/MMH/AB/PW/DN/00125.
4. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
5. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
6. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"
Mr. W.K.Poon (Project Director) 11/01/19 Date

Checked by the Designer "Mott MacDonald"
Dr. H.T.Cheng (Designer) 11/01/19 Date

Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) 11/01/19 Date

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald | YWL Engineering

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

TYPICAL DRAINAGE DOWNPIPE ARRANGEMENT - PIER P17

HKLR9/MMH/AB/PW/DN/00103 -

AL | SHL | HTC | AS-BUILT

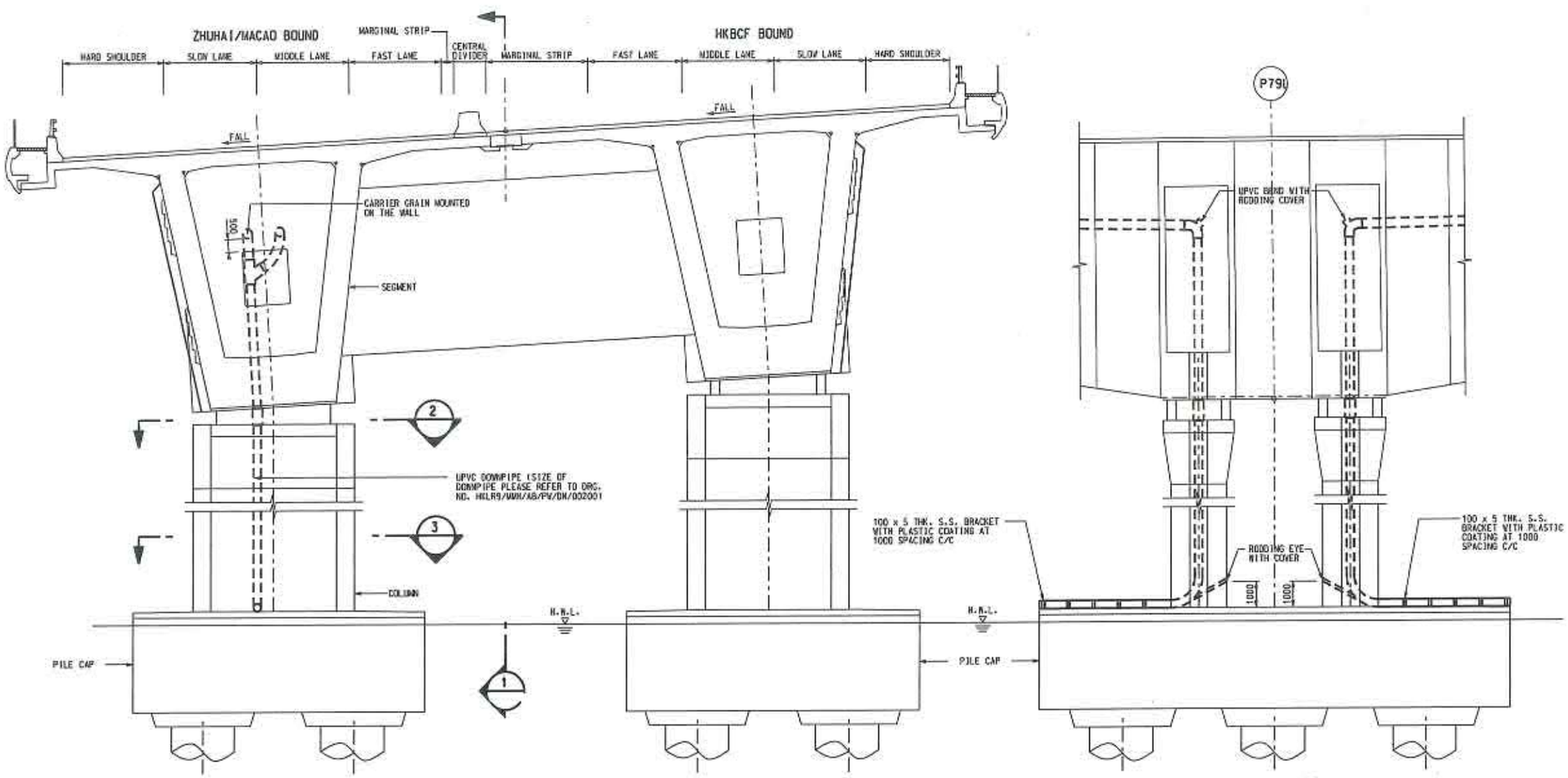
1:100 (IN A1) | -

HKLR9 | 1 OF 13

HKLR9_MMH_AB_PW_DN_00103.dgn

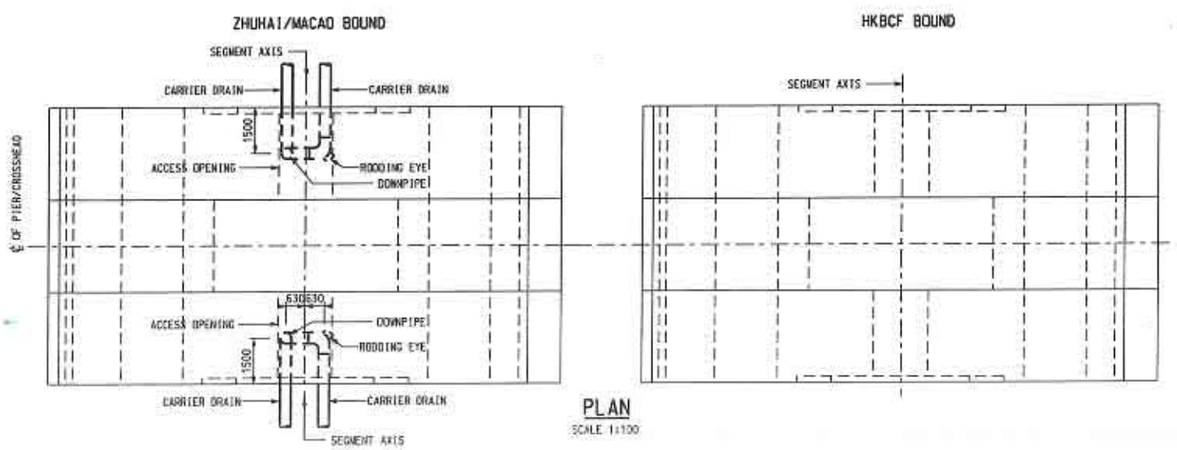
路政署 HIGHWAYS DEPARTMENT

Printed by : 1/30/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00103.dgn

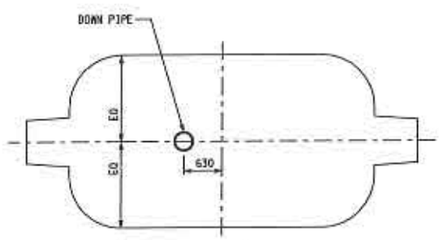


SECTION 1
SCALE 1:100

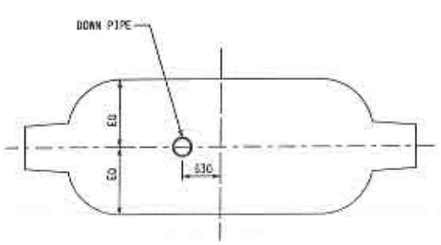
MONOLITHIC PIERS AT AIRPORT CHANNEL
(APPLICABLE TO PIER P79)
SCALE 1:100



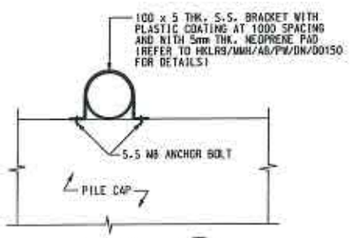
PLAN
SCALE 1:100



SECTION 2
SCALE 1:50



SECTION 3
SCALE 1:50



DETAIL A
SCALE 1:20

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIERS P79.
3. DETAILS OF RODDING EYE REFERS TO DRG. NO. HKLR9/MMH/AB/PW/DN/00125.
4. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
5. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
6. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing
Prepared by the Contractor "DCVJV"
Mr. W.K.Pun (Project Director) 11/01/19 Date
Checked by the Designer "Mott MacDonald"
Dr. H.T.Cheng (Designer) 11/01/19 Date
Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) 11/01/19 Date

Dragages - China Harbour - VSL Joint Venture
Mott MacDonald
YWL Engineering
ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

TYPICAL DRAINAGE
DOWNPIPE ARRANGEMENT - PIER P79

Drawing no.	HKLR9/MMH/AB/PW/DN/00104		Rev. -
Design AL	Drawn SHL	Approved HTC	Original AS-BUILT
Scale 1:100 (IN A1)		Approved -	
Job no. HKLR9		Sheet no. 2 OF 13	
File name HKLR9_MMH_AB_PW_DN_00104.dgn			

路政署 HIGHWAYS DEPARTMENT

Printed by : 1/30/2019
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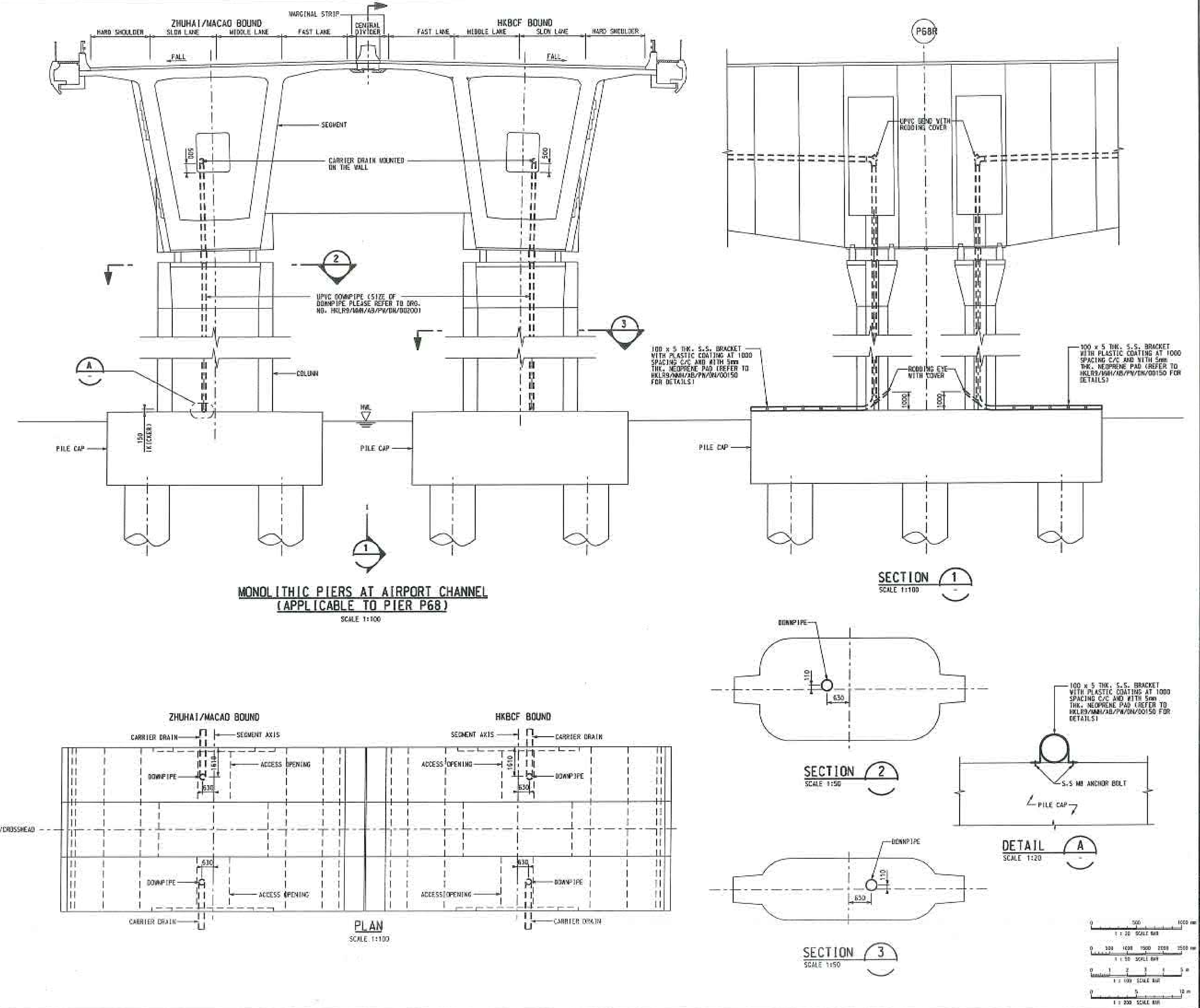

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIERS P68.
3. DETAILS OF RODDING EYE REFERS TO DRG. NO. HKLR9/MMH/AB/PW/DN/00125.
4. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
5. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
6. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.
7. STAINLESS STEEL FOR BRACKET SHALL BE GRADE 316 S33 AND STAINLESS STEEL ANCHOR BOLT SHALL BE GRADE A4-80.

As-built Drawing
Prepared by the Contractor "DCVJV"
Mr. W.K. Poon (Project Director) Date 11/01/19
Checked by the Designer "Mott MacDonald"
Dr. H.T. Cheng (Designer) Date 11/01/19
Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) Date 11/01/19

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald
YWL Engineering

ARUP
奧雅納工程顧問
Ove Arup & Partners Hong Kong Limited

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

TYPICAL DRAINAGE
DOWNPIPE ARRANGEMENT - PIER P68

Drawing no.	HKLR9/MMH/AB/PW/DN/00105
Rev.	-
Design	AL
Drawn	SHL
Approved	HTC
Status	AS-BUILT
Scale	1:100 (IN A1)
Job No.	HKLR9
Sheet No.	3 OF 13
File name	HKLR9_MMH_AB_PW_DN_00105.dgn

路政署
HIGHWAYS DEPARTMENT

Printed by : 1/30/2019
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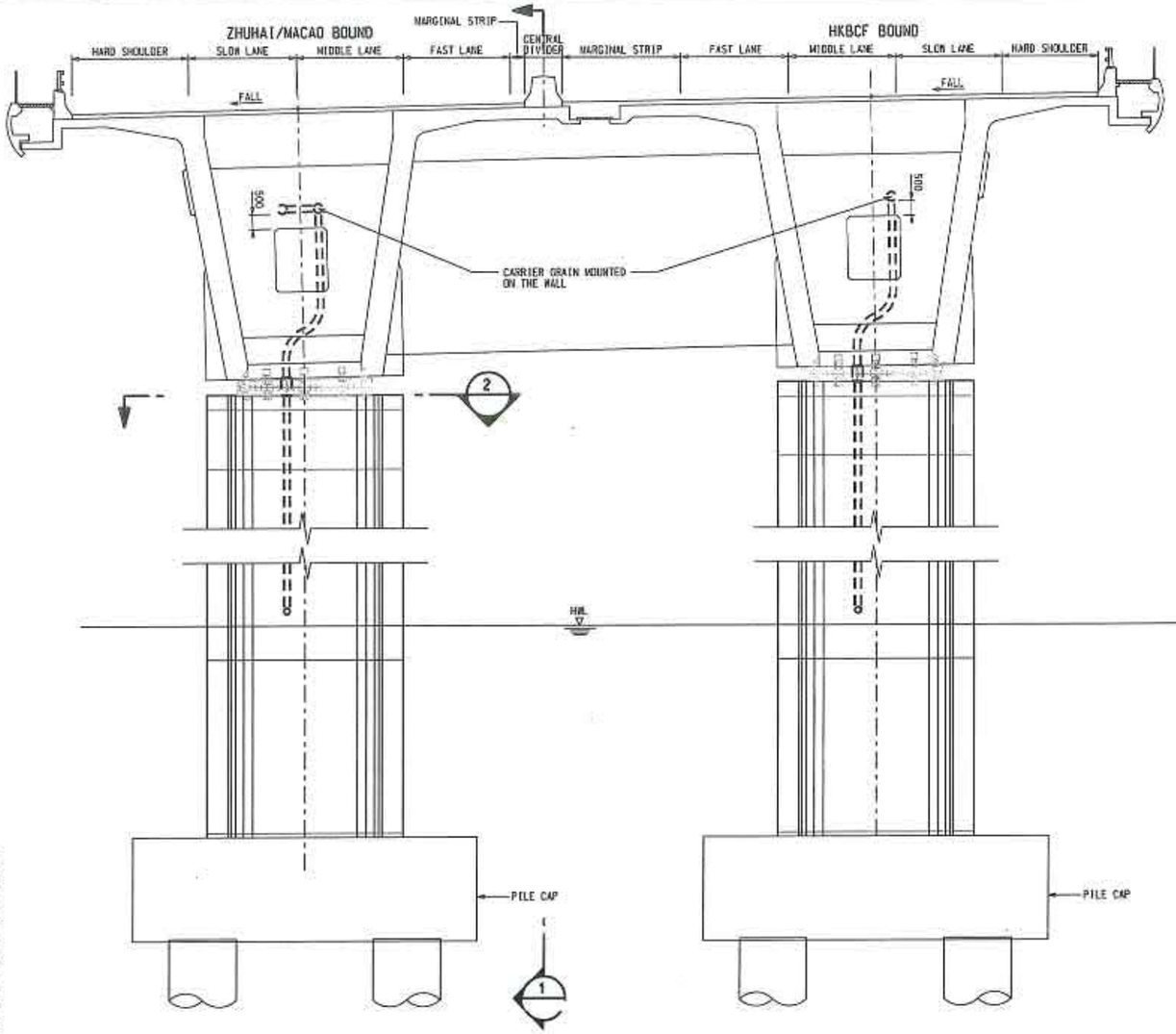
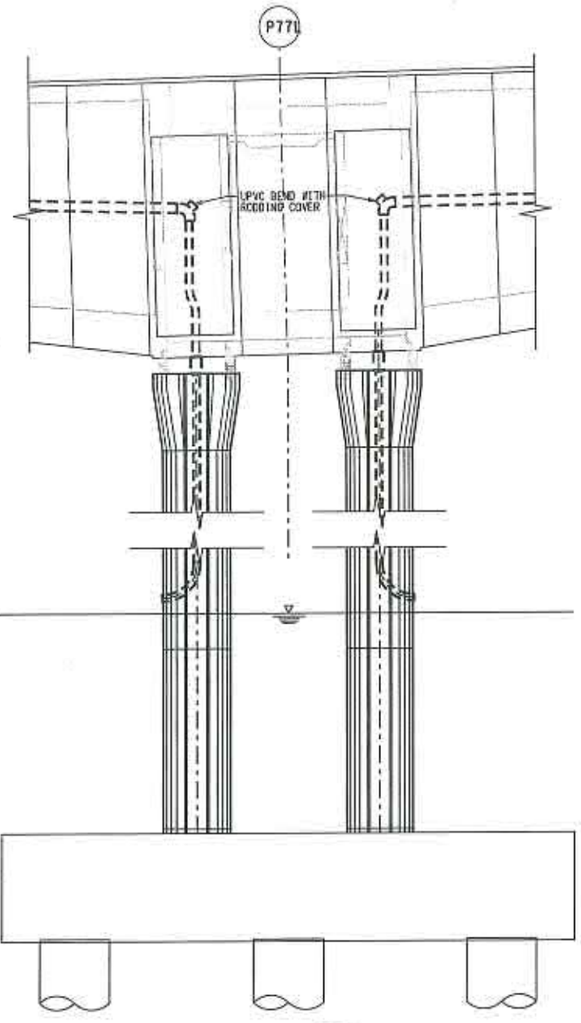
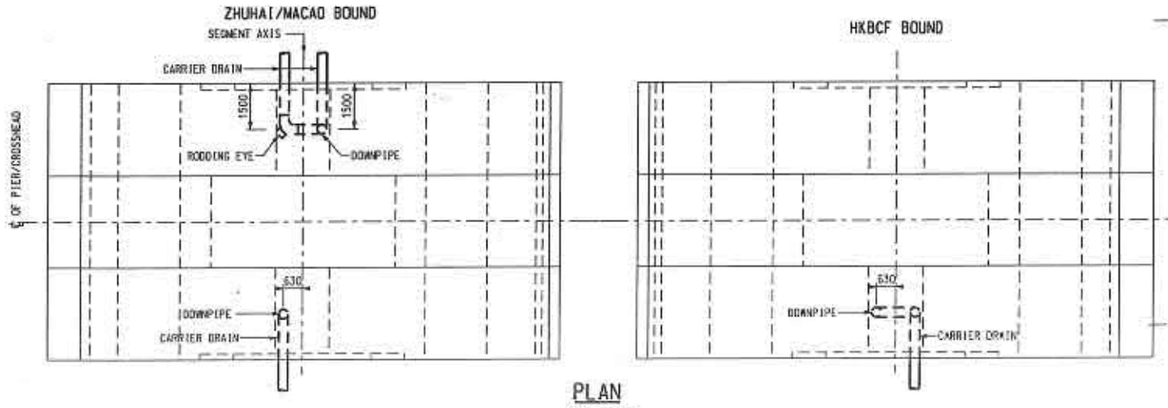


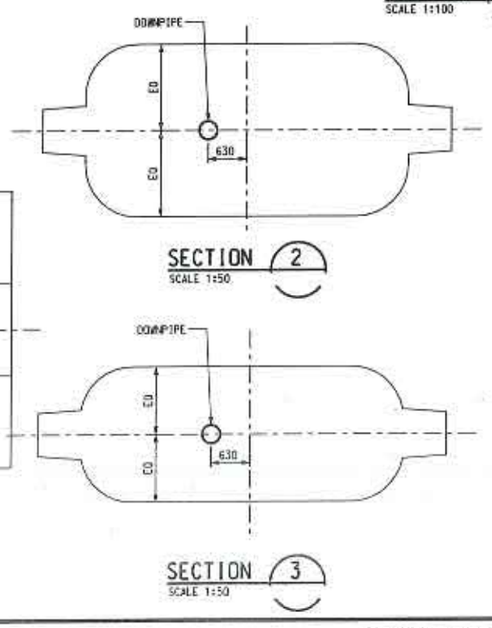
MONOLITHIC PIERS AT AIRPORT CHANNEL
(APPLICABLE TO PIER P77)
SCALE 1:100



SECTION 1
SCALE 1:100

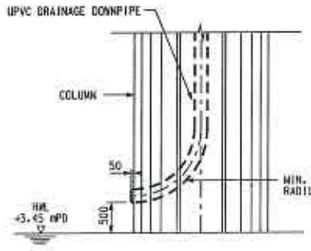


PLAN
SCALE 1:100



SECTION 2
SCALE 1:50

SECTION 3
SCALE 1:50



DETAIL A
SCALE 1:50

NOTES:

1. FOR GENERAL NOTES REFER TO DRG NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIER P77.
3. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
4. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
5. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"
Mr. WK Poon (Project Director) — 11/01/19 Date

Checked by the Designer "Mott MacDonald"
Dr. H.T. Cheng (Designer) — 11/01/19 Date

Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) — 11/01/19 Date

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald
YWL Engineering

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

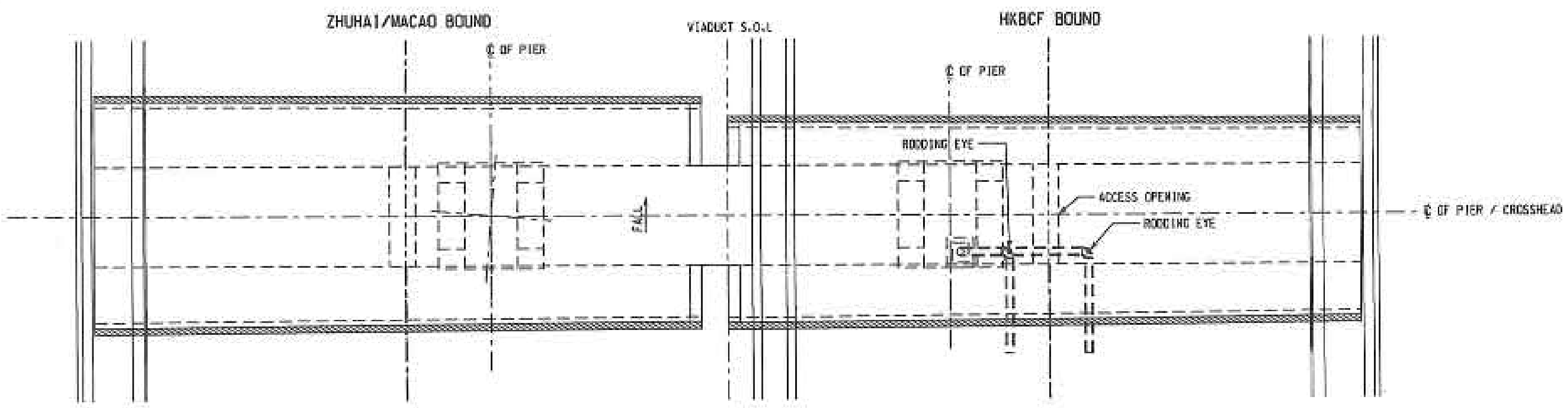
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

TYPICAL DRAINAGE
DOWNPIPE ARRANGEMENT - PIER P77

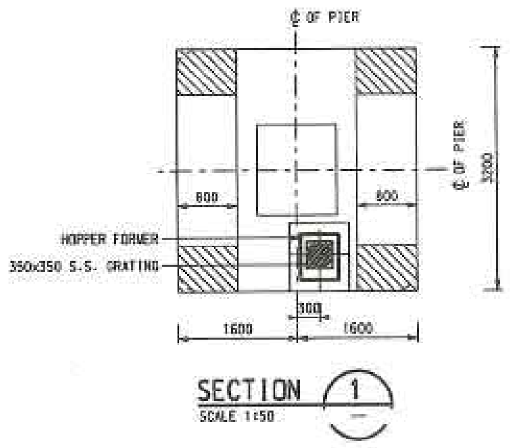
Drawing no. HKLR9/MMH/AB/PW/DN/00106 — Rev. -
Design AL | From SHL | Approved HTC | Status AS-BUILT
Scale 1:100 (IN A1) | Approved -
Job no. HKLR9 | Sheet no. 4 OF 13
File name HKLR9_MMH_AB_PW_DN_00106.dgn

路政署 HIGHWAYS DEPARTMENT

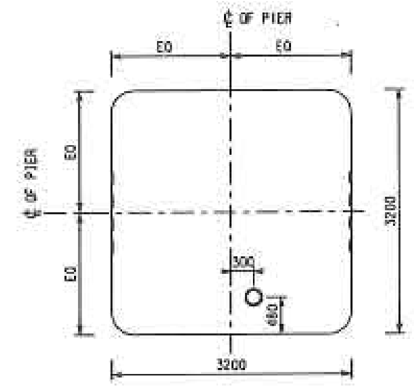
Printed by : 1/30/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00106.dgn
D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00106.dgn



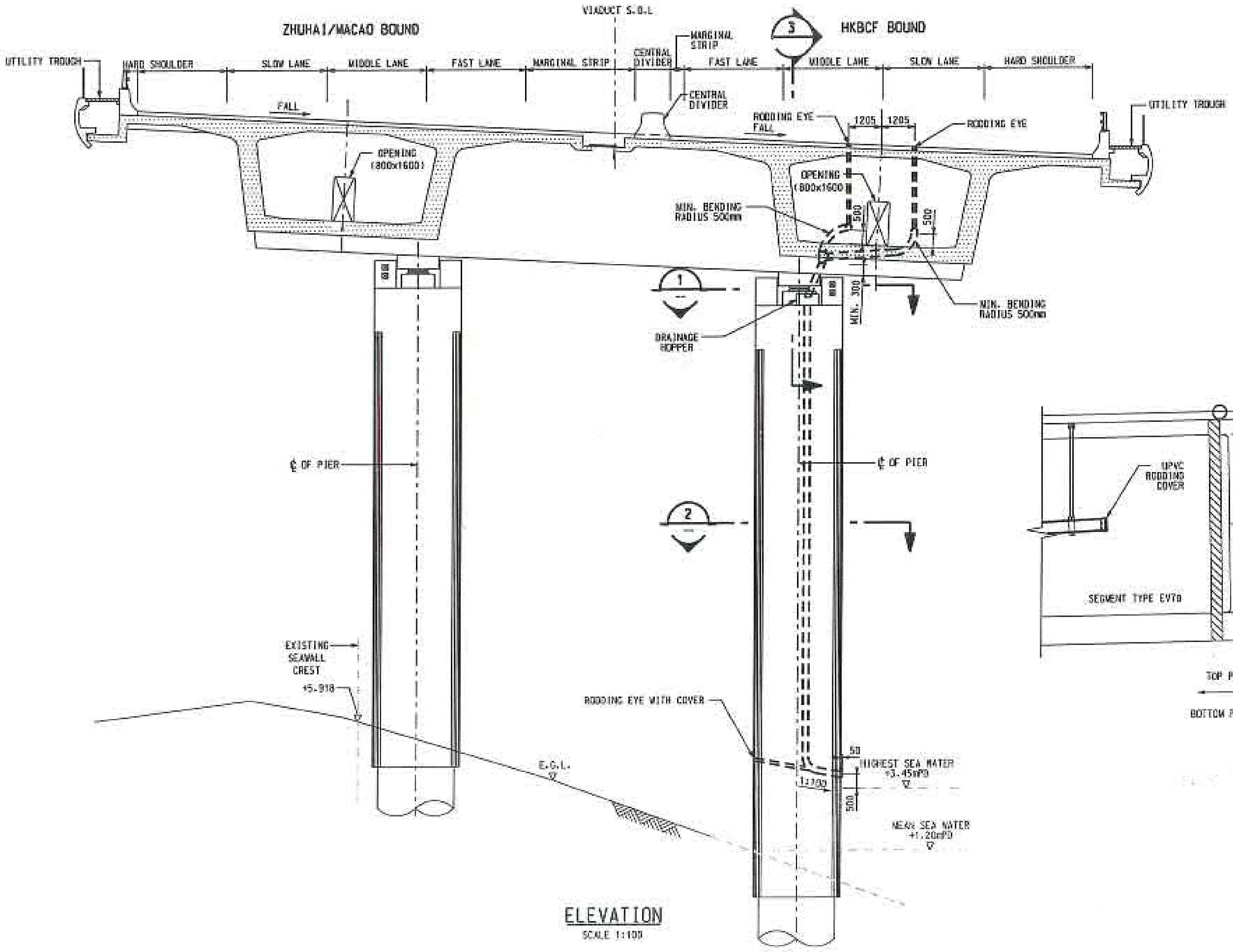
PLAN
SCALE 1:100



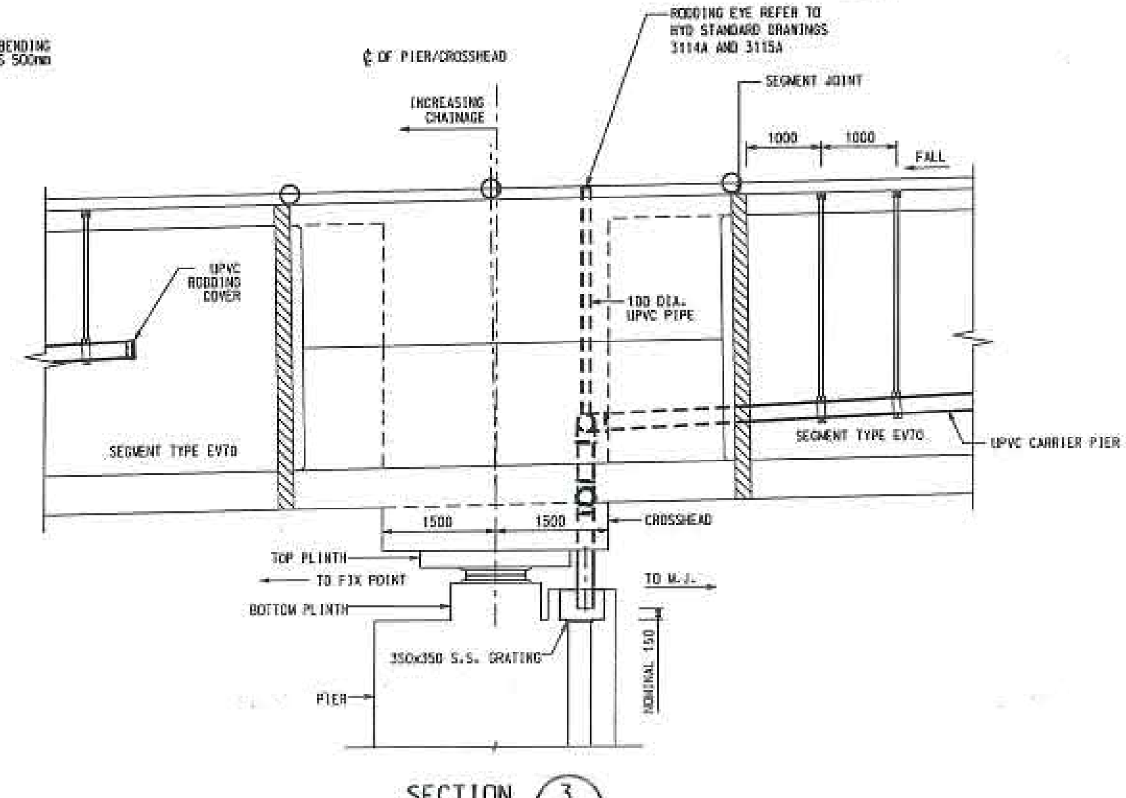
SECTION 1
SCALE 1:50



SECTION 2
SCALE 1:50



ELEVATION
SCALE 1:100



SECTION 3
SCALE 1:50

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE IS APPLICABLE TO PIER P85.
3. DETAILS OF RODDING EYE REFERS TO DRG. NO. HKLR9/MMH/AB/PW/DN/00125.
4. DETAILS OF DRAINAGE HOPPER REFERS TO DRG. NO. HKLR9/MMH/AB/PW/DN/00130.
5. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
6. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
7. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"
Mr. W.K. Poon (Project Director) — Date 11/01/19

Checked by the Designer "Mott MacDonald"
Dr. H.T. Cheng (Designer) — Date 11/01/19

Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) — Date 11/01/19

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald — YWL Engineering

ARUP — Ove Arup & Partners Hong Kong Limited

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

TYPICAL DRAINAGE DOWNPIPE ARRANGEMENT - PIER P85

Drawing no. HKLR9/MMH/AB/PW/DN/00107			Rev. -
AL	PL	HTC	AS-BUILT
AS SHOWN (IN A1)			-
HKLR9		5 OF 13	
HKLR9_MMH_AB_PW_DN_00107.dgn			

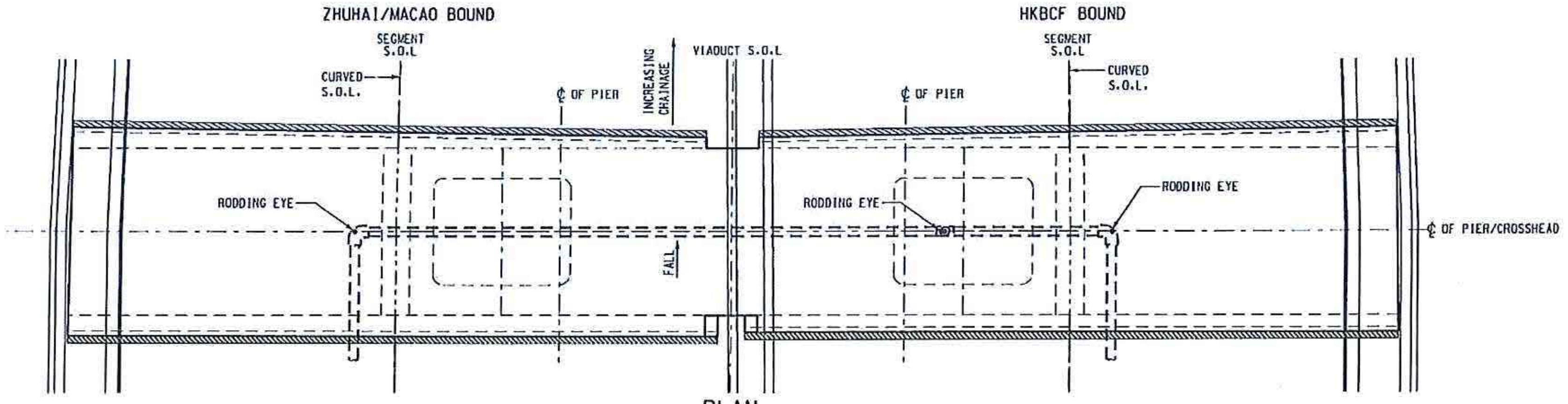
路政署 HIGHWAYS DEPARTMENT

Printed by : 1/30/2019
Filename : D:\HKLR9\As-Built drawings\00A 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00107.dgn

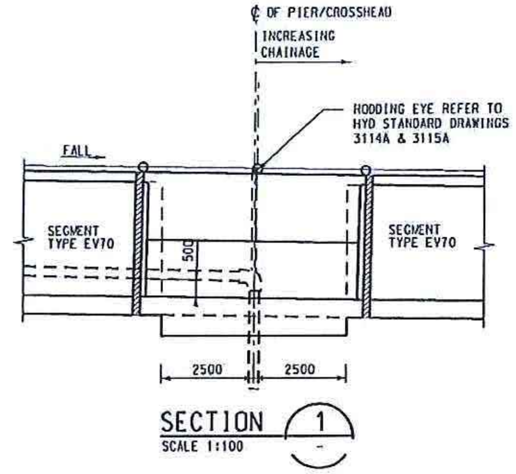
NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIERS P87, P88, P89, P90, P94, P95, P96, P97, P98, P101 AND P103.
3. DETAILS OF RODDING EYE REFERS TO DRG. NO. HKLR9/MMH/AB/PW/DN/00125.
4. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
5. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
6. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

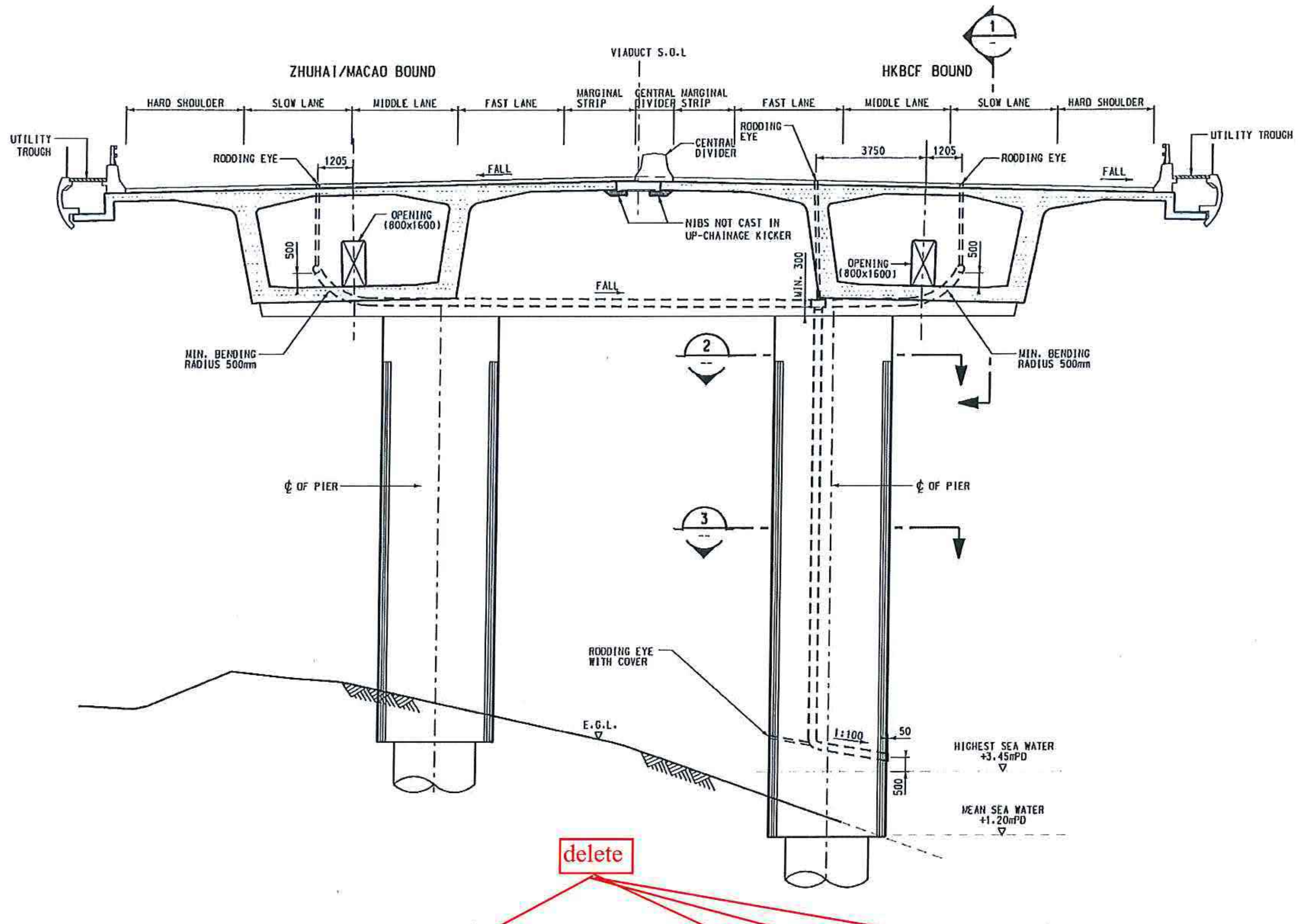
delete



PLAN
SCALE 1:100

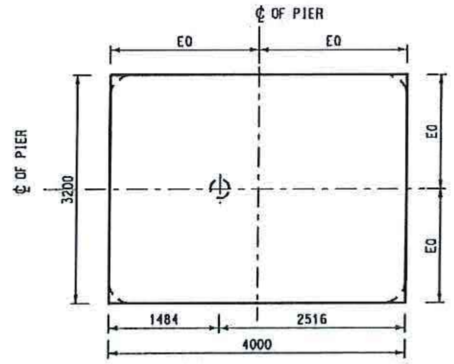


SECTION 1
SCALE 1:100
(SECTION @ SEGMENT S.O.L.)

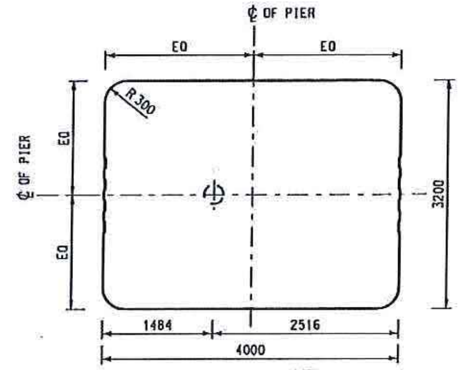


delete

MONOLITHIC PIERS AT LANDSIDE VIADUCT
(APPLICABLE TO PIER P87, P88, P89, P90, P94, P95, P96, P97, P98, P101 AND P103)
SCALE 1:100



SECTION 2
SCALE 1:50



SECTION 3
SCALE 1:50

As-built Drawing

Prepared by the Contractor "DCVJV"
Mr. W.K.Poon (Project Director) — Date 04JUN2019

Checked by the Designer "Mott MacDonald"
Dr. H.T.Cheng (Designer) — Date 04JUN2019

Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) — Date 04JUN2019

Main Contractor: Dragages - China Harbour - VSL Joint Venture

Contractor's Designer: Mott MacDonald, YWL Engineering

Consultant: ARUP 奥雅纳工程顾问 Ove Arup & Partners Hong Kong Limited

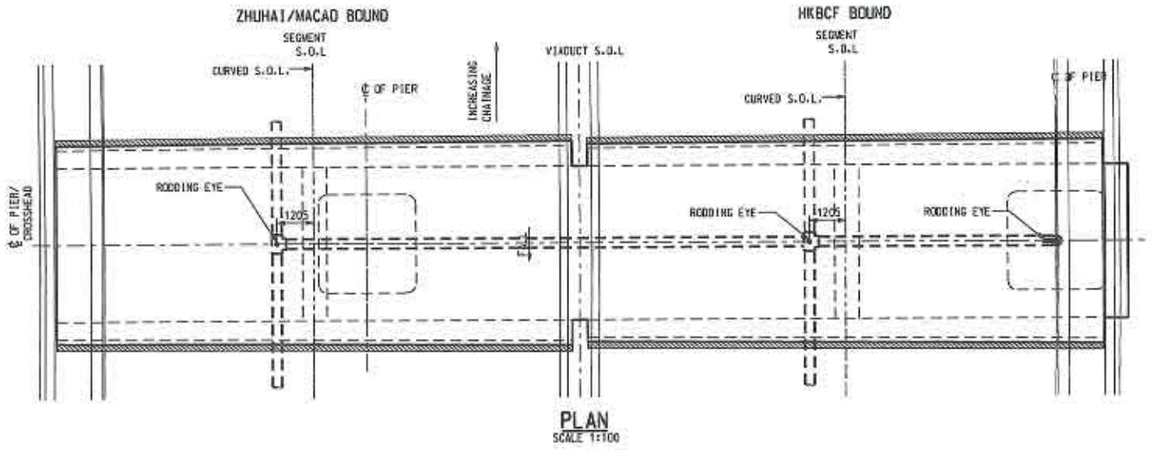
Project Title:
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

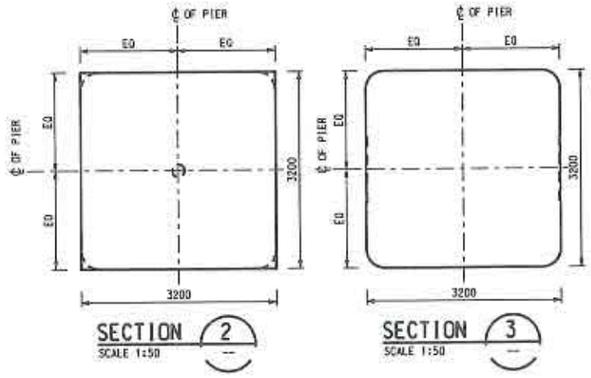
Drawing Title:
TYPICAL DRAINAGE DOWNPIPE ARRANGEMENT PIER P88, P89, P90, P94, P95, P97 AND P101

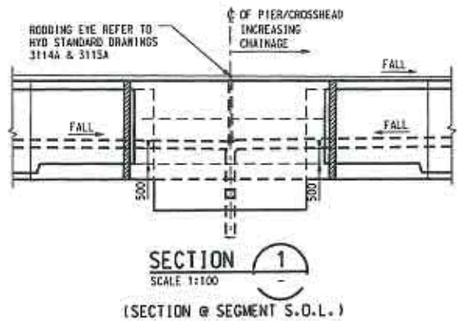
Drawing no.	HKLR9/MMH/AB/PW/DN/00108
Rev.	-
Design	AL
Drawn	PL
Approved	HTC
Status	AS-BUILT
Scale	AS SHOWN (IN A1)
Approved	-
Job No.	HKLR9
Sheet No.	6 OF 13
File name	HKLR9_MMH_AB_PW_DN_00108.dgn

路政署 HIGHWAYS DEPARTMENT

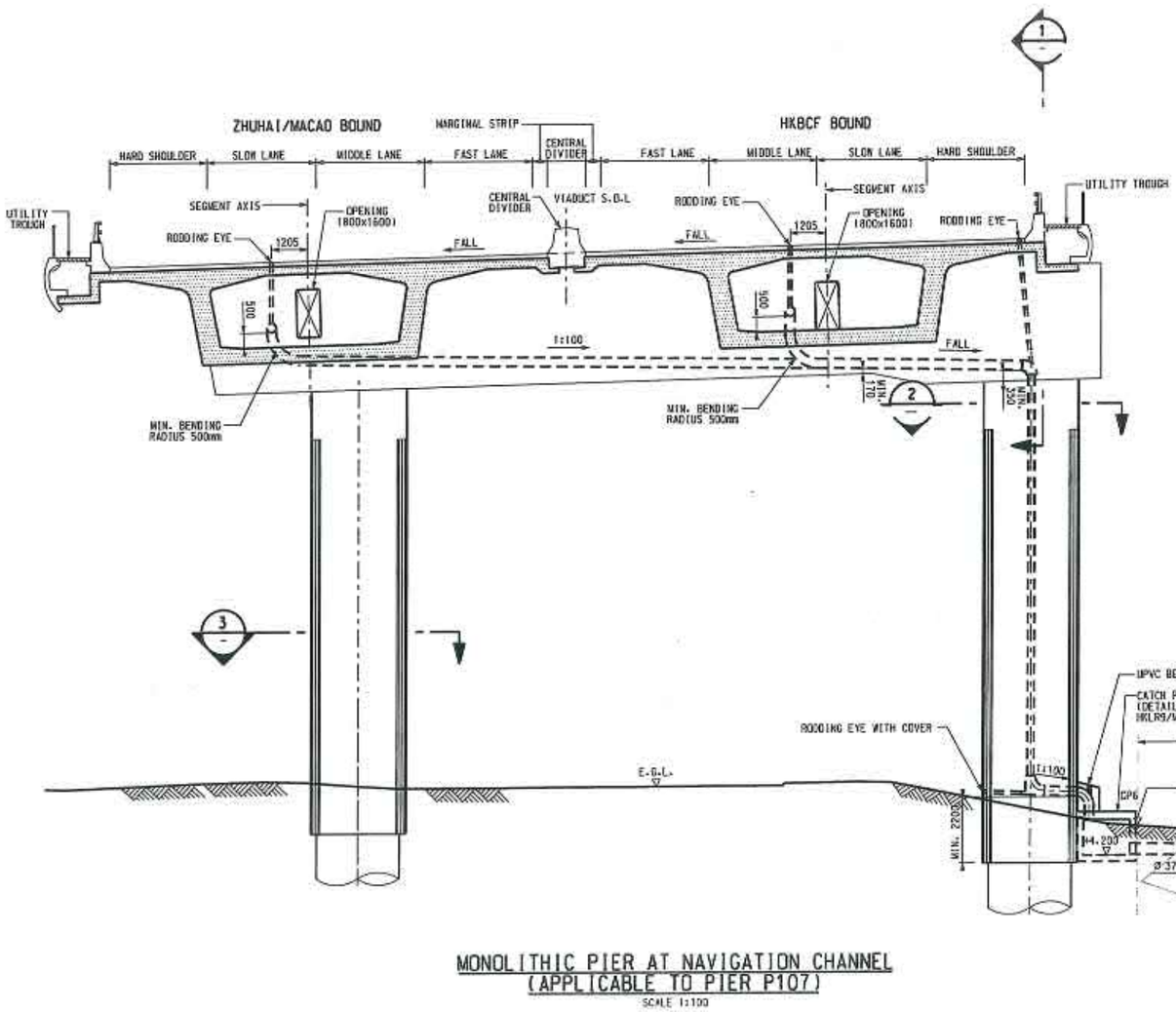
Printed by : 6/4/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00108.dgn







(SECTION @ SEGMENT S.O.L.)



MONOLITHIC PIER AT NAVIGATION CHANNEL
(APPLICABLE TO PIER P107)
SCALE 1:100

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MWH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE IS APPLICABLE TO PIER P107.
3. FOUNDATION : FOUNDATION OF MANHOLE VARIES WITH SITE CONDITION. THEREFORE, IT SHOULD BE DETERMINED ON SITE BY THE ENGINEER.
4. COVER AND FRAME NOT SHOWN ON PLAN FOR CLARITY.
5. DETAILS OF RODDING EYE REFERS TO DRG. NO. HKLR9/MWH/AB/PW/DN/00125.
6. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
7. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MWH/AB/PW/DN/C0001-00009.
8. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MWH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"
Mr. W.K. Poon (Project Director) — 11/01/19 Date

Checked by the Designer "Mott MacDonald"
Dr. H.T. Cheng (Designer) — 11/01/19 Date

Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) — 11/01/19 Date

Dragados - China Harbour - VSL Joint Venture

Mott MacDonald
YWL Engineering

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

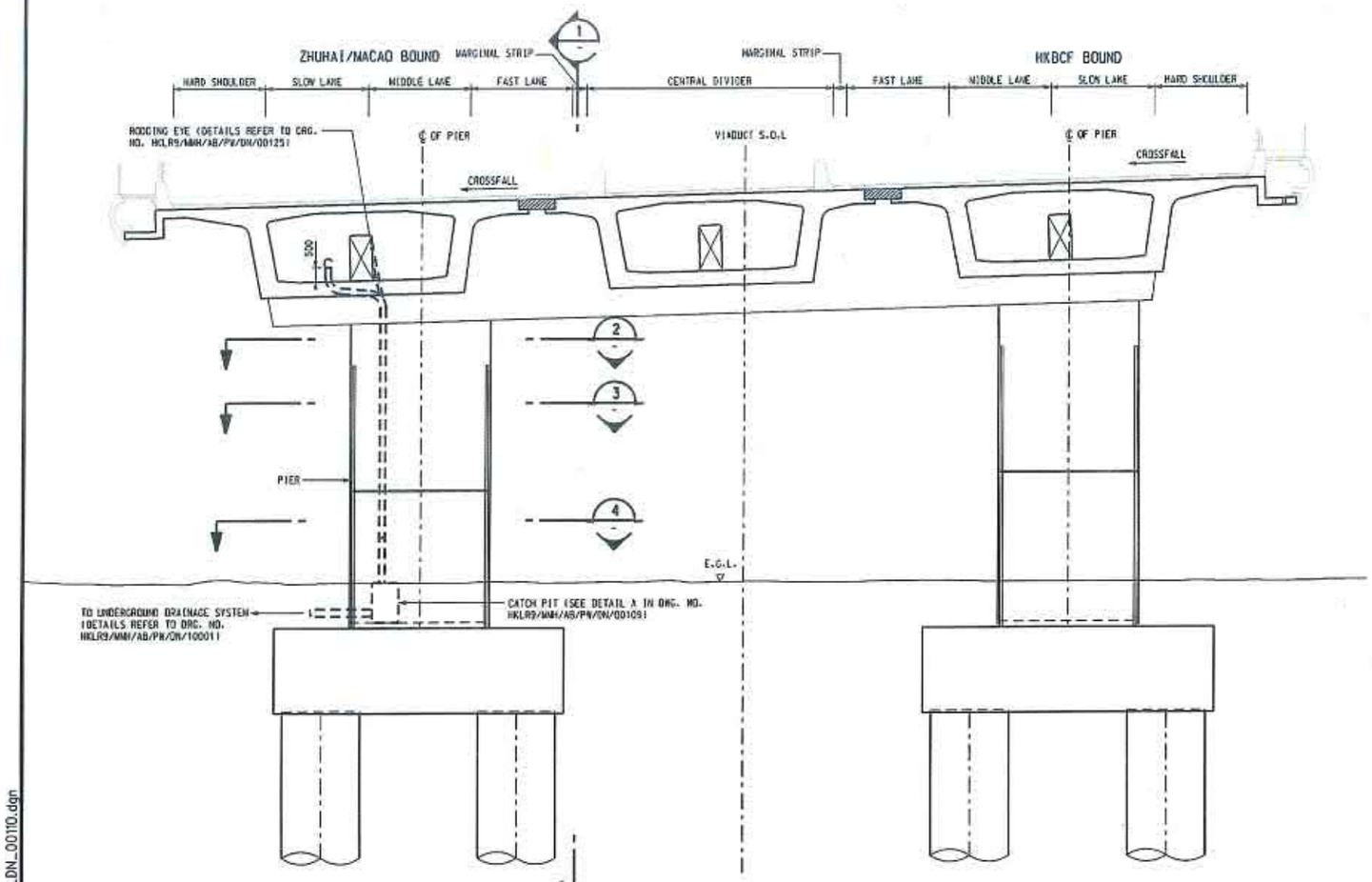
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

TYPICAL DRAINAGE
DOWNPIPE ARRANGEMENT - PIER P107

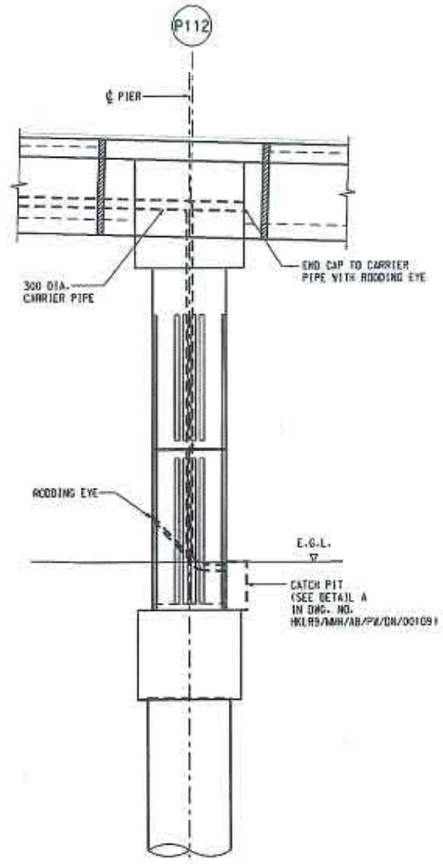
Drawing no.	Rev.
HKLR9/MWH/AB/PW/DN/00109	-
Design: AL / Drawn: PL / Approved: HTC / Status: AS-BUILT	
Scale: AS SHOWN (IN A1)	Approved: -
Job no.: HKLR9	Sheet no.: 7 OF 13
File name: HKLR9_MWH_AB_PW_DN_00109.dgn	

路政署 HIGHWAYS DEPARTMENT

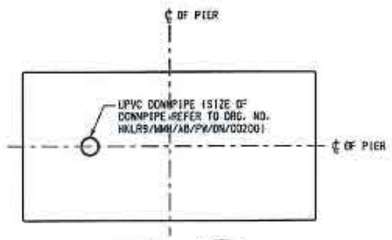
1:50 SCALE BAR
1:100 SCALE BAR



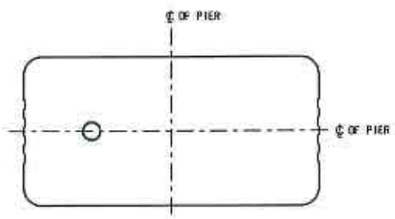
MONOLITHIC PIER AT LANDSIDE VIADUCT
(APPLICABLE TO PIER P112)
SCALE 1:100



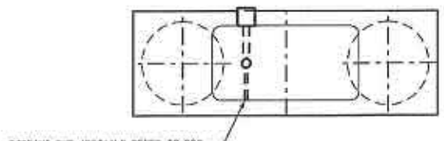
SECTION 1
SCALE 1:100



SECTION 2
SCALE 1:50



SECTION 3
SCALE 1:50



SECTION 4
SCALE 1:100

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE IS APPLICABLE TO PIER P.112.

As-built Drawing

Prepared by the Contractor "DCVJV"

Mr. W.K.Poon (Project Director) — 11/01/19 Date

Checked by the Designer "Mott MacDonald"

Dr. H.T.Cheng (Designer) — 11/01/19 Date

Endorsed by the Design Checker "AECOM"

Ir. Charles Luk (Design Checker) — 11/01/19 Date

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald | YWL Engineering

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

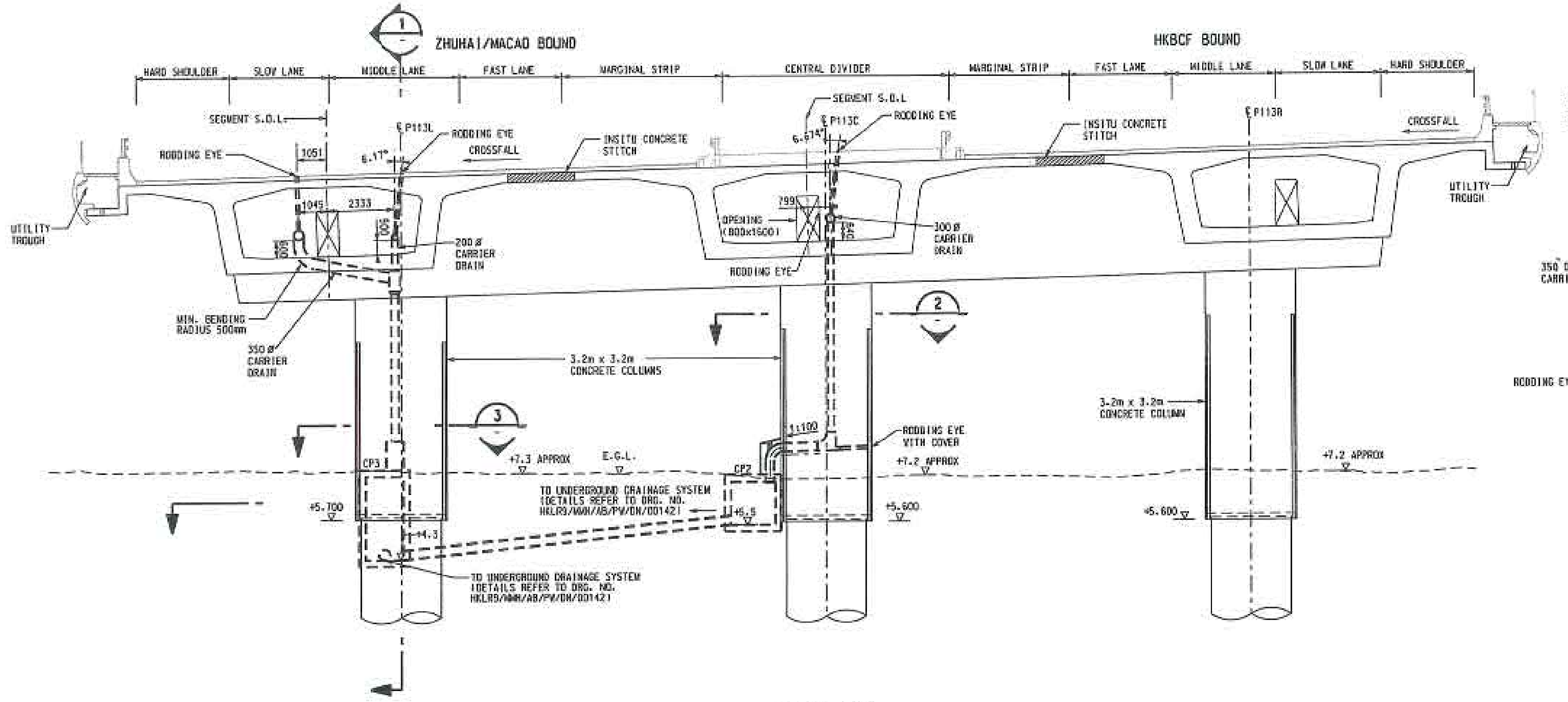
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

TYPICAL DRAINAGE DOWNPIPE ARRANGEMENT

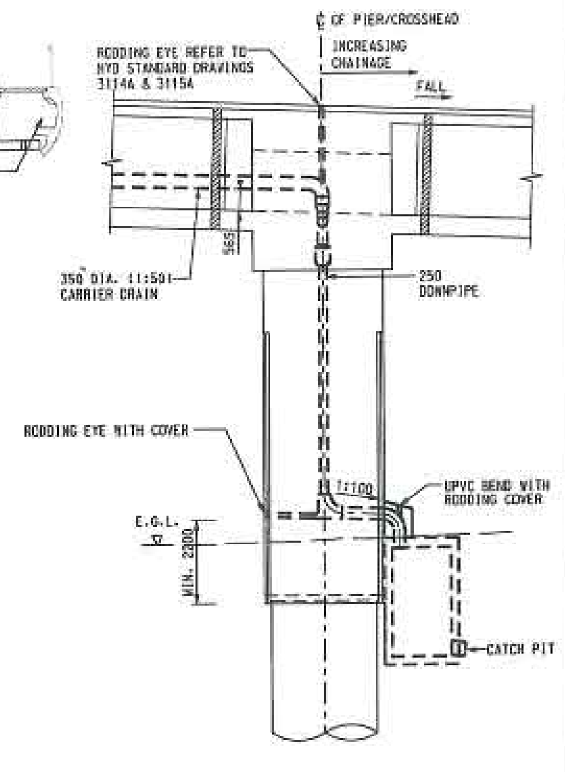
Drawing No.	HKLR9/MMH/AB/PW/DN/00110		Rev. -
Design AL	Draw PL	Approved HTC	Status AS-BUILT
Scale AS SHOWN (IN A1)		Approved -	
Job No. HKLR9		Sheet No. 8 OF 13	
File name HKLR9_MMH_AB_PW_DN_00110.dgn			

路政署 HIGHWAYS DEPARTMENT

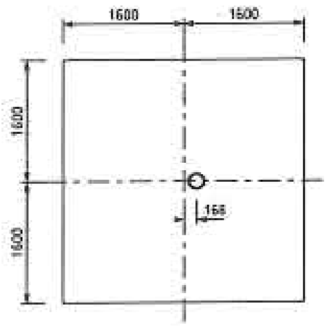
Printed by : 1/30/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00110.dgn



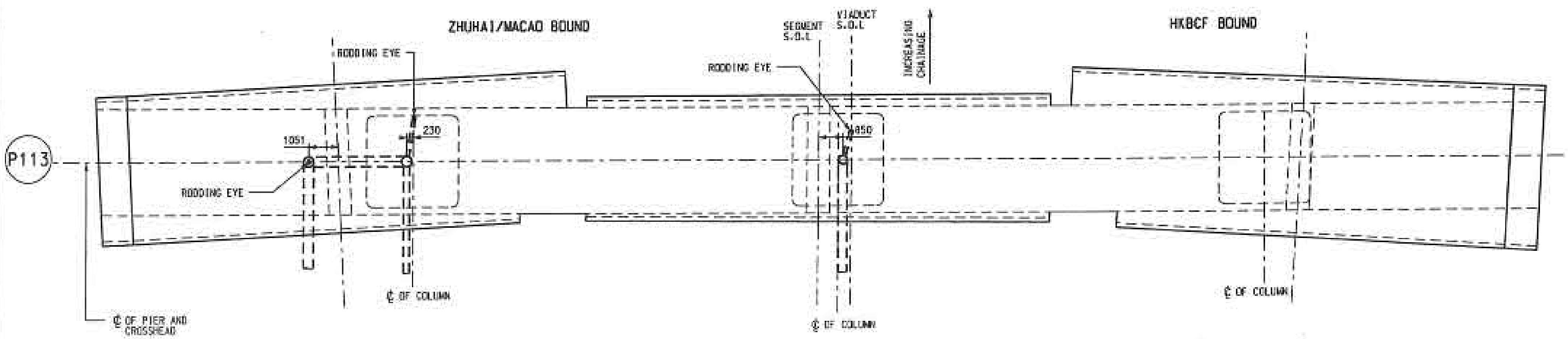
PIER 113
SCALE 1:100



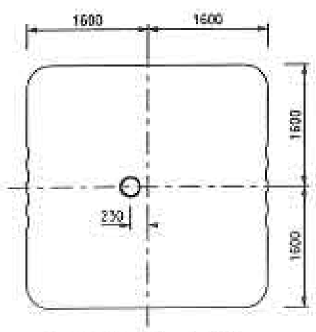
SECTION 1
SCALE 1:100



SECTION 2
SCALE 1:50



PLAN
SCALE 1:100



SECTION 3
SCALE 1:50

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE IS APPLICABLE TO PIER P.113.
3. DETAILS OF RODDING EYE REFERS TO DRG. NO. HKLR9/MMH/AB/PW/DN/00125.
4. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
5. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
6. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing
Prepared by the Contractor "DCVJV"
Mr. W.K. Poon (Project Director) Date 11/01/19
Checked by the Designer "Mott MacDonald"
Dr. H.T. Cheng (Designer) Date 11/01/19
Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) Date 11/01/19

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald | YWL Engineering

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

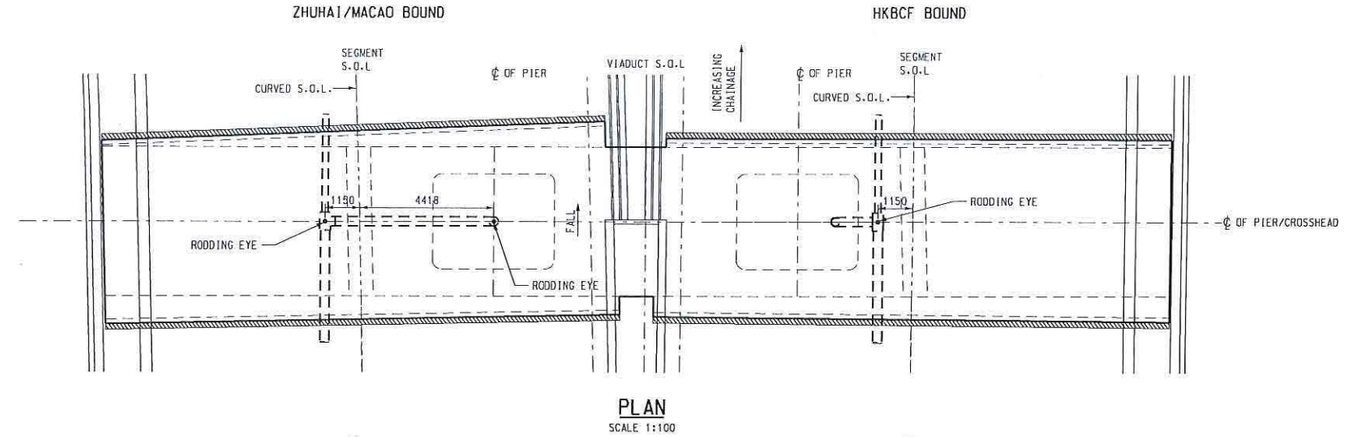
TYPICAL DRAINAGE DOWNPIPE ARRANGEMENT - PIER P113

Drawing no. HKLR9/MMH/AB/PW/DN/00111			Rev. -
AL	SHL	HTC	AS-BUILT
AS SHOWN (IN A1)			-
HKLR9		9 OF 13	
HKLR9_MMH_AB_PW_DN_00111.dgn			

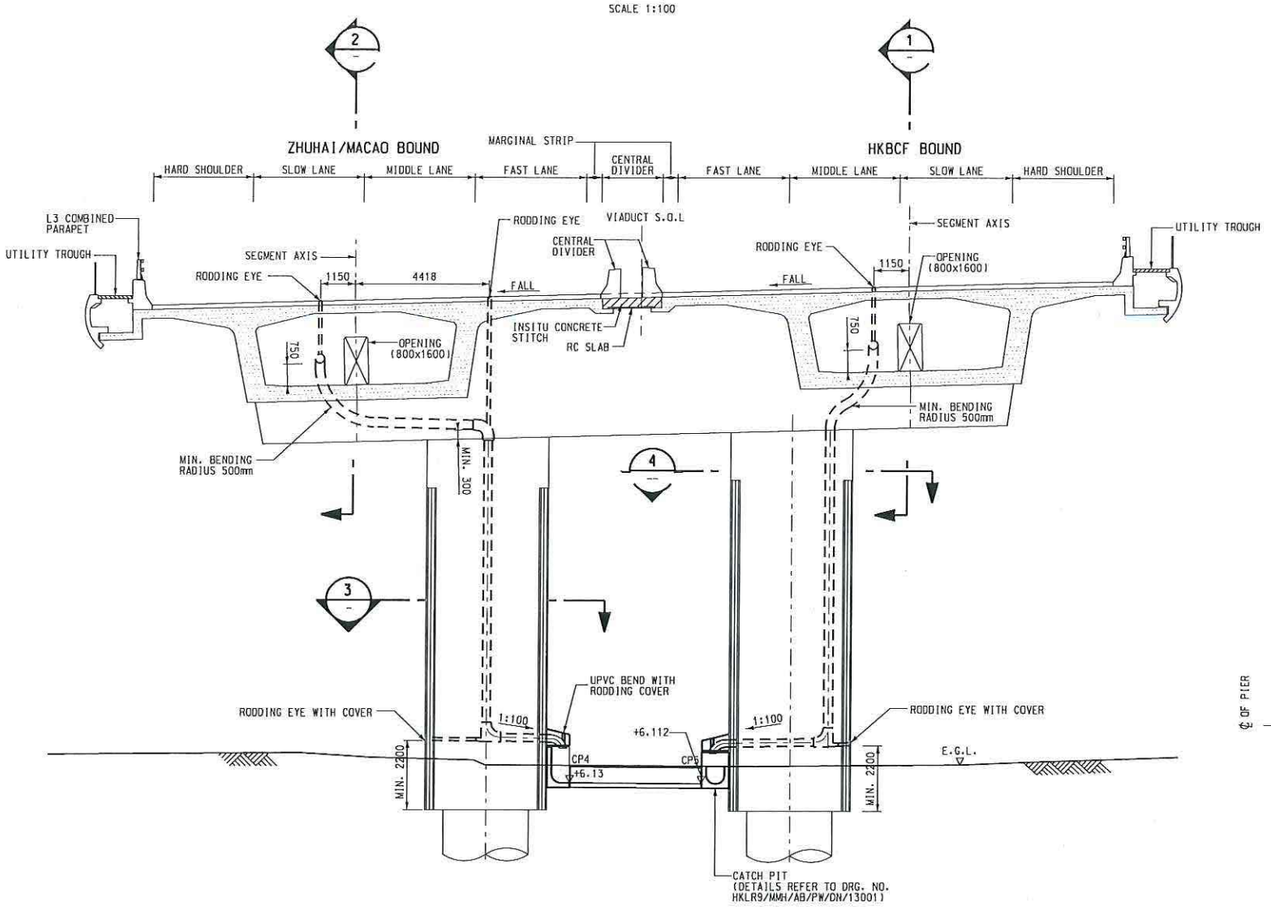
路政署 HIGHWAYS DEPARTMENT

1 : 50 SCALE BAR
1 : 100 SCALE BAR

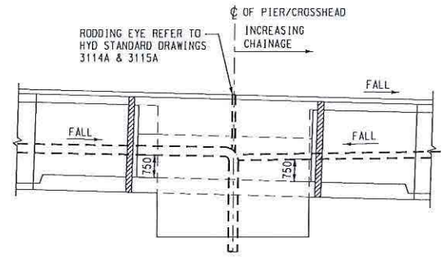
Printed by : 1/30/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00111.dgn



PLAN
SCALE 1:100

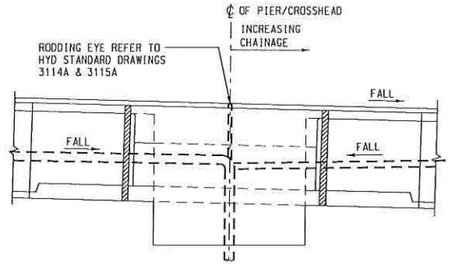


MONOLITHIC PIER AT LANDSIDE VIADUCT
(APPLICABLE TO PIER 110)
SCALE 1:100



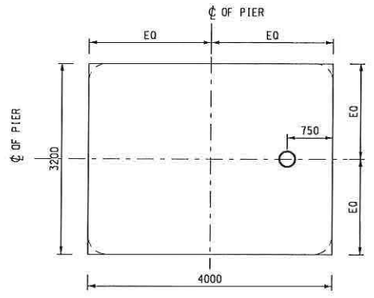
SECTION 1
SCALE 1:100

(SECTION @ SEGMENT S.O.L.)

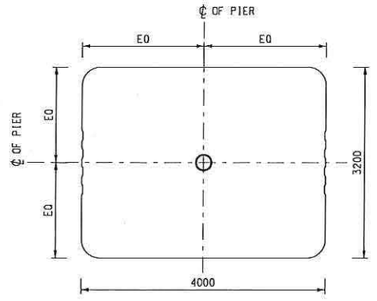


SECTION 2
SCALE 1:100

(SECTION @ SEGMENT S.O.L.)



SECTION 4
SCALE 1:50



SECTION 3
SCALE 1:50

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICATBLE TO PIER P110.
3. DETAILS OF RODDING EYE RETERS TO DRG. NO. HKLR9/MMH/AB/PW/DN/00125.
4. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
5. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
6. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"
04JUN2019
Mr. W.K.Poon (Project Director) Date

Checked by the Designer "Mott MacDonald"
04JUN2019
Dr. H.T.Cheng (Designer) Date

Endorsed by the Design Checker "AECOM"
04JUN2019
Ir. Charles Luk (Design Checker) Date

Main Contractor
Dragages - China Harbour - VSL Joint Venture 實基-中國海灣-威勝利聯營

Contractor's Designer
Mott MacDonald YWL Engineering

Consultant
ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title
TYPICAL DRAINAGE
DOWNPIPE ARRANGEMENT - PIER P110

Drawing no.	Rev.
HKLR9/MMH/AB/PW/DN/00112	-

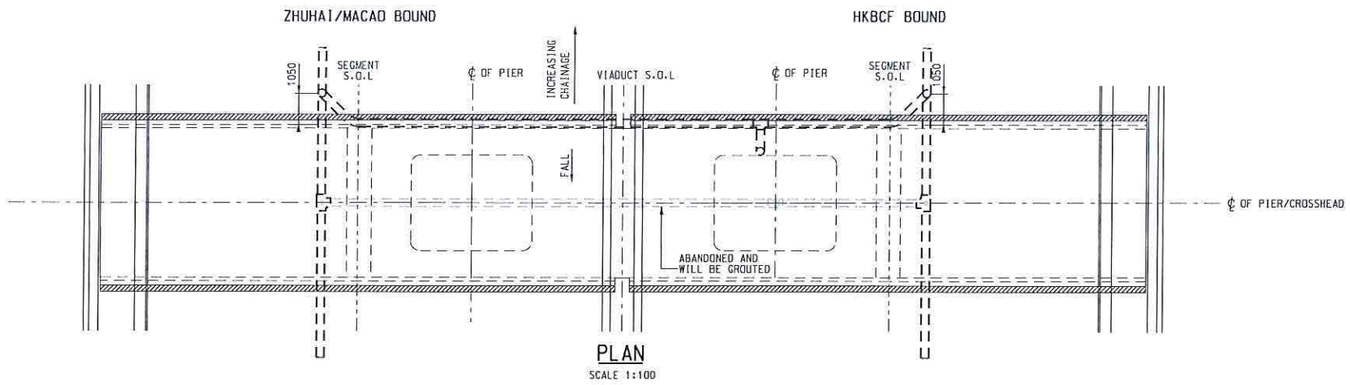
Design	Drawn	Approved	Status
AL	PL	HTC	AS-BUILT
Scale: AS SHOWN (IN A1)		Approved: -	
Job No.: HKLR9		Sheet No.: 10 OF 13	

File name: HKLR9_MMH_AB_PW_DN_00112.dgn

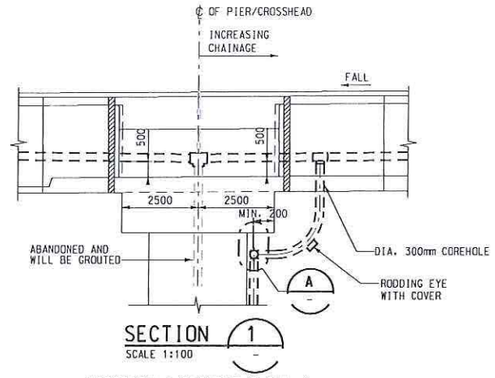
0 500 1000 1500 2000 2500 mm
1 : 50 SCALE BAR
0 1 2 3 4 5 m
1 : 100 SCALE BAR

路政署 HIGHWAYS DEPARTMENT

Printed by : 6/4/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00112.dgn

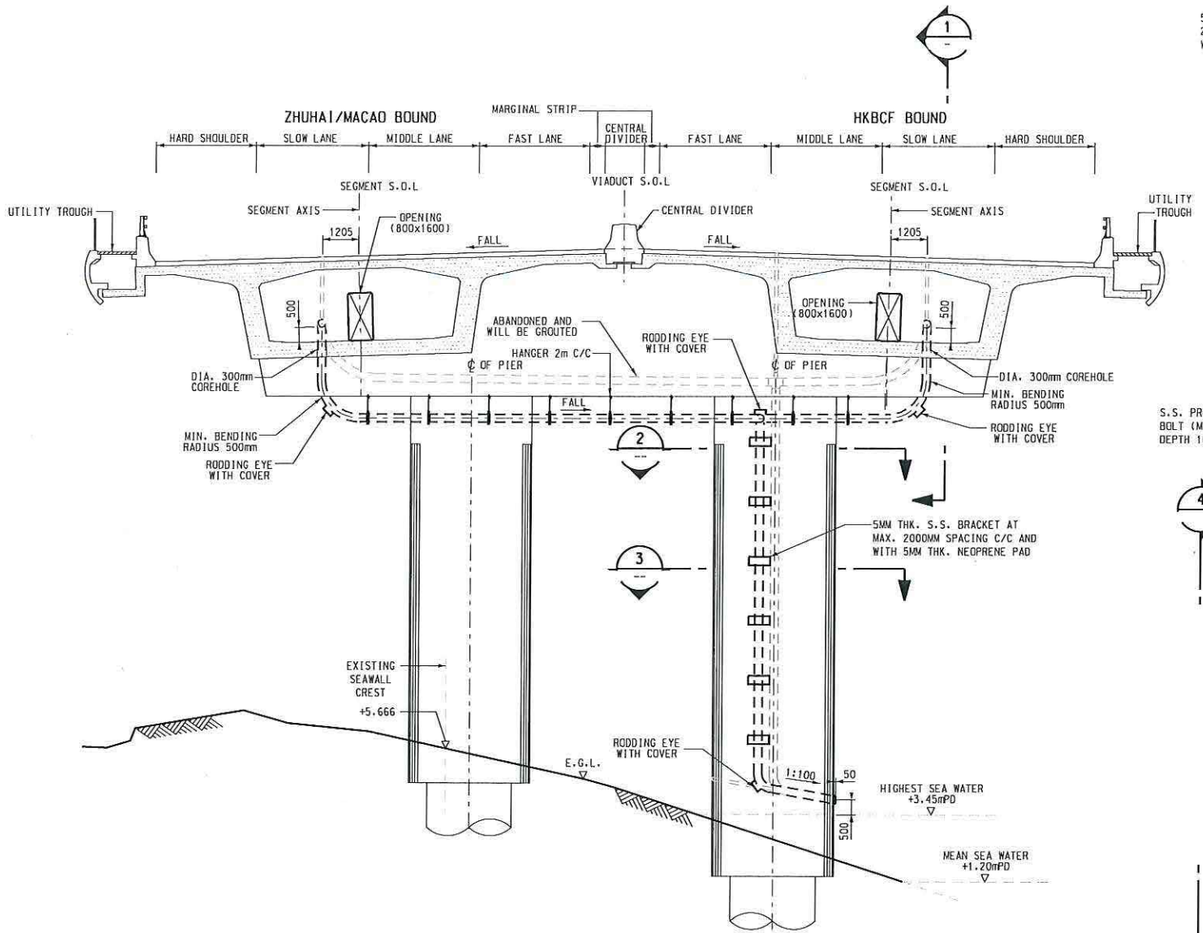


PLAN
SCALE 1:100

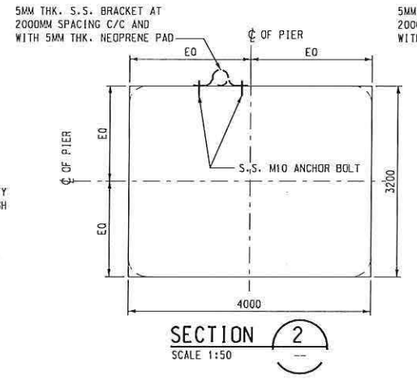


SECTION 1
SCALE 1:100

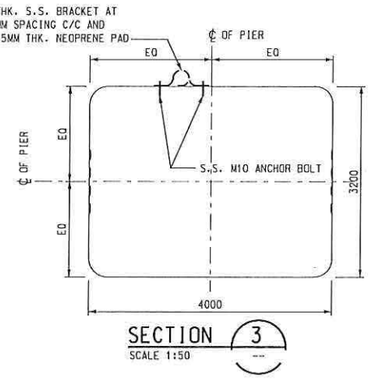
(SECTION @ SEGMENT S.O.L.)



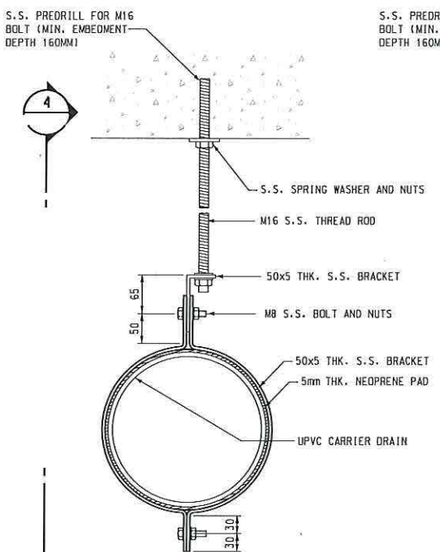
MONOLITHIC PIER AT LANDSIDE VIADUCT
(APPLICABLE TO PIER P100)
SCALE 1:100



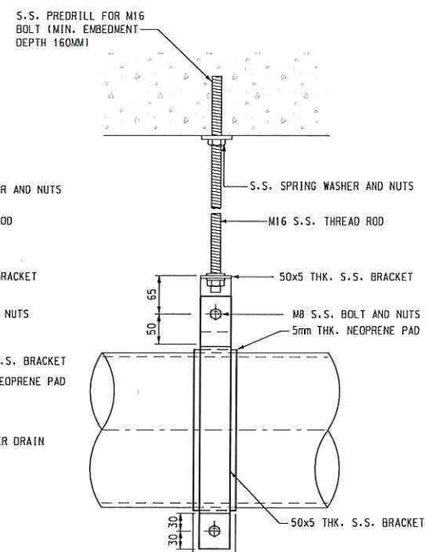
SECTION 2
SCALE 1:50



SECTION 3
SCALE 1:50



DETAIL A
SCALE



SECTION 4
SCALE

NOTES:

1. FOR GENERAL NOTES, SEE DWG NO. HKLR9/MMH/AB/PW/DN/0000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABE TO PIER P100.
3. DETAILS OF RODDING EYE RETERS TO DWG. NO. HKLR9/MMH/AB/PW/DN/00125.
4. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
5. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
6. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"

04JUN2019

Mr. W.K.Poon (Project Director) Date

Checked by the Designer "Mott MacDonald"

04JUN2019

Dr. H.T.Cheng (Designer) Date

Endorsed by the Design Checker "AECOM"

04JUN2019

Ir. Charles Luk (Design Checker) Date

Main Contractor

Dragages - China Harbour - VSL Joint Venture 實嘉-中國海灣-威爾利聯營

Contractor's Designer

Mott MacDonald YWL Engineering

Consultant

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title

TYPICAL DRAINAGE
DOWNPIPE ARRANGEMENT - PIER P100

Drawing no.	Rev.
HKLR9/MMH/AB/PW/DN/00113	-

Design	Drawn	Approved	Status
AL	PL	HTC	AS-BUILT

Scale	Approved
AS SHOWN (IN A1)	-

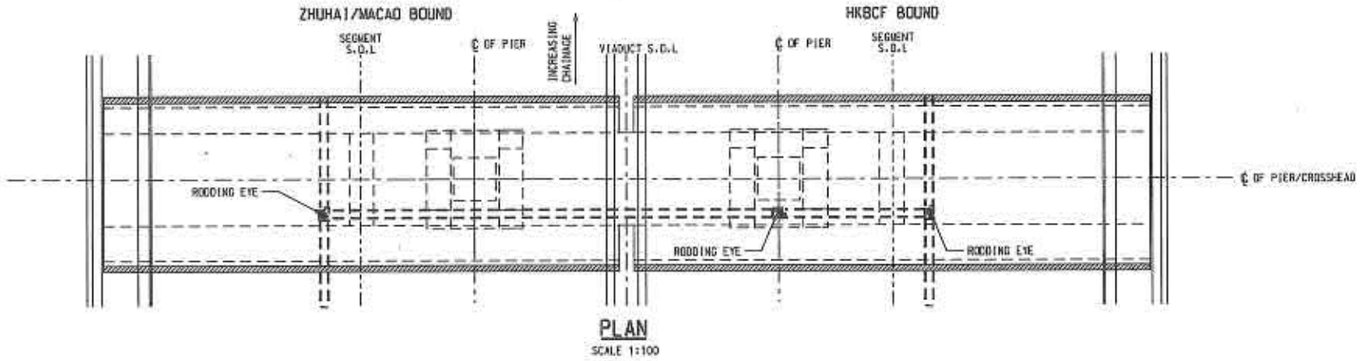
Job No.	Sheet No.
HKLR9	11 OF 13

File name: HKLR9_MMH_AB_PW_DN_00113.dgn

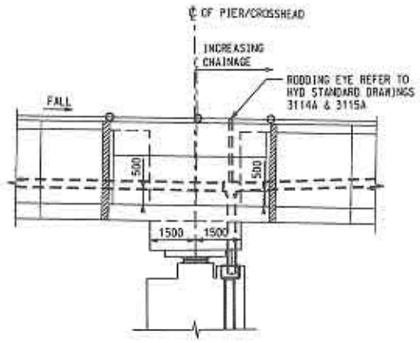
路政署 HIGHWAYS DEPARTMENT

0 500 1000 1500 2000 2500 mm
1 : 50 SCALE BAR
0 1 2 3 4 5 m
1 : 100 SCALE BAR

Printed by : 6/4/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00113.dgn

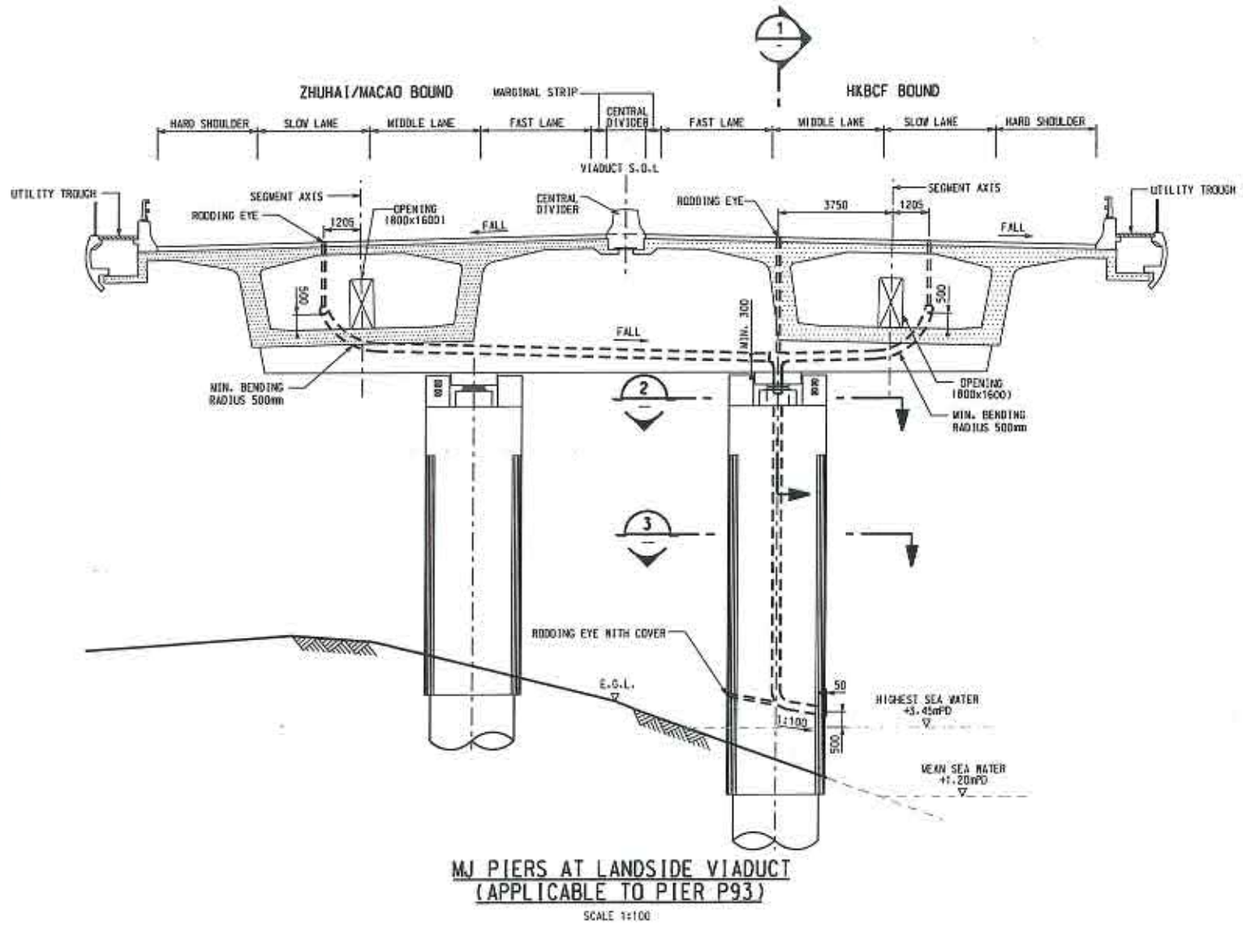


PLAN
SCALE 1:100

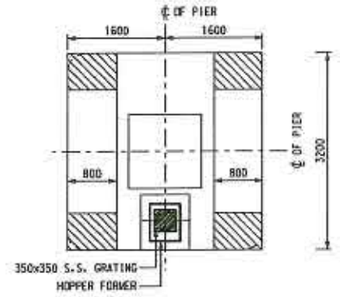


SECTION 1
SCALE 1:100

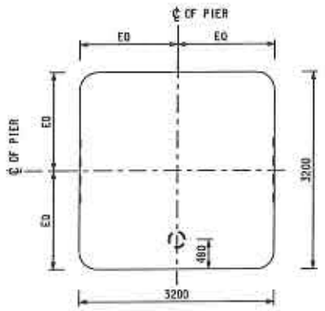
(SECTION @ SEGMENT S.O.L.)



MJ PIERS AT LANDSIDE VIADUCT
(APPLICABLE TO PIER P93)
SCALE 1:100



SECTION 2
SCALE 1:50



SECTION 3
SCALE 1:50

0 500 1000 1500 2000 2500 mm
1 : 50 SCALE BAR

0 1 2 3 4 5 m
1 : 100 SCALE BAR

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIER P93.
3. DETAILS OF RODDING EYE RETERS TO DRG. NO. HKLR9/MMH/AB/PW/DN/00125.
4. DETAILS OF DRAINAGE HOPPER RETERS TO DRG . NO. HKLR9/MMH/AB/PW/DN/00130.
5. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
6. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
7. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"
Mr. W.K.Poon (Project Director) — 11/01/19 Date

Checked by the Designer "Mott MacDonald"
Dr. H.T.Cheng (Designer) — 11/01/19 Date

Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) — 11/01/19 Date

Main Contractor: Dragages - China Harbour - VSL Joint Venture

Consultant: Mott MacDonald; YWL Engineering

Consultant: ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title: Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title: TYPICAL DRAINAGE
DOWNPIPE ARRANGEMENT - PIER P93

Drawing No.	Rev.
HKLR9/MMH/AB/PW/DN/00114	-

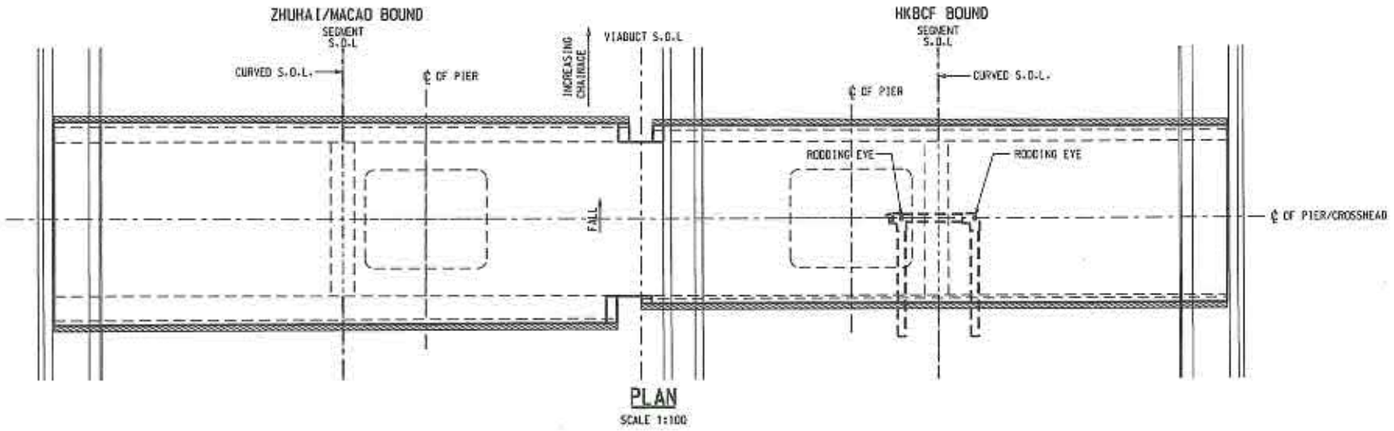
Design	Drawn	Approved	Status
AL	PL	HTC	AS-BUILT

Scale	Approved
AS SHOWN (IN A1)	-

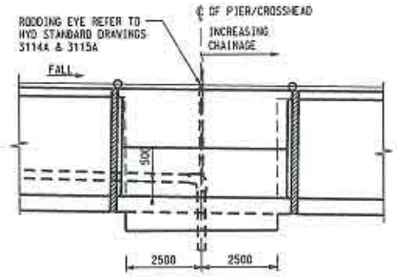
Job No.	Sheet No.
HKLR9	12 OF 13

File name: HKLR9_MMH_AB_PW_DN_00114.dgn

路政署 HIGHWAYS DEPARTMENT

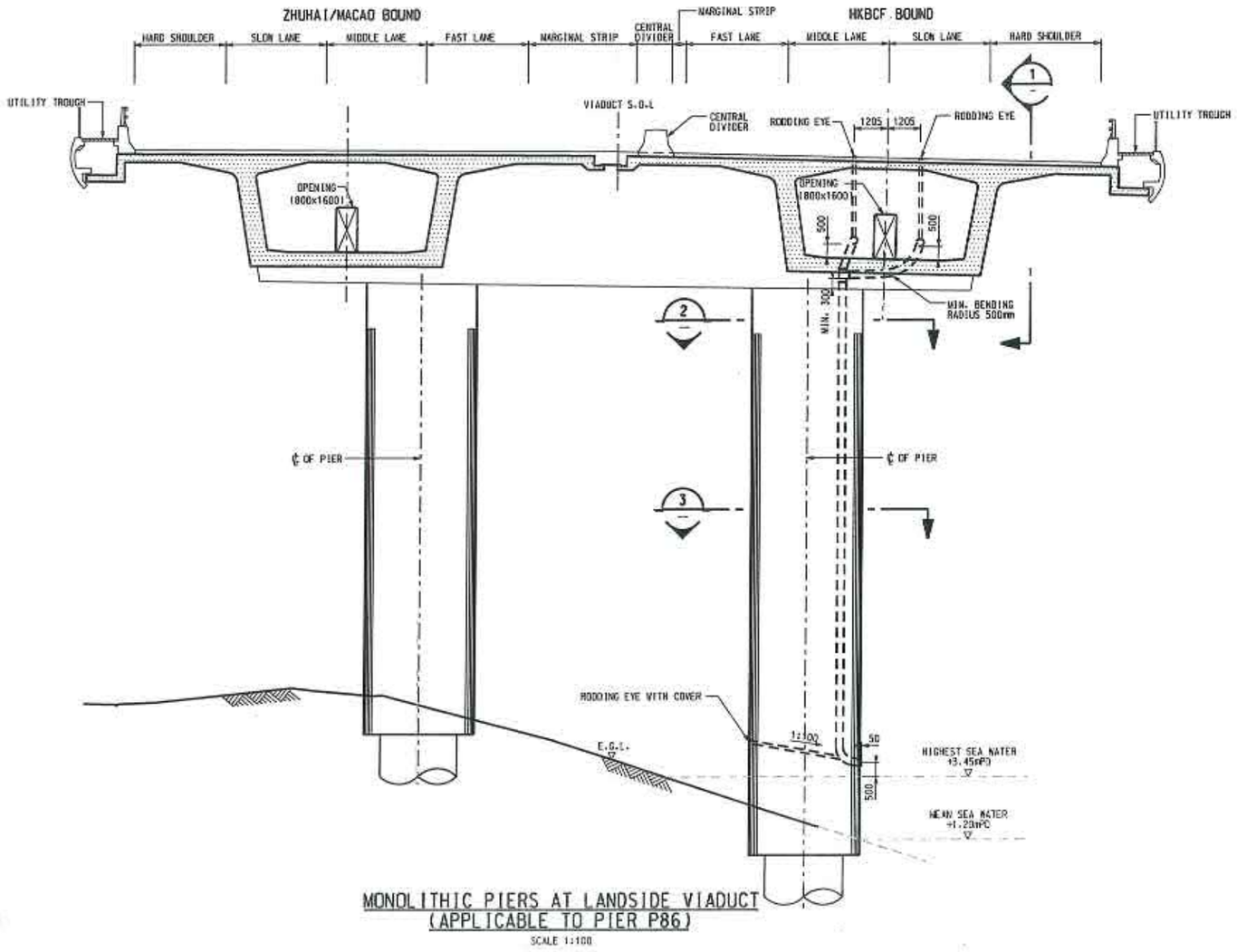


PLAN
SCALE 1:100

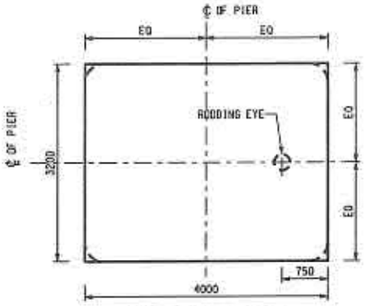


SECTION 1
SCALE 1:100

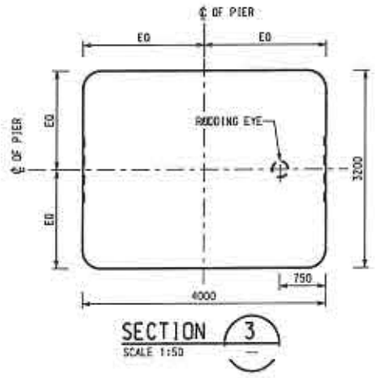
(SECTION @ SEGMENT S.O.L.)



MONOLITHIC PIERS AT LANDSIDE VIADUCT
(APPLICABLE TO PIER P86)
SCALE 1:100



SECTION 2
SCALE 1:50



SECTION 3
SCALE 1:50

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIER P86.
3. DETAILS OF RODDING EYE REFERS TO DRG NO. HKLR9/MMH/AB/PW/DN/00125.
4. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
5. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
6. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"
11/01/19
Mr. W.K.Poon (Project Director) Date

Checked by the Designer "Mott MacDonald"
11/01/19
Dr. H.T.Cheng (Designer) Date

Endorsed by the Design Checker "AECOM"
11/01/19
Ir. Charles Luk (Design Checker) Date

Chinagages - China Harbour - VSL Joint Venture

Mott MacDonald YWL Engineering

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

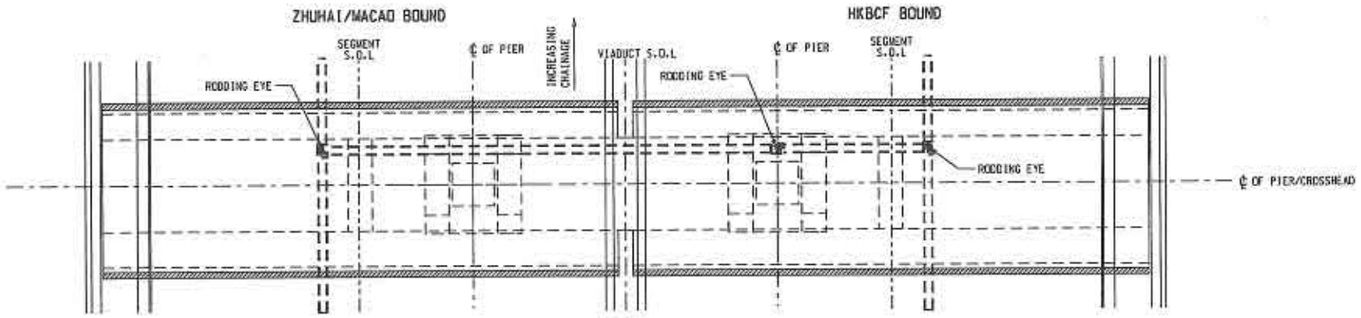
Project Title
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title
TYPICAL DRAINAGE
DOWNPIPE ARRANGEMENT - PIER P86

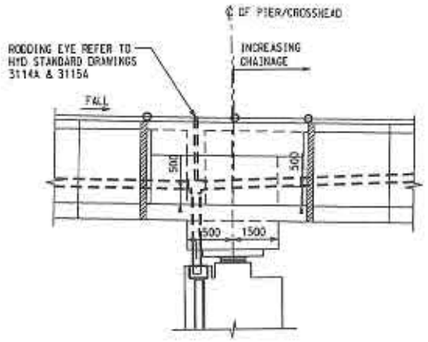
Drawing No.			Rev.
HKLR9/MMH/AB/PW/DN/00115			-
Design AL	Drawn PL	Approved HTC	Status AS-BUILT
Scale AS SHOWN (IN A1)		Approved -	
Contract No. HKLR9		Sheet No. 13 OF 13	
File Name HKLR9_MMH_AB_PW_DN_00115.dgn			

路政署 HIGHWAYS DEPARTMENT

0 500 1000 1500 2000 2500 mm
1 : 50 SCALE BAR
0 1 2 3 4 5 m
1 : 100 SCALE BAR

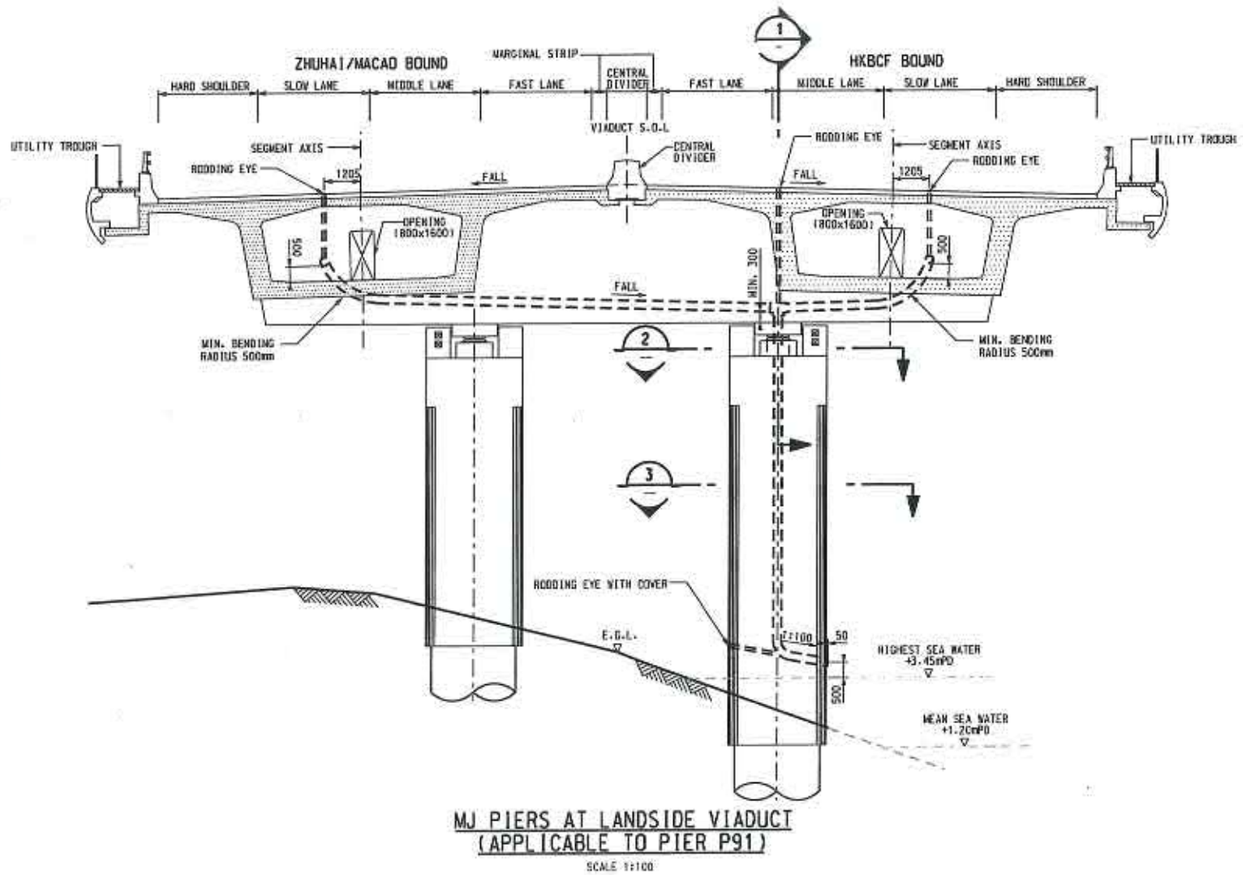


PLAN
SCALE 1:100

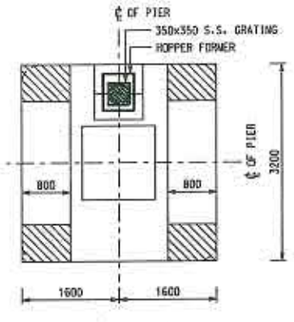


SECTION 1
SCALE 1:100

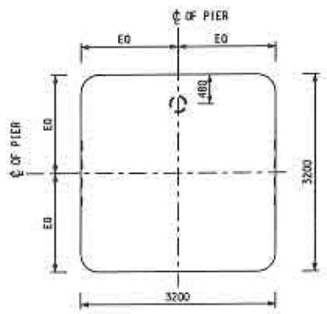
(SECTION @ SEGMENT S.O.L.)



MJ PIERS AT LANDSIDE VIADUCT
(APPLICABLE TO PIER P91)
SCALE 1:100



SECTION 2
SCALE 1:50



SECTION 3
SCALE 1:50

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIER P91.
3. DETAILS OF RODDING EYE REFERS TO DRG. NO. HKLR9/MMH/AB/PW/DN/00125.
4. DETAILS OF DRAINAGE HOPPER REFERS TO DRG. NO. HKLR9/MMH/AB/PW/DN/00130.
5. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
6. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
7. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"
Mr. W.K.Poon (Project Director) — 11/01/19 Date

Checked by the Designer "Mott MacDonald"
Dr. H.T.Cheng (Designer) — 11/01/19 Date

Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) — 11/01/19 Date

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald
YWL Engineering

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

TYPICAL DRAINAGE
DOWNPIPE ARRANGEMENT - PIER P91

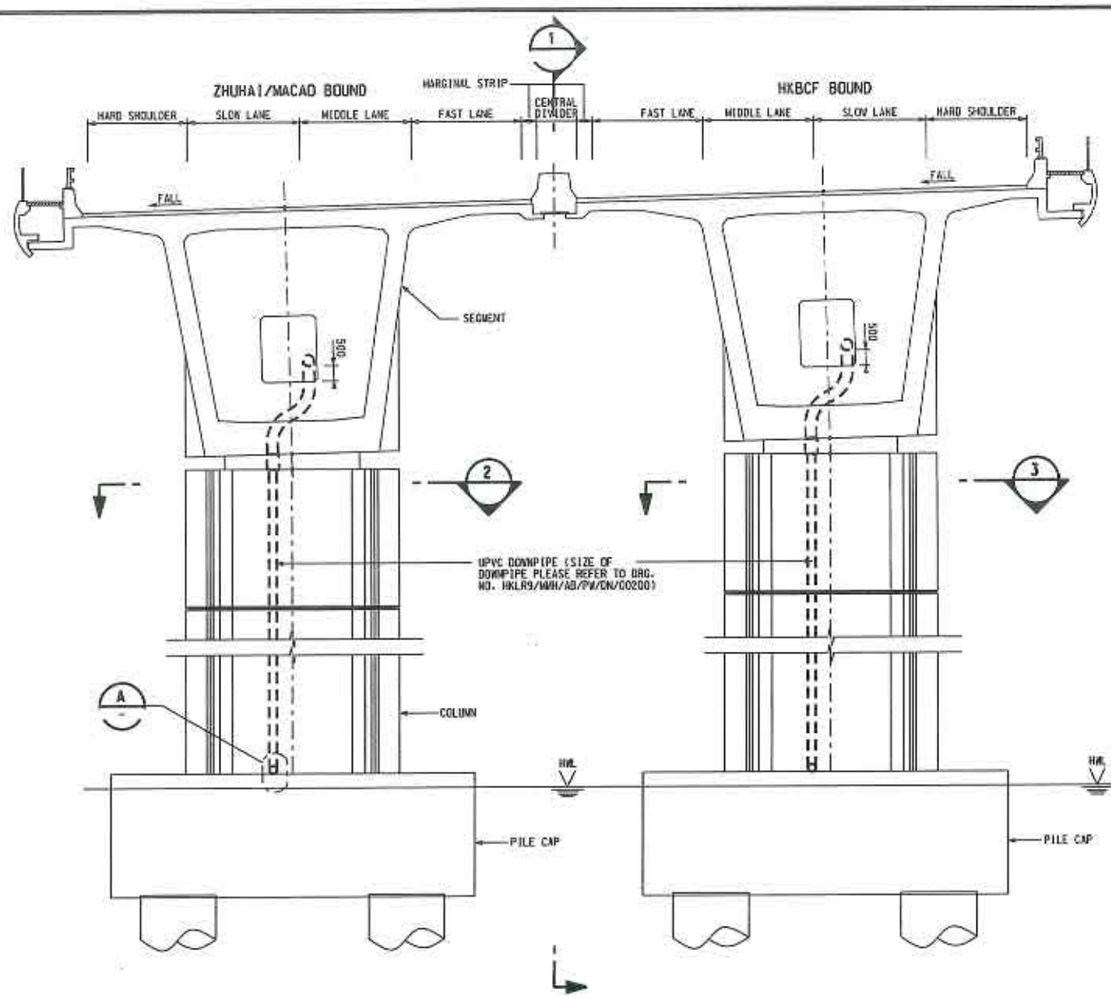
Drawing No.				Rev.
HKLR9/MMH/AB/PW/DN/00116				-
Design: AL	Drawn: PL	Approved: HTC	Status: AS-BUILT	
Scale: AS SHOWN (IN A1)		Approved: -		
Job No.: HKLR9		Sheet No.: 1 OF 1		
File name: HKLR9_MMH_AB_PW_DN_00116.dgn				

路政署 HIGHWAYS DEPARTMENT

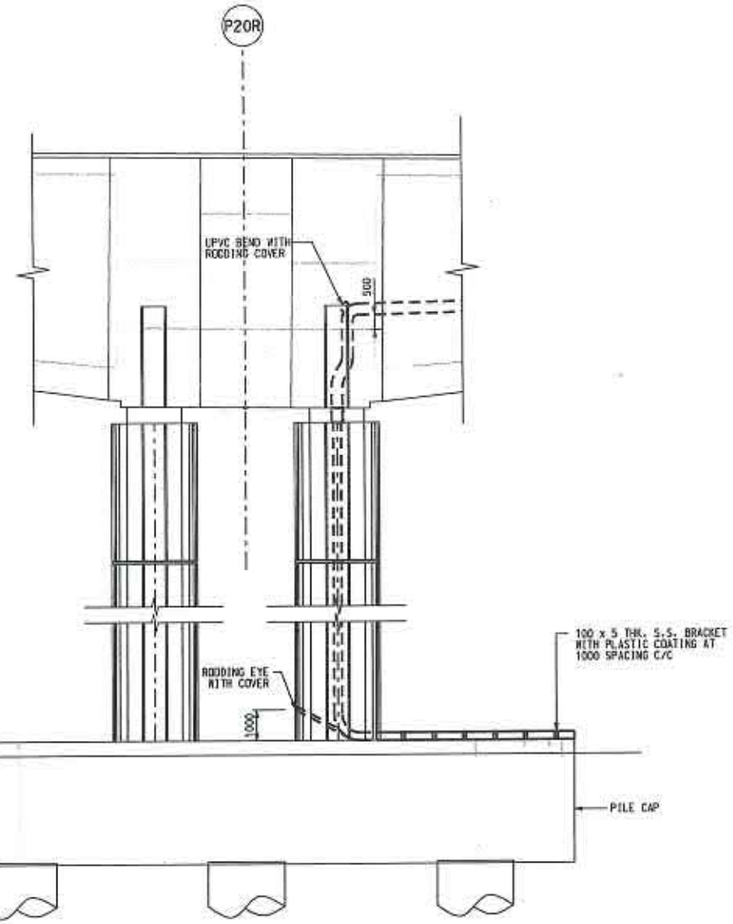
0 500 1000 1500 2000 2500 mm
1 : 50 SCALE BAR

0 1 2 3 4 5 m
1 : 100 SCALE BAR

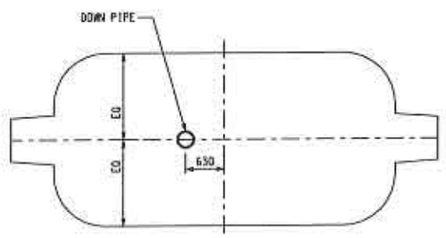
Printed by : 1/30/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00116.dgn



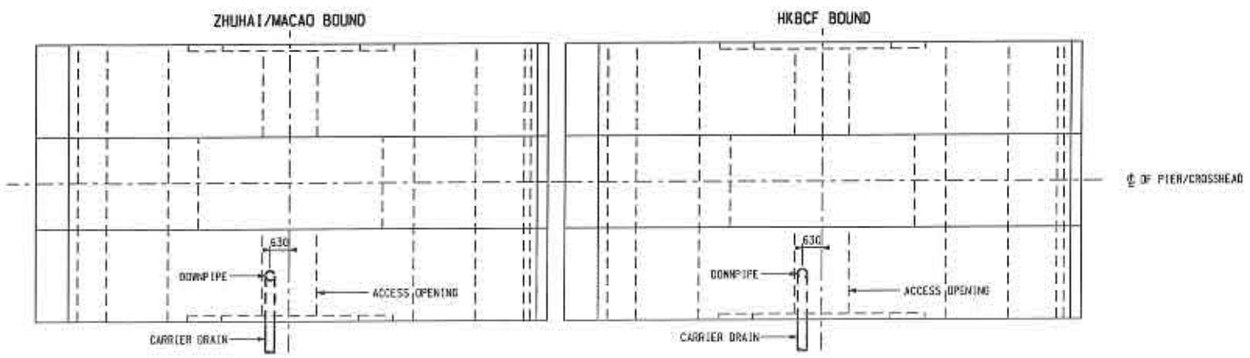
MONOLITHIC PIER AT NAVIGATION CHANNEL
(APPLICABLE TO PIER P20)
SCALE 1:100



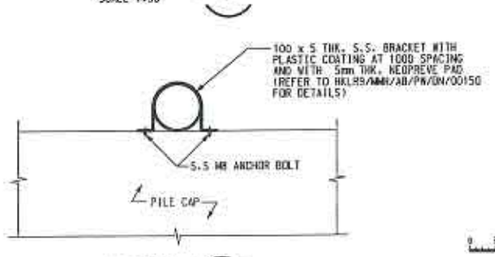
SECTION 1
SCALE 1:100



SECTION 2
SCALE 1:50



PLAN
SCALE 1:100



DETAIL A
SCALE 1:20

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIER P20.
3. DETAILS OF RODDING EYE REFERS TO DRG. NO. HKLR9/MMH/AB/PW/DN/00125.
4. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
5. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
6. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"
11/01/19
Mr. W.K.Poon (Project Director) Date

Checked by the Designer "Mott MacDonald"
11/01/19
Dr. H.T.Cheng (Designer) Date

Endorsed by the Design Checker "AECOM"
11/01/19
Ir. Charles Luk (Design Checker) Date

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald | YWL Engineering

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

TYPICAL DRAINAGE
DOWNPIPE ARRANGEMENT - PIER P20

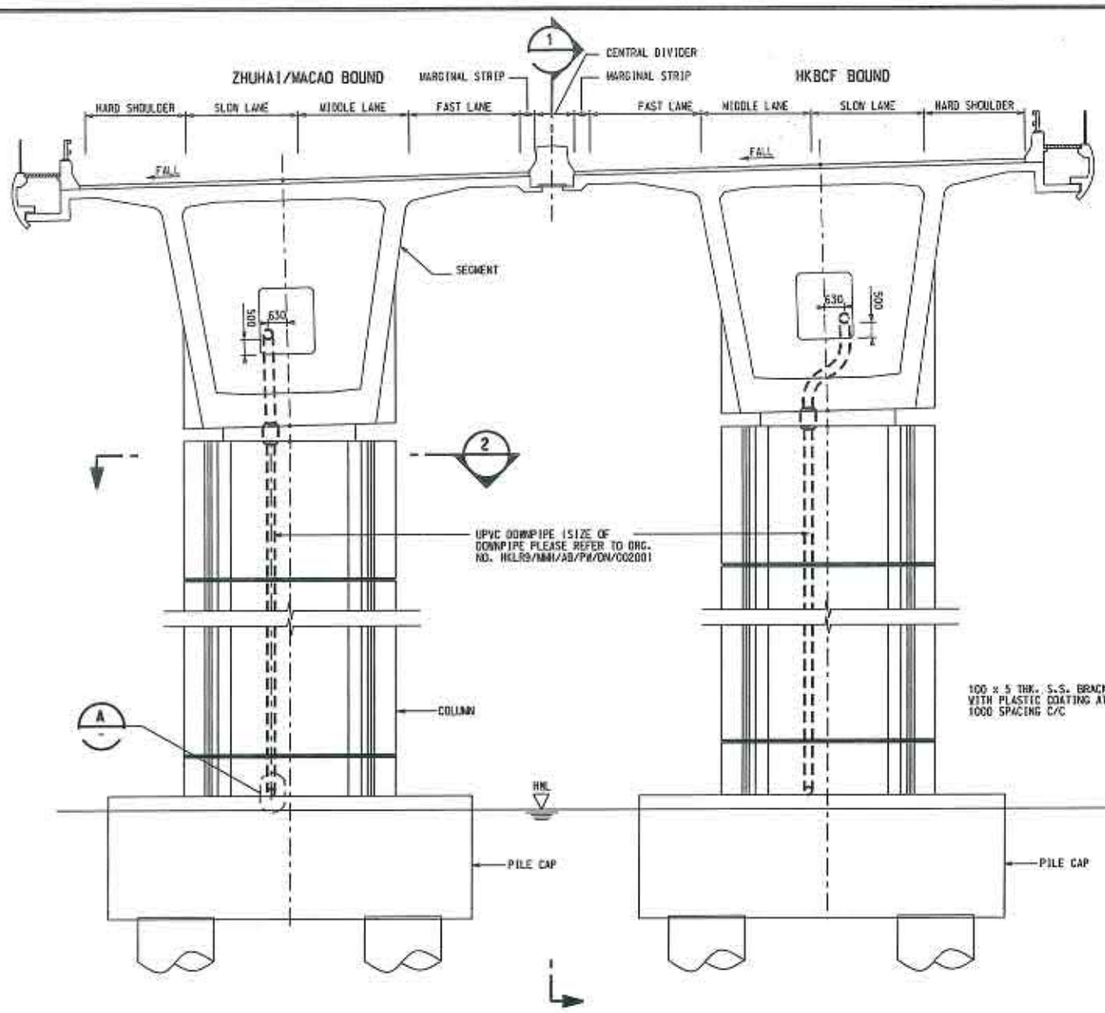
Drawing no.	Rev.
HKLR9/MMH/AB/PW/DN/00117	-

Design	Drawn	Approved	Original
AL	PL	HTC	AS-BUILT
Scale: AS SHOWN (IN A1)		Approved	-
Job No. HKLR9		Sheet No.	1 OF 1

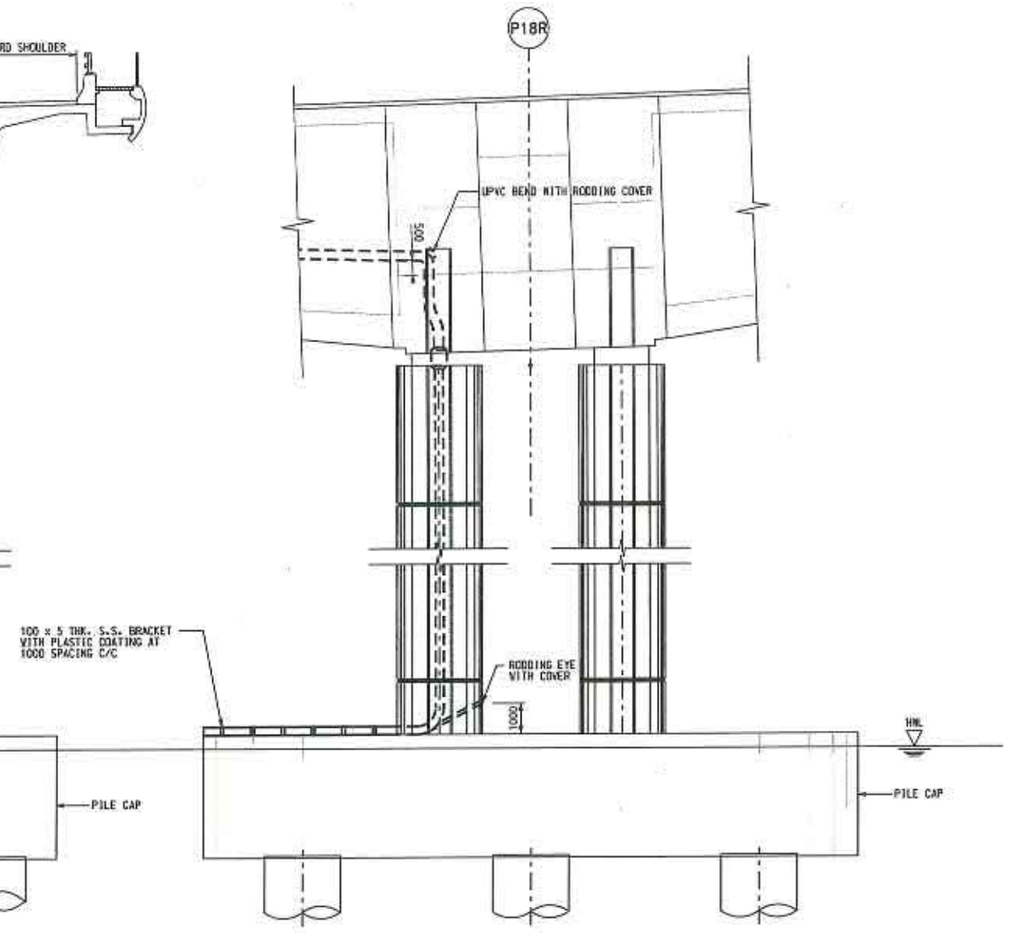
File name: HKLR9_MMH_AB_PW_DN_00117.dgn

路政署 HIGHWAYS DEPARTMENT

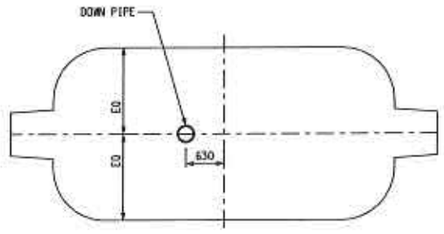
Printed by : 1/30/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00117.dgn



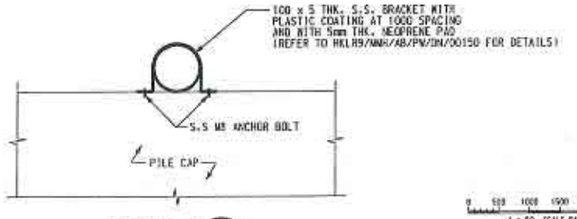
MONOLITHIC PIER AT NAVIGATION CHANNEL
(APPLICABLE TO PIER P18)
SCALE 1:100



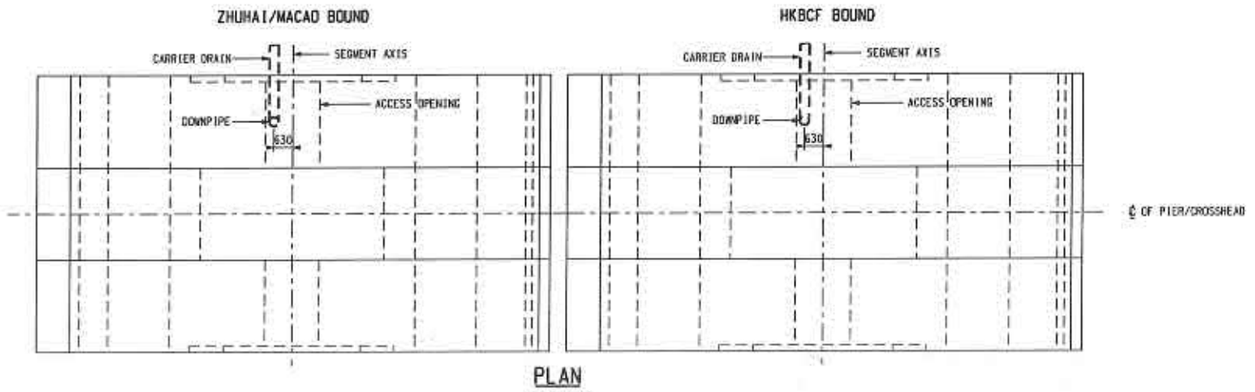
SECTION 1
SCALE 1:100



SECTION 2
SCALE 1:50



DETAIL A
SCALE 1:20



PLAN
SCALE 1:100

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIER P18.
3. DETAILS OF RODDING EYE REFERS TO DRG. NO. HKLR9/MMH/AB/PW/DN/00125.
4. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
5. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
6. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"
Mr. W.K.Poon (Project Director) — 11/01/19 Date

Checked by the Designer "Mott MacDonald"
Dr. H.T.Cheng (Designer) — 11/01/19 Date

Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) — 11/01/19 Date

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald | YWL Engineering

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

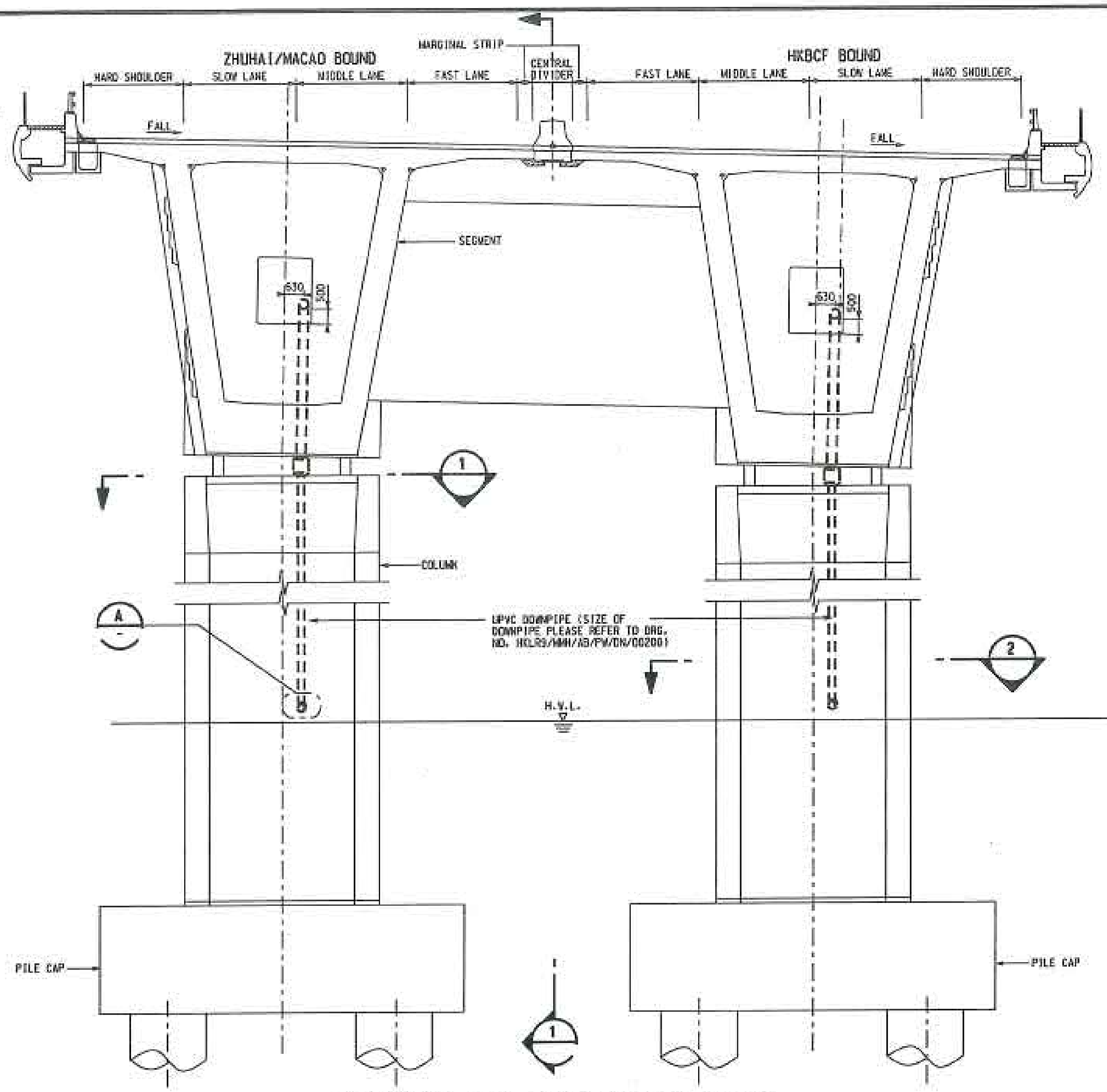
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

TYPICAL DRAINAGE
DOWNPIPE ARRANGEMENT - PIER P18

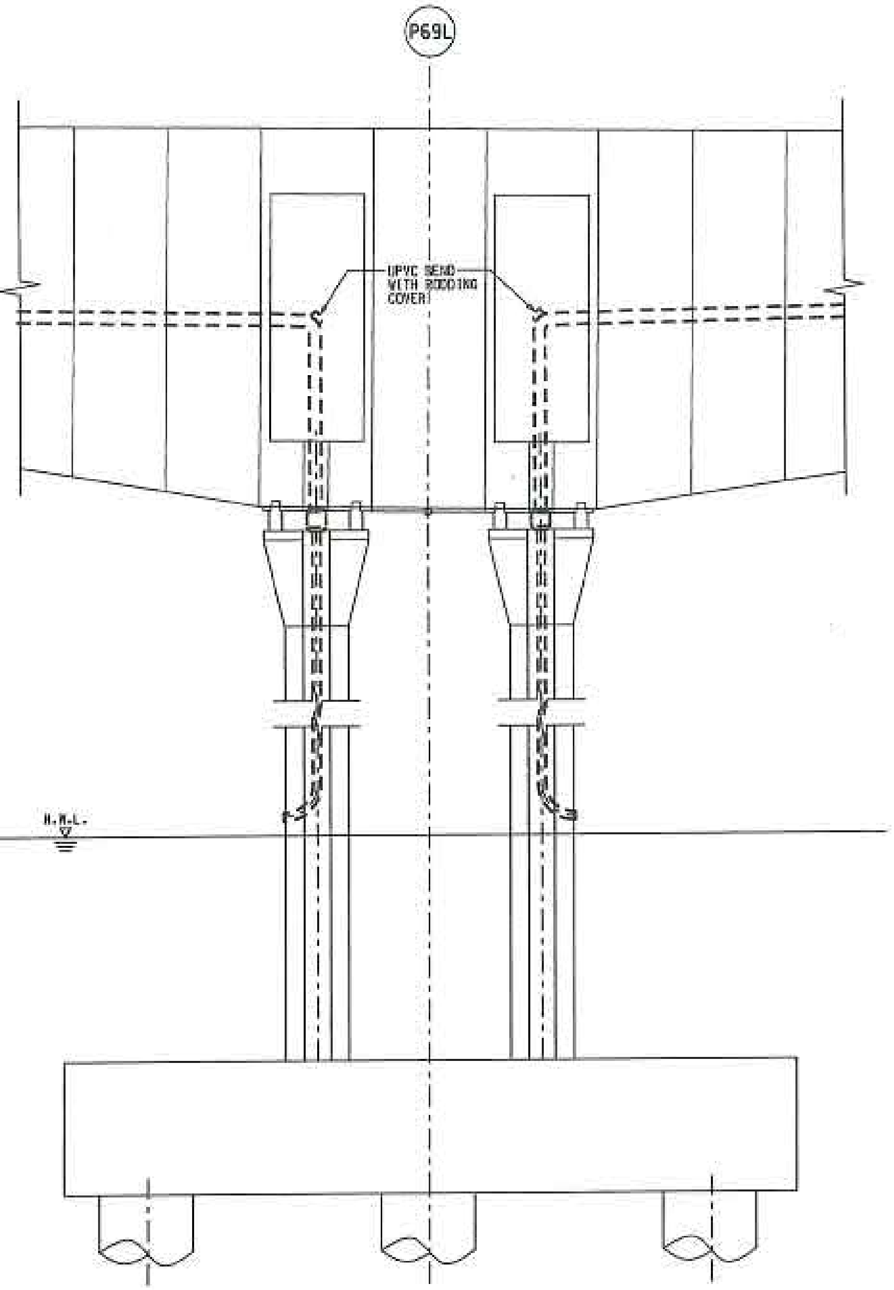
Drawing No.			Rev.
HKLR9/MMH/AB/PW/DN/00118			-
Design AL	Drawn PL	Approved HTC	Status AS-BUILT
Scale AS SHOWN (IN A1)		Approved -	
Job No. HKLR9		Sheet No. 1 OF 1	
File name HKLR9_MMH_AB_PW_DN_00118.dgn			

路政署 HIGHWAYS DEPARTMENT

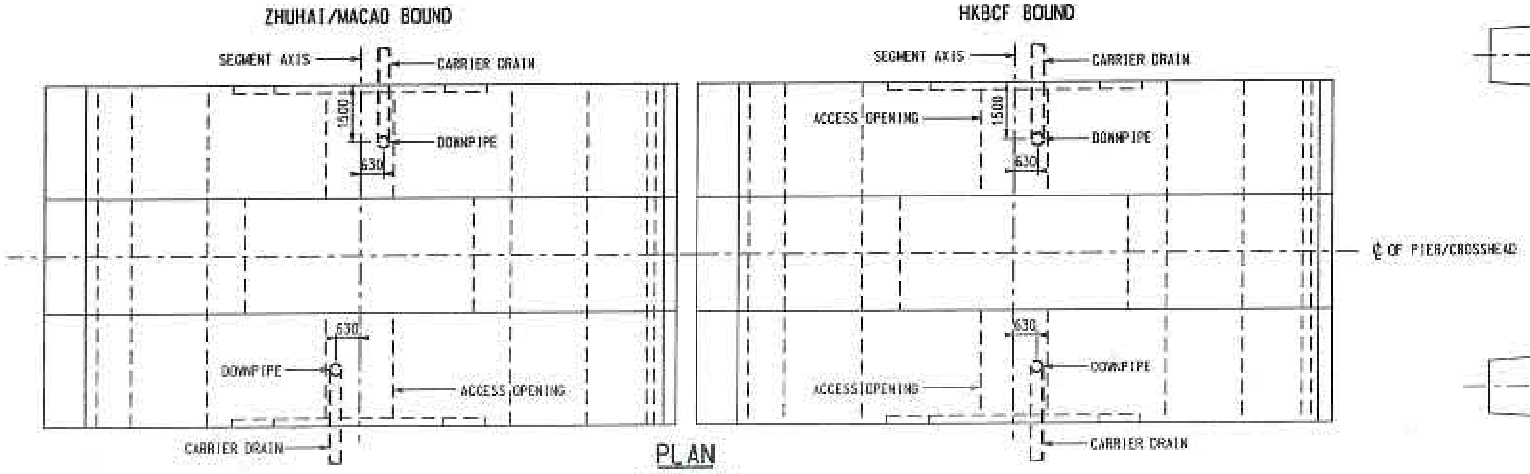
Printed by : 1/30/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Port 1\HKLR9_MMH_AB_PW_DN_00118.dgn



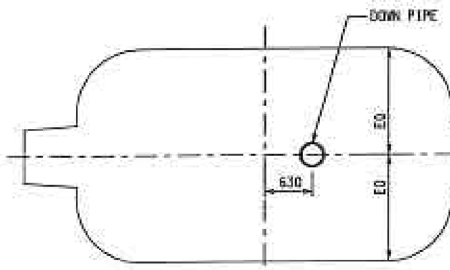
MONOLITHIC PIER AT NAVIGATION CHANNEL
(APPLICABLE TO PIER P69)
SCALE 1:100



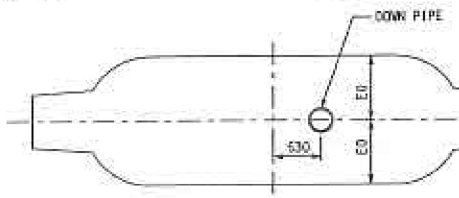
SECTION 1
SCALE 1:100



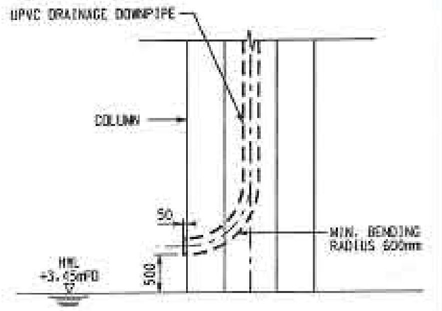
PLAN
SCALE 1:100



SECTION 2
SCALE 1:50



SECTION 3
SCALE 1:50



DETAIL A
SCALE 1:50

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIER P69.
3. DETAILS OF RODDING EYE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00125.
4. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
5. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
6. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"
Mr. W.K. Poon (Project Director) — Date 11/01/19

Checked by the Designer "Mott MacDonald"
Dr. H.T.Cheng (Designer) — Date 11/01/19

Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) — Date 11/01/19

Main Contractor: Dragages - China Harbour - VSL Joint Venture

Contractor's Designer: Mott MacDonald, YWL Engineering

Consultant: ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title:
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title:
TYPICAL DRAINAGE DOWNPIPE ARRANGEMENT - PIER P69

Drawing no.	HKLR9/MMH/AB/PW/DN/00119
Rev.	-
Design	AL
Drawn	PL
Approved	HTC
Status	AS-BUILT
Scale	AS SHOWN (IN A1)
Job No.	HKLR9
Sheet No.	1 OF 1
File name	HKLR9_MMH_AB_PW_DN_00119.dgn

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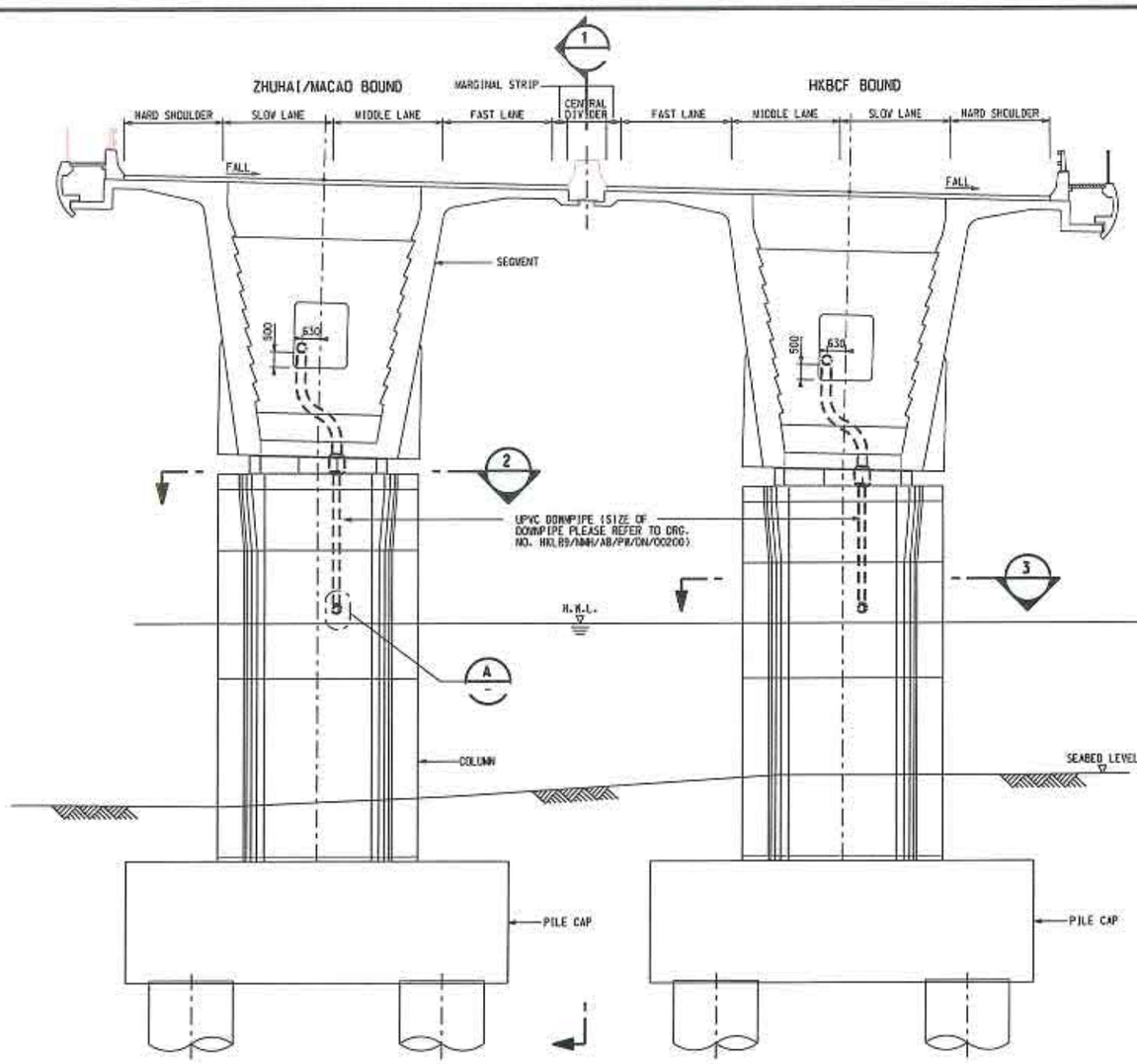
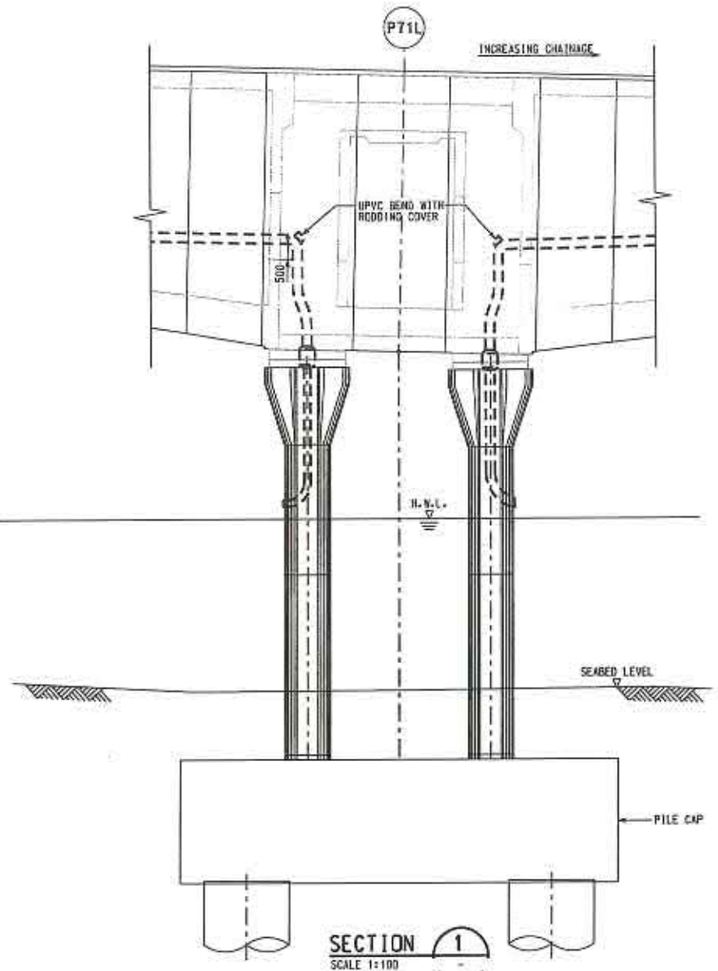
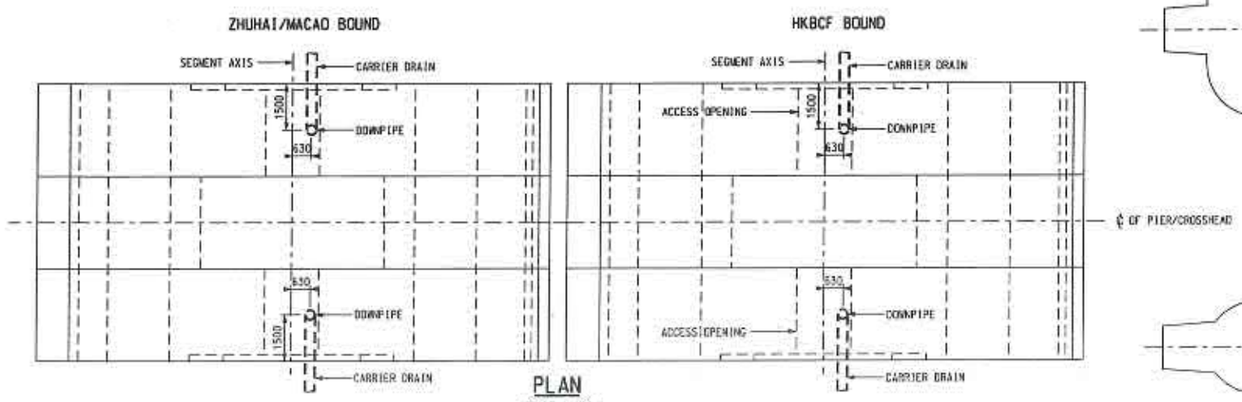
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00119.dgn



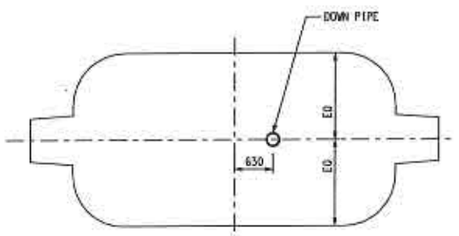
MONOLITHIC PIER AT NAVIGATION CHANNEL
(APPLICABLE TO PIER P71, P72, P73 AND P75)
SCALE 1:100



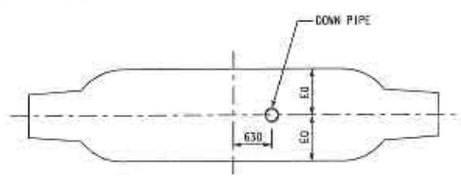
SECTION 1
SCALE 1:100



PLAN
SCALE 1:100



SECTION 2
SCALE 1:50



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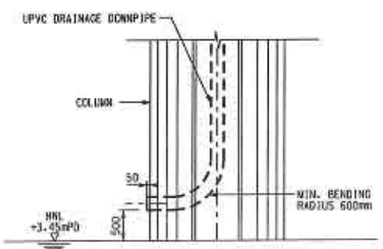

DETAIL A
SCALE 1:50

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIERS P71, P72, P73 AND P75.
3. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
4. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
5. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"
11/01/19
Mr. W.K.Poon (Project Director) Date

Checked by the Designer "Mott MacDonald"
11/01/19
Dr. H.T.Cheng (Designer) Date

Endorsed by the Design Checker "AECOM"
11/01/19
Ir. Charles Luk (Design Checker) Date

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald
YWL Engineering

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

TYPICAL DRAINAGE DOWNPIPE ARRANGEMENT PIER P71, P72, P73 & P75

Drawing No.	Rev.
HKLR9/MMH/AB/PW/DN/00120	-

Design	Drawn	Approved	Status
AL	PL	HTC	AS-BUILT

Scale	Approved
AS SHOWN (IN A1)	-

Job No.	Sheet No.
HKLR9	1 OF 1

File Name: HKLR9_MMH_AB_PW_DN_00120.dgn

1:50 SCALE BAR
1:100 SCALE BAR
1:200 SCALE BAR

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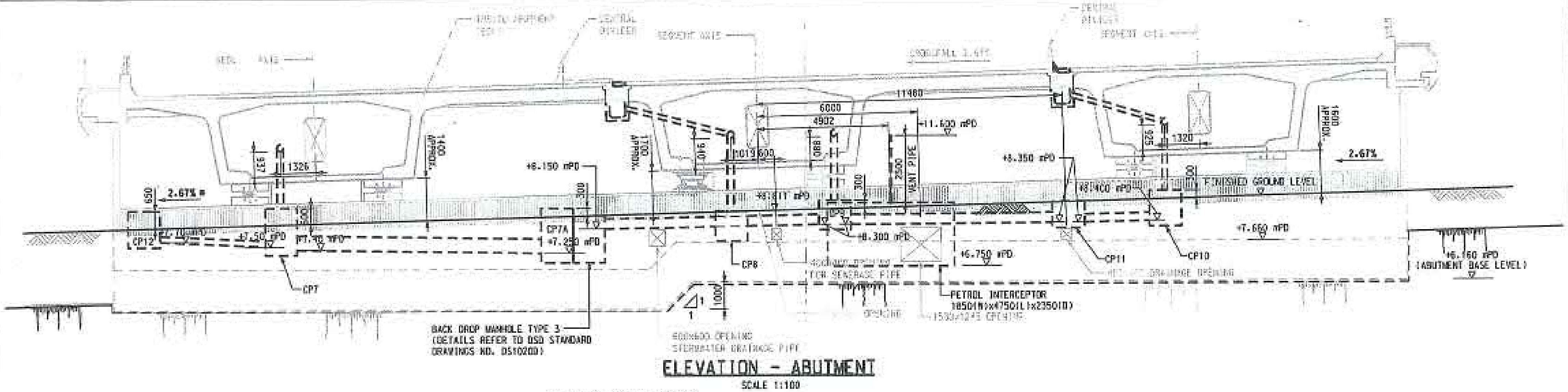
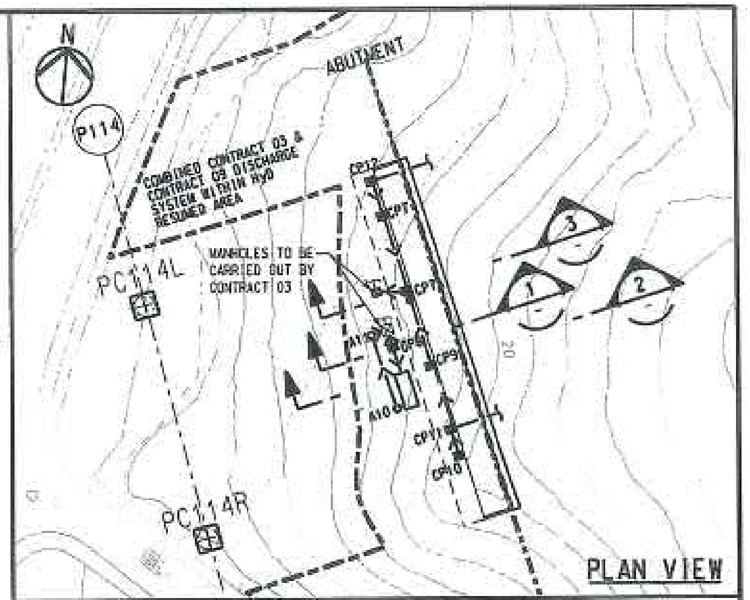
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00120.dgn





As-built Drawing

Prepared by the Contractor "DCVJV"

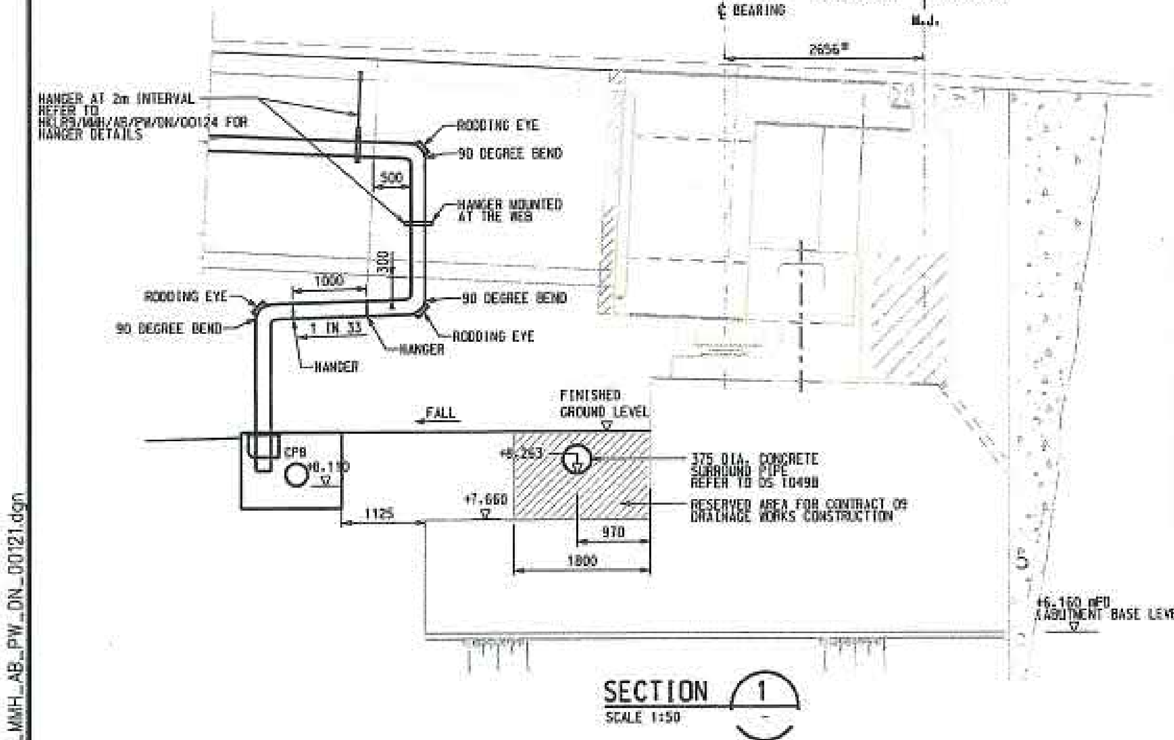
Mr. W.K.Poon (Project Director) — 11/01/19 Date

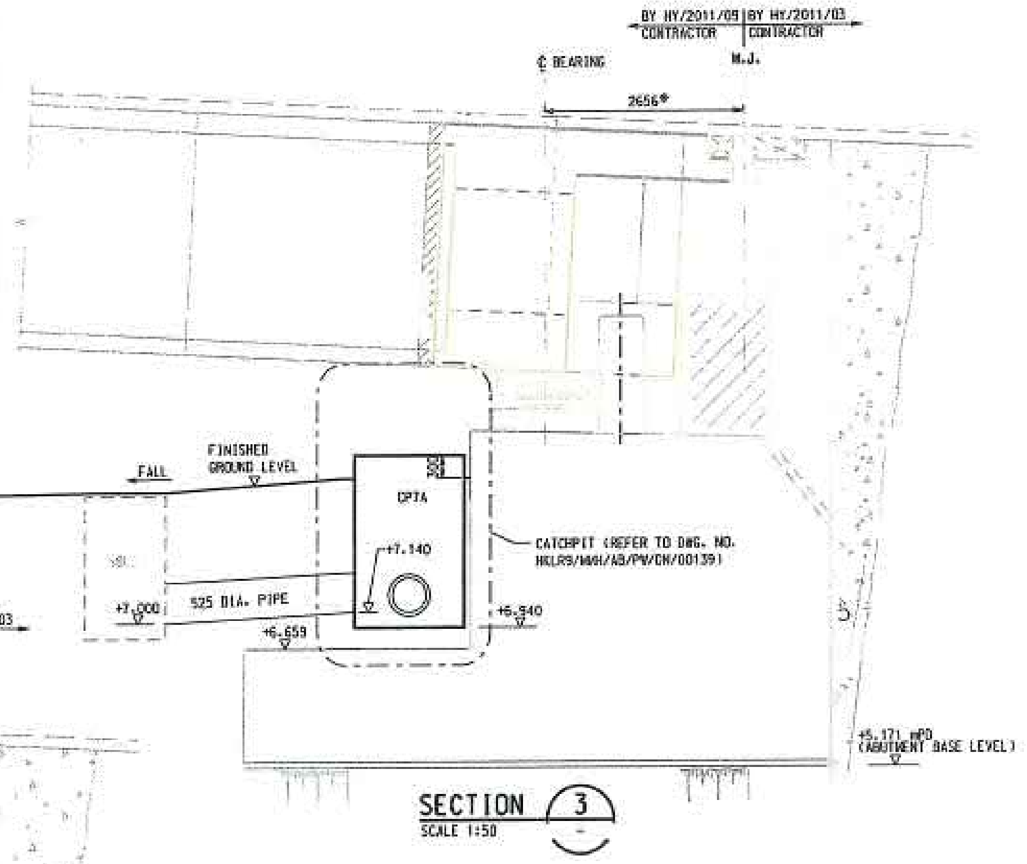
Checked by the Designer "Mott MacDonald"

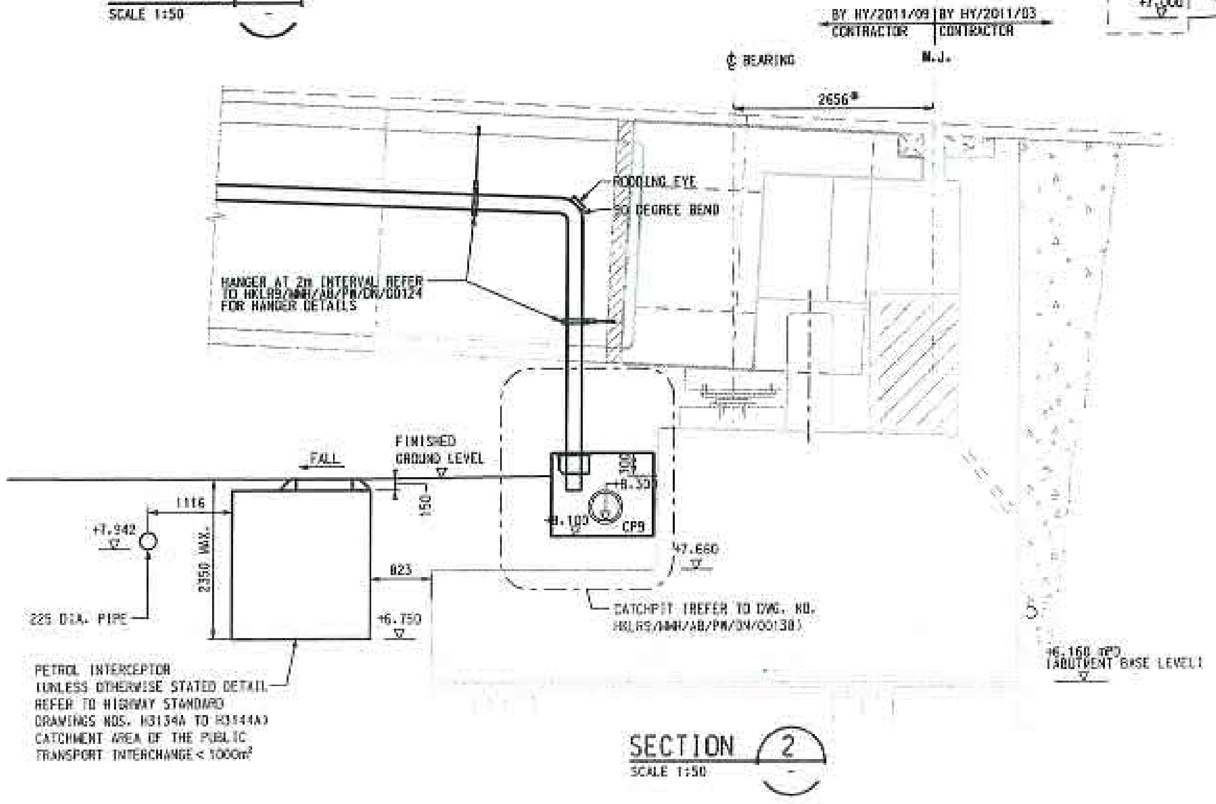
Dr. H.T.Cheng (Designer) — 11/01/19 Date

Endorsed by the Design Checker "AECOM"

Ir. Charles Luk (Design Checker) — 11/01/19 Date







NOTES:

1. DOWNPIPE ARE INDICATIVE ONLY AND TO BE CONSTRUCTED UNDER CONTRACT HY/2011/09.
2. ALL CAST UNITS SHALL BE COATED WITH A BITUMEN COATING.
3. FOR STRUCTURE DETAIL REFER TO DDA SUPERSTRUCTURE DESIGN PACKAGE.
4. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
5. DETAILS OF PRECAST CONCRETE COVERS FOR CATCHPIT REFER TO CEDD STD DRG. NO. C2407B.
6. THE LEVELS AND FALLS OF FINISH GROUND ARE INDICATIVE ONLY. THE GROUND REINSTATEMENT WORKS SHALL BE DONE BY OTHERS.

TABLE FOR CATCHPIT DETAILS:

CATCHPIT NO.	CP7	CP7A	CP8	CP9	CP10	CP11	CP12
TOP LEVEL (mm FROM F.G.L.)	600	300	0	300	300	0	650
DOWN PIPE AT TOP *	YES	NO	YES	YES	YES	NO	NO

* FOR ANY DOWN PIPE AT TOP REFER TO DWG. NO. HKLR9/MMH/AB/PW/DN/00138.
FOR NO DOWN PIPE AT TOP REFER TO DWG. NO. HKLR9/MMH/AB/PW/DN/00139.

Main Contractor: Dragages - China Harbour - VSL Joint Venture 寶嘉-中國港灣-威胜利聯營

Contractor's Designer: Mott MacDonald / YWL Engineering

Consultant: ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title: Contract No. HY/2011/09 Hong Kong - Zhuhai - Macao Bridge Hong Kong Link Road Section Between HKSAR Boundary and Scenic Hill

Drawing Title: TYPICAL DRAINAGE DETAILS INTERFACE ABUTMENT

Drawing No.: HKLR9/MMH/AB/PW/DN/00121 Rev. -

Design: AL | Drawn: PL | Checked: HTC | Status: AS-BUILT

Scale: 1:1000 (IN A1) | Approved: -

Job No.: HKLR9 | Sheet No.: 1 OF 1

File name: HKLR9_MMH_AB_PW_DN_00121.dgn

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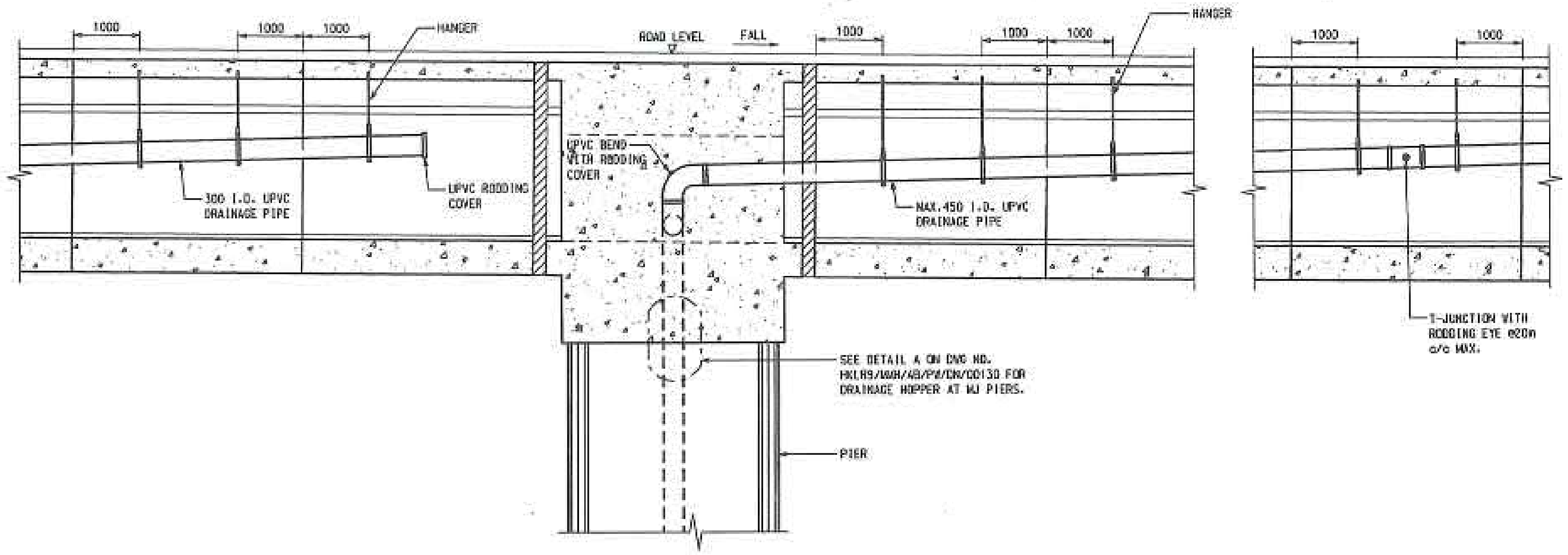
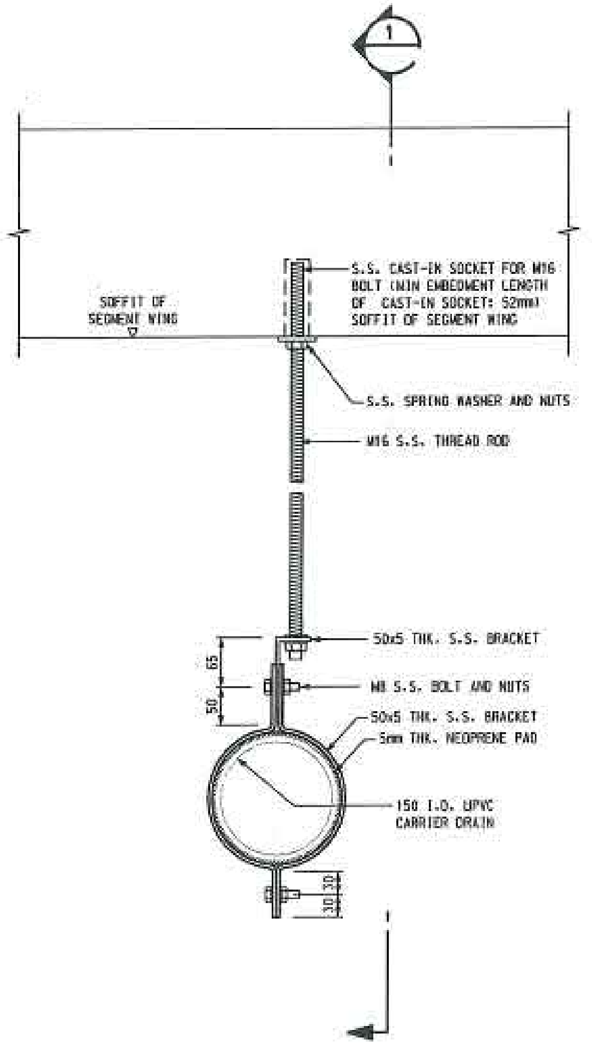


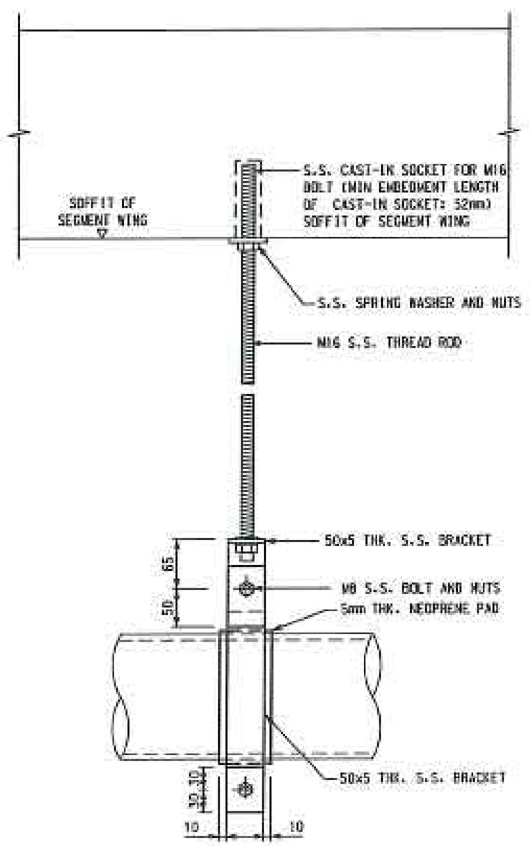
TYPICAL CARRIER DRAIN ARRANGEMENT

SCALE 1:50



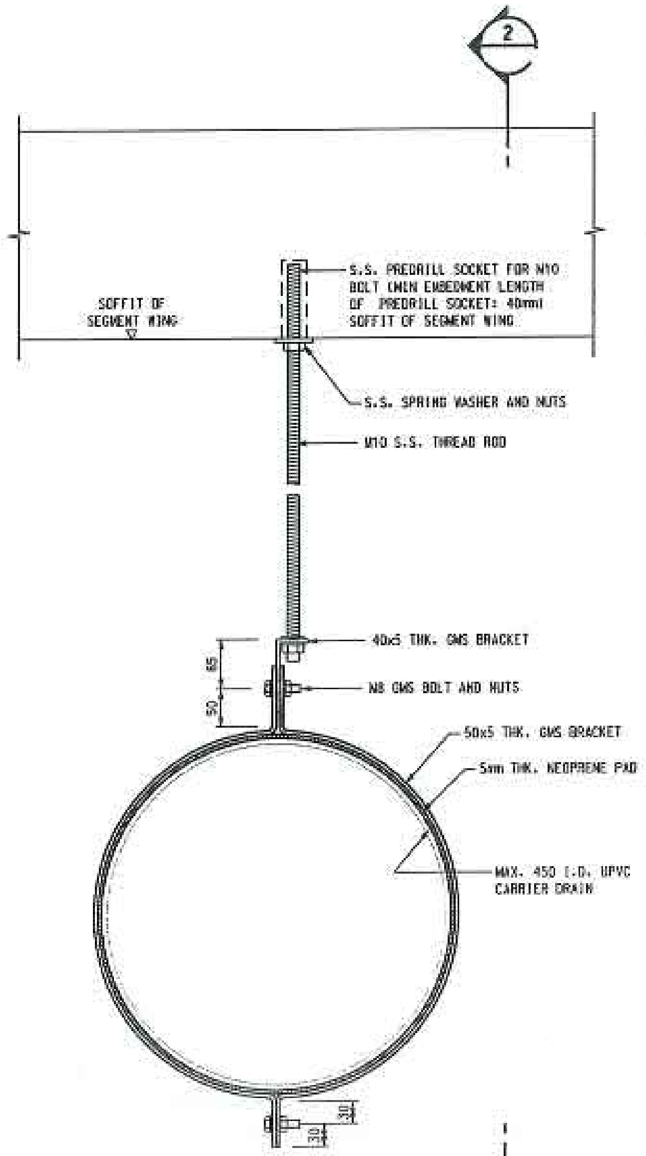
TYPICAL HANGER DETAIL FOR GULLY CONNECTION PIPE EXPOSED TO OUTDOOR ENVIRONMENT

SCALE 1:5



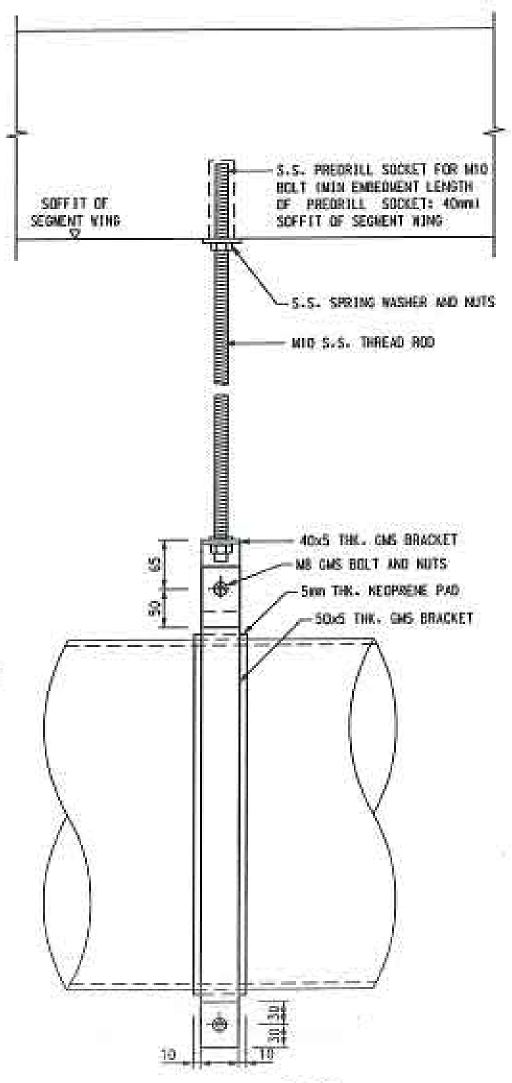
SECTION 1

SCALE 1:5



TYPICAL HANGER DETAIL FOR CARRIER DRAIN INSIDE DECK VOID

SCALE 1:5



SECTION 2

SCALE 1:5

NOTES:

1. FOR NOTES AND LEGENDS REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. LOCATION AND DETAIL OF HANGER ARE INDICATIVE ONLY. EXACT ARRANGEMENT OF HANGER TO BE DETERMINED ON SITE.
3. GRADE S275 WILL BE ADOPTED FOR GMS BRACKET.
4. NYLON WASHER TO BE PROVIDED BETWEEN S.S. AND GMS FOR ISOLATION.

As-built Drawing

Prepared by the Contractor "DCVJV"

Mr. W.K.Poon (Project Director) — 11/01/19 Date

Checked by the Designer "Mott MacDonald"

Dr. H.T.Cheng (Designer) — 11/01/19 Date

Endorsed by the Design Checker "AECOM"

Ir. Charles Luk (Design Checker) — 11/01/19 Date

Main Contractor: Dragages - China Harbour - VSL Joint Venture 寶嘉-中國港灣-威勝利聯營

Contractor's Designer: Mott MacDonald; YWL Engineering

Consultant: ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title: Contract No. HY/2011/09 Hong Kong - Zhuhai - Macao Bridge Hong Kong Link Road Section Between HKSAR Boundary and Scenic Hill

Drawing Title: TYPICAL DRAINAGE DETAILS HANGER SUPPORT

Drawing No. HKLR9/MMH/AB/PW/DN/00124			Rev. -
Design AL	Drawn SHL	Approved HTC	Status AS-BUILT
Scale AS SHOWN (IN A1)		Approved -	
Job No. HKLR9		Sheet No. 1 OF 1	
File name HKLR9_MMH_AB_PW_DN_00124.dgn			

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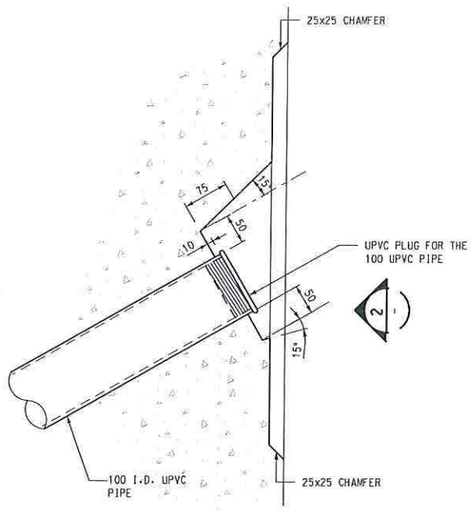
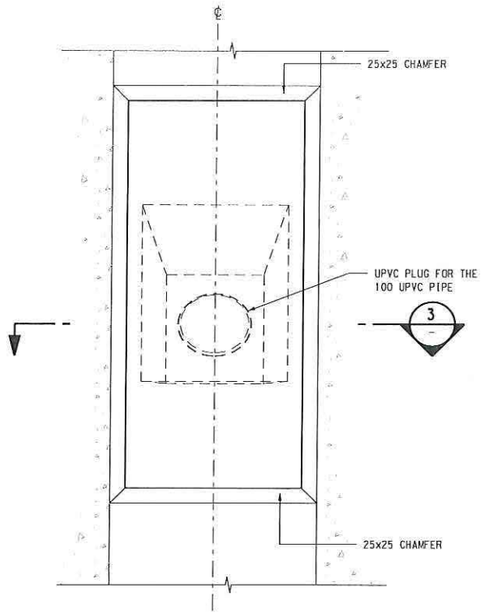


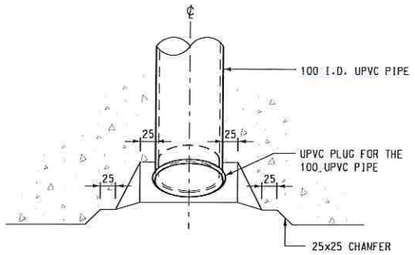
RODDING EYE AT PIER

SCALE 1:5



VIEW 2

SCALE 1:5



SECTION 3

SCALE 1:5

NOTES:

1. FOR NOTES AND LEGENDS REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. DETAILS OF RODDING EYE ON SURFACE ROAD SHALL REFER TO HyD STANDARD DRAWINGS H3114A AND H3115A.

As-built Drawing

Prepared by the Contractor "DCVJV"

04JUN2019

Mr. W.K.Poon (Project Director) — Date

Checked by the Designer "Mott MacDonald"

04JUN2019

Dr. H.T.Cheng (Designer) — Date

Endorsed by the Design Checker "AECOM"

04JUN2019

Ir. Charles Luk (Design Checker) — Date

Main Contractor

Dragages - China Harbour - VSL Joint Venture 實嘉-中國海灣-威勝利聯營

Contractor's Designer

Mott MacDonald YWL Engineering

Consultant

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title

TYPICAL DRAINAGE DETAILS - RODDING EYE

Drawing no.			Rev.
HKLR9/MMH/AB/PW/DN/00125			-
Design: AL	Drawn: SHL	Approved: HTC	Status: AS-BUILT
Scale: AS SHOWN (IN A1)		Approved: -	
Job No.: HKLR9		Sheet No.: 1 OF 1	
File name: HKLR9_MMH_AB_PW_DN_00125.dgn			

路政署 HIGHWAYS DEPARTMENT

0 50 100 150 200 250 mm
1 : 5 SCALE BAR

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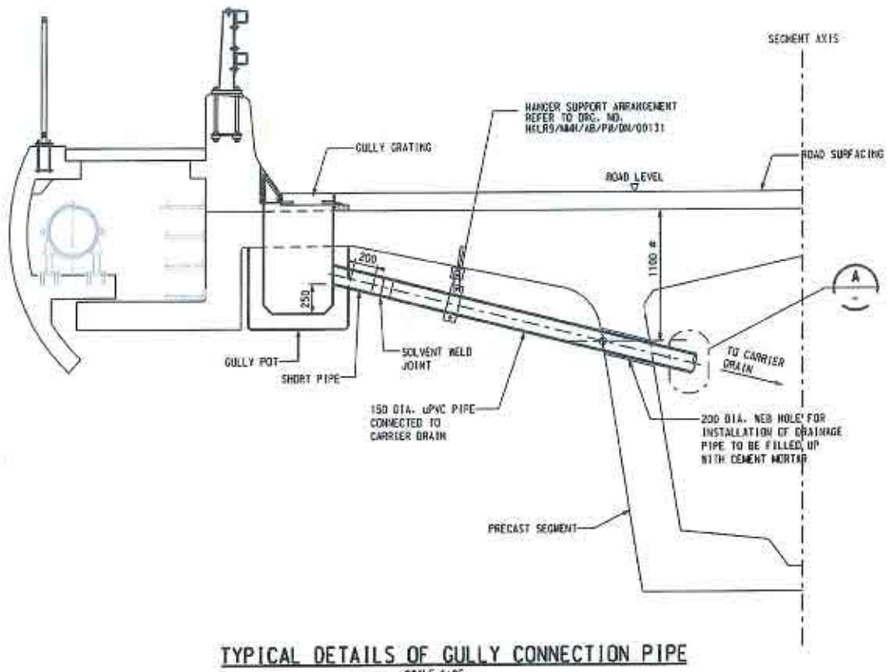
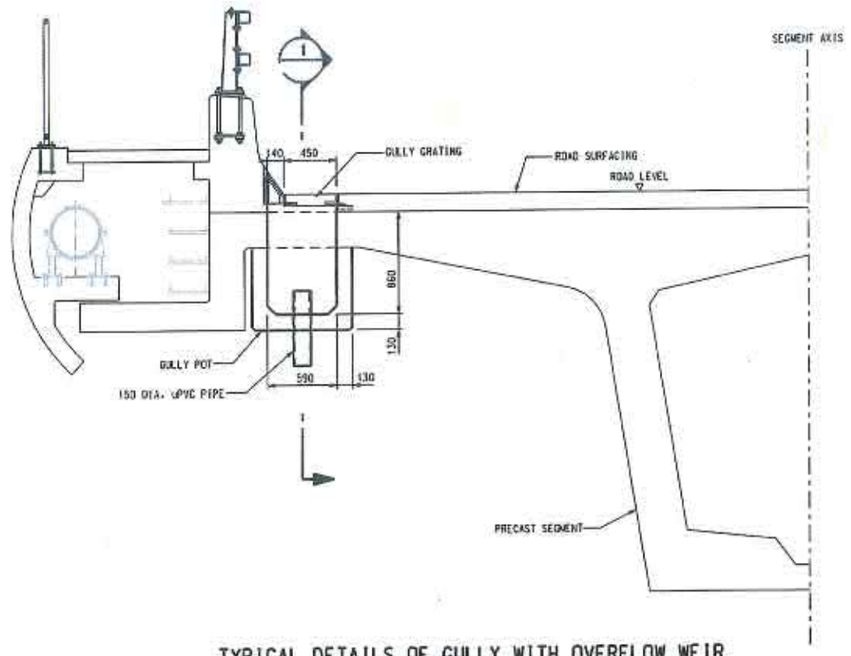
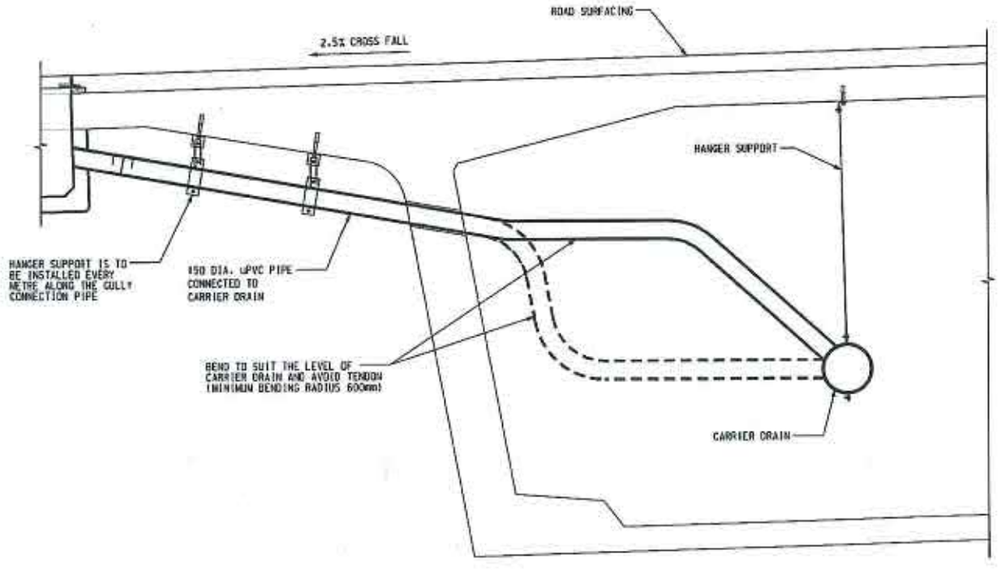


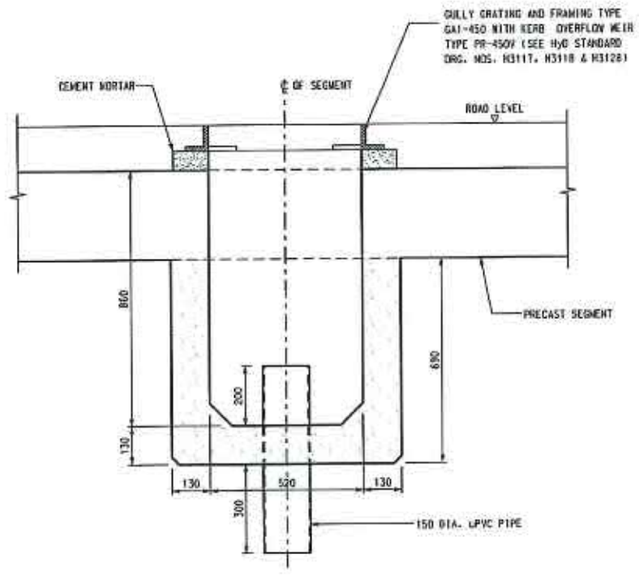
TYPICAL DETAILS OF GULLY CONNECTION PIPE
SCALE 1:25



TYPICAL DETAILS OF GULLY WITH OVERFLOW WEIR
SCALE 1:25



DETAIL A
SCALE 1:25



SECTION 1
SCALE 1:10

0 100 200 300 400 500 mm
1 : 10 SCALE BAR
0 500 1000 mm
1 : 25 SCALE BAR

As-built Drawing

Prepared by the Contractor "DCVJV"
11/01/19
Mr. W.K.Poon (Project Director) Date

Checked by the Designer "Mott MacDonald"
11/01/19
Dr. H.T.Cheng (Designer) Date

Endorsed by the Design Checker "AECOM"
11/01/19
Ir. Charles Luk (Design Checker) Date

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald | YWL Engineering

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

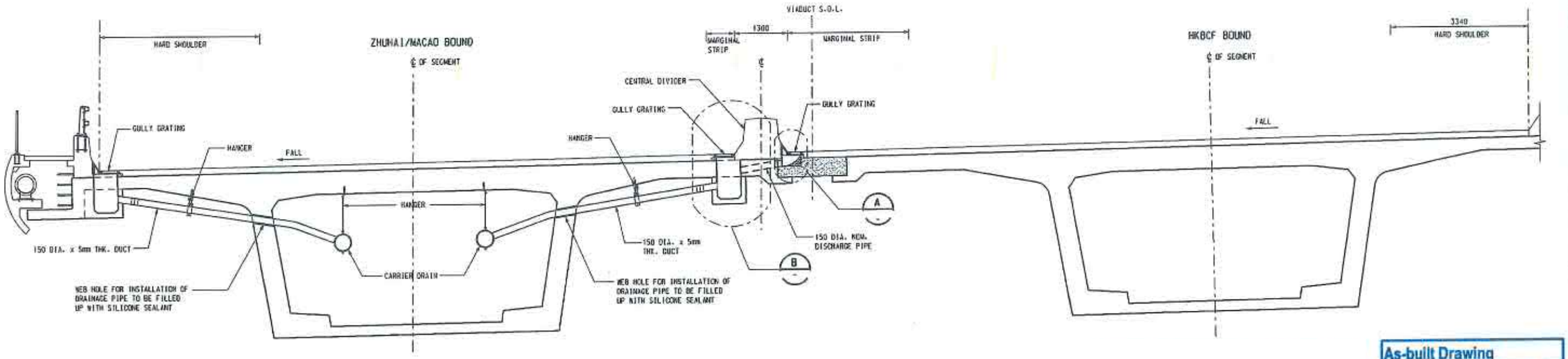
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

TYPICAL DRAINAGE DETAILS
GULLY CONNECTION PIPE

Drawing no. HKLR9/MMH/AB/PW/DN/00126			Rev. -
Design AL	Drawn SHL	Approved HTC	Status AS-BUILT
Scale AS SHOWN (IN A1)		Appr. ref. -	
Job no. HKLR9		Sheet no. 1 OF 1	
File name HKLR9_MMH_AB_PW_DN_00126.dgn			

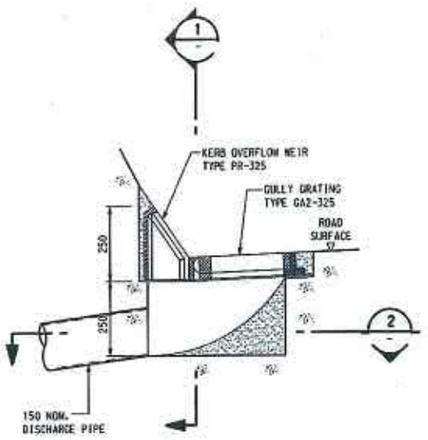
路政署 HIGHWAYS DEPARTMENT

Printed by : 1/30/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00126.dgn

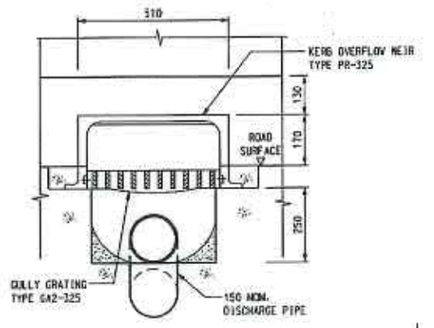


TYPICAL GULLY ARRANGEMENT FOR WIDENING SECTION

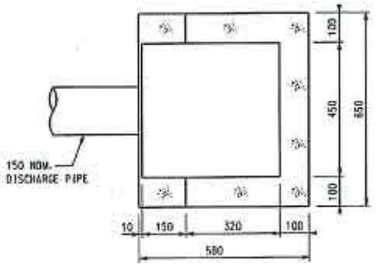
SCALE 1:50



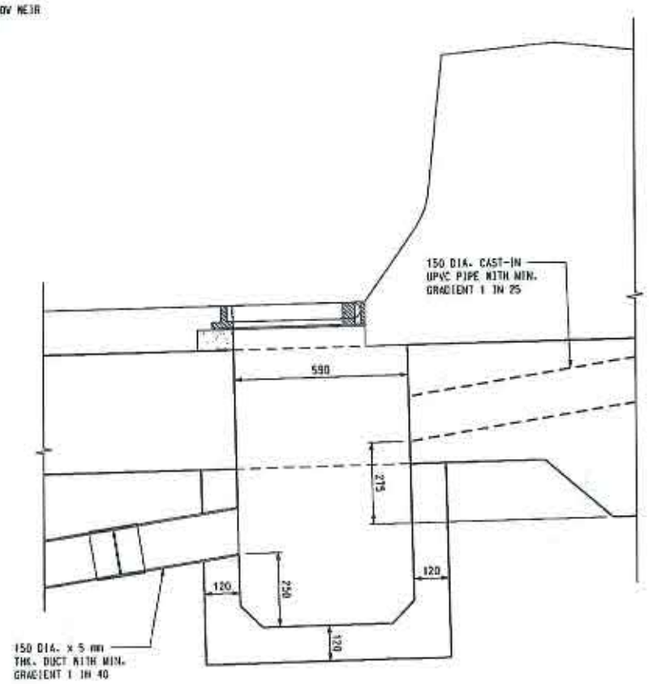
DETAIL A
SCALE 1:10



SECTION 1
SCALE 1:10



SECTION 2
SCALE 1:10



DETAIL B
SCALE 1:10

0 500 1000 1500 2000 2500 mm
1 : 50 SCALE BAR

As-built Drawing

Prepared by the Contractor "DCVJV"

11/01/19
Mr. W.K.Poon (Project Director) Date

Checked by the Designer "Mott MacDonald"

11/01/19
Dr. H.T.Cheng (Designer) Date

Endorsed by the Design Checker "AECOM"

11/01/19
Ir. Charles Luk (Design Checker) Date

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald YWL Engineering

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

TYPICAL DRAINAGE ARRANGEMENT FOR WIDENING SECTIONS

Drawing No. HKLR9/MMH/AB/PW/DN/00128			Rev. -
Design AL	Drawn SHL	Approved HTC	Status AS-BUILT
Scale AS SHWON (IN A1)		Approved -	
Job No. HKLR9		Sheet No. 3 OF 6	
File Name: HKLR9_MMH_AB_PW_DN_00128.dgn			

路政署 HIGHWAYS DEPARTMENT

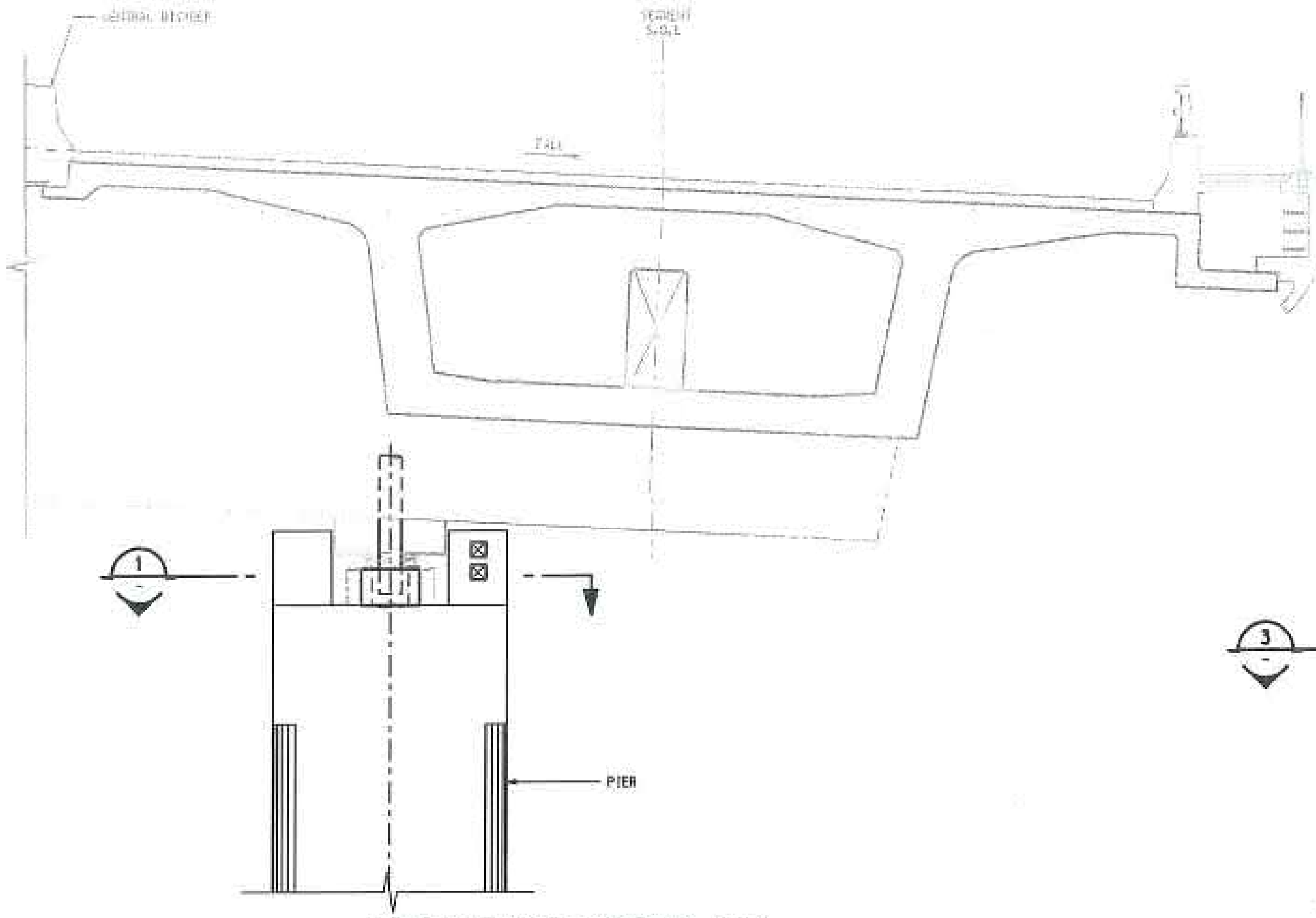
Printed by : 1/30/2019
Filename : D:\HKLR9\As-Built drawings\DDA 2D\Final As-Built drawings\Port 1\HKLR9_MMH_AB_PW_DN_00128.dgn

NOTE:

1. CAST IRON FOR GRATINGS IS TO CONFORM WITH GRADE 150 OF BS1452.

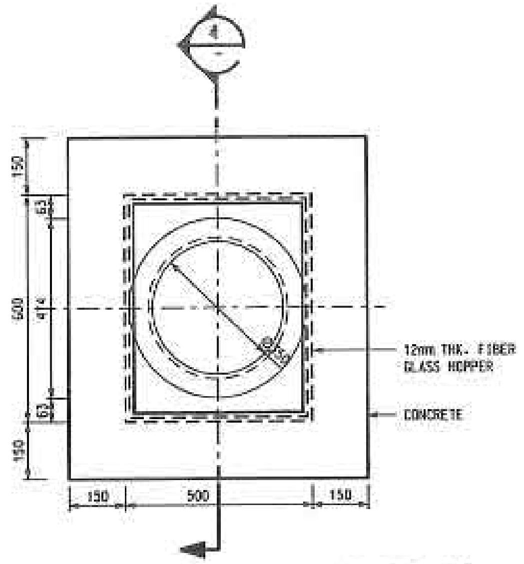
LEGEND:

(hatched)	ZONE FOR JACKING POINT FOR BEARING REPLACEMENT. JACK SHALL BE PLACED EQUALLY DISTRIBUTED IN THE ZONE
(boxed X)	200x200x150 BOX-OUT FOR EARTH / ELECTRICAL PIT



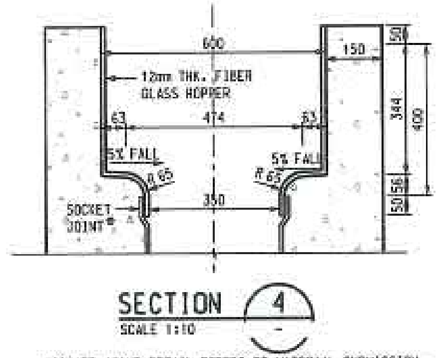
FRONT VIEW OF SLIDDING PIER

SCALE 1:50



DETAILS OF DRAINAGE HOPPER FORMER

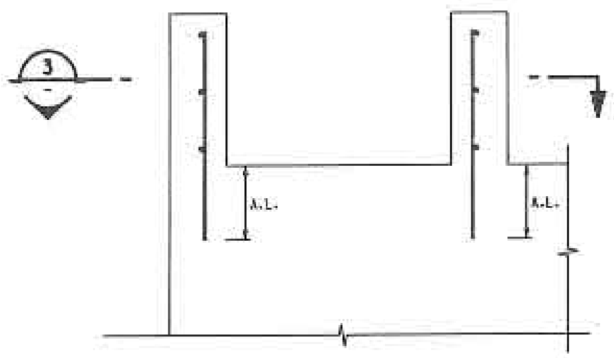
SCALE 1:5



SECTION 4

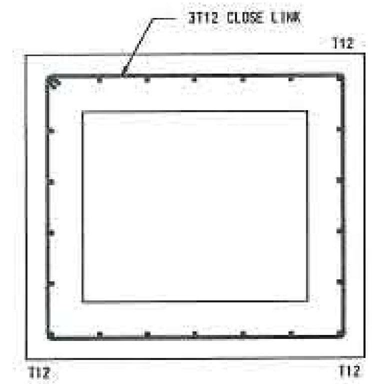
SCALE 1:10

* SOCKET JOINT DETAIL REFERS TO MATERIAL SUBMISSION.



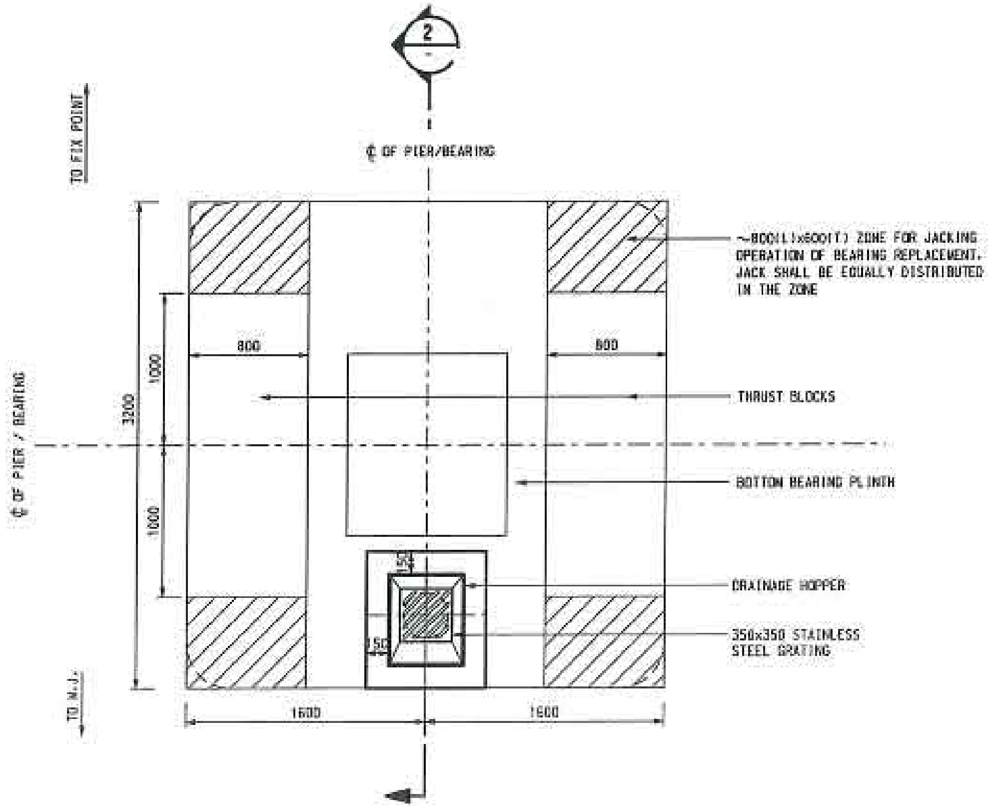
R.C. DETAIL DRAINAGE HOPPER CONCRETE SURROUND

SCALE 1:10



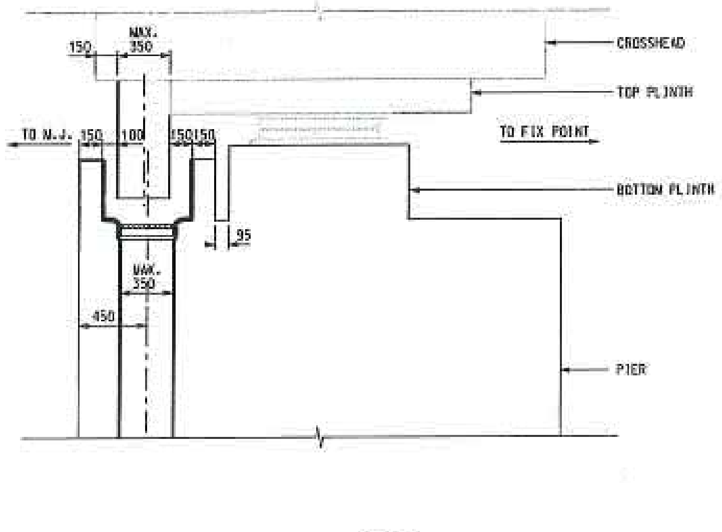
SECTION 3

SCALE 1:10



SECTION 1

SCALE 1:25



SECTION 2

SCALE 1:25

(THRUST BLOCK NOT SHOW FOR CLARITY)

As-built Drawing

Prepared by the Contractor "DCVJV"

Mr. W.K.Poon (Project Director) — Date 11/01/19

Checked by the Designer "Mott MacDonald"

Dr. H.T.Cheng (Designer) — Date 11/01/19

Endorsed by the Design Checker "AECOM"

Ir. Charles Luk (Design Checker) — Date 11/01/19

Main Contractor: Dragages - China Harbour - VSL Joint Venture 寶嘉-中國港灣-威胜利聯營

Contractor's Designer: Mott MacDonald; YWL Engineering

Consultant: ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

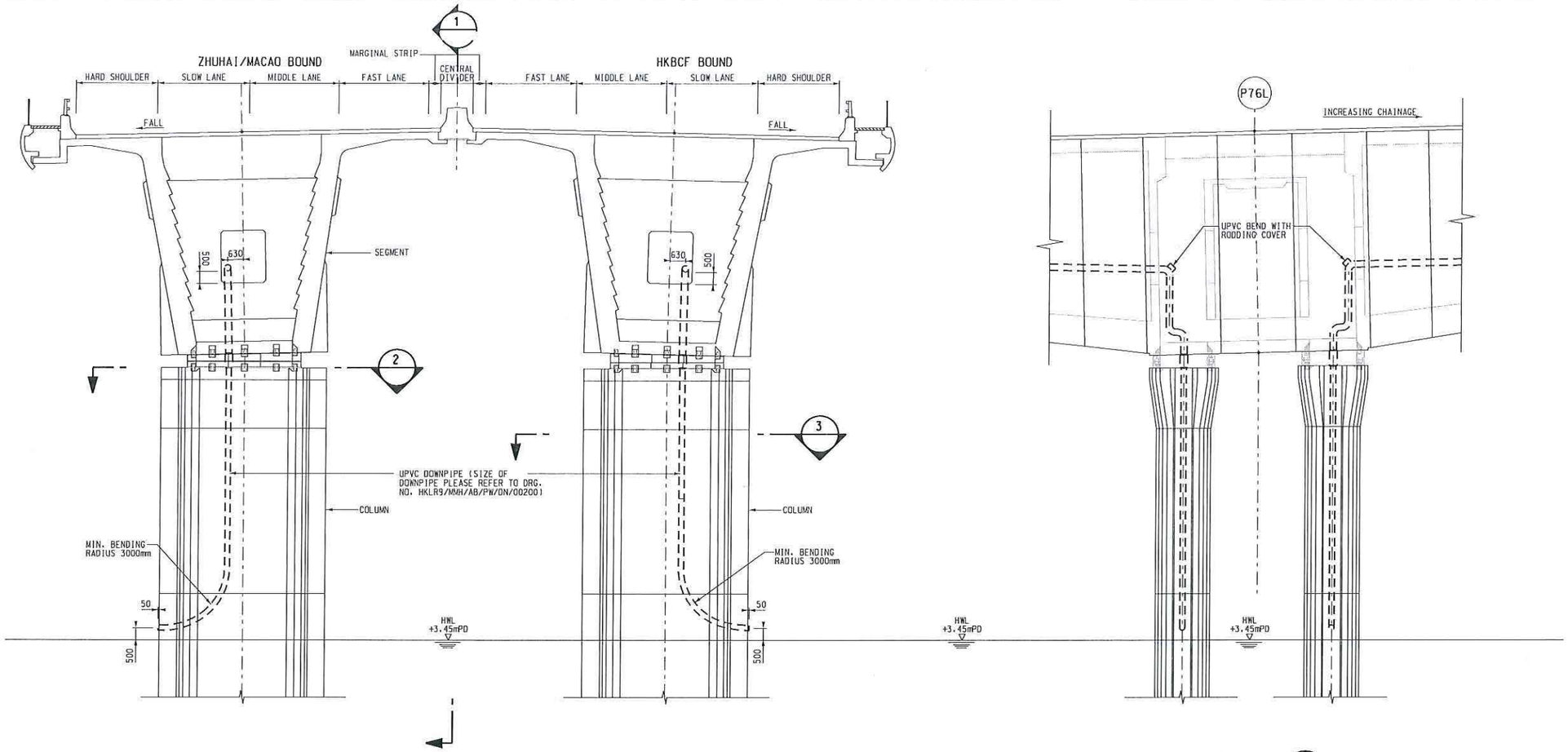
Project Title:
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title:
TYPICAL DRAINAGE DETAILS
DRAINAGE HOPPER

Drawing No.	HKLR9/MMH/AB/PW/DN/00130
Rev.	-
Design	AL
Drawn	PL
Approved	HTC
Status	AS-BUILT
Scale	AS SHOWN (IN A1)
Job No.	HKLR9
Sheet No.	1 OF 1
File name	HKLR9_MMH_AB_PW_DN_00130.dgn

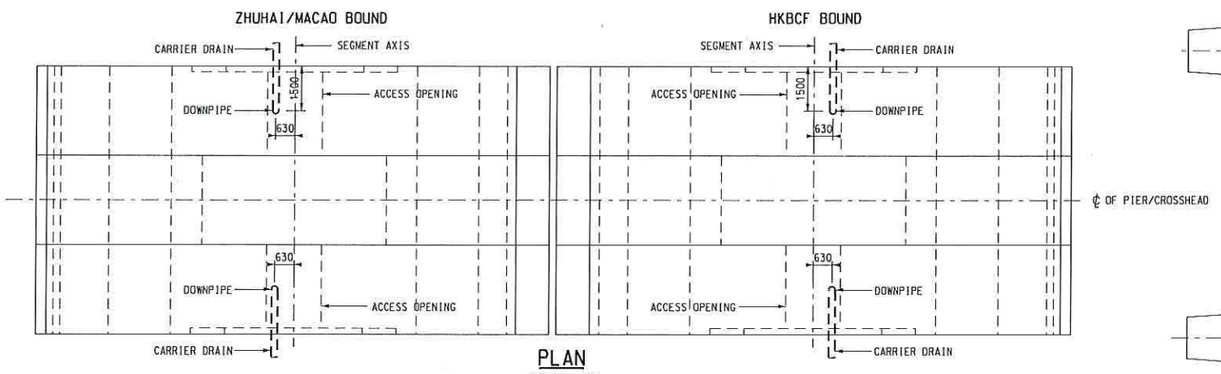
路政署 HIGHWAYS DEPARTMENT

Printed by : 1/30/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00130.dgn

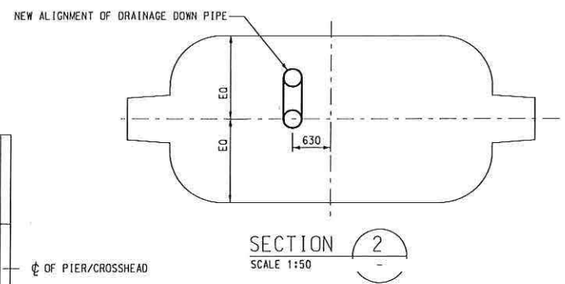


MONOLITHIC PIER AT NAVIGATION CHANNEL
(APPLICABLE TO PIER P76)
SCALE 1:100

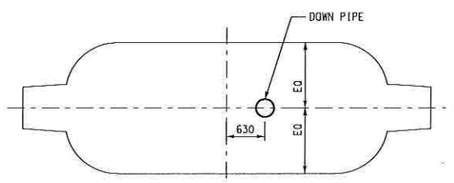
SECTION 1
SCALE 1:100



PLAN
SCALE 1:100



SECTION 2
SCALE 1:50



SECTION 3
SCALE 1:50

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIER P76.
3. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
4. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
5. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"
11/01/19
Mr. W.K.Poon (Project Director) Date

Checked by the Designer "Mott MacDonald"
11/01/19
Dr. H.T.Cheng (Designer) Date

Endorsed by the Design Checker "AECOM"
11/01/19
Ir. Charles Luk (Design Checker) Date

Main Contractor
Dragages - China Harbour - VSL Joint Venture 實基-中國海灣-威勝利聯營

Contractor's Designer
Mott MacDonald YWL Engineering

Consultant
ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

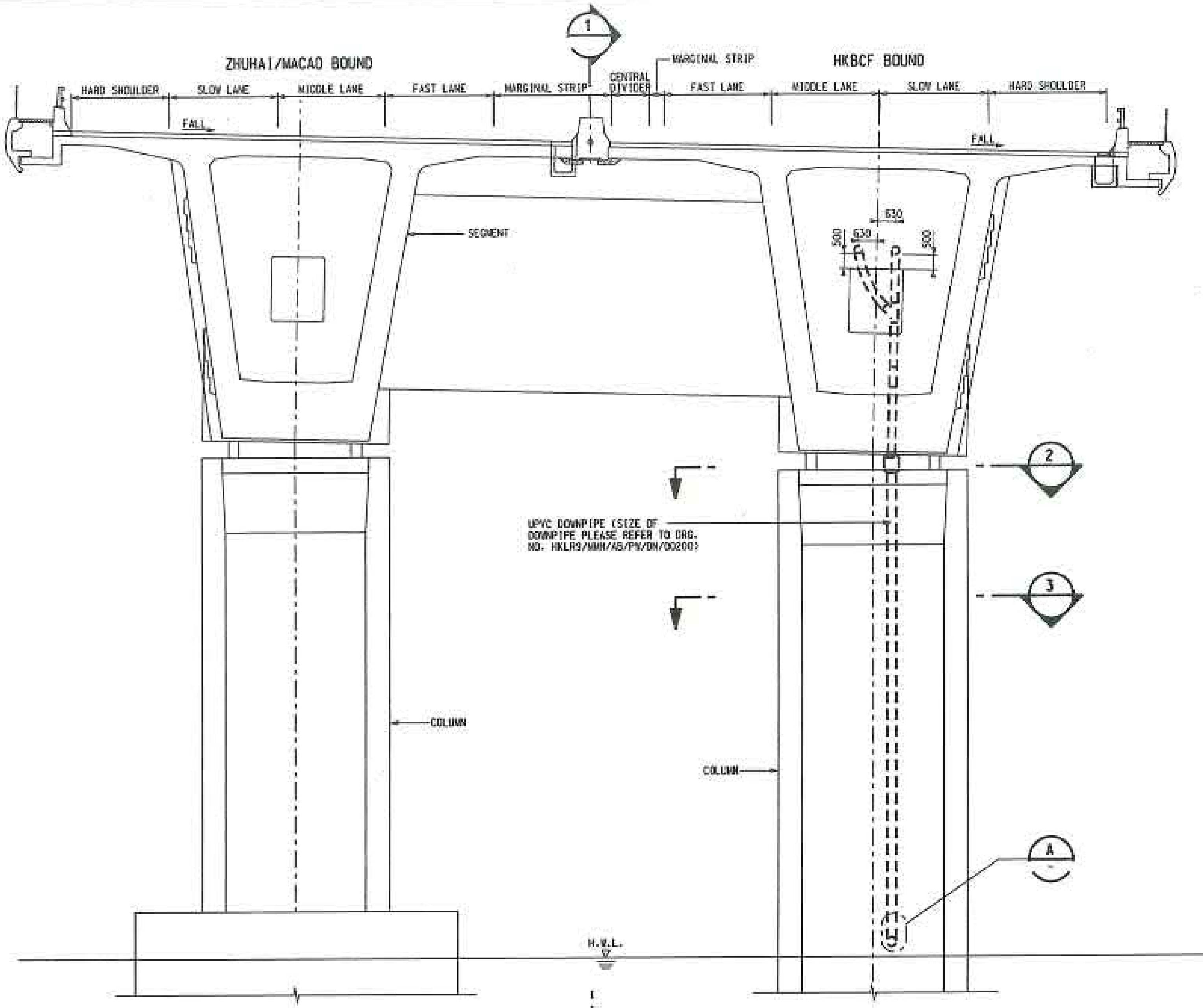
Project Title
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title
TYPICAL DRAINAGE
DOWNPIPE ARRANGEMENT - PIER P76

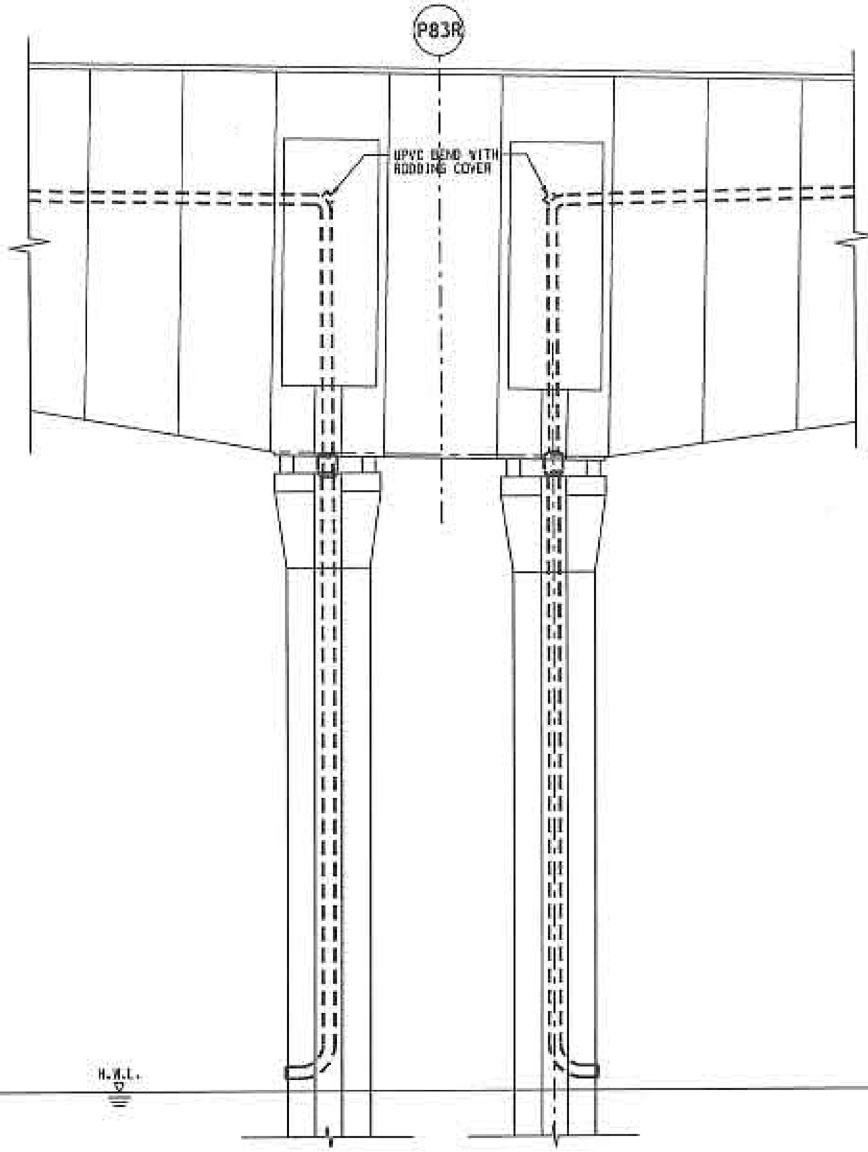
Drawing no. HKLR9/MMH/AB/PW/DN/00132			Rev. -
Design AL	Drawn PL	Approved HTC	Status AS-BUILT
Scale AS SHOWN (IN A1)		Approved -	
Job No. HKLR9		Sheet No. 1 OF 1	
File name HKLR9_MMH_AB_PW_DN_00132.dgn			

0 500 1000 mm
1 : 20 SCALE BAR
0 500 1000 1500 2000 2500 mm
1 : 50 SCALE BAR
0 1 2 3 4 5 m
1 : 100 SCALE BAR

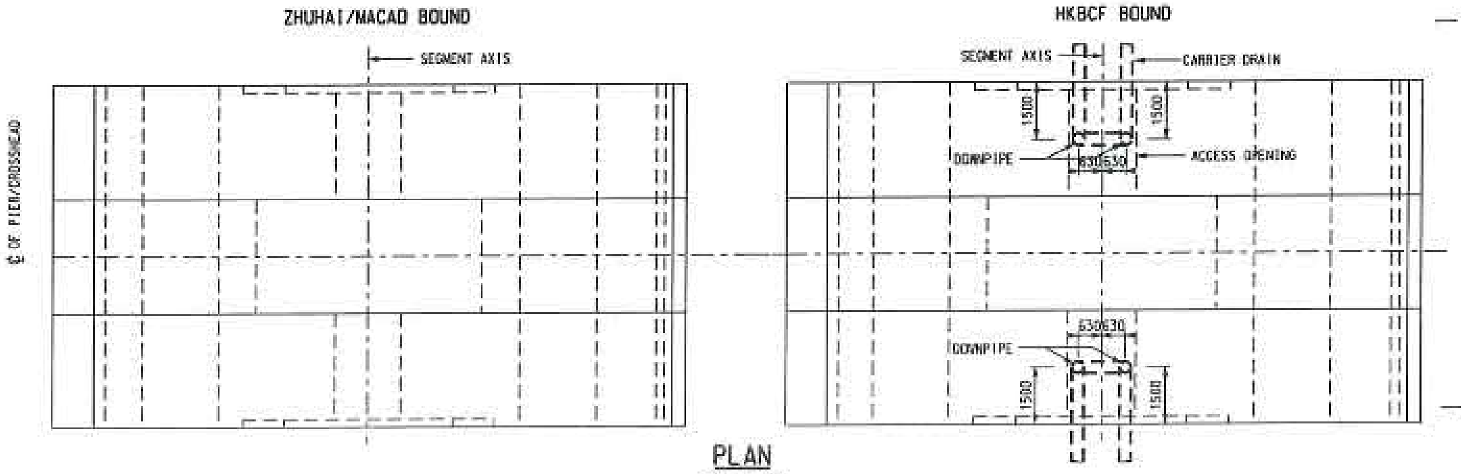
路政署 HIGHWAYS DEPARTMENT



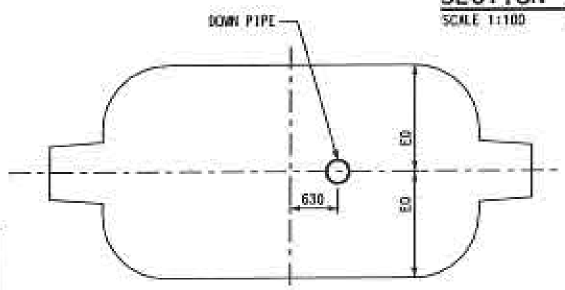
MONOLITHIC PIER AT NAVIGATION CHANNEL (APPLICABLE TO PIERS P82 AND P83)
SCALE 1:100



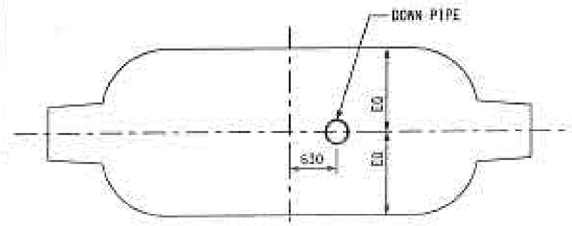
SECTION 1
SCALE 1:100



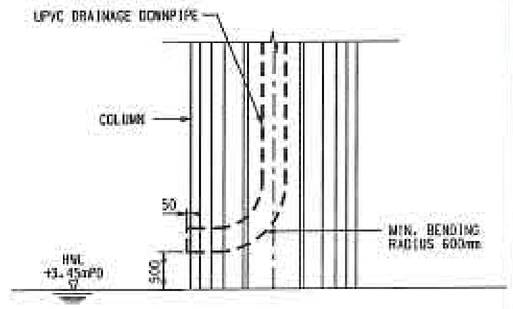
PLAN
SCALE 1:100



SECTION 2
SCALE 1:50



SECTION 3
SCALE 1:50



DETAIL A
SCALE 1:50

NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIERS P82 AND P83.
3. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
4. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
5. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"
Mr. W.K.Poon (Project Director) — Date 11/01/19

Checked by the Designer "Mott MacDonald"
Dr. H.T.Cheng (Designer) — Date 11/01/19

Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) — Date 11/01/19

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald | YWL Engineering

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

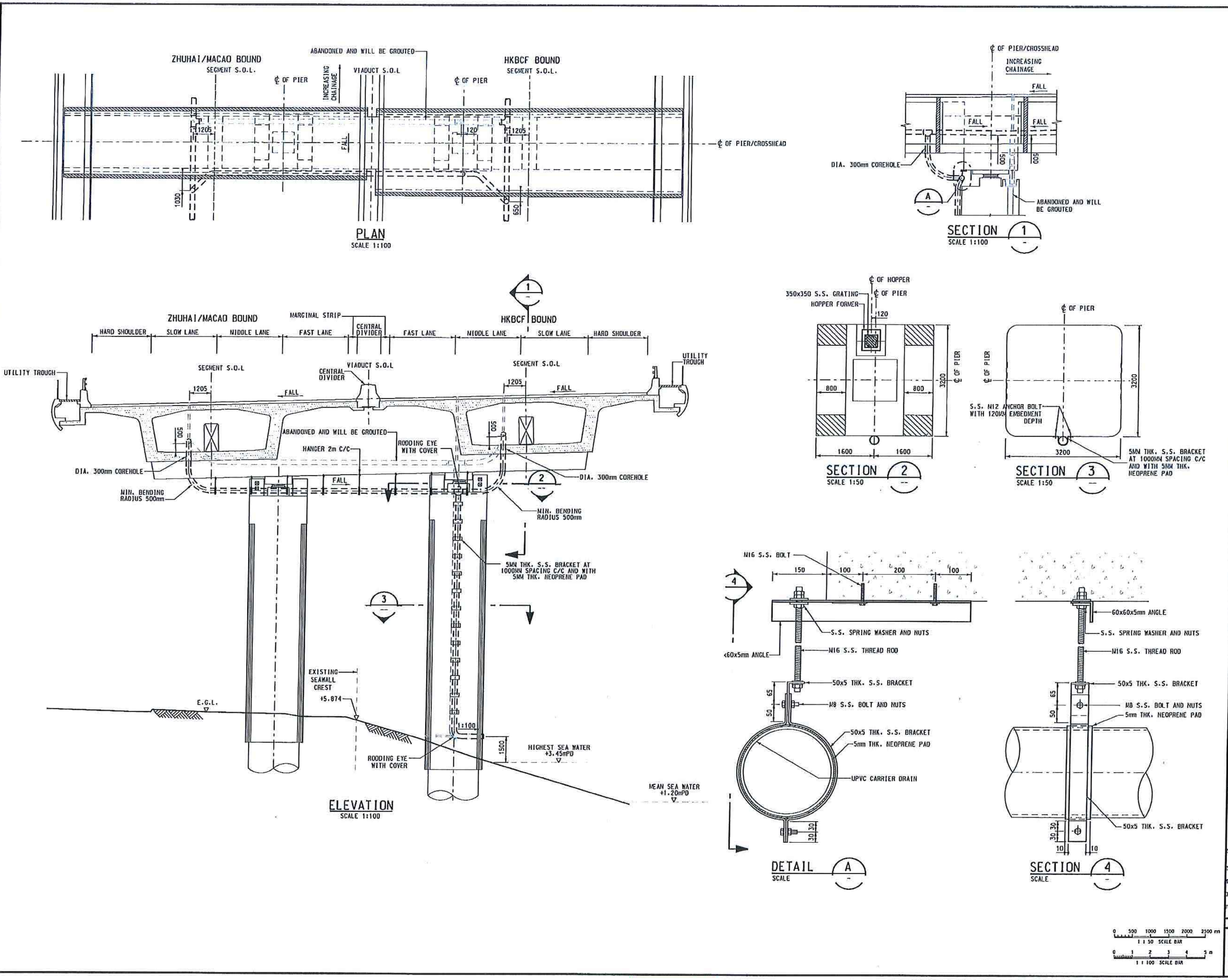
TYPICAL DRAINAGE DOWNPIPE ARRANGEMENT PIER P82 & P83

Drawing No. HKLR9/MMH/AB/PW/DN/00133			Rev. -
Design RL	Drawn PL	Approved HTC	Status AS-BUILT
Scale AS SHOWN (IN A1)		Approved -	
Job No. HKLR9		Sheet No. 1 OF 1	
File name HKLR9_MMH_AB_PW_DN_00133.dgn			

1:50 SCALE BAR
1:100 SCALE BAR
1:200 SCALE BAR

路政署 HIGHWAYS DEPARTMENT

Printed by : 1/30/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00133.dgn



NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIER P105.
3. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
4. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
5. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.
6. DETAILS OF DRAINAGE HOPPER REFERS TO DRG. NO. HKLR9/MMH/AB/PW/DN/00130.

As-built Drawing

Prepared by the Contractor "DCVJV"
Mr. W.K.Poon (Project Director) — Date 04JUN2019

Checked by the Designer "Mott MacDonald"
Dr. H.T.Cheng (Designer) — Date 04JUN2019

Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) — Date 04JUN2019

Main Contractor: Dragages - China Harbour - VSL Joint Venture 寶嘉-中國港灣-威胜利聯營

Contractor's Designer: Mott MacDonald / YWL Engineering

Consultant: ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title: Contract No. HY/2011/09 Hong Kong - Zhuhai - Macao Bridge Hong Kong Link Road Section Between HKSAR Boundary and Scenic Hill

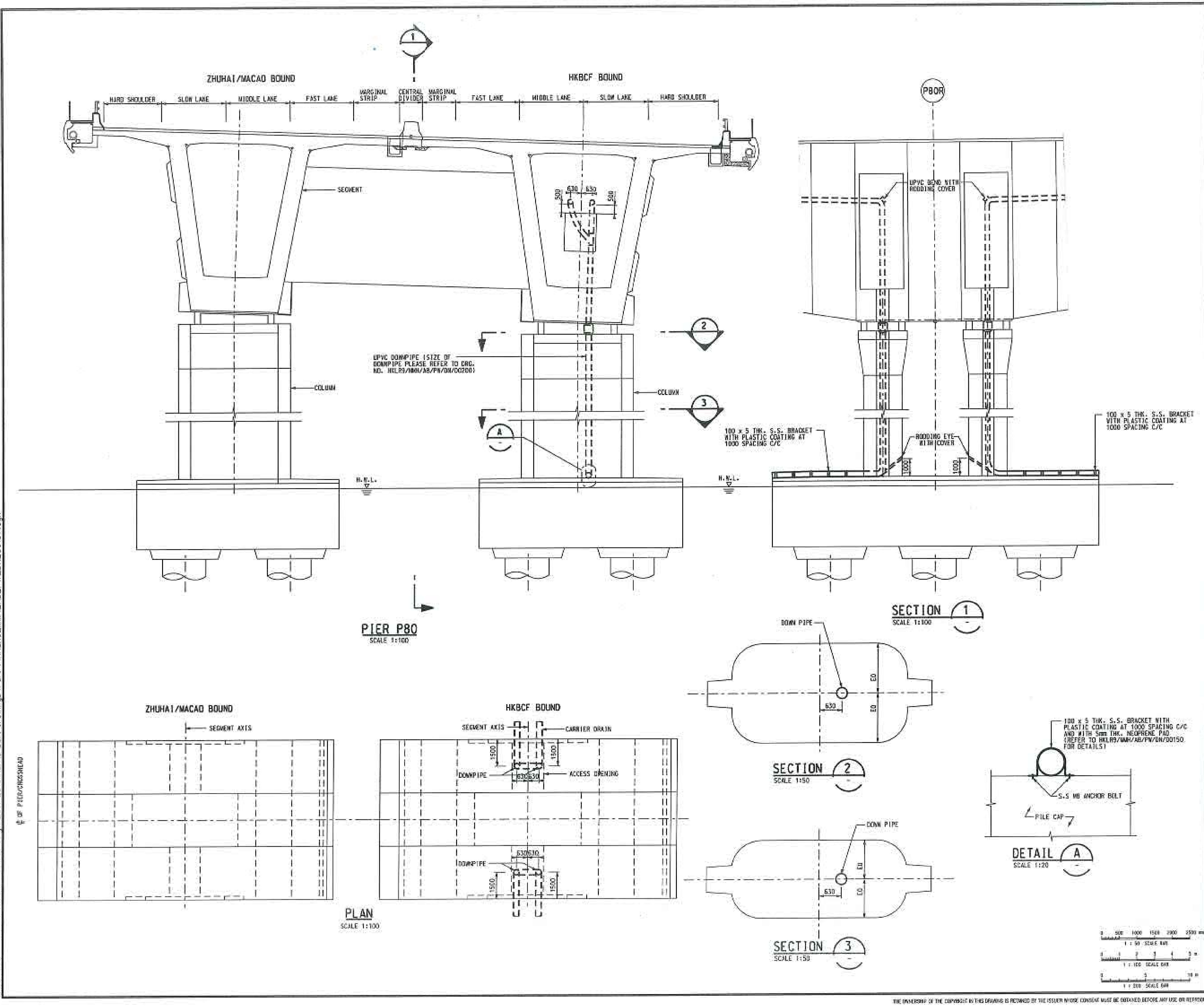
Drawing Title: TYPICAL DRAINAGE DETAILS DOWNPIPE ARRANGEMENT - PIER P105

Drawing no.	HKLR9/MMH/AB/PW/DN/00134
Rev.	-
Design	AL
Drawn	PL
Approved	HTC
Status	AS-BUILT
Scale	AS SHOWN (IN A1)
Job No.	HKLR9
Sheet No.	1 OF 1
File name	HKLR9_MMH_AB_PW_DN_00134.dgn

0 500 1000 1500 2000 2500 mm 1:50 SCALE BAR
0 1 2 3 4 5 m 1:100 SCALE BAR

路政署 HIGHWAYS DEPARTMENT

Printed by : 6/4/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00134.dgn



NOTES:

1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIERS P80.
3. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
4. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
5. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.

As-built Drawing

Prepared by the Contractor "DCVJV"
Mr. W.K.Poon (Project Director) — 11/01/19 Date

Checked by the Designer "Mott MacDonald"
Dr. H.T.Cheng (Designer) — 11/01/19 Date

Endorsed by the Design Checker "AECOM"
Ir. Charles Luk (Design Checker) — 11/01/19 Date

Dragages - China Harbour - VSL Joint Venture

Mott MacDonald | YWL Engineering

ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

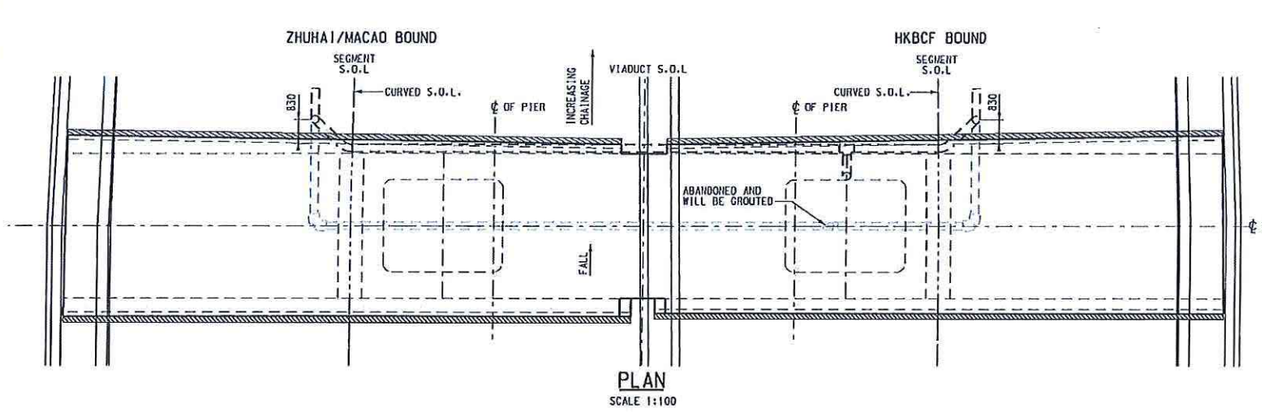
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

TYPICAL DRAINAGE DOWNPIPE ARRANGEMENT PIER P80

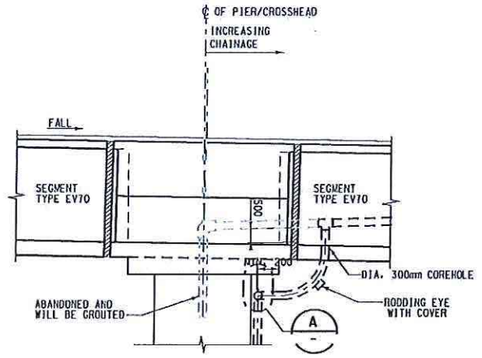
Drawing No.	HKLR9/MMH/AB/PW/DN/00137
Rev.	-
Design	RL
Drawn	JL
Approved	HTC
Status	AS-BUILT
Scale	AS SHOWN (IN A1)
Job No.	HKLR9
Sheet No.	1 OF 1
File name	HKLR9_MMH_AB_PW_DN_00137.dgn

路政署 HIGHWAYS DEPARTMENT

Printed by : 1/30/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00137.dgn



PLAN
SCALE 1:100



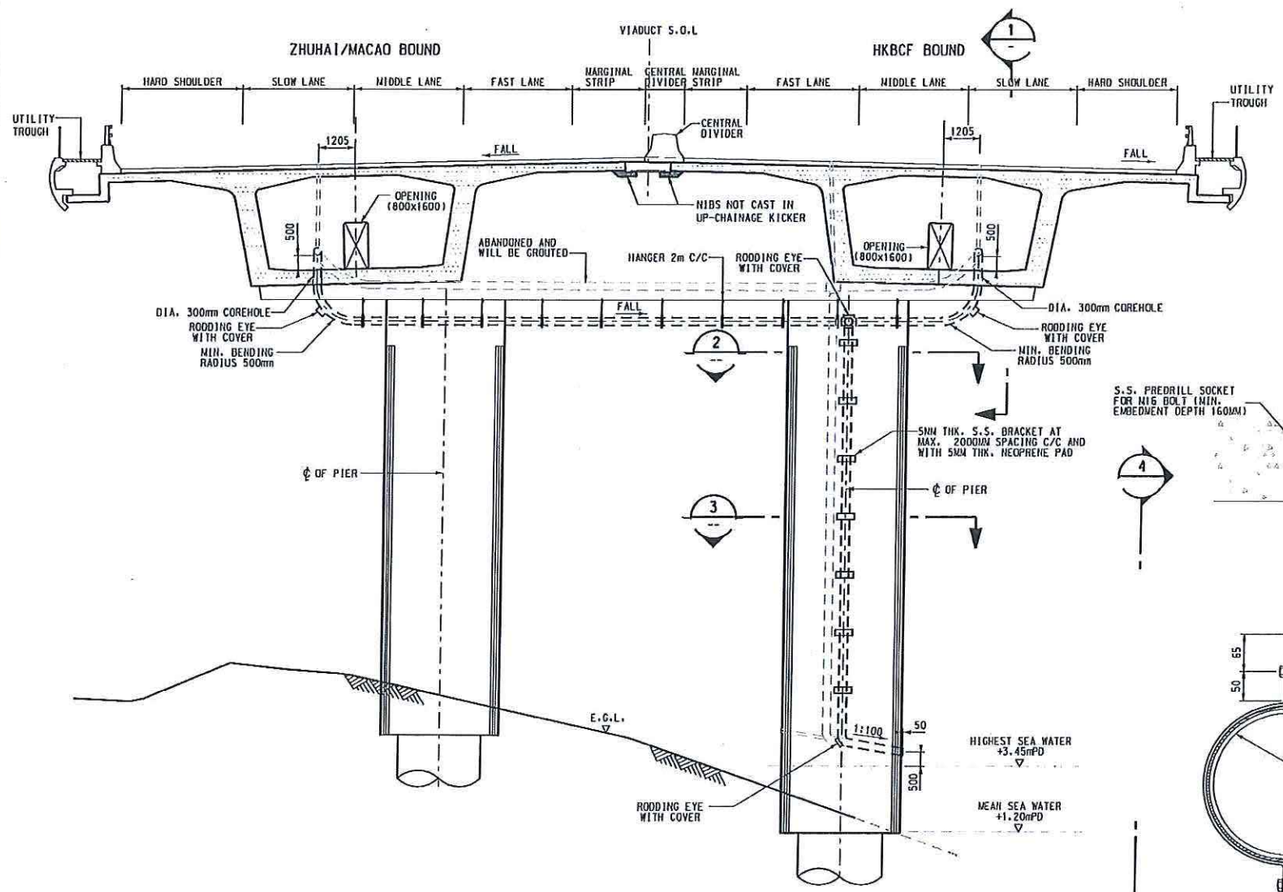
SECTION 1
SCALE 1:100

(SECTION @ SEGMENT S.O.L.)

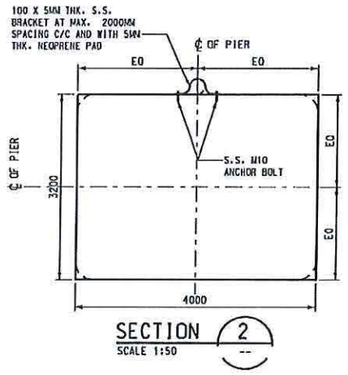
delete

NOTES:

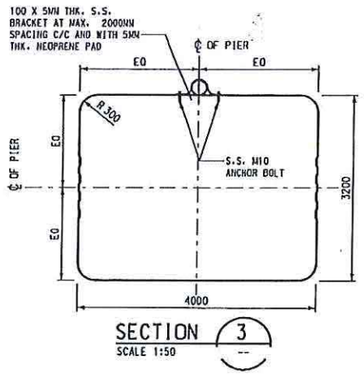
1. FOR GENERAL NOTES REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00000.
2. THIS TYPE OF DRAINAGE ARRANGEMENT IS APPLICABLE TO PIERS P87, ~~P88, P89, P90, P94, P95, P96, P97, P98, P101, P102~~ AND P103.
3. DETAILS OF RODDING EYE RETERS TO DRG. NO. HKLR9/MMH/AB/PW/DN/00125.
4. PIER STARTERS AT CROSSHEAD SHALL BE CRANKED TO ALLOW CARRIER DRAIN PASSING THROUGH TO THE PIER AREA IF NECESSARY.
5. THIS SIZE OF CARRIAGE DRAIN REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00001-00009.
6. THE SIZE OF DOWNPIPE REFER TO DRG. NO. HKLR9/MMH/AB/PW/DN/00200.



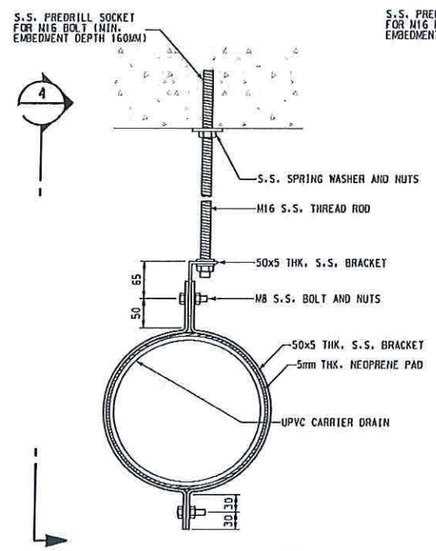
MONLITHIC PIERS AT LANDSIDE VIADUCT
(APPLICABLE TO PIER P87, P96, P98 AND P103)
SCALE 1:100



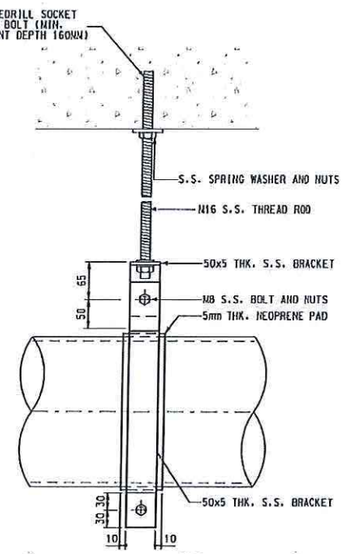
SECTION 2
SCALE 1:50



SECTION 3
SCALE 1:50



DETAIL A
SCALE



SECTION 4
SCALE

0 500 1000 1500 2000 2500 mm
1 : 50 SCALE BAR

0 1 2 3 4 5 m
1 : 100 SCALE BAR

As-built Drawing

Prepared by the Contractor "DCVJV"

04JUN2019

Mr. W.K.Poon (Project Director) Date

Checked by the Designer "Mott MacDonald"

04JUN2019

Dr. H.T.Cheng (Designer) Date

Endorsed by the Design Checker "AECOM"

04JUN2019

Ir. Charles Luk (Design Checker) Date

Joint Contractor
Dragages - China Harbour - VSL Joint Venture 實嘉-中國海灣-威勝利聯營

Contractor's Designer
Mott MacDonald YWL Engineering

Consultant
ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Project Title
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title
TYPICAL DRAINAGE DOWNPIPE ARRANGEMENT PIER P87, P96, P98, P103

Drawing no.				Ver.
HKLR9/MMH/AB/PW/DN/00150				-
Design: AL	Drawn: MAR	Approved: HTC	Status: AS-BUILT	
Scale: AS SHOWN (IN A1)		Approved: -		
Job No.: HKLR9		Sheet No.: 1 OF 1		
File name: HKLR9_MMH_AB_PW_DN_00150.dgn				

路政署 HIGHWAYS DEPARTMENT

Printed by : 6/4/2019
Filename : D:\HKLR9\As-Built drawings\DDA 20\Final As-Built drawings\Part 1\HKLR9_MMH_AB_PW_DN_00150.dgn

Appendix C – Implementation Schedule

Appendix C – Implementation Schedule of Emergency Response Plan for Chemical and Oil Spillage

Ref.	Recommended Mitigation Measures / Actions	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location of the Measures	Implementation Stage
S5.4	In case of chemical spillage on the HKLR, HyD will follow the procedures specified in the Highways Department Emergency Handbook. In accordance with Clause 2.1 of the Handbook, HyD is responsible for informing the contractor to mobilize emergency plants/materials (e.g. sandbags) to confine chemical spills, upon identification of the incident by emergency parties i.e. HKPF and FSD.	Prevent the chemical spillage into the marine water.	HyD	On HKLR	During chemical spillage incident.
S5.5	Within the resources of the HyD or through the HyD's term maintenance contractors, HyD will be responsible for the duties as listed in S5.5(1) – (9).	Prevent the chemical spillage into the marine water and remove the chemical from the road as soon as possible.	HyD	On HKLR	During chemical spillage incident.
S5.6	In case of vehicle accident with, or with likelihood of, chemical spillage on HKLR, TD and HKPF's "Regional Command and Coordination Centre" will monitor the traffic conditions within Hong Kong portions of HKLR and in its vicinity through the 24-hour Traffic Control and Surveillance System (TCSS) operated by TD.	Implement temporary traffic arrangement and control in case of vehicle accident and chemical spillage.	TD	On HKLR	During chemical spillage incident.
S5.7	TD will assist HKPF to ascertain the necessity of traffic diversion and control, and whether partial or total road closure is required. TD will assist the temporary traffic management / arrangement including contra-flow traffic arrangement if necessary by controlling the TCSS. TD, in consultation with Police Public Relations Branch (PPRB), will be responsible for disseminating traffic diversion and lane/road closure as well as other related traffic and transportation information for motorists through the media and to other parties if necessary. Regarding cross-boundary coach services on HKLR, TIMS duty officers will	Implement temporary traffic arrangement and control in case of vehicle accident and chemical spillage.	TD	On HKLR	During chemical spillage incident.

Ref.	Recommended Mitigation Measures / Actions	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location of the Measures	Implementation Stage
	arrange publicity on the closure of HKLR, inform THB duty officer, and inform the cross-boundary coach associations that the HKLR is to be closed. TIMS duty officer will request them to adjust service level / suspend service as appropriate.				
S5.8	RCCC NT of HKPF will immediately activate this ERP and inform the relevant government departments including but not limited to those departments identified under this ERP to take immediate actions to deal with the (potential) chemical spillage.	Activate the ERP and deal with chemical spillage situation.	HKPF	On HKLR	During chemical spillage incident.
S5.9	HKPF and FSD will carry out a preliminary assessment as to the likelihood of chemical spillage from vehicle, and if spillage has occurred, the likelihood of the spill entering into the drainage system of HKLR. HKPF should keep RCCC NT informed of the seriousness of the incident and provide RCCC NT with regular updated situation reports.	Activate the ERP and deal with chemical spillage situation.	HKPF	On HKLR	During chemical spillage incident.
S5.10	In the event of traffic congestion brought about by a chemical spillage incident, HKPF will inform the Mainland/Macao Authorities through the established border liaison channel for any incidents which may cause serious disruption to the operation of the HZMB and HKLR. They may request the Mainland/Macao Authorities for assistance from Mainland/Macao as and where necessary.	Activate the ERP and deal with chemical spillage situation.	HKPF	On HKLR	During chemical spillage incident.
S5.11 - 5.12	HKPF will be a key member of the ad hoc chemical spillage response team comprising representatives of all relevant departments to deal with (potential) chemical spillage from vehicle with the duties listed S5.11 and S5.12.	Activate the ERP and deal with chemical spillage situation.	HKPF	On HKLR	During chemical spillage incident.
S5.13 – 5.14	FSD is mainly responsible for fire-fighting and rescue. FSD will be responsible to take the actions listed in S5.14.	Fire-fighting and rescue.	FSD	On HKLR	During chemical spillage incident.
S5.15 – 5.18	MD is the designated authority for the clean up of oil spillage at sea.	Clean-up of chemical / oil spillage at sea.	MD	Marine water	During chemical spillage incident.
S5.19	EPD will follow the plans responding to marine based and land	Respond to	EPD	On HKLR /	During chemical

Ref.	Recommended Mitigation Measures / Actions	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location of the Measures	Implementation Stage
	based pollution incidents in the territory.	marine / land based pollution incidents.		Marine water	spillage incident.
S5.20	GL will provide assistance in chemical identification in a chemical spillage incident and advise the characteristics of the chemical so as to help FSD and HKPF to plan the operational strategy. If necessary, GL will send an officer to the scene to assist in locating/identifying the chemical, analyse the levels of toxic substances at scene and/or provide advice to stabilise/handle/dispose the chemical.	Assist FSD and HKPF to plan the operational strategy to deal with chemical spillage.	GL	On HKLR / Marine water	During chemical spillage incident.
S5.21	AFCD will advise on the protection of ecologically sensitive areas in the waters; provide assistance and comments on the methods for cleaning up the substances/wastes/chemicals washed ashore in the nearby marine parks, especially their ecological impacts as recommended by relevant authorities; and monitor the ecological conditions and assess the potential ecological/fisheries impacts at the likely affected ecologically sensitive areas.	Protection of ecologically sensitive areas in the waters.	AFCD	Marine water	During chemical spillage incident.
S5.22	HyD will provide back up equipment and personnel to assist LCSD in removal of landed oil from gazetted beaches according MOSRP.	Removal of landed oil from gazetted beaches.	LCSD and HyD	Gazetted beaches	During chemical spillage incident.
S5.23	FEHD will provide manpower to assist to manual removal of non-contaminated refuse not classified as chemical or hazardous waste on non-gazetted beaches and foreshores that are without land access if necessary. For non-gazetted beaches and foreshores where land access is available, HyD is responsible for providing equipment and personnel for the removal of landed oil.	Removal of non-contaminated refuse not classified as chemical or hazardous waste on non-gazetted beaches and foreshores.	FEHD	Non-gazetted beaches and foreshores	During chemical spillage incident.
S5.24	DO(Islands) and DO(Tuen Mun) will inform the relevant District Council member(s) and Village Representative(s) in case of	Inform District Council	DO	-	During chemical spillage incident.

Ref.	Recommended Mitigation Measures / Actions	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location of the Measures	Implementation Stage
	chemical spillage incidents in the waters as necessary.	member(s) and Village Representative(s)			
S5.25	If coordination with the Zhuhai/Macao side is required in traffic control during the exercise/drills (if any), Security Bureau will help liaison work, particularly at the initial stage.	Coordination with the Zhuhai / Macao side	SB	On HKLR	During chemical spillage incident.
S5.26	The HZMB Authority is responsible for the operation, management and maintenance of the Main Bridge of HZMB. In principle, the HZMB Authority will be responsible for emergency response actions for chemical spillage on the Main Bridge of HZMB.	Emergency response actions for chemical spillage on the Main Bridge of HZMB.	HZMBA	On Main Bridge	During chemical spillage incident.
S7	HKPF will notify the Mainland Authority through the established border liaison channel for the accident and requesting for assistance from Mainland where necessary. TD/HKPF will also notify the Mainland Authority if any traffic diversion and lane/road closure are required to be implemented on the Main Bridge.	Notify the Mainland Authority	HKPF	-	During chemical spillage incident.
S8	Training and Drill	Provide a prompt response to an emergency event	Relevant government departments	-	Regular training.

Figures

LEGEND

WATER SENSITIVE RECEIVERS
- A - TAI O
- B - SHA LO WAN
- C - SAN TAU SSSI
- D - TAI HO WAN
- E - ARTIFICIAL REEF IN NE AIRPORT
- F - SHA CHAU AND LUNG KWU CHAU MARINE PARK
- G - THE BROTHERS MARINE PARK
- H - GAZETTED BEACHES IN TUEN MUN
- I - BUTTERFLY BEACH
- J - SHAM WAT
- K - HAU HOK WAN
- L - PROPOSED SOUTHWEST LANTAU MARINE PARK

PLEASE ALSO REFER TO FIGURE 9.5 OF EIA REPORT OF HONG KONG LINK ROAD FOR THE MARINE ECOLOGY SENSITIVE RECEIVERS.

Rev	Description	By	Date

Consultant
ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited

Contract No. and Title:
Agreement No. CE36/2009 (HY)
Tender and Construction of
Hong Kong-Zhuhai-Macao Bridge
Hong Kong Link Road -
Design and Construction

Drawing title
WATER SENSITIVE RECEIVERS

Drawing no.	Rev.
FIGURE 1	–

Drawn	Date	Checked	Approved
RI	09/17		

Scale	Status
1:40000 @A1	

路政署 HIGHWAYS DEPARTMENT
港珠澳大橋香港工程管理處 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

Printed by : 10/12/2017
Filename : Z:\Drawings\214487\HY03\Sketch\E-HY_2011_03-SK573.dgn

805000 E

810000 E

820000 N

815000 N

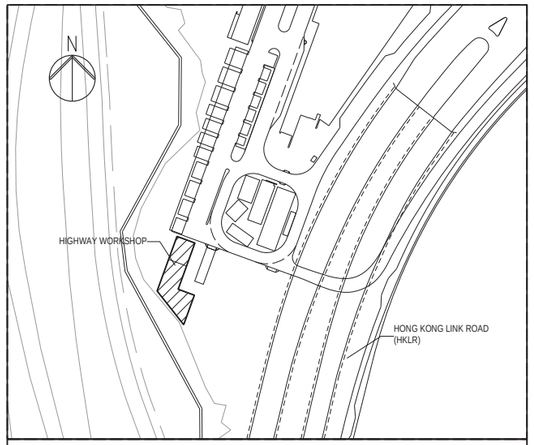
HKSAR BOUNDARY

HONG KONG INTERNATIONAL AIRPORT

SEE INSET A

TUNG CHUNG

HONG KONG LINK ROAD
(HKLR)



INSET A

LEGEND

HIGHWAY WORKSHOP

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Tender and Construction of
Hong Kong-Zhuhai-Macao Bridge
Hong Kong Link Road -
Design and Construction

Drawing title

LOCATION PLAN OF
MAINTENANCE WORKSHOP
FOR HONG KONG LINK ROAD

Drawing no.			Rev.
FIGURE 2			–
Drawn: RI	Date: 09/17	Checked	Approved
Scale: 1:20000 @A1		Status	

路政署 HIGHWAYS DEPARTMENT
港珠澳大橋香港工程管理處
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Project Management Office

Printed by : 9/28/2017
Filename : Z:\Drawings\214487\HY03\Sketch\E-HY_2011_03-SK574.dgn

N

805000 E

810000 E

820000 N

815000 N

HKSAR BOUNDARY

HONG KONG INTERNATIONAL AIRPORT

HONG KONG LINK ROAD (HKLR)

TUNG CHUNG

HKBCF

HZMB Fire Station cum Ambulance Depot

A

Chek Lap Kok Fire Station

B

Tung Chung Fire Station

LEGEND

FIRE STATION

Rev	Description	By	Date

Consultant

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Contract No. and Title:

Agreement No. CE36/2009 (HY)
Tender and Construction of
Hong Kong-Zhuhai-Macao Bridge
Hong Kong Link Road -
Design and Construction

Drawing title

LOCATION OF FIRE STATION

Drawing no.			Rev.
FIGURE 3			–
Drawn: RI	Date: 09/17	Checked	Approved
Scale: 1:20000 @A1		Status	

路政署 HIGHWAYS DEPARTMENT
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Hong Kong Project Management Office

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Filename : Z:\Drawings\214487\HY03\Sketch\E-HY_2011_03-SK575.dgn