



Paper No. WD 1/2005

**SUBMISSION TO
SUBCOMMITTEE ON WAN CHAI DEVELOPMENT PHASE II REVIEW
OF THE HARBOUR-FRONT ENHANCEMENT COMMITTEE**

1. **Title of submission:** Wan Chai Marine Basin
2. **Name of proponent:** Royal Hong Kong Yacht Club
3. **Brief description of the submission:** To enhance the vibrancy of the Wan Chai Cargo Working Area through sports and recreational activities
4. **Benefits:** See attachment
5. **Estimated costs:** Not considered for the purpose of this submission
6. **Source of funding:** Not considered for the purpose of this submission
7. **Time table for consultation:** Not considered for the purpose of this submission
8. **Presentation to HEC Subcommittee on Wan Chai Development Phase II Review**
The Club would welcome an opportunity to make a presentation to the HEC. The concerned individuals would be:

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c/o Royal Hong Kong Yacht Club

Mr. Robert Bird, General Manager,
c/o Royal Hong Kong Yacht Club

**Royal Hong Kong Yacht Club's Submission to the
Harbour-front Enhancement Committee's
Subcommittee on Wan Chai Development Phase II Review**

OBJECTIVE

To seek comment from the Harbour-front Enhancement Committee's Subcommittee on Wan Chai Development Phase II Review (HEC-SWCD) on Royal Hong Kong Yacht Club's (RHKYC's) ideas and concepts on enhancing the vibrancy of the Victoria Harbour, with a view to participate more actively as one of the Collaborators for the Harbour-front Enhancement Review (HER) exercise.

BACKGROUND

The RHKYC has been a member of the Wan Chai and Causeway Bay communities for nearly 70 years. Since first moving to Kellett Island in 1938, RHKYC has organised frequent sporting and yachting events in the harbour and remain a community centre for yachting and rowing enthusiasts across Hong Kong. One of Hong Kong's oldest membership clubs, RHKYC's history of sailing and rowing activities stretches back over 150 years ago. Today, RHKYC is an organisation actively promoting sports and recreational activities to the local communities. RHKYC also acts as one of the ambassadors for Wan Chai, as well as the Hong Kong SAR, to present our Victoria Harbour to more than 150 yachting organisations around the world that have reciprocal relationships with the Club.

Throughout this history, RHKYC has witnessed extraordinary development that has drastically changed the Wan Chai and Causeway Bay waterfront and disturbed the local community. It has therefore decided to become an active and vocal contributor to community debate on the reclamation of Victoria Harbour and expansion of Hong Kong Island. RHKYC has been fortunate to gain experience and knowledge on various urban planning opportunities and constraints for the Wan Chai waterfront, and welcomes the opportunity to share this know-how. Moreover, with many years of first hand experience on rowing and sailing activities as well as operating as a premier international sailing club, RHKYC is well placed to contribute to a discussion which aims to develop a world-class harbour catering for recreation and maritime function.

CONTRIBUTING TO THE VIBRANCY OF THE HARBOUR

RHKYC praises the HEC's effort in promoting and enhancing the vibrancy of the Victoria Harbour, which aligns with the following objectives of this submission:

- Promoting the development of sailing, rowing, and associated recreational activities;
- Maximising positive recreational and tourism use, and also the development of the Victoria Harbour, for the overall benefit and prestige of Hong Kong that the city possesses a world-class harbour; and
- Contributing to the visual interest and unique character of the Harbour.

With the above objectives in mind, the RHKYC would like to take this opportunity to share with the HEC-SWCD some of the opportunities that the Club sees for public access to and enjoyment of the Harbour.

Beautifying the “Wan Chai Marine Basin”

The removal of the cargo working activities from the Wan Chai Cargo Working Area has made it much more visible to the public. This area is now used as a helicopter landing pad and a storage site for construction materials. It is proposed that the Wan Chai Cargo Working Area be renamed “Wan Chai Marine Basin” and developed in a meaningful way which encourages recreational and other positive uses by a wide range of citizens. RHKYC encourages HEC members as well as the public to provide alternative names to the Wan Chai District Council and the government for consideration.

As can be seen from the aerial perspective, the basin contains a large area of water and has substantial surrounding seawalls protecting the area. The Basin also bounds the sea to the north and this provides scope for providing the public with access to the basin and the main harbour edge. This valuable water area and sea wall has significant potential for becoming a major focal point of the Wan Chai harbour-front.

There are similarities with other working wharfs and basins in great harbours of the world, which have been rejuvenated in this way. An example is that of the Viaduct Basin in Auckland that has become the focus on the American Cup Yacht Racing. The Viaduct Basin has turned into a tourism area with restaurants and entertainment, and a vibrant relationship between facilities on land and use of the water. Some of the World’s other great harbours, such as Sydney, San Francisco, Vancouver, New York and Singapore demonstrate what an asset a vibrant harbour can be.

In the context of presenting Hong Kong as a world-class metropolitan, Victoria Harbour is yet to be fully utilized in the way it accommodates sailing craft, it is also

poorly provided for in terms of public access to the waterfront. The “Wan Chai Marine Basin” concept might provide an opportunity to rectify this situation.

In the interests of positive dialogue, RHKYC has considered some of the issues and possibilities which it would be delighted to share with HEC members:

Creating a Vibrant Harbour-front for Wan Chai

To maximize the recreational and aesthetic value of the Wan Chai Marine Basin, it is suggested that the government should consider more fully an option for an underground alignment for the Central-Wan Chai Bypass for the whole distance from Central to North Point.¹ One of the main advantages of this “Tunnel Option” is that it does *not* require reclamation of the “Wan Chai Marine Basin”, nor an elevated structure across the Causeway Bay Typhoon Shelter.

The “Tunnel Option” enables the prime function of the Bypass to be achieved while *minimising reclamation* and avoiding the visual intrusion by elevated structure. Should the Government elect for an underground alignment for the Central-Wan Chai Bypass, the Wan Chai Marine Basin could be utilised for the following recreational and sports activities and facilities for the Wan Chai Marine Basin may include, but not limited to, the following:

- Sailing training centres and pontoons;
- Moorings for historic ships with tourism values (tall ships, historic junks, etc.)
- Aquatic displays and entertainment;
- Dragonboat racecourses;
- Multiple-use facilities for performance and public gatherings;
- Tourism-related facilities;
- On-shore service facilities for boating activities;
- Water-taxi / ferry pontoons;
- Public landing areas for pleasure craft; and
- Moorings for large visiting yachts and pleasure craft which currently cannot be accommodated in Victoria Harbour.

HEC members are welcome to provide ideas and suggestions in addition to the above.

¹ The RHKYC has been provided with a copy of a study prepared by engineering consultant Scott Wilson and transport engineers MVA (HK) Limited for Swire Properties Limited. It has been included in RHKYC’s previous submission to the HEC main committee for reference in December 2004 and is attached to this submission. The study was not commissioned or conducted by RHKYC and is merely included in this submission to show that the Tunnel Option could be a viable alternative. RHKYC has already sought prior approval from the respective organisations above for including the study report in this submission.

Subject to comments from the HEC-SWCD, public activities along the Wan Chai harbour-front could focus on the Wan Chai Marine Basin. The emphasis could be on boats and marine activities in close proximity to areas with easy and convenient public access.

Contributing to the Hong Kong Community

The Wan Chai Marine Basin is a yet-to-be utilised waterfront asset, with great potential for becoming a focus for transforming the waterfront into a thriving vibrant area of great interest to the public and visitors alike. The range of uses to which the area could be put provides great scope for attractive and imaginative developments, which deserve closer study.

It is the belief of RHKYC that comprehensive urban planning which integrates new and existing facilities along the harbour-front would be most beneficial to the community. Despite the fact that RHKYC does *not* intend to derive any commercial interests from beautifying the Wan Chai Marine Basin, the Club would be willing to work with relevant bodies to transform the Wan Chai harbour-front into an area of public marine activity and interest. RHKYC would also be willing to provide technical and logistical assistance to the development of sailing and rowing related activities in the Wan Chai Marine Basin.

CONCLUSION

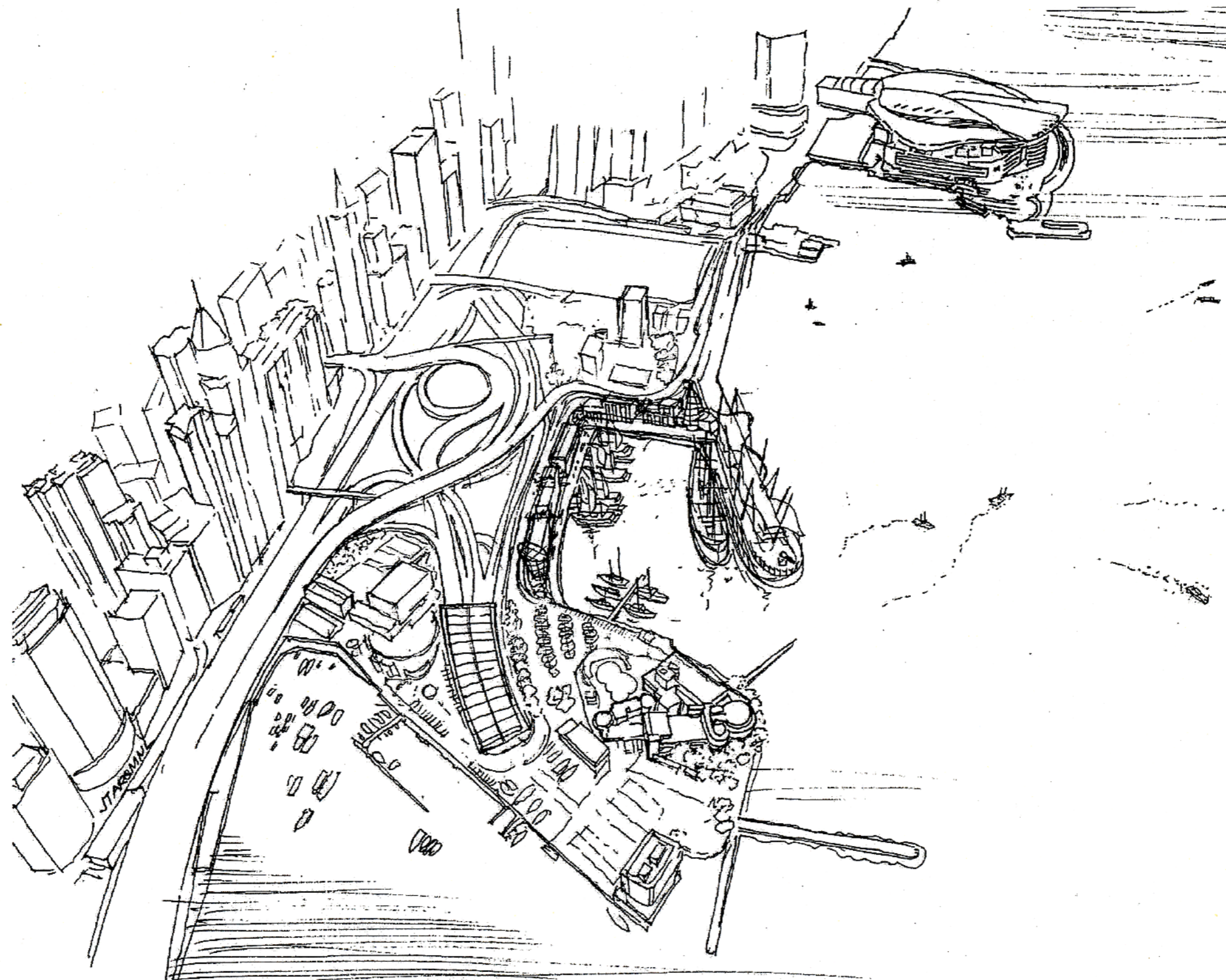
Given the mission of the Envisioning Stage of the HER exercise to engage the public to generate ideas for the possible development of the harbour front, RHKYC believes that it can contribute much to this public discussion. RHKYC would therefore like to be included as one of the “Collaborators” under the “Local / Community Groups” category of the HER exercise and support the HEC’s important work. Should members agree with RHKYC’s development concepts for the Wan Chai Marine Basin, the Club would like to suggest to the HEC other possible improvements to the Causeway Bay Typhoon Shelter for a more comprehensive and coordinated development of the Wan Chai harbour-front area as a whole.

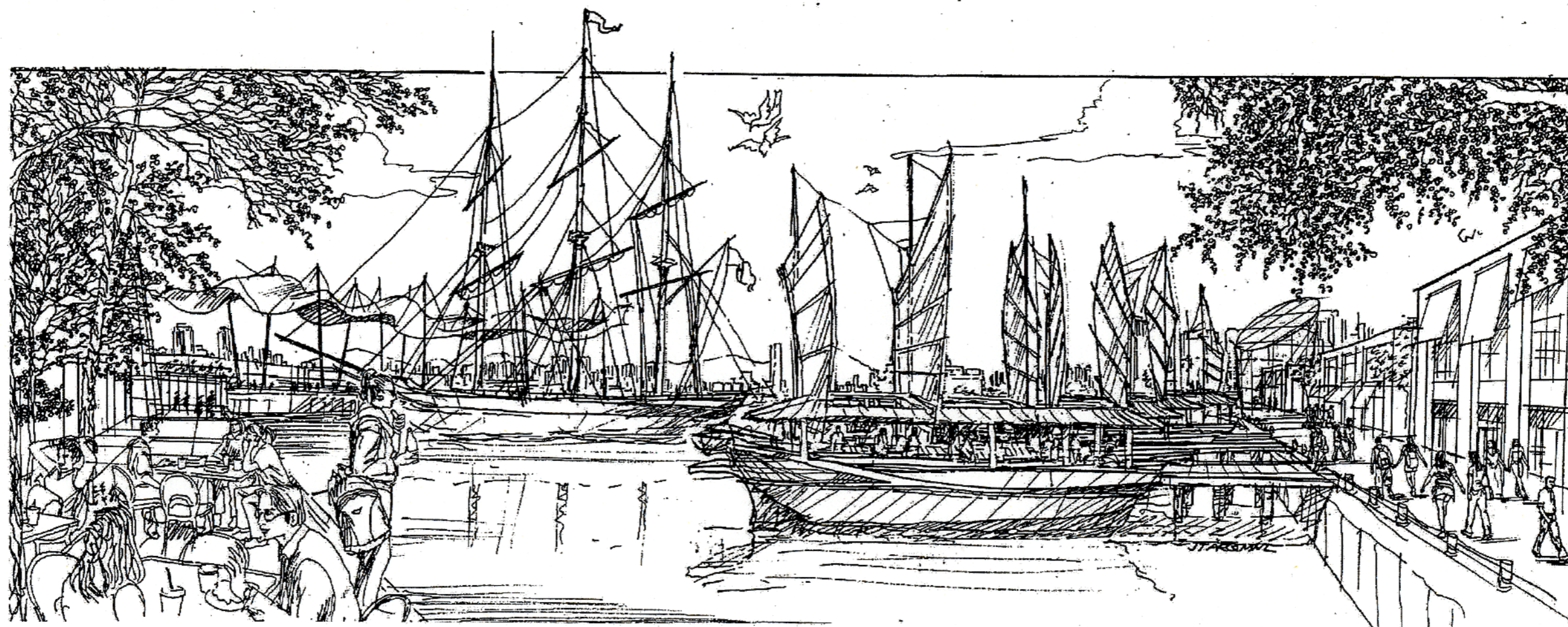
Royal Hong Kong Yacht Club

January 2005



View of Kellett Basin from Yacht Club





SOUTHWEST VIEW

Appendix R

CULTURAL HARBOUR

Developments East of Central

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R1. INTRODUCTION

R1.1.1 This paper presents the proposal for Developments East of Central.

R1.1.2 The main headings comprise of:

- Site Characteristics
- A Sustainable Approach
- Site Constraints & Solutions
- Wanchai Bypass
- Layout & Site Appraisal
- Accessibility & Transport
- Environmental Outlook
- Conclusion

R2. SITE CHARACTERISTICS

R2.1.1 Development East of Central comprises opportunities extending from Wanchai through to Causeway Bay and Victoria Park. These sites consist of partly existing and reclaimed landform and potential reclamation that may arise following the reasement of Wanchai Development Phase 2. These areas are located along the prime northern waterfront of Hong Kong Island between the landmark site of the Hong Kong Convention and Exhibition Centre and Hong Kong's largest north shore open space of Victoria Park sited along Hong Kong's north shore. The present waterfront is largely inaccessible, though in future there is potential for access to be provided along the waterfront that would afford magnificent views of Kowloon. The landward margins comprise the dense urban developments of Wanchai and the Causeway bay extending through to the hinterland foothills and trail walks of Hong Kong Island.

R3.1.2 The proposed improvements offer great potential when assessed in respect of economic, social and environmental effects having full regard to international best practice in sustainable development and the Guiding Principles for Sustainability promoted by the Government of the Hong Kong SAR.

R3.2 Wanchai and Causeway Bay Districts

R3.2.1 In economic terms, the proposed Bypass and its extension should result in reduced congestion and shorter journey times. The provision of the improved access between Victoria park and Central will promote tourism and will draw more visitors, both tourists and residents, back into the Central and Wanchai waterfront areas, providing spin-off benefits for restaurants, bars, shops etc.

R3.2.2 In social terms, these proposals will add to the vitality of Hong Kong's northern shoreline by attracting people to use the cultural facilities and the greenspace. The links through to cultural facilities along northern shoreline will facilitate and encourage accessibility by all sections of the community.

R3.2.3 The extensive area of linked greenspace of Central Park and Victoria Park will provide opportunities for walking, jogging, cycling and other forms of exercise thus contributing to health and social interaction.

R3.2.4 In environmental terms, the substantial area of linked greenspace will provide opportunities for habitat creation and for enhancing the environment.

R3.2.5 The location of cultural facilities along Hong Kong's northern shoreline will also make the most efficient use of the existing transport system which is designed to transport large numbers

of people into the heart of Hong Kong's northern shoreline.

R4. SITE CONSTRAINTS & SOLUTIONS

R4.1 Introduction

R4.1.1 The various government facilities and other infrastructure located within the areas from Wanchai to Causeway Bay have been identified and assessed. The development layouts have taken these factors into consideration and the scheme has been generated in order to accommodate these elements.

R4.1.2 Consideration is given to the site constraints, services and utilities (to be referred to as services from herein) from Wanchai to Causeway Bay. The site has a variety of existing services that may represent constraints to the scheme. Main service have been avoided through careful alignment design other services may require repovisioning

R4.1.3 The buried structure forming the bypass offers an ideal opportunity for provision of a combined services corridor. Conversely the Bypass will run parallel to the existing shoreline and intersect with services that require direct connection to the waterfront and may require some repovisioning

R5. CENTRAL TO WANCHAI BYPASS

R5.1 Background

R5.1.1 The future road network improvement strategy proposed by Swire aims to:

- Create a better defined road network hierarchy compatible with adjacent land use
- Reallocate roadspace to favour pedestrians and public transport
- Remove/reduce traffic in people dominated/environmentally sensitive streets
- Provide underground strategic

bypasses to divert through traffic

R5.1.2 A buried Bypass is proposed from Central to the Hong Kong Convention and Exhibition Centre in Wanchai. This bypass scheme is proposed by government. It is proposed for this to be extended from Wanchai through to Causeway Bay before reconnecting with the Island East Corridor. The bypass allows a ground-level road network and pedestrian network to be provided that encourages access to the facilities in the North Wanchai and Causeway Bay districts and the waterfront. This initiative will promote social and leisure activities as well as serving commercial interests adequately.

R5.1.3 A broad comparison is made with the original government's scheme in terms of overall traffic and engineering issues.

R5.2 Waterfront Access

R5.2.1 The prime goal of the Bypass is that of handing a ground level streetscape back to the public. Presently the streetscape is vertically separated and this arrangement is typically found along the northern shore of Hong Kong Island. Placing the bypass below ground is an initiative that combines other waterfront improvement initiatives that are intended to attract the public and thereby give the harbour back to the people.

R5.3 Design Concepts

Road Hierarchy

R5.3.1 The proposed Bypass is an urban trunk road providing relief to the existing east-west routes in particular the Gloucester Road corridor. The Bypass provides a through route for long distance traffic away from the surface roads and hence offers more opportunity to provide a pedestrian friendly environment.

R5.3.2 To achieve the objective of bringing the people closer to the waterfront, the bypass is expected to be utilised mainly by long distance traffic. While the parallel waterfront boulevard route (Road P2) at ground level could be mainly used for access traffic, its traffic flow could therefore be minimised to allow more scope for convenient pedestrian facilities. Therefore although the waterfront boulevard would be classified as a primary distributor, along the waterfront boulevard where traffic condition allows several at-grade pedestrian crossings could be provided to promote convenient pedestrian access.

R5.3.3 In general, the Bypass would provide a bypass route for long distance traffic, aiming to relieve the already congested hinterland road network. The waterfront boulevard alongside the Bypass though on the ground level, would expect to provide a primary access route for the existing or new waterfront developments. The existing Gloucester Road / Lockhart Road, and Hennessy Road would remain in their present function, providing a mixture of access and strategic linkage. The Bypass would expect to reduce the strategic significance of these existing roads and hence provide more scope for pedestrian friendly measures.

R5.3.4 To overcome the difficulties presented by lane weaving within tunnels (a practice not normally permitted in Hong Kong) the following concept has been applied:

- One lane will provide free flow to / from Central through to Causeway Bay
- Lane for destination must be selected prior to entering the tunnel bypass system since weaving is not permitted

- Destinations along the tunnel bypass are provided for by means of lane gain and lane drop

Alignment

R5.3.5 The primary objective is to put the main line of the Bypass entirely underground. Likewise where slip roads are provided, they too should be underground as far as possible.

R5.3.6 Specifically, the section of the mainline and slip roads beside Victoria Park should be placed in tunnel to allow the park to be re-connected with the shoreline. This would require the demolition and relocation of the existing viaducts.

R5.3.7 The Bypass alignment plan and vertical elevation at Victoria Park is shown conceptually in Figures R5.1 and R5.2.

R5.3.8 For the bypass to act as such and reduce traffic on ground-level roads, it needs to connect to origins / destinations in the Causeway Bay area and in North Wanchai. Also it should provide a connection for traffic from Central / Cotton Tree Drive / Garden Road so that this traffic does not have to use ground-level roads through Wanchai and Causeway Bay.

R5.3.9 Since interchanges concentrate traffic flow, the fewer there are, the better. At interchanges the efficient dispersion of traffic into the local road system is vital. This requires that in the immediate vicinity distributor roads are provided. Consequently interchange locations need to be chosen with care and the facilities provided in the vicinity should not be overtly sensitive to noise (or should be capable of being sound-proofed).

R5.4 Highway Design Policy

General

R5.4.1 There is a long-standing policy within the Hong Kong Government not to allow lane-changing in tunnels, which means that weaving sections cannot be provided. Also merging is considered unacceptable, but diverging (which arguably involves no traffic 'conflicts') has been permitted. Examples of diverging are found in the Airport Tunnel and one is proposed in the Bypass at the Hong Kong Convention and Exhibition Centre (eastbound).

R5.4.2 The argument for the policy is as follows:

- there is a greater risk of accidents when vehicles are changing lanes or merging than if they stay in lane (this is true)
- vehicle fires involve greater risks when they occur in tunnels or other confined spaces (this is true, and has been an issue of concern in recent years following fatal fires in tunnels in Europe)
- an increase in the number of accidents increases the risk of fires (this is probably true, although we believe that the number of vehicle fires caused by accidents is small and the increased risk is correspondingly small).

R5.4.3 The weakness in the argument is that, to our best knowledge, the magnitude of the increased risk has never been quantified. Consequently no logical argument about the level of risk and the balance of advantages in different situations has occurred - the policy has simply been adopted in the past and is not up for discussion.

R5.4.4 Application of the policy has not been entirely consistent. At the exits to the Cross Harbour Tunnel and Eastern

Harbour Crossing, climbing lanes have been provided (to avoid loss of capacity at a vital section of the tunnel, and also to allow traffic to choose the correct destination at the exit). These additional lanes involve more than diverging movements; they allow lane-changing, often on steep and tightly-curved alignments. They therefore do not comply with the policy on lane-changing, but are allowed, possibly out of 'necessity' or because the first one was built before the policy came into being. There are therefore some precedents for stretching the rules in specific circumstances.

R5.5 Highway Design Standard

R5.5.1 The proposed Bypass has been design in accordance with the criteria as stated in Hong Kong's latest Transport Planning and Design Manual. The mainline is classified as an Urban Trunk Road with a design speed of 80kph and a corresponding slip road design speed of 50kph. It is a dual carriageway with grade-separated interchanges at Central, Wanchai and Causeway Bay.

R5.5.2 The minimum horizontal radius used on the mainline is 350m and all radii below 1,280m have transitions designed with a 0.3m/s³ maximum rate of centripetal acceleration. The vertical alignment has a maximum gradient of 4% and all vertical curves are at or above desirable minimum standards. Requirements for vertical clearance / separation from infrastructure crossing above or below the tunnel have been accommodated. No relaxations below desirable minimum standards have been considered within the tunnel area.

R5.5.3 The merging and diverging arrangement within the tunnel has been avoided through adopting a system of lane drop and lane gain slip roads (the driver commits to their

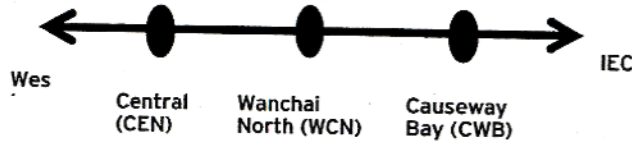
destination prior to the tunnel entrance). This avoids the higher risk of vehicle conflicts associated with weaving and merging within the lanes. All slip road tapers comply with the Transport Planning and Design Manual Volume 2 chapter 4.

R5.5.4 Ground level roads at the interchanges have been designed to a 50kph design speed, with a normal minimum horizontal radius of 88m. Cross-falls have been limited to a maximum of 5% due to the urban location.

R5.6 Configuration

Connectivity

R5.6.1 In order to focus the functionality of the Bypass the following concept has been adopted.



Proposed CWB Eastbound Connections

From/To	WEST	CEN	WCN	CWB	IEC
IEC					
CWB					Not allowed
WCN				Not allowed	✓
CEN			✓*	✓	✓
WEST		Not allowed	✓	✓	✓

- The onramp from Central is designed to be some distance away from the Bypass tunnel and hence this movement is allowed.

Proposed Bypass Westbound Connections

From/To	WEST	CEN	WCN	CWB	IEC
IEC	✓	✓	✓	Not allowed	
CWB	✓	✓	Not allowed		
WCN	✓	Not allowed			
CEN	Not allowed				
WEST					

R5.6.2 In order to minimise weaving requirements, the Bypass was designed to function solely as a bypass. More localised traffic such as those from Causeway Bay to Wanchai North, or those from Wanchai North to Central, are expected to utilise the existing Gloucester Road/Connaught Road corridor. The design of the bypass therefore does not allow traffic movement from the upstream onramp to the immediate downstream off ramp.

Lane Arrangements

R5.6.3 The proposed lane arrangement of the Bypass is shown in Figure R5.3. Due to the proposed extension of the tunnel section and the restriction of tunnel lane change, the proposed on and off ramp of the bypass has adopted a lane gain and lane drop arrangement. No lane changing will be allowed within the tunnel.

R5.6.4 In the westbound direction from the Island Eastern Corridor, two traffic lanes are diverged to Gloucester Road while two lanes continue its way towards the west. Further downstream, the slip road from Victoria Park Road joins the mainline on the offside. From then on up to the off ramp in Wanchai North there are altogether three traffic lanes within the tunnel. At Wanchai North the near side lane drop provides an offramp to the Fenwick Street junction with the waterfront boulevard (Road P2). One of the significant improvements of this

proposal has improved over the original bypass design is that an additional onramp from Wanchai North is provided. This single traffic lane gain takes place on the offside lane in the westbound direction of the waterfront boulevard and the bypass remains with three traffic lanes through the Central Reclamation Phase 3. Towards the western end of the bypass an off slip is provided on the near side for traffic heading towards northern Central.

R5.6.5 In the eastbound direction the onramp from Central joins the mainline on the near side and becomes three traffic lanes through the tunnel travelling towards Wan Chai North. At Wanchai North the near side lane separates off to provide an offramp towards the north wing of the Hong Kong Convention and Exhibition Centre. Further downstream, an on ramp from Wanchai North joins the mainline on the near side providing a total of three lanes. Further downstream, in Causeway Bay an offside lane drop provides a offramp towards the eastbound direction of Victoria Park Road. Prior to merging with the Island Eastern Corridor a two lane connection on the near side of the Bypass adds traffic from Gloucester Road.

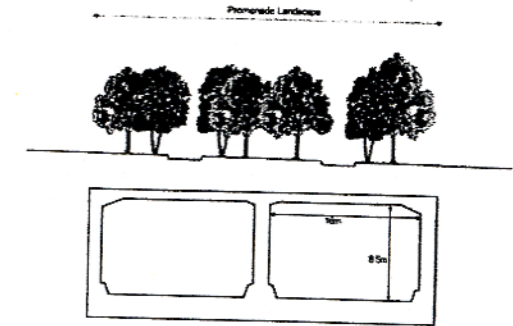
R5.7 Proposed Form

R5.7.1 For the current proposal we consider that the first arrangement of avoiding weaving and merging should be developed as it does not challenge the current policy, it does not require justification by any computer analysis, and it does not require finding suitable locations for sections of 'open' roof to be found.

R5.7.2 For both options, ventilation buildings will be required for tunnel ventilation. These are conspicuous buildings because the vents have to be positioned about 25 - 30 m above

ground. It is proposed that buildings should be provided next to the MTR vent building at Fenwick Street, next to the Drainage Services Department site near Wanchai sports ground, and at the tunnel portals.

R5.7.3 The Structure itself could be of a box type, the top of which could be landscaped. A typical section is shown below.



R5.8 Interchanges

Interchange at the Hong Kong Convention and Exhibition Centre (North Wanchai)

R5.8.1 The Interchange at the Hong Kong Convention and Exhibition Centre is shown conceptually in Figure R5.4. In order to achieve planning objectives this interchange is significantly reviewed and re-configured from the original government scheme.

R5.8.2 In the westbound direction it is primarily a free flow interchange providing connections between the Central Wanchai Bypass and Fenwick Pier Street. Via the existing Fenwick Pier Street Flyover access to westbound of Harcourt Road is provided. For other directions of traffic the junction between Road P2 and Fenwick Pier Street is proposed to be signalized. Connections are essentially the same as the original government's bypass scheme.

R5.8.3 An eastbound nearside lane drop occurs within the eastbound tunnel and remains in tunnel until it emerges

parallel with Expo Drive West. It then connects with a proposed new roundabout at Expo Drive East.

R5.8.4 North Wanchai traffic, bound for the Island Eastern Corridor may enter the tunnel from either the proposed new roundabout on Expo Drive East or from a diverge from the eastbound waterfront boulevard. The slip road passes into tunnel under Expo Drive East and joins the mainline through-traffic via a nearside lane gain.

R5.8.5 Westbound Bypass traffic bound for north Wanchai leaves the mainline tunnel via a nearside lane drop and continues in tunnel to emerge beneath Expo Drive East. Here the two lane link splits. The nearside lane continues to the south to link in with either Fenwick Pier Street or Harbour Road. The offside lane connects to the westbound waterfront boulevard via a nearside merge.

R5.8.6 Westbound traffic from Wanchai North may join the Bypass via an offside lane drop from the westbound waterfront boulevard. From here it passes into tunnel between the mainline westbound and eastbound carriageways. This arrangement provides better access to frontage property on the waterfront boulevard. Once the link has dropped to mainline tunnel level it joins with the westbound tunnel as an offside lane gain.

Mainline Tunnel from the Hong Kong Convention and Exhibition Centre to Fortress Hill

R5.8.7 The mainline alignment continues in tunnel from HKIEC passing close to the existing shoreline in proposed new reclamation. The alignment then drops down below the existing Cargo Handling Basin / Causeway Bay Typhoon Shelter and continues below the sea bed until reaching land at Fortress Hill. The alignment rises at

4% to emerge opposite Fook Yum Road.

Interchange at Victoria Park

R5.8.8 The Interchange at Victoria Park is shown conceptually in Figure R5.5.

R5.8.9 Eastbound Bypass traffic may access Causeway Bay via an offside lane drop beneath Causeway Bay Typhoon Shelter. The link continues in tunnel to emerge at Causeway Bay Promenade where it merges with Victoria Park Road.

R5.8.10 Eastbound traffic from Causeway Bay access (leaves) the Island Eastern Corridor via a tunnel located in the approximate vicinity of the existing Island Eastern Corridor on Victoria Park Road. The link continues in tunnel and passes over the Bypass to emerge at the same portal as the Bypass mainline at Fortress Hill. It then merges with the eastbound mainline to connect with the Island Eastern Corridor.

R5.8.11 Westbound traffic on the Island Eastern Corridor may access Causeway Bay via a diverge just prior to the Bypass tunnel portal. Here the link passes into a separate tunnel and joins with the eastbound link below the existing Typhoon Shelter. Following the line of the existing IEC it emerges in the center of Victoria Park Road.

R5.8.12 Westbound traffic from Causeway Bay may access the Bypass via a diverge from Victoria Park Road passing into tunnel below the Gloucester Road Flyover. From here it drops down between the mainline eastbound and westbound tunnels to join the westbound mainline as an offside lane gain.

R5.8.13 Two additional at-grade/ elevated links are to be provided to/from Hing Fat Street in Causeway Bay. These links provide access from Island

Eastern Corridor westbound to Fortress Hill and from Fortress Hill to Island Eastern Corridor eastbound.

Mainline East of Tunnel Portal

R5.8.14 The Bypass Mainline emerges from the tunnel adjacent to the existing Home affairs Department / Causeway Bay Community Centre and continues to rise until connecting with the existing Island Eastern Corridor.

Intersection at Causeway Bay Typhoon Shelter

R5.8.15 The Interchange at Causeway Bay Typhoon Shelter is shown conceptually in Figure F5.6.

R5.8.16 The proposed waterfront boulevard links into the local road network in the vicinity of the Central & Wanchai East Pumping Station. A new, elevated link located within the pumping station grounds, connects the eastbound waterfront boulevard to Victoria Park Road. With minor modifications to the existing local roads, access to the westbound waterfront boulevard can be achieved via Marsh Road.

R5.9 Traffic Forecast

Comparison with the Government's Original Scheme

R5.9.1 In order to assess the effect of introducing the proposed changes to the Bypass, a study area traffic model was rerun for year 2016 for the typical morning peak hour. Except for the changes in road alignment and built form, which are not traffic sensitive, the traffic model has taken into account the revised onramp and offramp connection points, proposed lane gain and lane drop arrangements, and also the restriction in weaving and lane changes. The purpose of this analysis is to investigate how the proposed changes would affect the utilisation of the bypass and whether

this would cause any impact to the adjacent road network.

R5.9.2 The proposed lane arrangements and the traffic forecast comparison between the governments' and the proposed scheme is shown in Figure R5.7 for the westbound direction, Figure R5.8 for the eastbound direction.

R5.9.3 The results of the analysis revealed that the comparative utilisation of the tunnel for the governments' and the proposed scheme would be very similar. A screenline analysis further indicates that the westbound Bypass section near Central Reclamation Phase 3 is in fact expected to have an additional 850 pcu/hr due to the proposed additional on ramp from Wanchai North. This onramp is anticipated to provide an alternative route for the Wanchai North traffic heading towards Sheung Wan and beyond, and is therefore expected to provide further traffic relief to the Harcourt Road/Connaught Road corridor in the westbound direction. The screenline table is shown in Figure R5.9.

R5.9.4 In general, it can be concluded that the proposed Bypass configurations would enable the provision of those necessary functions as intended in the government's original scheme. Moreover though the addition of the westbound onramp in Wanchai North the utilisation of the Bypass also increases, providing further relief to the currently congested Connaught Road.

R5.10 Interfaces

Road

Connaught Road

R5.10.1 The Bypass alignment ties in with the existing elevated carriageway above

Connaught Road at the Hong Kong - Macau Ferry Terminal.

Cross-Harbour Tunnel - Wanchai

R5.10.2 The Bypass mainline passes beneath the Cross Harbour Tunnel at a Road Level of -12.45mPD.

Island Eastern Corridor

R5.10.3 The vertical alignment of the Bypass ties in with the Island Eastern Corridor in the proximity of City Garden, North Point.

Rail

MTR - Tung Chung Line

R5.10.4 The Bypass alignment passes above the existing Tung Chung Line MTR Tunnels just west of Expo Drive West. One tunnel diameter clearance has been allowed between tunnels.

Podium for future Causeway Bay North Station

R5.10.5 The Bypass alignment passes below the proposed location for the Causeway Bay North Station Podium at a road level of -12.75mPD. The future rail crossing passes below the Bypass in the vicinity of the Causeway Bay Typhoon Shelter where the Bypass road level is -14.25mPD.

R6. LAYOUT APPRAISAL MARINE ASPECTS

R6.1 Concept and Layout

R6.1.1 The layout, and detailed design for the Central Reclamation has been decided by government and the works are proceeding under the Contract for Central Reclamation III. The details of the revised waterfront for Wanchai II reclamation including the areas within Causeway Typhoon Shelter have not however been finalized, although the planning is constrained at the

interfaces with the Central Reclamation. Our proposals reduce the reclamation needed compared to the last Government Scheme. In terms of marine aspects the urban and landscape design has to accommodate sustainable sea wall design, the location of transport corridors in submerged tunnels and the provision of leisure facilities such as marinas and beaches.

R6.1.2 Layout will be similar to the requirements for Central Reclamation III. Hence a similar design concept is proposed from Wan Chai Wan based on precast caisson units to reduce wave agitation.

Bypass as an Immersed Tube

R6.1.3 In the current plans by Government, the Bypass is to be built within an underground tunnel formed in the new CR III reclamation and planned to be extended in the proposed reclamation connecting the Convention Centre island to Wanchai and extending east in the proposed Wanchai II Reclamation. Within the Governments proposed Wanchai Reclamation, the road emerges from underground and there is an above ground interchange with the Island Eastern Corridor.

R6.1.4 The alternative we propose is for the road to be carried within an underground tunnel which extends for a greater distance along the Waterfront. It may be constructed as an immersed tube tunnel, and then the seawall would be built in front of it, and the areas between backfilled.

R6.1.5 Immersed tube technology is well known in Hong Kong having been used already by all five cross harbour road and rail tunnels. Normally full width reinforced concrete tunnel sections, between one and two hundred metres long, are cast in the dry within a dock. On completion of concreting the dock is flooded and the sections floated out

into the harbour for positioning adjacent to the previous section. Use is made of sophisticated rubber joints (Gina gaskets) and water pressure to draw the units tight together before dewatering, breaking through and forming permanent joints to make a continuous tunnel. Fabrication and placing sequences are shown on Figure R6.1.

Causeway Bay Typhoon Shelter Artificial Beach

R6.1.6 With the operation of the Strategic Sewage Disposal Scheme Phase 1, water quality in Hong Kong harbour has greatly improved. Further improvements are anticipated with the completion of the Harbour Area Treatment Scheme. Consequently the provision of an artificial beach for recreational use following these improvements is a real possibility.

R6.1.7 It is envisaged the beach design would be similar to that at Discovery Bay which also has an artificial beach. The beach at Repulse Bay has also been replenished by artificially placed dredged marine sand and has proven a great success. Careful selection of grain size and grading is required for stability to suit each location, see Figure R6.2. A crenulated shape with natural looking headlands would provide the most stable arrangement taking into account erosion from vessel generated waves and the infrequent typhoon storm waves. The underlying its formation would be formed by filling with public fill, including possible construction and demolition waste from Tsim Sha Tsui and elsewhere, which would be shaped to the required profile. Use will have to be made of sand filters or geotextiles to separate the coarser beach sand from the other materials. Beach slope will also have to be considered to take account of longshore drift, tidal rise and sufficient areas for leisure activities but would simulate natural

beach angles of between 1 in 10 to 1 in 50.

R6.1.8 Given the relatively sheltered condition, the construction of an artificial beach within the Causeway Bay Typhoon Shelter is considered entirely feasible and would form an attractive and different waterfront edge to this area which will be linked by continuous landscaping with an extended Victoria Park, which would be formed over the Central/Wanchai bypass which would extend underneath in tunnel.

Urban Design Concept

R6.1.9 The urban design concepts that drive the road network and the conceptual road network functionality are shown in Figure H6.3.

R7. PEDESTRIAN MOVEMENTS

R7.1.1 The anticipated major future pedestrian movements are shown in Figure R7.1. At present, pedestrian movements are mostly concentrated between the established Wanchai North developments and the public transport facilities on Hennessy Road. In the future, when the waterfront open space is completed, east-west pedestrian movement along the waterfront would be provided for. This would likely generate similar north-south pedestrian movements between the hinterland and most of the waterfront. As a result, additional pedestrian facilities or modifications to existing facilities will be necessary.

R8. PUBLIC TRANSPORT INTERCHANGES & SERVICES

R8.1 Existing

R8.1.1 The existing public transport facilities are mainly concentrated at and south of Gloucester Road. Main modes of public transport are MTR, buses, mini buses, and trams. These services

serve the waterfront developments presently via good pedestrian linkages at major attraction points. Ferries are also provided in the Wanchai Ferry Pier between Wanchai and Tsim Sha Tsui/Hung Hom.

R8.1.2 A public transport interchange is presently provided in Wanchai North near Wanchai Ferry Pier at the junction of Convention Avenue and Fleming Road. This interchange is a bus terminal and also provides taxi stands and coach stopping facilities. An additional bus terminus of a much smaller scale is provided at the northern end of Expo Drive.

R8.2 Future

R8.2.1 In the future the public transport system would be enhanced with the introduction of new transport infrastructures. Firstly, the committed future Shatin to Central Link would provide a station near Exhibition Centre, Admiralty and Causeway Bay. This would provide an additional cross harbour rail service to the north of the existing MTR service and would therefore greatly benefit the waterfront developments.

R8.2.2 Secondly, following completion of the proposed Road P2, bus services are recommended along this route. Since Road P2 is designed to function not as a thoroughfare it is desirable to provide bus services since it is within good walking distance to most of the waterfront developments.

R8.2.3 Thirdly, a proposed electric tramway branch from the existing tramway to be located along the waterfront between Rumsey Street and Victoria Park is proposed. This tramway branch can serve as a tourist attraction and concurrently function as recreational routes along the waterfront.

R8.2.4 Fourthly, the existing public transport interchange at Wanchai North would be modified from the original government's original scheme. The modification is also supported under the current proposal to enhance its efficiency and capacity.

R8.2.5 The additional public transport facilities in the future would provide a backbone for the convenient access of people to the waterfront. However, it needs to be emphasized that the success of public transport would mostly rely on a good pedestrian network which is mentioned separately in another White Paper.

R8.2.6 The future public transport facilities are shown in Figures R8.1 and R8.2.

R9. TRAMWAY EXTENSION

R9.1.1 Better integration with railways can be achieved by providing convenient transfer at hubs and interchanges from bus to rail modes. This is proposed with longer distance services being restricted to the fringe of the Harbour Area, whilst permitting Kowloon and Hong Kong Island services to penetrate further, and using environmentally friendly tramway systems for distribution in the downtown areas. The system is described in Appendix F.

R9.1.2 Modern surface tramway systems offering low floor, low noise, emission free, mobility friendly transport are being integrated into streetscapes in many forward-thinking cities. The revitalization and expansion of surface tramways or similar systems is proposed as a key component of Swires strategy. This includes a sensitive modernization of Hong Kong Tramways to enable it to recapture its role as the distributor mode of choice along the north foreshore (reducing the need for buses) and extension onto the Central and Wanchai reclamation areas for local and

overseas leisure seekers. Potential route extensions are shown in Figure 9.1.

R10. CONCLUSION

R10.1.1 A once in a life time opportunity exists for Hong Kong to open up its northern shore. This will move the territory from its post industrial past to a modern future emulating that of the world most forward thinking cities. A feasible scheme is at hand.

R10.1.2 A Harbour wide vision integrated with improved transit and transport rejuvenation measures are very real possibilities that the community and the private sector wish to see introduced.



Figure R5.1 Bypass Alignment Plan

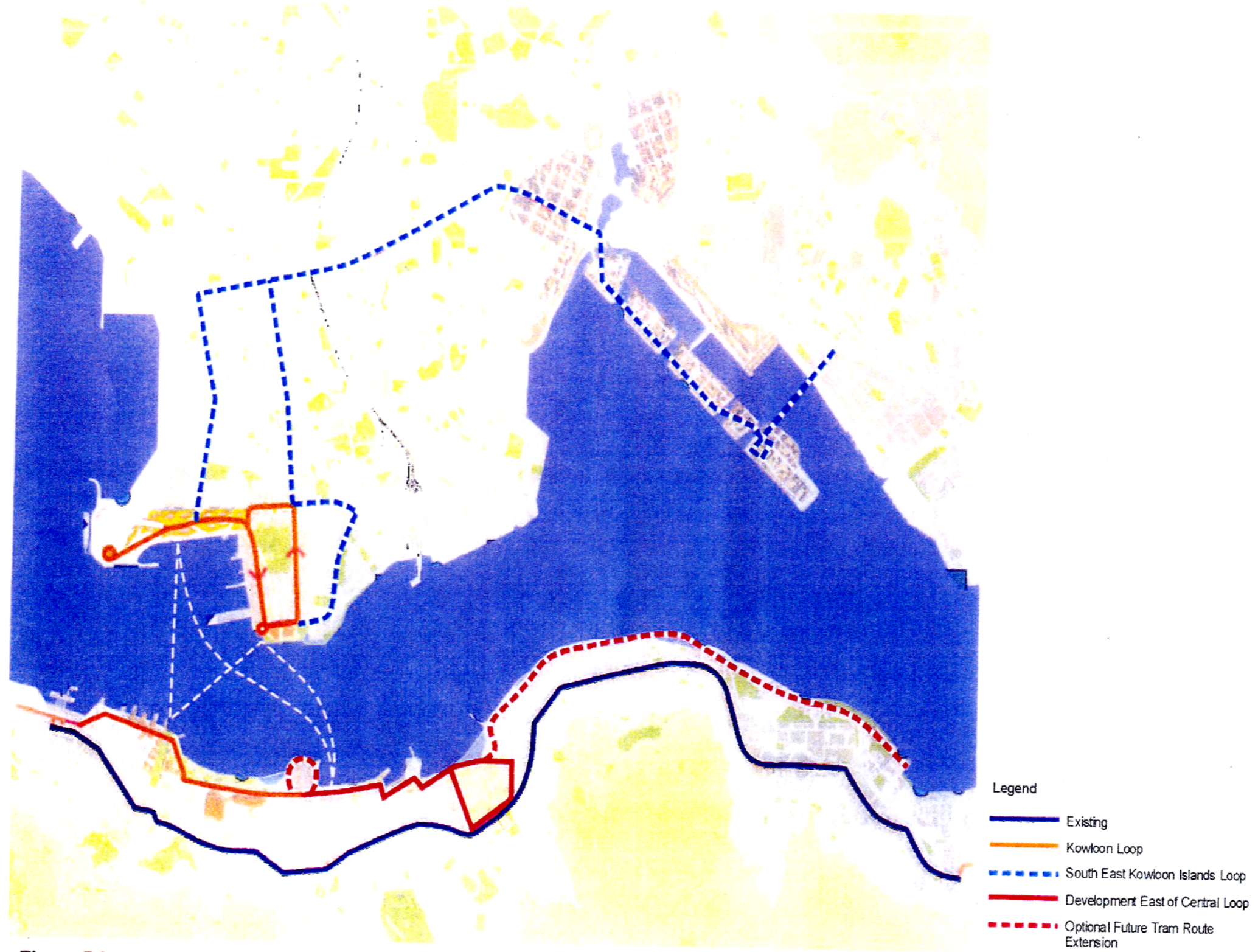


Figure R9.1 Harbour Plan Tram System

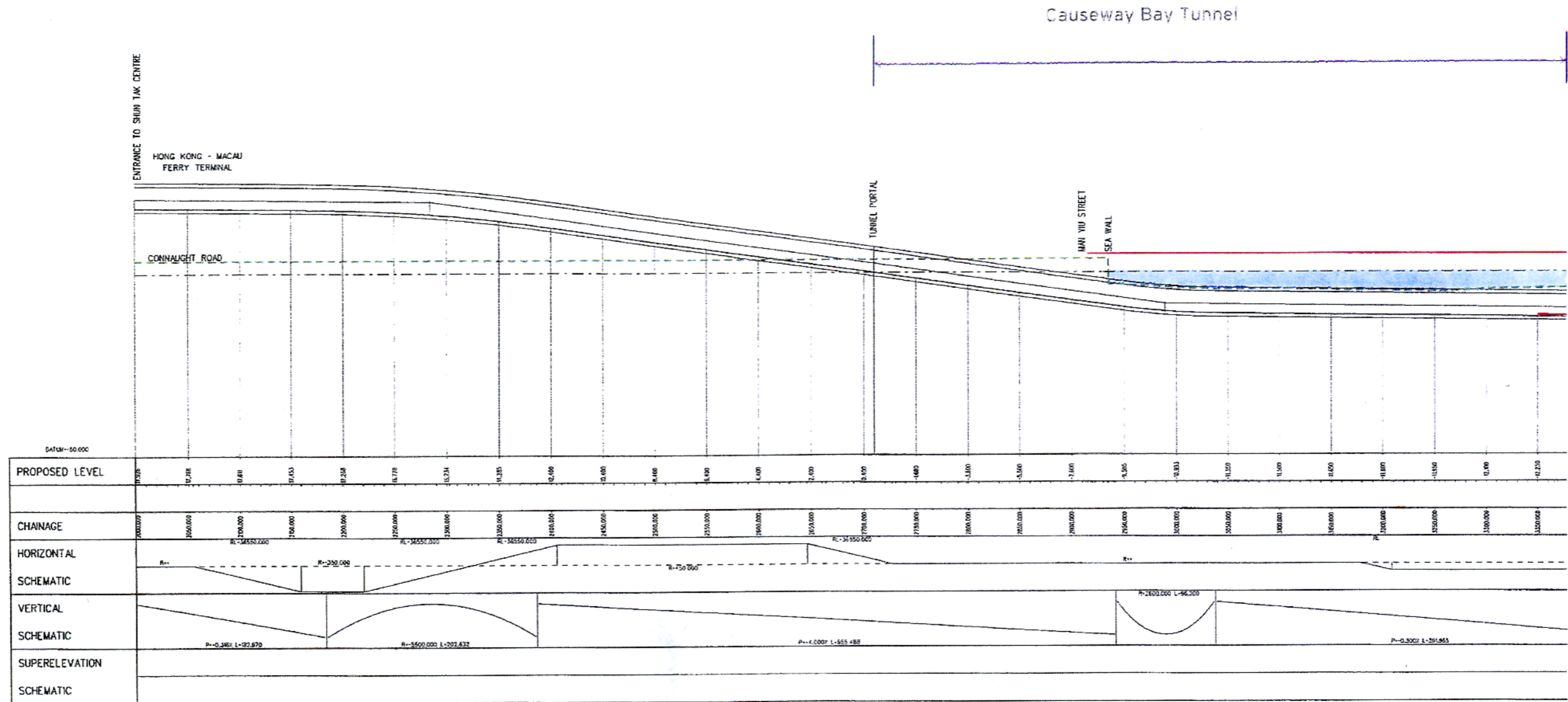


Figure R5.2 Vertical Elevation of Bypass (1 of 4)

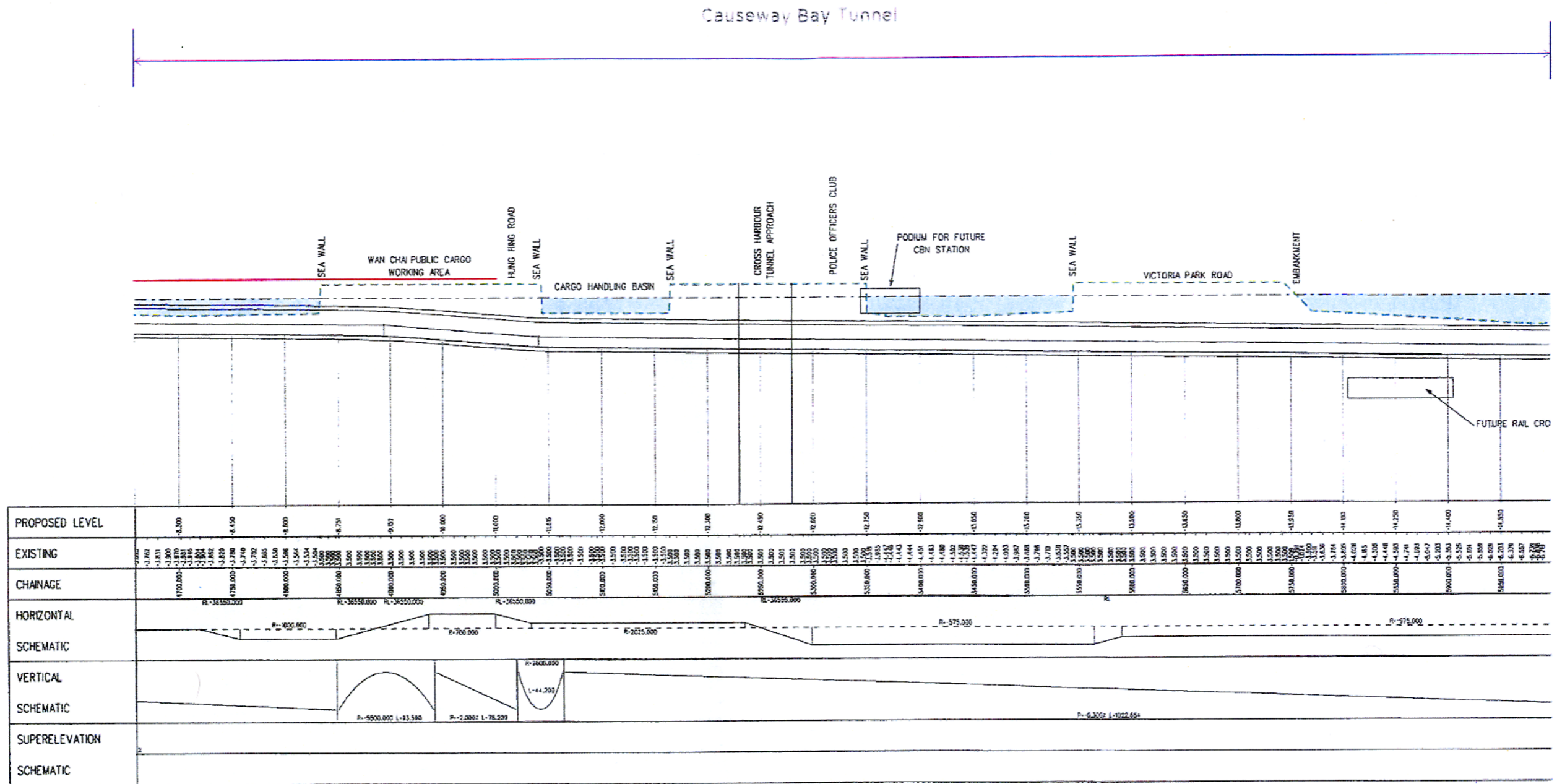


Figure R5.2 Vertical Elevation of Bypass (3 of 4)

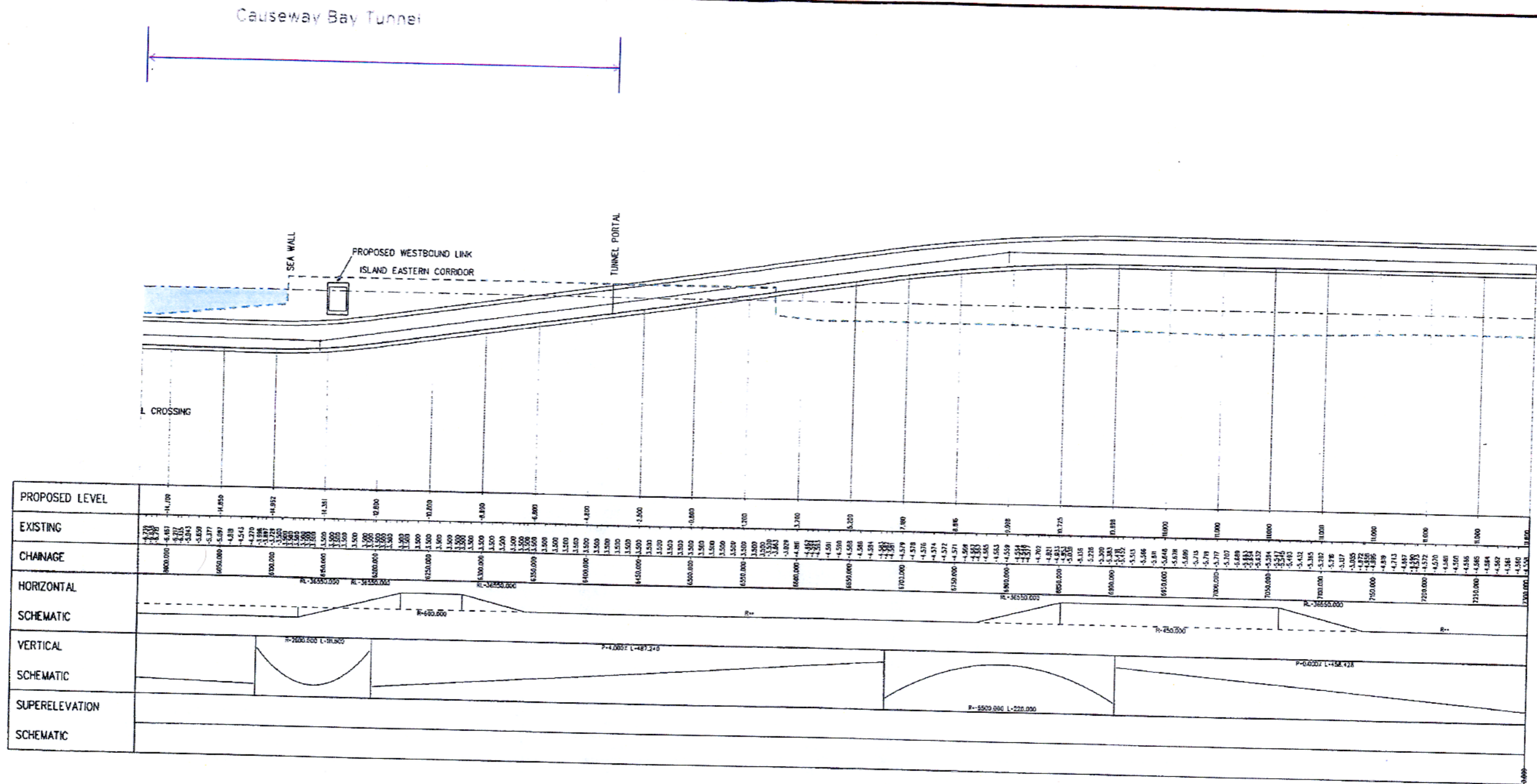


Figure R5.2 Vertical Elevation of Bypass (4 of 4)

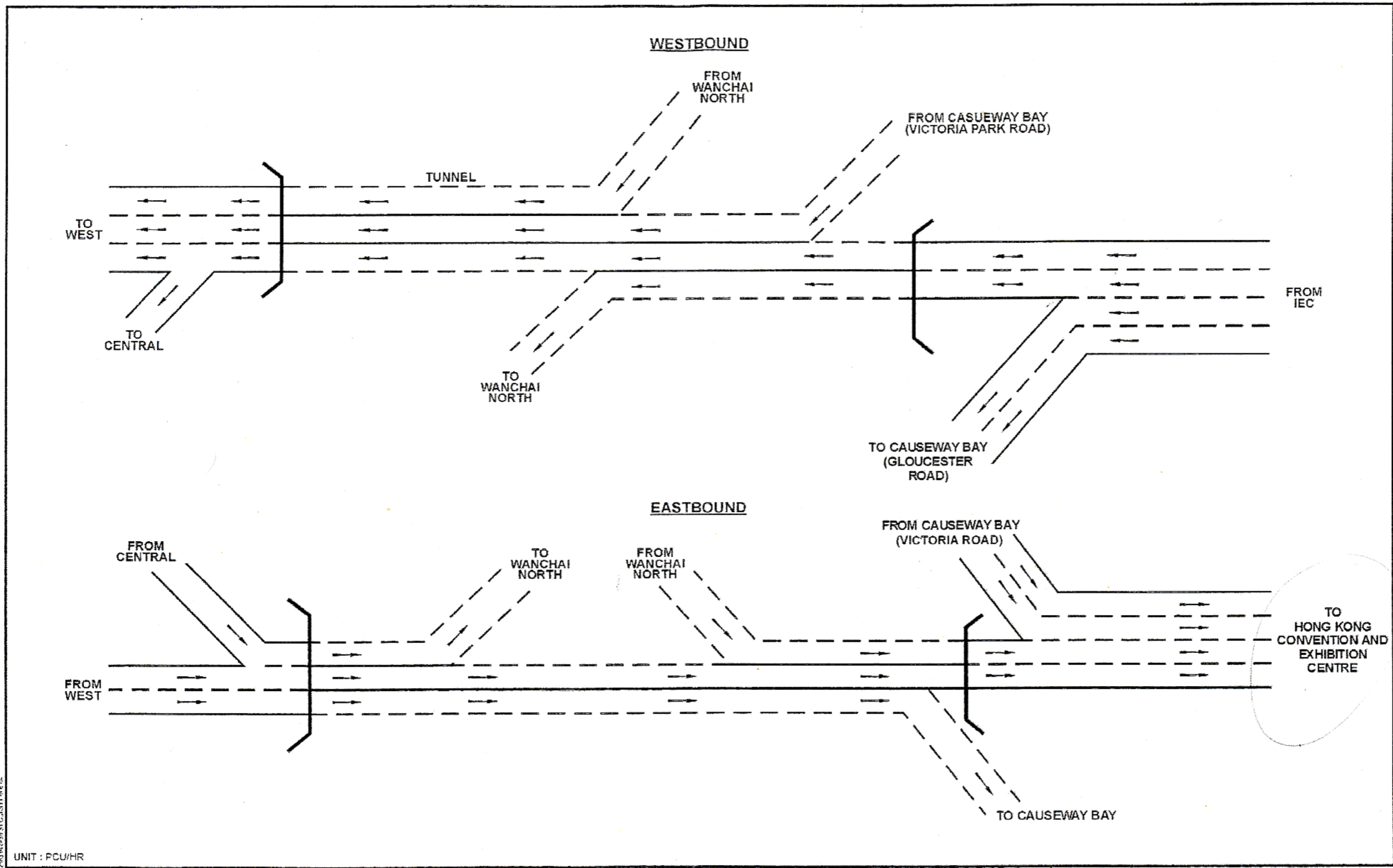


Figure R5.3 Proposed Lane Arrangement

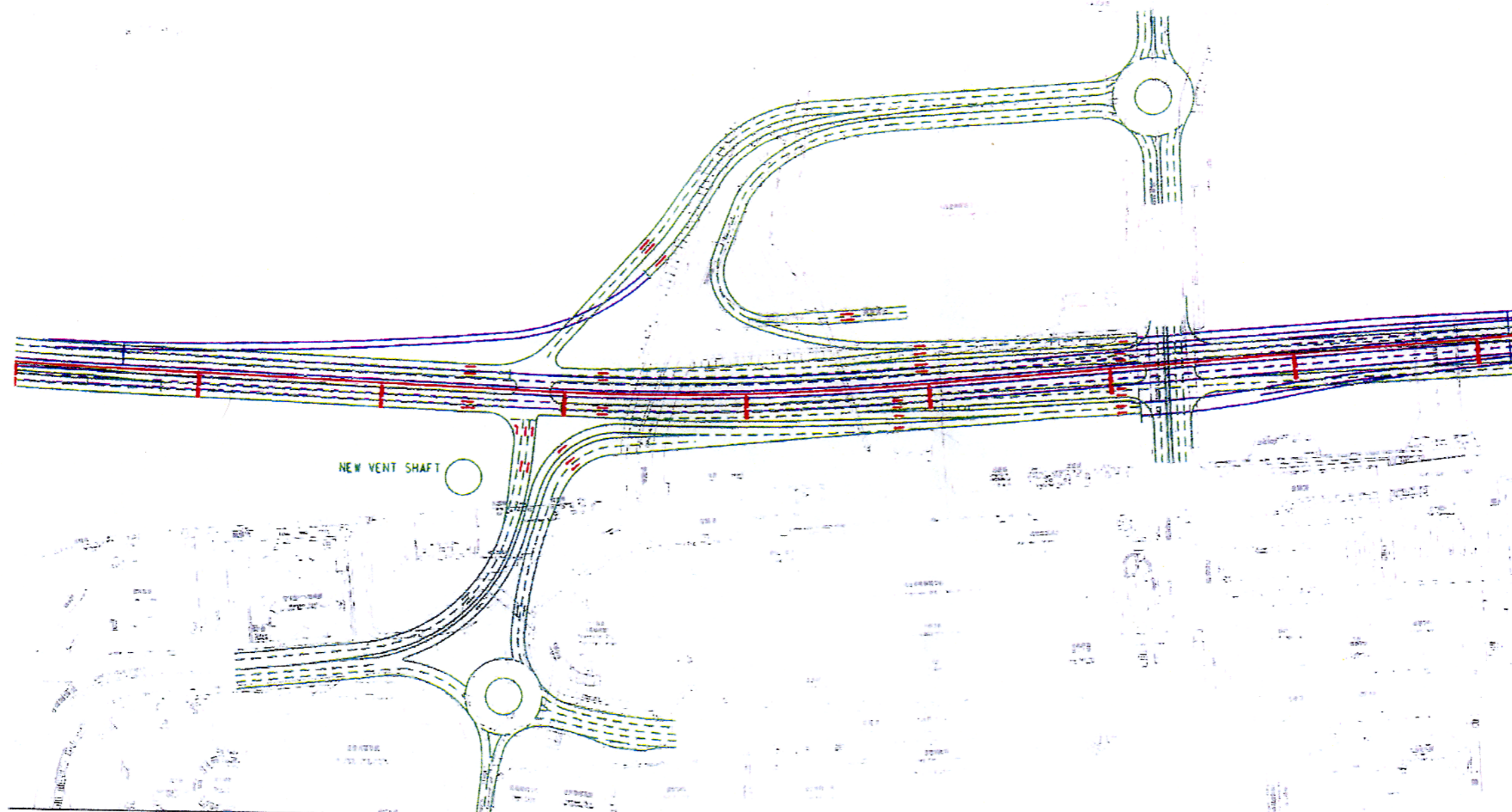


Figure R5.4 Interchange at Hong Kong Convention and Exhibition Centre

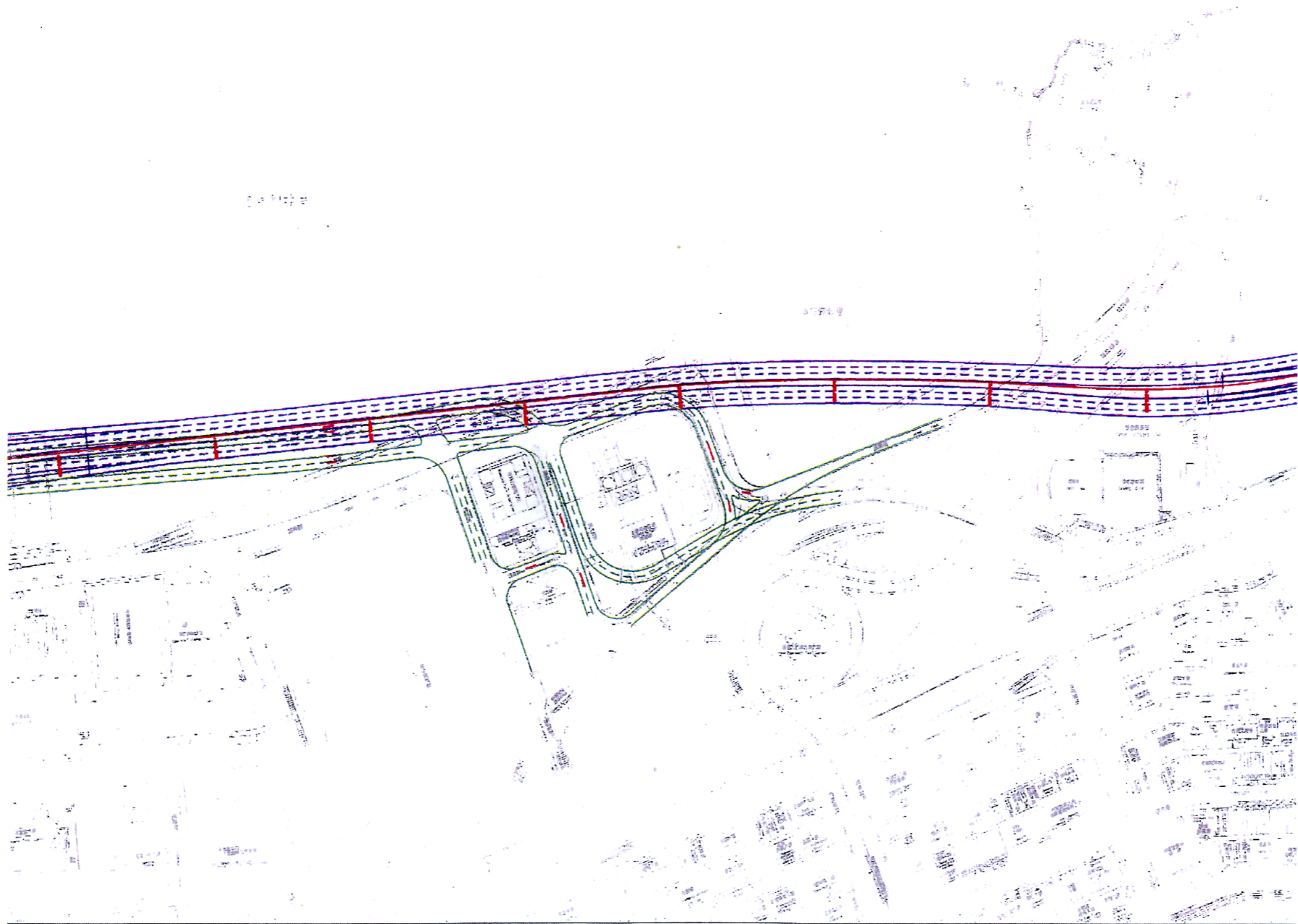


Figure R5.5 Interchange at Victoria Park

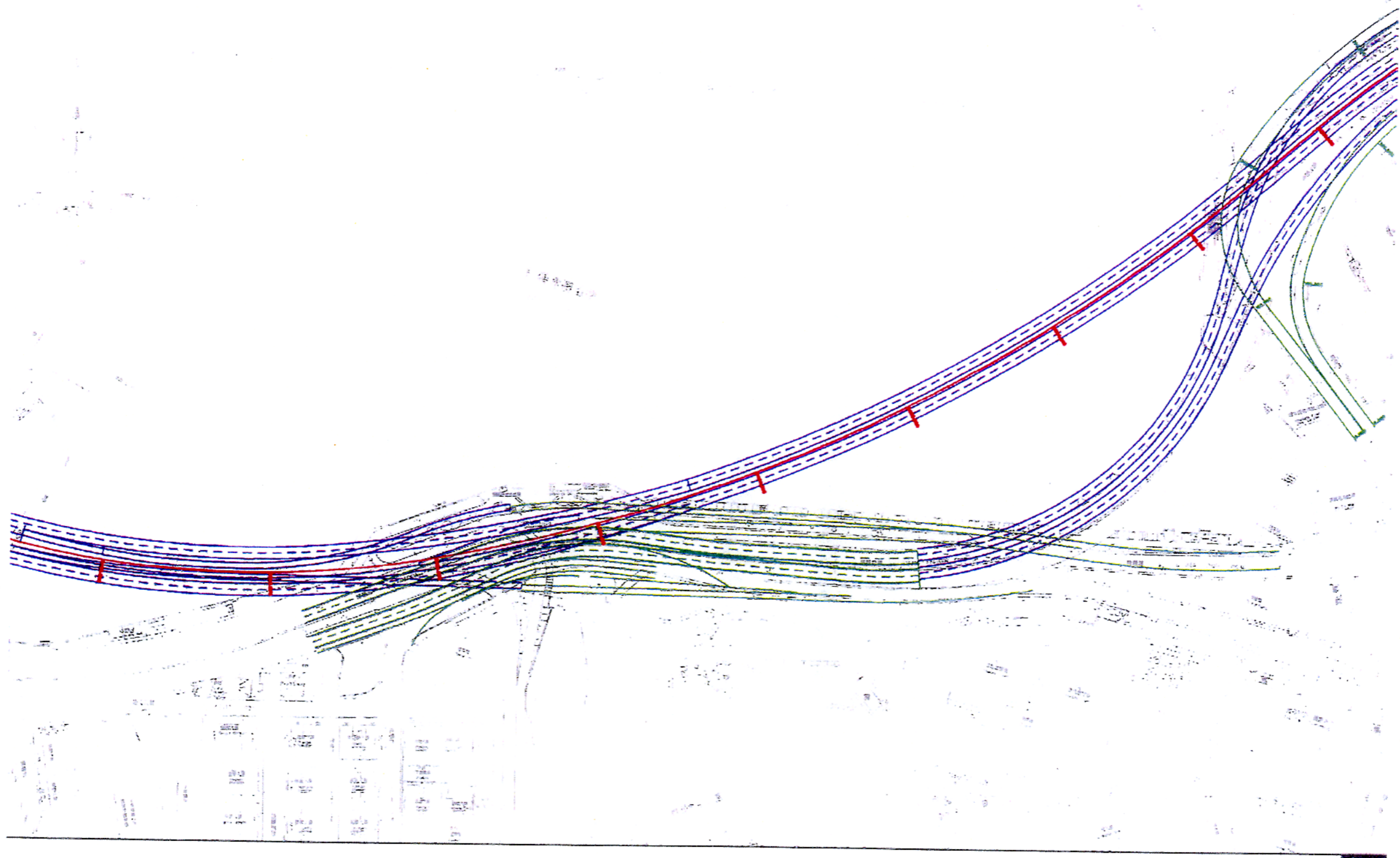


Figure R5.6 Interchange at Causeway Bay Typhoon Shelter

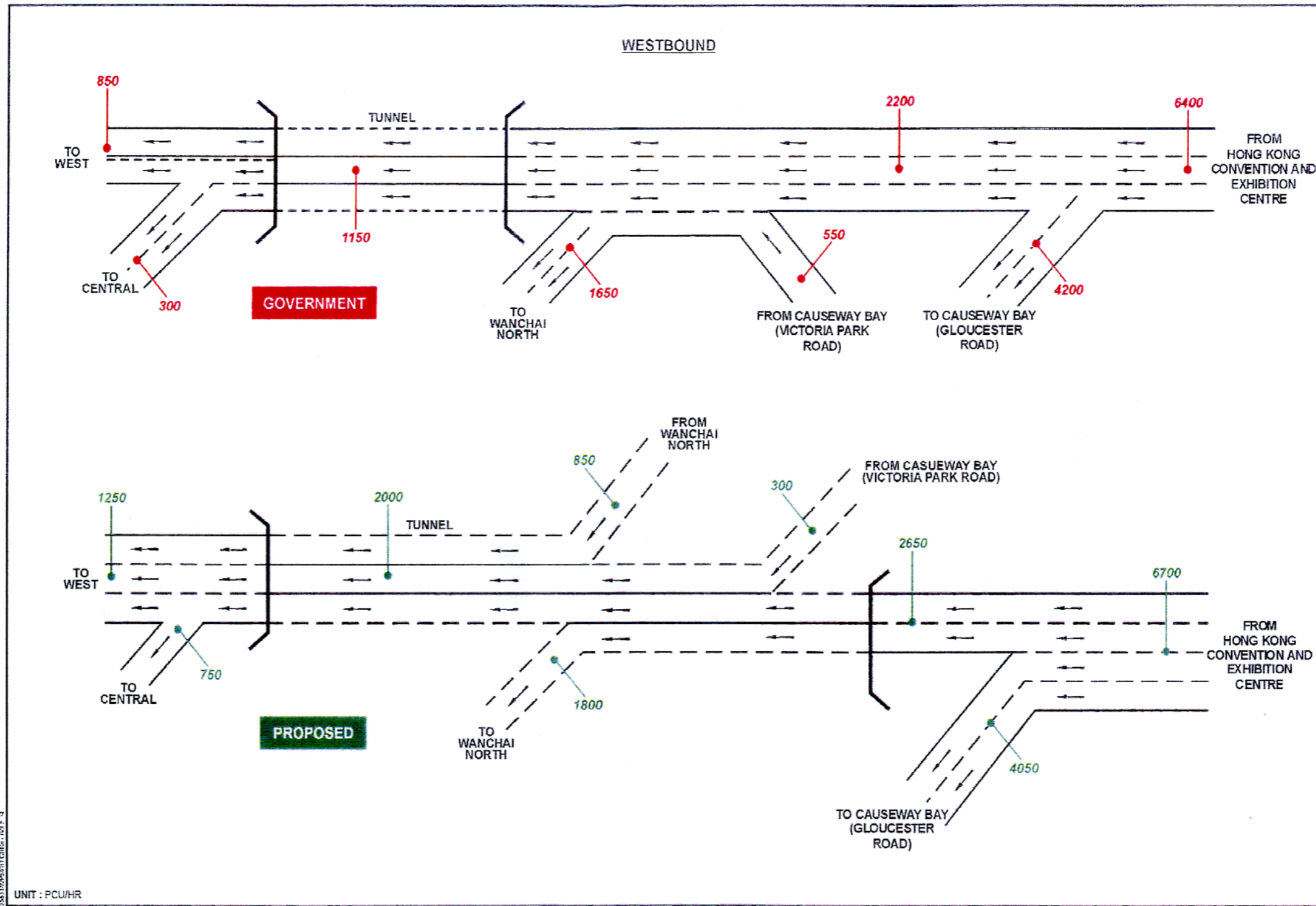


Figure R5.7 2016 Traffic Flow Comparison between Government and Proposed Scheme (Westbound AM)

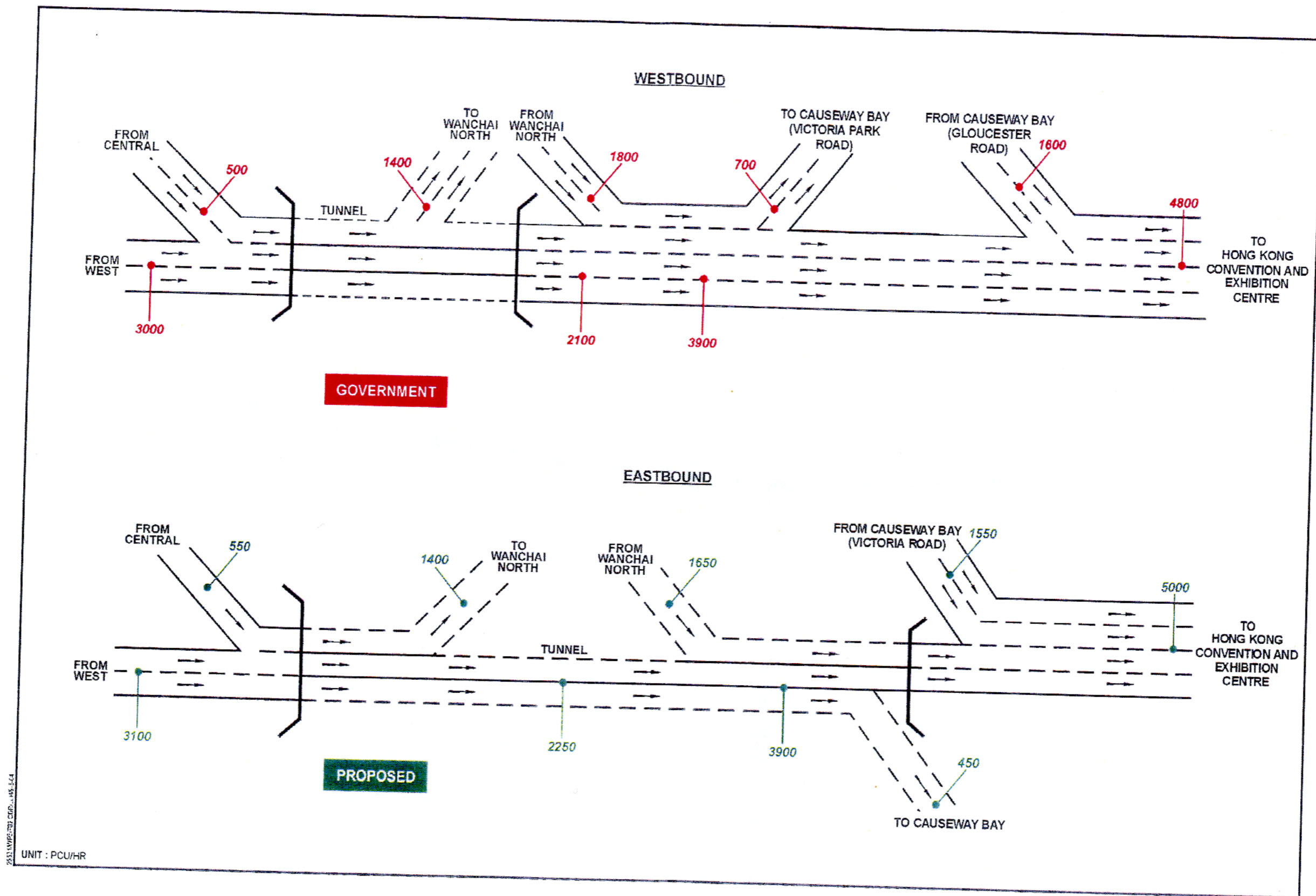


Figure R5.8 2016 Traffic Flow Comparison between Government and Proposed Scheme (Eastbound AM)

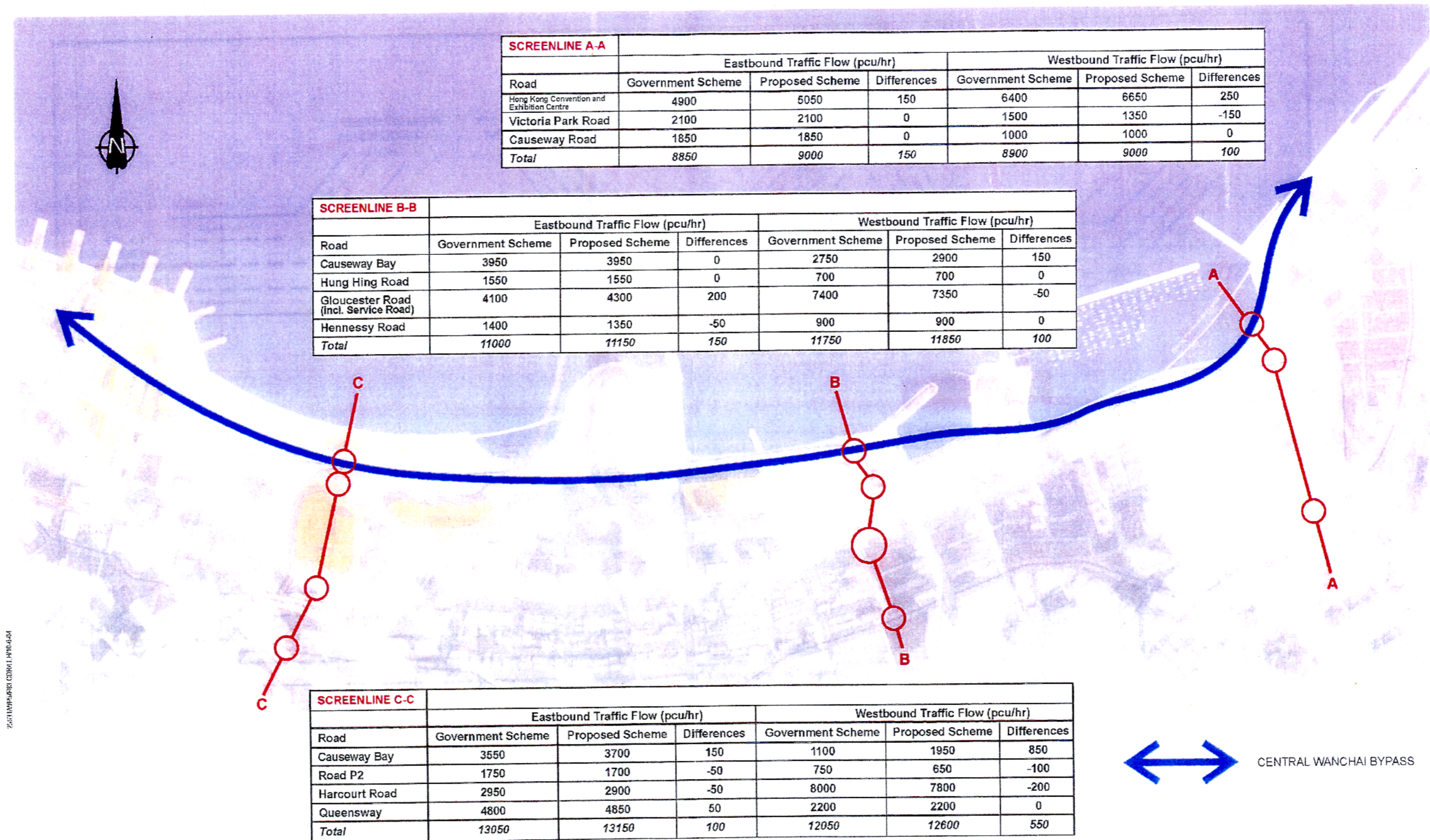


Figure R5.9 Screenline Comparison between Government and Proposed Scheme

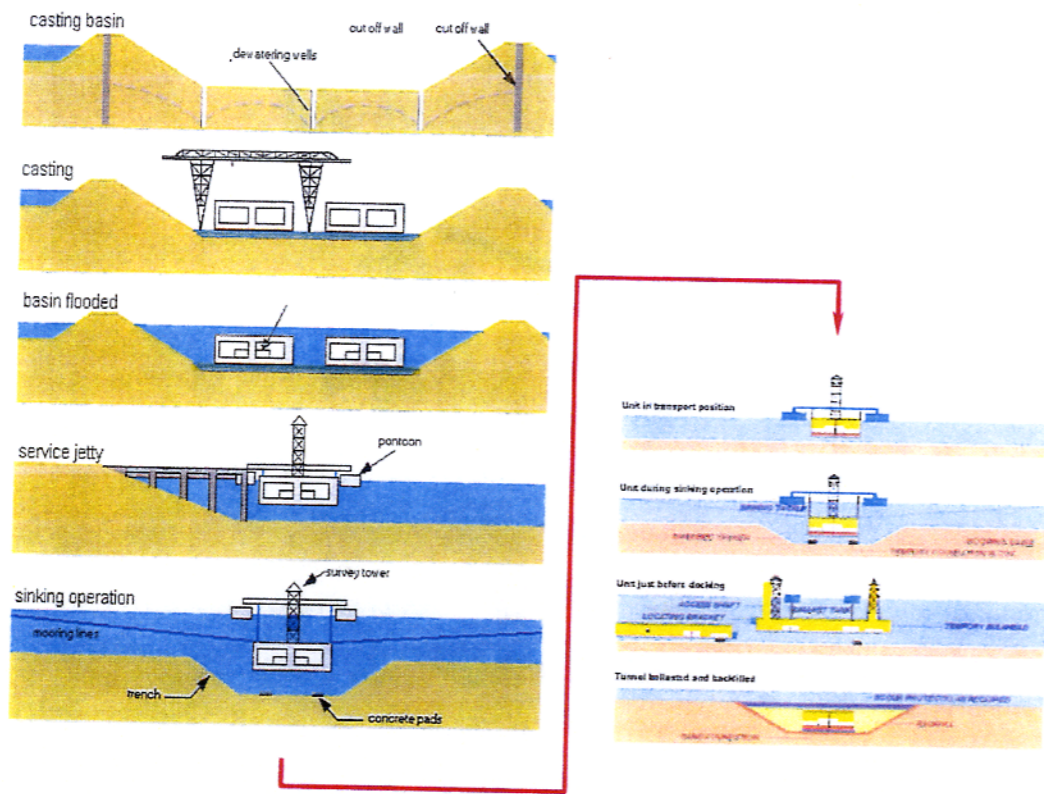


Figure R6.1 Immersed Tube Tunnel Fabrication and Placing Sequence



Figure R6.2 Potential for Discovery Bay Artificial Beach at CWB Typhoon Shelter

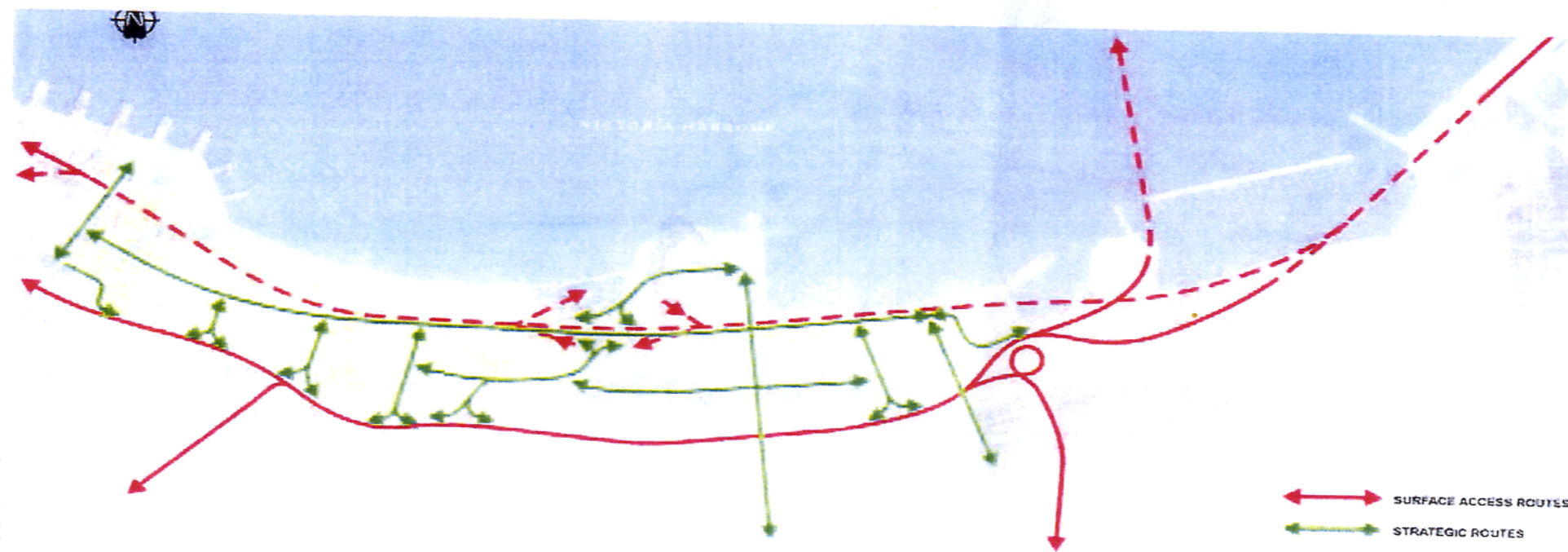


Figure R6.3 Conceptual road network functionality

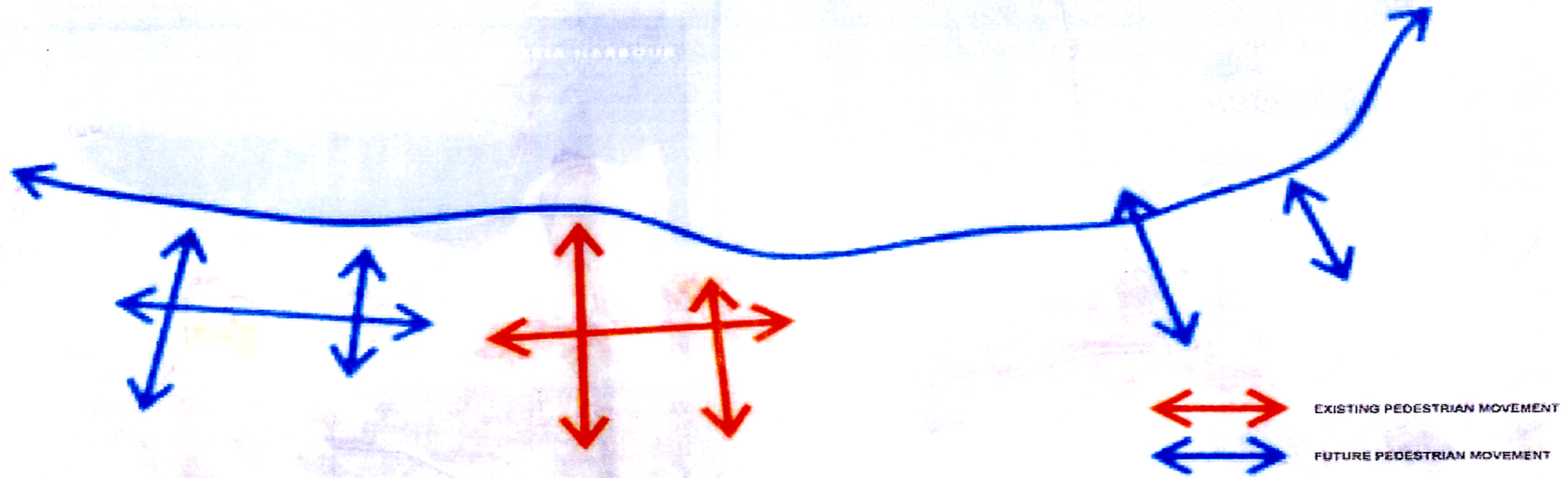


Figure R7.1 Future pedestrian movements

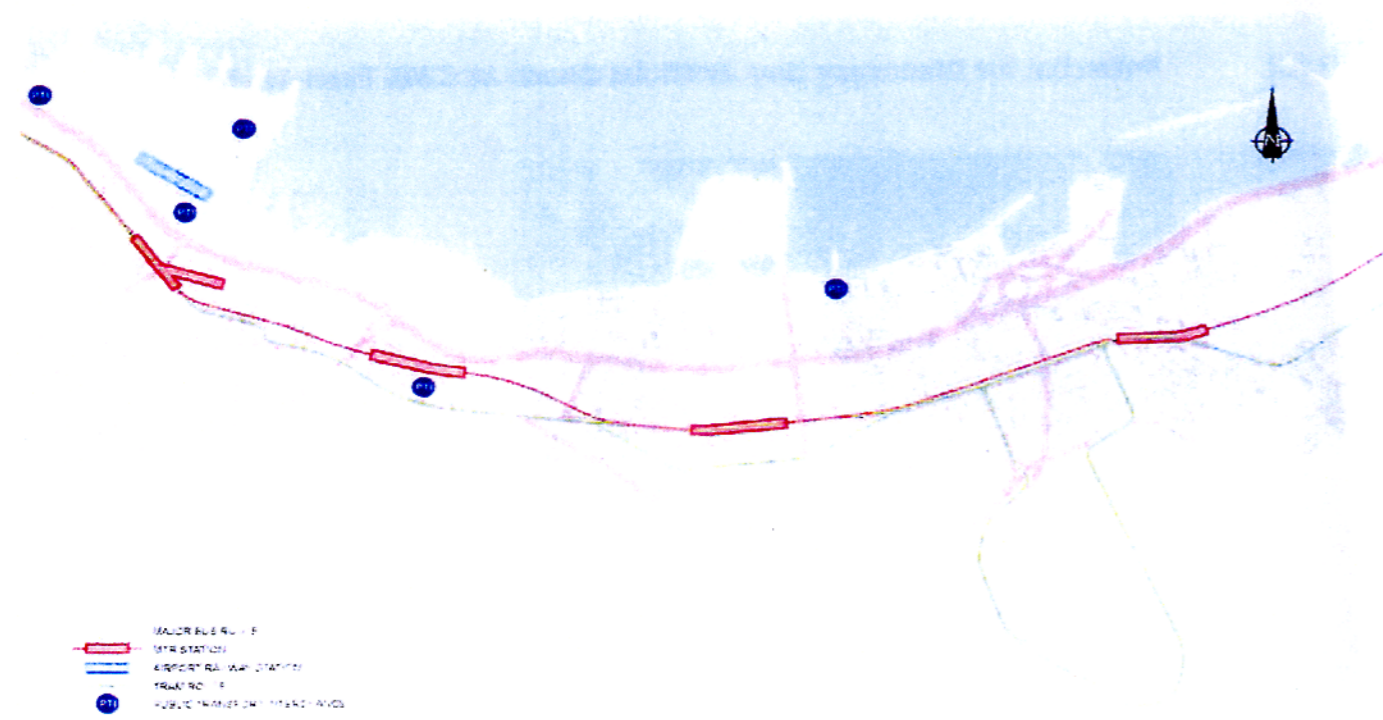


Figure R8.1 Existing public transport facilities at Central to Wanchai

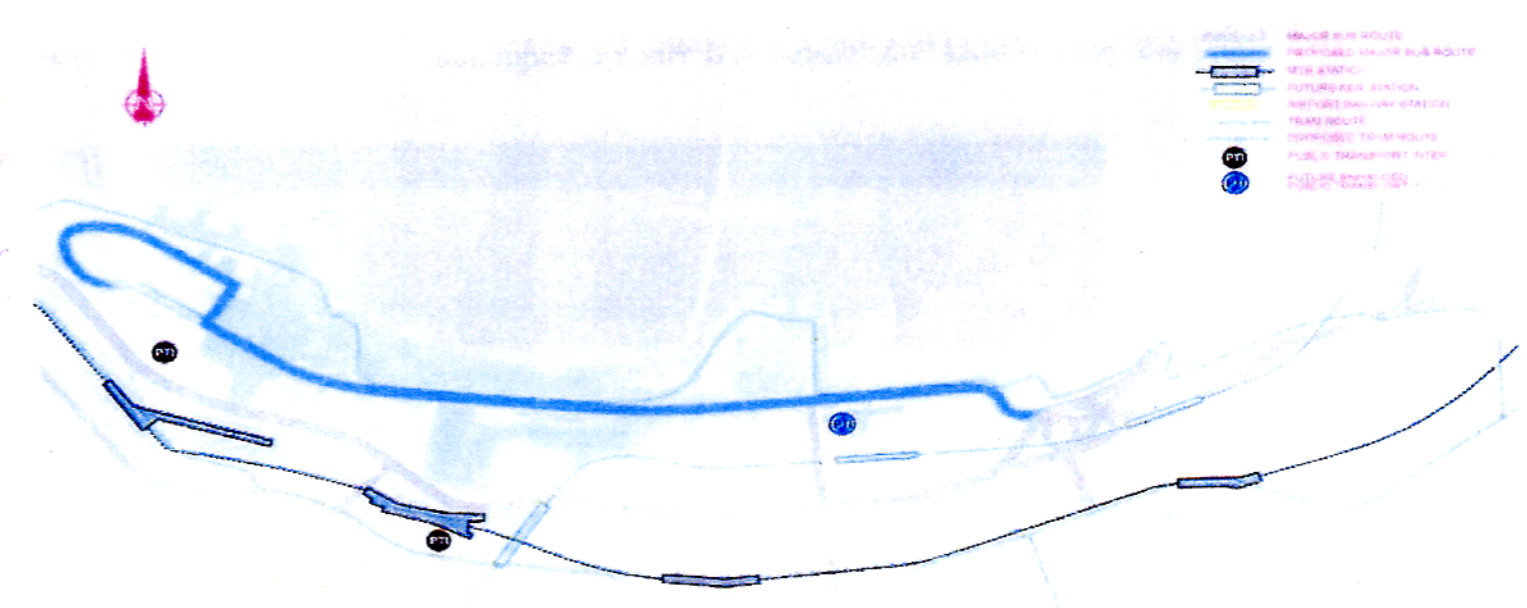


Figure R8.2 Future public transport facilities at Central to Wanchai