Maeda Corporation

Castle Peak Road Improvement Between Sham Tseng and Ka Loon Tsuen, Tsuen Wan West Contract No. HY/99/18

Monthly Environmental Monitoring and Audit Report
March 2005

Second Issue

Maeda Corporation

West Contract No. HY/99/18
Castle Peak Road Improvement Between Sham Tseng and Ka Loon Tsuen, Tsuen Wan

Environmental Monitoring and Audit

Monthly Environmental Monitoring and Audit Report – March 2005

April 2005

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11 April 2005

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For attention of: Mr. Sam Tsoi

Dear Mr. Tsoi

Contract HY/99/18 West Contract
Castle Peak Road Improvement between Sham Tseng and Ka Loon Tsuen, Tsuen Wan
Monthly EM&A Report (March 2005)

We refer to the electronic version of the captioned report submitted by your Mr. Angus Choi via e-mail on 11 April 2005. We do not have comment and endorsed the report.

Yours sincerely

p.p. **Coleman Ng**
Independent Checker (Environmental)
HYDER CONSULTING LIMITED

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ARUP

Document Verification

Job title	West Contract No. HY/99/18 Castle Peak Road Improvement Between Sham Tseng and Ka Loon Tsuen, Tsuen Wan	Job number	23437
Document title	Environmental Monitoring and Audit Report – March 2005	File reference	
Document ref	23437-55		

Revision	Date				
First Issue	08/04/05	Filename	G:\env\project\23437\reports\Monthly\2005\-02\55-Mar-05.doc		
		Description	Issue to IEC for comments		
			Prepared by	Checked by	Approved by
		Name	Fredrick Leong	Sam Tsoi	Sam Tsoi
		Signature			
Second Issue	14/04/05	Filename	G:\env\project\23437\reports\Monthly\2005-02\55-Mar-05-RevA.doc		
		Description	Submitted to Client with IEC verification letter		
			Prepared by	Checked by	Approved by
		Name	Fredrick Leong	Sam Tsoi	Sam Tsoi
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		Filename			
		Description			
		Name			
		Signature			

Issue Document Verification with Document ✓

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ABBREVIATIONS AND ACTONYMS

A/L	Action or Limit Levels
AQO	Air Quality Objectives
Arup	Ove Arup & Partners Hong Kong Limited
ASR	Area Sensitive Rating
BOD	Biochemical Oxygen Demand
B&K	Brüel & Kjær
CFM	Cubic Feet per Minute
CNP	Construction Noise Permit
CT	Contractor
C&D	Construction & Demolition
DO	Dissolved Oxygen
DGPS	Differential Global Positioning System
EA	Environmental Auditor
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
EP	Environmental Permit
EPD	Environmental Protection Department
ER	Engineer / Engineer's Representative
ET	Environmental Team
HKPSG	Hong Kong Planning Standards and Guidelines
HKSAR	Hong Kong Special Administrative Region
HOKLAS	The Hong Kong Laboratory accreditation Scheme
HVS	High Volume Sampler
IC(E)	Independent Checker (Environment)
IEC	International Electrotechnical Commission Publications
K	Degrees Kelvin
MC	Maeda Corporation
MHJV	Mouchel Halcrow Joint Venture
NAMAS	National Measurement accreditation Service
NTU	Nephelometric Turbidity Unit
NSR	Noise Sensitive Receiver
SCFM	Standard Cubic Feet per Minute
SS	Suspended Solids
TSP	Total Suspended Particulates
Tby	Turbidity

EXECUTIVE SUMMARY

This is the thirty-eighth monthly environmental monitoring and audit (EM&A) report presenting the progress of environmental monitoring and audit works for the period between 1 March 2005 and 31 March 2005. Monitoring works included air quality monitoring and noise monitoring. Air quality was recorded in terms of 1-hour Total Suspended Particulates (TSP) and 24-hour TSP. Noise was measured in terms of $L_{eq(30min)}$ with L_{10} and L_{90} measurements as references. Audit works included the weekly environmental audit and the bi-weekly landscape and visual monitoring and audit.

Air Quality

A total of 6 sets of 3 consecutive 1-hour TSP measurements had been taken during the reporting month. The highest 1-hour TSP level was 244.9μg/m^3 recorded at Carpark L3, Phase 2, Block 6, Sea Crest Villa (WA9) on 18 March 2005 while the lowest 1-hour TSP level was 46.9μg/m^3 recorded at G/F, Regent Heights, Hong Kong Garden (WA3) on 14 March 2005. There was no exceedance of the Action and Limit (A/L) Levels during the monitoring period.

A total of 6 sets of 24-hours TSP measurement had been taken during the reporting month. The highest 24-hour TSP level was 183.7μg/m^3 recorded at G/F, Tsing Lung Tau Temple (WA6) on 19 March 2005 while the lowest 24-hour TSP level was 32.0μg/m^3 recorded at Carpark L3, Phase 2, Block 6, Sea Crest Villa (WA9) on 2 March 2005. There was no exceedance of the A/L Levels during the monitoring period.

Noise

A total of 5 sets of daytime (0700 – 1900 hours) noise monitoring had been taken during the reporting month. The highest noise level was 74dB(A) recorded at Village House 1, Tsing Lung Tau (WN9) on 24 March 2005 while the lowest noise level was 65dB(A) recorded at Lido Garden (WN16) on 1 March 2005. There was no exceedance of the A/L Levels during the monitoring period.

Marine Water Quality

No marine water quality was conducted in March 2005.

Environmental Auditing

A total of 5 environmental site audits had been carried out on a weekly basis in March 2005. The major environmental concerns included the following issues:

- **Water quality:** cleaning of open channels, mud trails, implement wheel wash and stagnant water.
- **Air quality:** watering earth moving operations and stockpiles covering.
- **Construction Noise:** no non-compliance was found.
- **Handling of waste and chemicals:** cleaning up oil stain and empty oil drums.

Landscape and Visual

A total of 3 landscape and visual monitoring and audits had been carried out on a biweekly basis in March 2005. The Registered Landscape Architect had recommended as follows:

- The Contractor was reminded to urgently carry out proper tree protection to ensure existing trees retained are not damaged.
- The Contractor was reminded to clear away all scattered litter, garbage, etc. as found on site, and keep the site in a tidy condition at all times.
- The Contractor was reminded to carry out more frequent watering of the site during dry periods to prevent dust nuisance.

Waste Disposal

A total of 5 loads of Construction & Demolition (C&D) waste materials and a total of 1799 loads of C&D fill materials (Public Fill) had been disposed of at WENT Landfills and at Public Filling Area in Tuen Mun respectively in March 2005. No chemical waste was disposed of in March 2005.

Complaint Records

There was no environmental complaints received in March 2005.

Non-compliances

There were no non-compliances for TSP air quality and noise monitoring during the monitoring period in March 2005.

Notification of Summons and Successful Prosecution

There was neither notification of summons nor prosecution received during the reporting month.

Environmental Licenses

There was no new CNP granted in the reporting month.

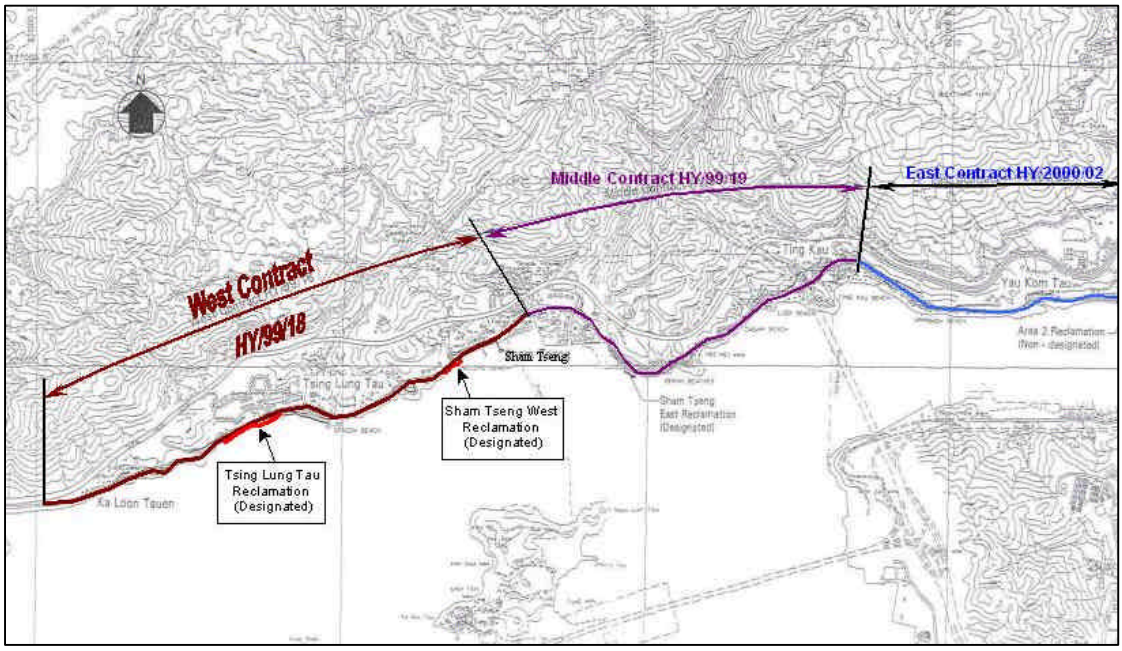
1. INTRODUCTION

Ove Arup & Partners Hong Kong Limited (Arup) was appointed by the Contractor - Maeda Corporation (MC) as the Environmental Team (ET) for *Contract No. HY/99/18 Castle Peak Road Improvements between Sham Tseng and Ka Loon Tsuen, Tsuen Wan* (hereafter called the "Project"). Environmental parameters including air quality, construction noise, water quality and landscape & visual issues were selected for impact monitoring for the Project. The major construction period of the Project are anticipated as 43 months from December 2001 to June 2005.

1.1 Project Background

The Castle Peak Road improvements works consists of upgrading the existing Castle Peak Road to provide a dual two-lane carriageway of "Rural Road A" classification between Area 2, Tsuen Wan and Ka Loon Tsuen, and all associated utility, junction and pedestrian facilities. The Castle Peak Improvement project is divided into three contracts. This Environmental Monitoring and Audit (EM&A) exercise only concerns the West Contract No. HY/99/18 between Sham Tseng and Ka Loon Tsuen, Tsuen Wan. Figure 1-1 shows the site location plan and the detailed site layout plans are provided in Appendix A.

Figure 1-1 Site location plan



The scope of the construction work includes:

- Improvement to Castle Peak Road between Area 2 and Ka Loon Tsuen, Tsuen Wan to a dual two-lane carriageway;
- Provision of pedestrian facilities in the form of footpaths, subways, footbridges and Crossings;
- Road junction and signal design and the re-provision of access roads and connections to existing road networks;
- Construction of associated drainage and landscaping works;
- Environmental mitigation measures;
- Design and construction of watermains;
- Construction of entrusted sewerage works; and
- Dredging and reclamation (designated project – see also Section 1.2)

1.2 Designated Project

The marine reclamation and the construction of the associated seawall at Tsing Lung Tau and Sham Tseng West within Contract No. HY/99/18 had been classified as designated projects under the Environmental Permits No. EP-093/2001 and EP-094/2001 respectively.

1.3 Impact EM&A Requirements

The impact environmental monitoring and audit included air quality monitoring (both 1-hour and 24-hour TSP), noise, water quality, landscape and visual monitoring, and environmental audit.

1.4 Purpose of the Report

The purpose of the monthly EM&A report is to provide the information on monitoring methodology, monitoring results, environmental permit status, site audit findings, recommendations and conclusions.

This is the thirty-seventh monthly EM&A report prepared by Arup for the submission to Maeda Corporation summarising the monitoring methodology, locations, periods, frequencies, results and any observation from the air quality, noise, marine water quality, and landscape and visual monitoring and audit from 1 February to 28 February 2005.

2. ENVIRONMENTAL STATUS

2.1 Construction Programme

The construction work was commenced in February 2002. An up-to-date construction programme is given in Appendix B.

2.2 Construction Activities of the Month

The major construction activities carried out by the Contractor (CT) in March 2005 included:

- Construction of footbridges FB01, FB02, FB12;
- Construction of noise barriers NM01, NM02, NM03 and NM04;
- Construction of culverts and outfalls;
- Construction of retaining wall RW01 and
- Construction of utility and water mains works.

The major sea works at level below +2.5mPD had been completed in July 2003 and sand placement activities at Seawall B completed on 13 August 2004.

3. SUMMARY OF EM&A REQUIREMENTS

Air quality, construction noise, marine water quality and landscape issues are significant environmental impacts identified for the construction period of the project. In accordance with the Project specific EM&A Manual[1], air quality, noise, water quality, landscape and visual monitoring and audit shall be performed by an ET at all specified monitoring locations during the construction and operational stages. As instructed by the Contractor, the marine monitoring was suspended since 10 October 2003 as the major sea works at level below +2.5mPD had been completed in July 2003. Marine monitoring was resumed in August from 2 August to 27 August 2004 during and after beach reinstatement activity took place in August 2004.

The monitoring schedule for March 2005 and the tentative schedule for April 2005 are attached in Appendix C.

3.1 Air Quality Monitoring

3.1.1 Monitoring Parameters

Air monitoring was measured in terms of the TSP levels for both 24-hour and 1-hour periods.

3.1.2 Monitoring Frequency

24-hour TSP and 1-hour TSP levels were monitored during the course of construction in accordance with the EM&A Manual. The monitoring parameters and frequency are specified in Table 3-1.

Table 3-1 TSP monitoring parameters and frequency

Parameters	Monitoring Frequency	Time Period	No. of measurement for each monitoring
24-hour TSP	Once every six days	0000 - 2400	1
1-hour TSP	Three times per every six days	0700 - 1900	1

3.1.3 Monitoring Locations

A total of eleven locations had been specified for the air quality monitoring and they are given in Table 3-2 and presented in Figures 3-1a to 3-1d.

Table 3-2 Air quality monitoring locations

Air Monitoring Station No.	Location	Location description
~~WA1~~	~~Bayside Villas~~	~~G/F, Bayside Villas~~ (Temporary Suspended)
~~WA2~~	~~Grand Bay Villas~~	~~G/F, Grand Bay Villas~~ (Temporary Suspended)
WA3	Hong Kong Garden	G/F, Hong Kong Garden (Regent Heights)
WA4	Hong Kong Garden	G/F, Hong Kong Garden (Between Blk 1 & 2)

Air Monitoring Station No.	Location	Location description
WA5	Hong Kong Garden	G/F, Hong Kong Garden (Block 4)
WA6	Tsing Lung Tau Tin Hau Temple	G/F, Tsing Lung Tau Tin Hau Temple
WA7	Sea Crest Villa	Podium, Sea Crest Villa (Phase 4 Block 12)
WA8	Sea Crest Villa	Podium, Sea Crest Villa (Phase 3 Block 8)
WA9	Sea Crest Villa	Car Park (L3), Sea Crest Villa (Phase 2 Block 6)
WA10	Sea Crest Villa	Podium, Sea Crest Villa (Phase 1 Block 1)
WA11	Lido Garden	G/F, Carpark, Lido Garden Tower 1

Note: Bayside Villas (WA1) and Grand Bay Villas (WA2) are no longer the air sensitive receivers as all residents of Bayside Villas and Grand Bay Villas were moved out since September 2002. Therefore, the air quality monitoring at Bayside Villas and Grand Bay Villas were temporary suspended since October 2002 after approval from IC(E) and EPD.

3.1.4 Wind Monitoring

Wind monitoring data, which included the wind speed and wind directions are extracted from Hong Kong Observatory – Tsing Yi Wind Monitoring Station.

3.2 Construction Noise Monitoring

3.2.1 Monitoring Parameters

Construction noise monitoring was measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). L_{10} and L_{90} will also be recorded as supplementary reference information for data auditing.

3.2.2 Monitoring Frequency

Construction noise measurements were required to be taken on a weekly basis in accordance with the EM&A Manual. The monitoring time periods, monitoring parameters and frequency are specified in Table 3-3.

Table 3-3 Construction noise monitoring parameters and frequency

Time Period (when construction activity is found)	Parameters	Monitoring Frequency	No. of Measurements for Each Monitoring
Between 0700-1900 hours on normal weekdays	$L_{eq(30\ min)}$	Once per week	1
Between 1900-2300 hours on normal weekdays	$L_{eq(5\ min)}$*		3 (consecutive)
Between 2300-0700 hours of next day			
Between 0700-1900 hours on holidays			

Remarks: * The $L_{eq(5\ min)}$ will only be measured if construction activities are conducted in holidays and between the period of 1900 and 0700 hours during normal weekdays.

3.2.3 Monitoring Locations

A total of sixteen noise monitoring locations had been specified. They are given in Table 3-4 and presented in Figures 3-1a to 3-1d. The measurements were taken at a position 1m from the exterior of building façade and at a position of 1.2m above ground.

Table 3-4 Construction noise monitoring locations

Noise Monitoring Station No.	Location	Monitoring Point
WN1	Ka Loon Tsuen	House No.3, Ka Loon Tsuen
WN2	Ka Loon Tsuen	House No.15, Ka Loon Tsuen
~~WN3~~	~~Bayside Villas~~	~~Upper G/F, Bayside Villas~~ (Temporary Suspended)
~~WN4~~	~~Bayside Villas~~	~~Lower G/F, Bayside Villas~~ (Temporary Suspended)
~~WN5~~	~~Grand Bay Villas~~	~~G/F, Grand Bay Villas~~ (Temporary Suspended)
WN6	Hong Kong Garden	G/F, Hong Kong Garden (Regent Heights)
WN7	Hong Kong Garden	G/F, Hong Kong Garden (Between Blk 1 & 2)
WN8	Hong Kong Garden	G/F, Hong Kong Garden (Block 4)
WN9	Tsing Lung Tau Village	House 1,Tsing Lung Tau Village
WN10	Tsing Lung Tau Village	House 60-64,Tsing Lung Tau Village
WN11	Villa Alfavista	G/F, Villa Alfavista
WN12	Sea Crest Villa	Podium, Sea Crest Villa (Phase 4 Block 12)
WN13	Sea Crest Villa	Podium, Sea Crest Villa (Phase 3 Block 8)
WN14	Sea Crest Villa	Car Park (L3), Sea Crest Villa (Phase 2 Block 6)
WN15	Sea Crest Villa	Podium, Sea Crest Villa (Phase 1 Block 1)
WN16	Lido Garden	G/F, Carpark, Lido Garden Tower 1

Note: Bayside Villas (WN3 and WN4) and Grand Bay Villas (WN5) are no longer the noise sensitive receivers as all residents of Bayside Villas and Grand Bay Villas were moved out since September 2002. Therefore, the noise monitoring at Bayside Villas and Grand Bay Villas were temporary suspended since October 2002 after approval from IC(E) and EPD.

3.3 Water Quality (Designated Project)

3.3.1 Monitoring Parameters

Water quality monitoring includes Turbidity (Tby) in the unit of NTU, Dissolved Oxygen (DO) in the unit of mg/L and Suspended Solids (SS) in the unit of mg/L. In addition to the water quality parameters, other relevant data, such as monitoring location/position, time, water depth, water temperature, salinity, DO saturation, weather conditions, sea conditions, tidal stage will be recorded including any special phenomena, work underway at the construction site, etc.

3.3.2 Monitoring Frequency

Water quality monitoring during the impact stage was conducted three times per week, during mid-flood and mid-ebb tides and at sixteen designated sampling. The interval between two sets of monitoring will not be less than 36 hours except where exceedances above the Action Level or Limit Level were detected (see also Section 3.5). In these cases, the monitoring frequency will be increased.

3.3.3 Monitoring Locations

A total of sixteen locations, 9 for impact and 7 for control were originally selected for marine water quality monitoring and the locations are given in Table 3-5a and presented in Figure 3-1b to 3-1e.

The new marine water quality monitoring programme, was commenced on 12 February 2003 and suspended on 10 October 2003, as agreed by the IC(E) and EPD. A total of twelve locations, 8 for impact and 4 for control were selected for the new marine water quality monitoring programme and the locations are given in Table 3-5b and presented in Figure 3-1b to Figure 3-1e.

Table 3-5a Water quality monitoring locations (Original)

Water Monitoring Station No.		Location	
		Eastings	Northings
Tsing Lung Tau	WW1 (Impact Station)	822260	824491
	WR1 (Control Station)	822278	824459
Tsing Lung Tau	WW2 (Impact Station)	822352	824538
	WR2 (Control Station)	822363	824505
Tsing Lung Tau	WW3 (Impact Station)	822506	824609
	WR3 (Control Station)	822518	824578
Tsing Lung Tau	WW4 (Impact Station)	822820	824640
	WR4 (Control Station)	822800	824603
Angler's Beach: Sham Tseung	WW5 (Impact Station)	823697	824937
	WR5 (Control Station)	823700	824905
Angler's Beach: Sham Tseung	WW6 (Impact Station)	823775	824991
	WW7 (Impact Station)	823797	825042
	WR6/WR7 (Control Station)	823797	824964
Angler's Beach	WW8 (Impact station)	823994	825141
	WR8 (Control Station)	824006	825107
Ma Wan Fish Culture Zone	FCZ1 (Impact Station)	823500	823870

Table 3-5b Water quality monitoring locations (New)

Water Monitoring Station No.		Location	
		Eastings	Northings
Tsing Lung Tau	WW1 (Impact Station)	822306	824405
	WW2 (Impact Station)	822377	824462
	WW3 (Impact Station)	822529	824500
	WW4 (Impact Station)	822775	824560
	WR-E-1234 (Control Station for Mid-Ebb Tide)	822204	824312
	WR-F-1234 (Control Station for Mid-Flood Tide)	822850	824519
Angler's Beach: Sham Tseung West	WW5 (Impact Station)	823700	824905
	WW6/7 (Impact Station)	823797	824964
	WW8 (Impact Station)	823900	825023
	WR-E-5678 (Control Station for Mid-Ebb Tide)	823590	824830
	WR-F-5678 (Control Station for Mid-Flood Tide)	823994	825034
Ma Wan Fish Culture Zone	FCZ1 (Impact Station)	823500	823870

Figure 3-1a Monitoring locations

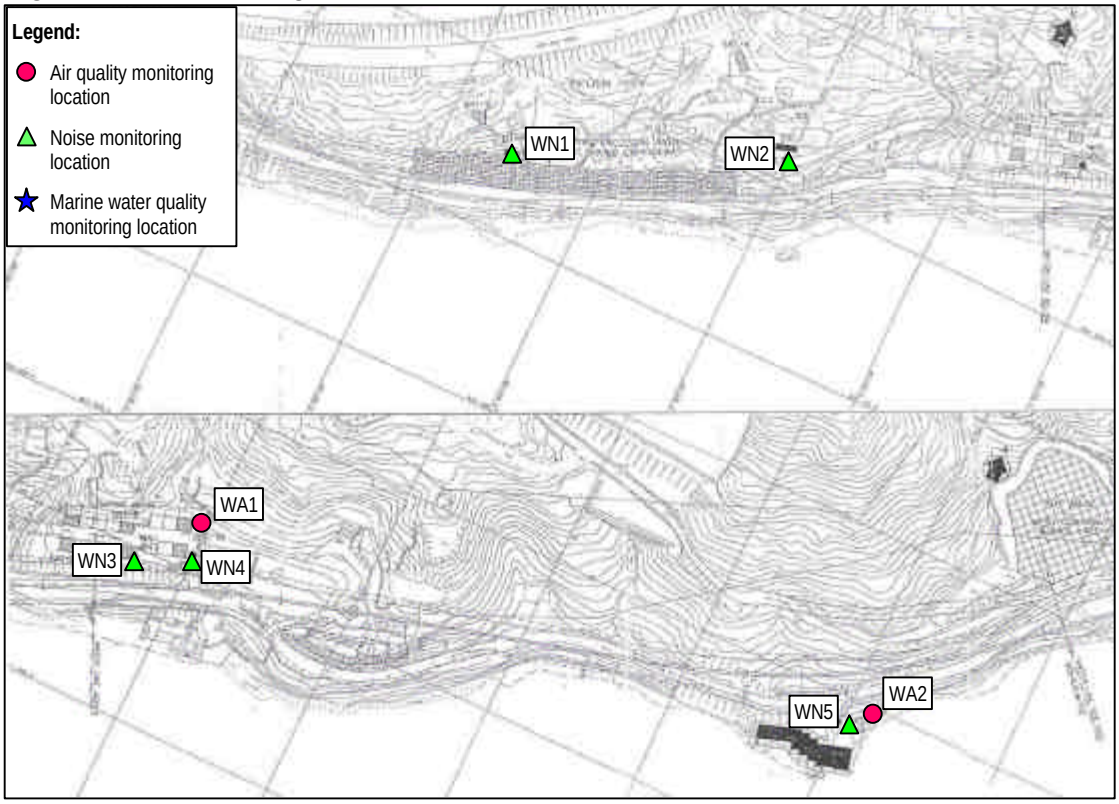


Figure 3-1b Monitoring locations

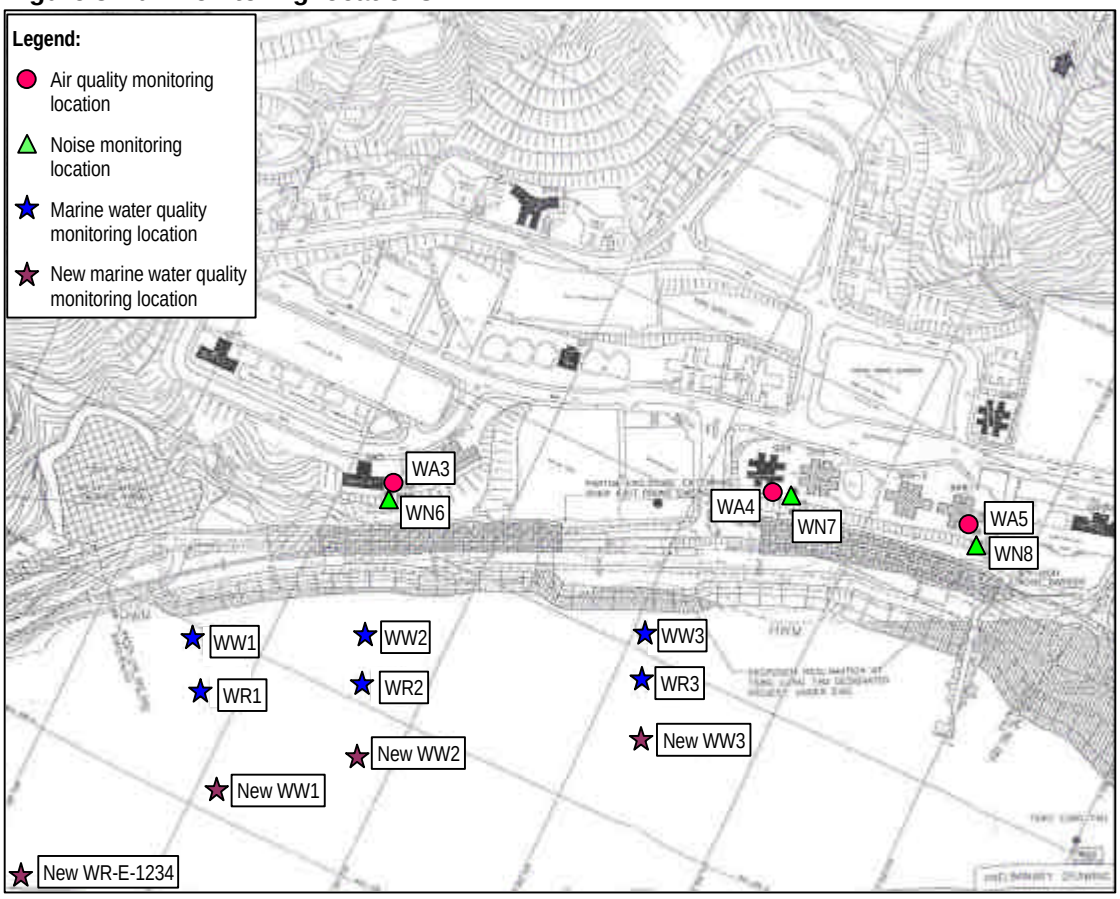


Figure 3-1c Monitoring locations

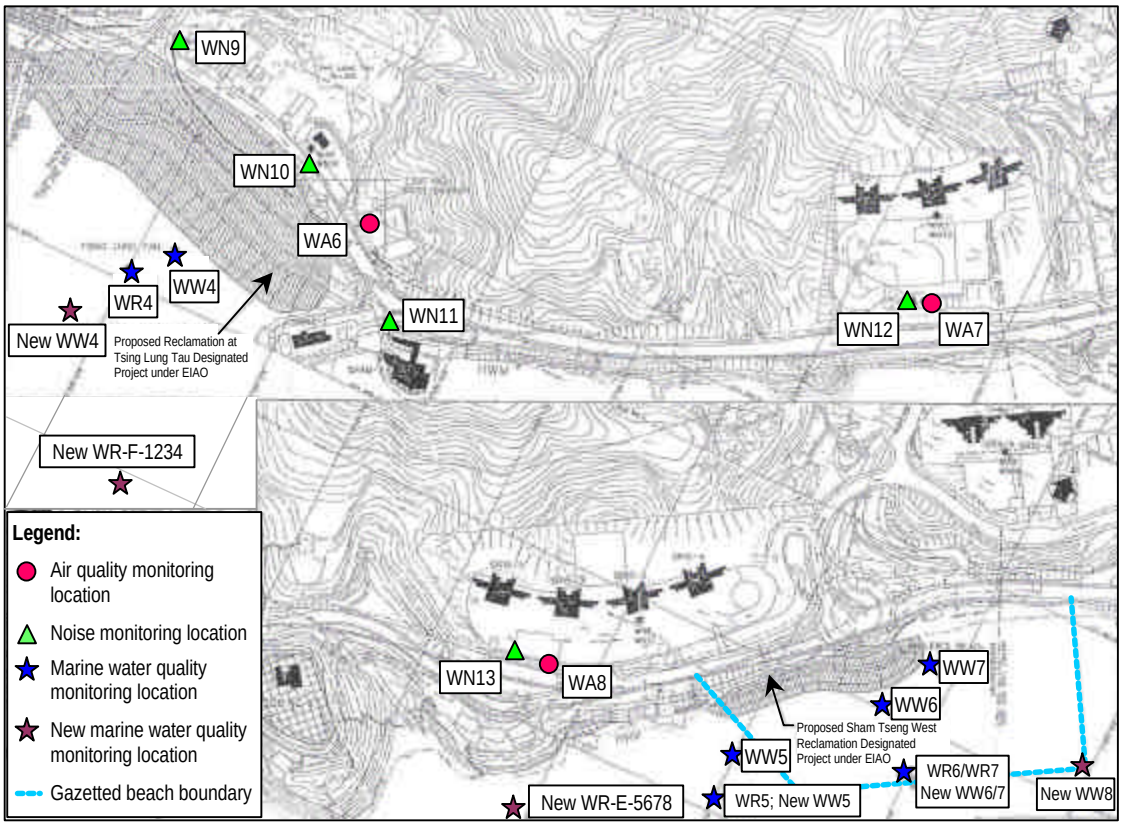


Figure 3-1d Monitoring locations

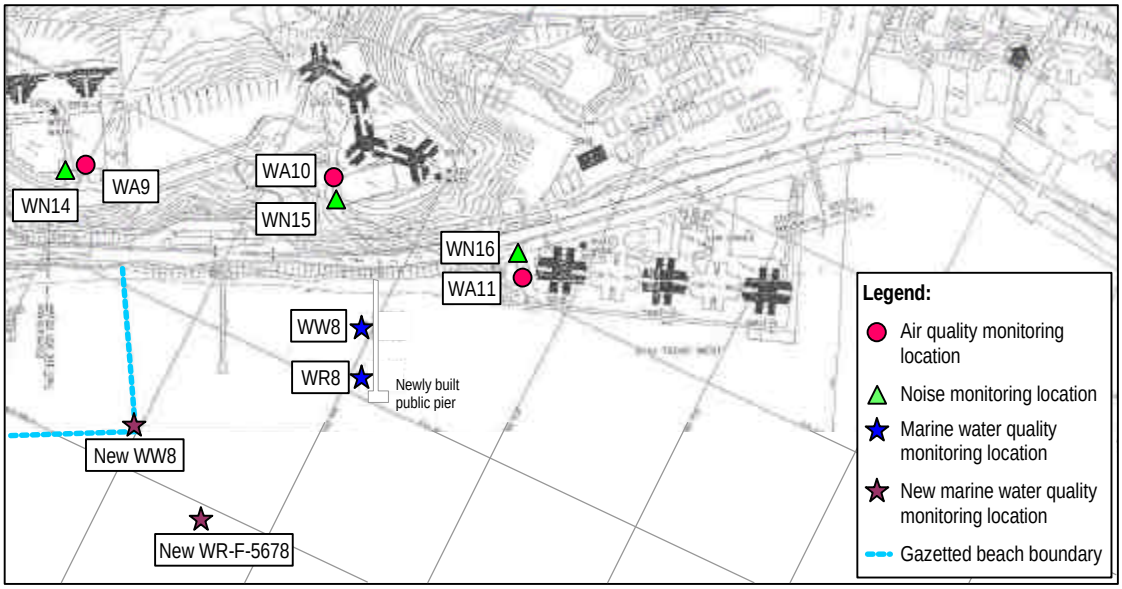
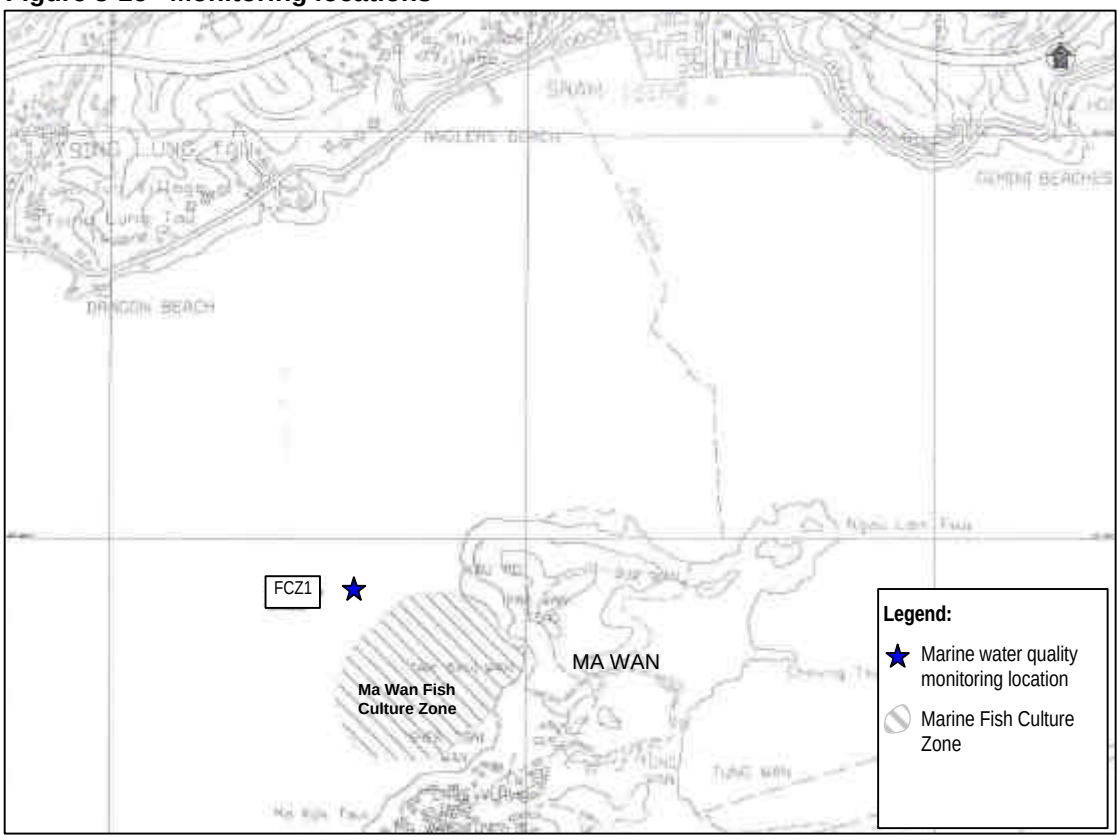


Figure 3-1e Monitoring locations



3.4 Landscape and Visual Monitoring and Audit

3.4.1 Audit Parameters

All landscape and visual mitigation measures undertaken by both the CT and the Landscape Contractor during the construction phase and during the first year of the operational phase shall be audited by a Registered Landscape Architect, to ensure compliance with the intended aims of the mitigation measures.

3.4.2 Audit Frequency

The landscape and visual monitoring and audit shall be undertaken at least once every two weeks throughout the construction period and once every two months during the operational phase.

3.4.3 Audit Location

The landscape and visual monitoring and audit shall be conducted throughout the entire site area.

3.5 Performance Limits and Event-Action Plans

The monitoring results shall be checked against appropriate standards and requirements. A two-tier system performance limits have been established in the Project specific EM&A Manual. The "Action Level" and the "Limit Level" (A/L) are established according to the EPD requirements. ET, ER, IC(E), and CT will take corresponding actions in accordance with the Event-Action Plans if the monitoring results exceed the performance limits.

3.5.1 Air Quality

The action and limit levels for air quality have been established during the baseline monitoring and are provided in Table 3-6.

Table 3-6 Action and Limit Level for air quality

Air Monitoring Station No.	1-hour TSP Level in μg/m³		24-hour TSP Level in μg/m³	
	Action Level	Limit Level	Action Level	Limit Level
WA1	350	500	187	260
WA2	362		192	
WA3	353		190	
WA4	362		187	
WA5	346		185	
WA6	362		204	
WA7	351		187	
WA8	347		188	
WA9	345		182	
WA10	352		183	
WA11	357		195	

Table 3-7 details the actions required to be carried out by different parties in case of an exceedance of performance limits being detected.

Table 3-7 Event/Action plan for air quality

Event	Action			
	ET Leader	IC(E)	ER	Contractor
Action Level				
1. Exceedance for one sample	1. Identify the source. 2. Inform the IC(E) and the ER. 3. Repeat measurement to confirm finding. 4. Increase monitoring frequency to daily.	1. Check monitoring data submitted by the ET Leader. 2. Check Contractor's working method.	1. Notify the Contractor.	1. Rectify any unacceptable practice. 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	1. Identify the source. 2. Inform the IC(E) and the ER. 3. Repeat measurements to confirm findings. 4. Increase monitoring frequency to daily. 5. Discuss with the IC(E) and the Contractor on remedial actions required. 6. If exceedance continues, arrange meeting with the IC(E) and the ER. 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET Leader. 2. Check the Contractor's working method. 3. Discuss with the ET Leader and the Contractor on possible remedial measures. 4. Advise the ER on the effectiveness of the proposed remedial measures. 5. Supervisor implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial actions to IC(E) within 3 working days of notification. 2. Implement the agreed proposals. 3. Amend proposal if appropriate.
Limit Level				
1. Exceedance for one sample	1. Identify the source. 2. Inform the ER and the EPD. 3. Repeat measurement to confirm finding. 4. Increase monitoring frequency to daily. 5. Assess effectiveness of Contractor's remedial actions and keep the IC(E), the EPD and the ER informed of the results.	1. Check monitoring data submitted by the ET Leader. 2. Check the Contractor's working method. 3. Discuss with the ET Leader and the Contractor on possible remedial measures. 4. Advise the ER on the effectiveness of the proposed remedial measures. 5. Supervisor implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification. 3. Implement the agreed proposals. 4. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	1. Notify the IC(E), the ER, the EPD and the Contractor. 2. Identify the source. 3. Repeat measurements to confirm findings. 4. Increase monitoring frequency to daily. 5. Carry out analysis of the Contractor's working procedures to determine possible mitigation to be implemented. 6. Arrange meeting the IC(E) and the ER to discuss the remedial actions to be taken. 7. Assess effectiveness of the Contractor's remedial actions and keep the IC(E), the EPD and the ER informed of the results. 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst the ER, the ET Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary and advise the ER accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. In consultation with the IC(E), agree with the remedial measures to be implemented. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the ER until the exceedance is abated.

3.5.2 Construction Noise Impact

The action and limit levels for the construction noise extracted from the Baseline Monitoring Report[2] are tabulated in Table 3-8.

Table 3-8 Action and Limit Levels for construction noise

Time Period	Action	Limit
0700 - 1900 hours on any day not being a Sunday or public holiday	When one documented complaint is received	75dB(A)(1)
19:00 - 23:00 hours on all days and 07:00 - 23:00 on general holidays (including Sundays)		55(2) / 70(3)
23:00 - 07:00 hours on all days		40(2) / 55(3)

Remarks:
(1) For educational establishments the limit level shall be 70dB(A) and reduced to 65dB(A) during examination periods.
(2) Refers to the types of Plant regulated under the Technical Memorandum on Noise from Construction Work in Designated Areas (DA-TM).
(3) Refers to the types of Plant regulated under the Technical Memorandum on Noise Other than Percussive Piling (GW-TM).
(4) Owing to the high background noise level recorded at WN5, WN9, and WN10, the noise impact monitoring results at these 3 locations will be corrected by its background using the following background correction equation: $L_{eq(30min)=}$ 10 log ($10^{m/10}$ - $10^{b/10}$) as m= Measured $L_{eq(30min),}$ b=Average Baseline $L_{eq(30min)}$.
Only up to the maximum of 3dB(A) is allowed to be deducted after the background correction.

Table 3-9 details the actions required to be carried out by different parties in the case of an exceedance of performance limits being detected.

Table 3-9 Event/Action plan for construction noise

Event	Action			
	ET Leader	IC(E)	ER	Contractor
Action Level	1. Notify the IC(E) and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to the IC(E) and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation measures.	1. Review with analysed results submitted by the ET. 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly. 3. Supervise the implement of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IC(E). 2. Implement noise mitigation proposals.
Limit Level	1. Notify the IC(E), the ER, the EPD and the Contractor. 2. Identify the source. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform the IC(E), the ER, and the EPD the causes & actions taken for the exceedances. 7. Assess effectiveness of the contractor's remedial actions and keep the IC(E), the EPD and the ER informed of the results. 8. If exceedance stops, cease additional monitoring	1. Discuss amongst the ER, the ET Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the ER until the exceedance is abated.

3.5.3 Water Quality (Designated Project)

The action and limit levels for the water quality have been established in accordance with the EM&A Manual and approved by EPD on 15 October 2002. EPD and IC(E) had agreed on 10 April 2003 to apply the "Direct Comparison" method for evaluation of the marine water quality exceedance. The A/L levels had been revised in April 2003 and are presented in Table 3-10.

Table 3-10 Action and Limit Levels of water quality

Parameters		Monitoring Location			
		WW1 to WW8		FCZ1	
		Action Level	Limit Level	Action Level	Limit Level
Mid-Ebb					
DO (mg/L)	Surface & Middle	**4.9**	**4.8**	**4.7**	**4.6**
	Bottom	**4.8**	**4.8**	**4.0**	**4.0**
SS (mg/L) (Depth-averaged)		**17.0**	**23.4**	For EPD: **12.9** For AFCD: **12.9 and 120%** of upstream control station's SS at the same tide of the same day	For EPD: **14.0** For AFCD: **14.0 and 130%** of upstream control station's SS at the same tide of the same day
Tby (NTU) (Depth-averaged)		**12.0**	**13.6**	For EPD: **9.1** For AFCD: **9.1 and 120%** of upstream control station's Tby at the same tide of the same day	For EPD: **10.3** For AFCD: **10.3 and 130%** of upstream control station's Tby at the same tide of the same day.
Mid-Flood					
DO (mg/L)	Surface & Middle	**4.3**	**4.2**	**4.5**	**4.4**
	Bottom	**4.3**	**4.1**	**4.1**	**4.1**
SS (mg/L) (Depth-averaged)		**25.3**	**28.7**	For EPD: **23.3** For AFCD: **23.3 and 120%** of upstream control station's SS at the same tide of the same day	For EPD: **25.9** For AFCD: **25.9 and 130%** of upstream control station's SS at the same tide of the same
Tby (NTU) (Depth-averaged)		**25.2**	**31.5**	For EPD: **18.7** For AFCD: **18.7 and 120%** of upstream control station's Tby at the same tide of the same day	For EPD: **22.3** For AFCD: **22.3 and 130%** of upstream control station's Tby at the same tide of the same day.

Notes: "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.

In order to better differentiate between exceedance caused by the contract works and elevated readings arising from causes unrelated to contract works, all parties had agreed to introduce a term "Reaching of Trigger Value" to represent the scenario where the A/L levels were exceeded by the "Direct Comparison" evaluation method. Upon the detection of "Reaching of Trigger Value", an initial analysis would be

carried out to determine whether it was caused by contract works. Exceedance and non-compliance should only be recorded in case where the "Reaching of Trigger Value" was caused by the contract works.

Table 3-11 details the actions required to be carried out by different parties in the case of water quality exceedance of performance limits being detected. The revised Event/Action Plan for water quality has been endorsed by IC(E) in May 2003, and will be finalised subject to agreement with EPD.

Table 3-11 Event/Action plan for water quality

Event	Action			
	ET Leader	IC(E)	ER	Contractor
Trigger Value				
1. Trigger Value being surpassed for one sampling day	1. Repeat in-situ measurement to confirm findings. 2. Conduct investigation to identify the source(s) of impact. 3. Check monitoring data, all plant, equipment, mitigation measures and the Contractor's working methods. 4. Inform the IC(E), ER, EPD, HyD, Contractor and AFCD (if required) the investigation results. 5. If exceedance is confirmed as caused by the construction works, take relevant actions as detailed in "**Action Level**" and "**Limit Level**"	1. If exceedance is confirmed as caused by the construction works, take relevant actions as detailed in "**Action Level**" and "**Limit Level**"	1. If exceedance is confirmed as caused by the construction works, take relevant actions as detailed in "**Action Level**" and "**Limit Level**"	1. If exceedance is confirmed as caused by the construction works, take relevant actions as detailed in "**Action Level**" and "**Limit Level**"
Action Level				
1. Action level being exceeded by one sampling day and is caused by the construction works	1. Discuss the current mitigation measures with the IC(E) and the Contractor. 2. Pay attention on the monitoring results collected on the subsequent scheduled monitoring date to see if an exceedance, caused by the same or related construction works, is recurring.	1. Discuss with the ET Leader and the Contractor on the current mitigation measures. 2. Assess the effectiveness of the current mitigation measures and advised the ER accordingly.	1. Discuss with the IC(E) on the current mitigation measures.	1. Inform the ER and confirm notification of the exceedance in writing. 2. Rectify unacceptable practice. 3. Check all plants and equipment. 4. Consider changes of working methods. 5. Discuss with the ET Leader and the IC(E) on the current mitigation measures.
2. Action level being exceeded by more than one consecutive days and is cause by the construction works	1. Discuss mitigation measures with the IC(E) and the Contractor. 2. Ensure the proposed mitigation measures are implemented. 3. Further evaluation of the monitoring results on the next scheduled monitoring day and report to all concerned parties, if the affected monitoring stations are still being affected (or are no longer affected) by the construction works. 4. Prepare to increase the monitoring frequency to daily, if the Limit Level is exceeded as below.	1. Discuss with the ET Leader and the Contractor on the proposed mitigation measures. 2. Review proposals on mitigation measures submitted by the Contractor and advised the ER accordingly. 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IC(E), the ET Leader and the Contractor on the proposed mitigation measures. 2. Make agreement on the proposed mitigation measures to be implemented. 3. Assess the effectiveness of the implemented mitigation measures.	1. Inform the ER and confirm notification of the consecutive exceedance in writing. 2. Rectify unacceptable practice. 3. Check all plants and equipment. 4. Consider changes of working methods. 5. Discuss with the ET Leader and the IC(E) and propose mitigation measures to the IC(E) and the ER within 3 working day. 6. Implement the agreed mitigation measures.
Limit Level				
1. Limit level being exceeded by one sampling day and is cause by the construction works	1. Discuss mitigation measures with the IC(E), the ER and the Contractor. 2. Ensure the proposed mitigation measures are implemented. 3. Prepare to increase the monitoring frequency to daily if further exceedances of the Limit Level are detected on the next sampling day.	1. Discuss with the ET Leader and the Contractor on the proposed mitigation measures. 2. Review proposals on mitigation measures submitted by the Contractor and advised the ER accordingly. 3. Assess the effectiveness of the implemented mitigation measures.	1. Discuss with IC(E), the ET Leader and the Contractor on the proposed mitigation measures. 2. Request the Contractor to Critically review the working methods. 3. Make agreement on the proposed mitigation measures to be implemented. 4. Assess the effectiveness of the implemented mitigation measures.	1. Inform the ER and confirm notification of the exceedance in writing. 2. Rectify unacceptable practice. 3. Check all plants and equipment. 4. Consider changes of working methods. 5. Discuss with the ET Leader, the IC(E) and the ER, and propose mitigation measures to the IC(E) and the ER within 3 working days. 6. Implement the agreed mitigation measures.

Event	Action			
	ET Leader	IC(E)	ER	Contractor
2. Limit level being exceeded by more than one consecutive days and is cause by the construction works	1. Discuss further mitigation measures with the IC(E), the ER and the Contractor. 2. Ensure the proposed further mitigation measures are implemented. 3. Increase the monitoring frequency to daily until no exceedance of the Limit Level.	1. Discuss with the ET Leader and the Contractor on the proposed further mitigation measures. 2. Review proposals on further mitigation measures submitted by the Contractor and advised the ER accordingly. 3. Assess the effectiveness of the implemented further mitigation measures.	1. Discuss with IC(E), the ET Leader and the Contractor on the proposed further mitigation measures. 2. Request the Contractor to Critically review the working methods. 3. Make agreement on the further mitigation measures to be implemented. 4. Assess the effectiveness of the implemented further mitigation measures. 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level.	1. Inform the ER and confirm notification of the consecutive exceedance in writing. 2. Rectify unacceptable practice. 3. Check all plants and equipment. 4. Consider changes of working methods. 5. Discuss with the ET Leader, the IC(E) and the ER, and propose further mitigation measures to the IC(E) and the ER within 3 working days. 6. Implement the agreed further mitigation measures. 7. As directed by the ER, slow down or stop all or part of the construction activities.

3.5.4 Landscape and Visual

The Final Tree Survey Report[3] approved in April 2001 was adopted as the framework of the baseline landscape condition of this road section. In addition, a supplementary tree survey has been carried out in December 2001. The Supplementary Tree Survey Report (Revision A)[4] completed in March 2002 is also adopted to provide supplementary information of the baseline landscape condition of this road section.

If any non-conformity on landscape and visual issue is observed, the actions in accordance with Event/Action Plan shown in Table 3-12 shall be carried out.

Table 3-12 Event/Action plan for landscape and visual impact

Event	Action			
	ET Leader	IC(E)	ER	Contractor
Non-conformity on one occasion	1. Identify Source(s). 2. Inform the IC(E) and the ER. 3. Discuss mitigation actions with the IC(E), the ER and the Contractor. 4. Monitor remedial actions until rectification has been completed.	1. Check report. 2. Check the Contractor's working method. 3. Discuss with the ET Leader and the Contractor on possible remedial measures. 4. Advise the ER on effectiveness of proposed remedial measures. 5. Check implementation of remedial measures.	1. Notify the Contractor. 2. Ensure remedial measures are properly implemented.	1. Amend working method. 2. Rectify damage and undertaken any necessary replacement.
Repeated Non-conformity	1. Identify Source(s). 2. Inform the IC(E) and the ER. 3. Increase monitoring frequency 4. Discuss mitigation actions with the IC(E) , the ER and the Contractor. 5. Monitor remedial actions until rectification has been completed. 6. If exceedance stops, cease additional monitoring	1. Check monitoring report 2. Check the Contractor's working method 3. Discuss with the ET Leader and the Contractor on possible remedial measures. 4. Advise the ER on effectiveness of proposed remedial measures. 5. Supervise implementation of remedial measures.	1. Notify the Contractor. 2. Ensure remedial measures are properly implemented.	1. Amend working method. 2. Rectify damage and undertaken any necessary replacement.

3.6 Site Inspection and Environmental Complaint Handling

3.6.1 Site Inspection Frequency and Areas Covered

Regular site inspections shall be carried out on a weekly basis. The areas of inspection cover the different environmental impacts, such as air, noise, water and waste, and their pollution controls and mitigation measures for both within and outside the site area. Site inspection for landscape and visual impact shall be carried out on a bi-weekly basis.

Ad hoc site inspection will be carried out if significant environmental non-compliance is identified. Inspections may also be carried out subsequent to receipt of any environmental complaints, or as part of the investigation work, as specified in the Event-Action Plans.

3.6.2 Site Inspection Procedures

a) The CT and/or ER will advise the Environmental Auditor (EA) for all information on any environmental related aspects.

b) The EA will conduct discussion with the CT and/or ER to sort out and forecast any potential environmental impact.

c) The EA will conduct a site walk with the CT and/or ER, particularly the areas with extensive construction works.

d) The EA will conduct inspection for the main environmental facilities and measures such as the wheel washing facilities located at the site exits, water spraying truck, temporary noise barrier, and the internal noise-reducing measures of the heavy equipment etc, to ensure that these environmental facilities operate normally and effectively.

e) The EA will fill up a site inspection checklist during the site inspection for recording of any special observations.

f) The EA will conduct post-discussion with the CT and/or ER for the establishment of additional/special measures if any non-conformance is found. The completion date for such additional measures will be confirmed during the post-discussion.

g) The EA will propose a reasonable timeframe together with the CT and/or ER, for the preparation of the proposal for the remediation of environmental non-compliance.

h) The completed site inspection checklist will be signed by the EA, the CT and/or ER, for reference and for taking actions in accordance with the agreed procedures, reporting systems and time frame.

3.6.3 Environmental Complaints

In accordance with the EM&A Manual, environmental complaints will be referred to the ET for initiation of the complaint investigation procedures. The ET will undertake the following procedures upon receipt of the complaints:

a) The ET will record the details of the complaint and the date of receipt onto the complaint database, and inform ER immediately.

b) The ET will perform compliant investigation to determine its validity, and to assess whether the source of the problem is due to work activities.

c) The ER will instruct the CT to identify mitigation measures in consultation with the ET, if the compliant is valid and due to works.

d) The ET will liaise with the CT on their mitigation measure proposals and implementation, if required.

e) The ET will conduct review of the CT's response on the identified mitigation measures, and of the updated situation.

f) The ET will submit interim report to EPD if the complaint is received via EPD. The interim report will clearly state the status of the complaint investigation and the follow-up action within the time frame assigned by EPD.

g) The ET will undertake additional monitoring and audit to verify the situation if necessary, and ensure that any valid reason for complaint does not recur.

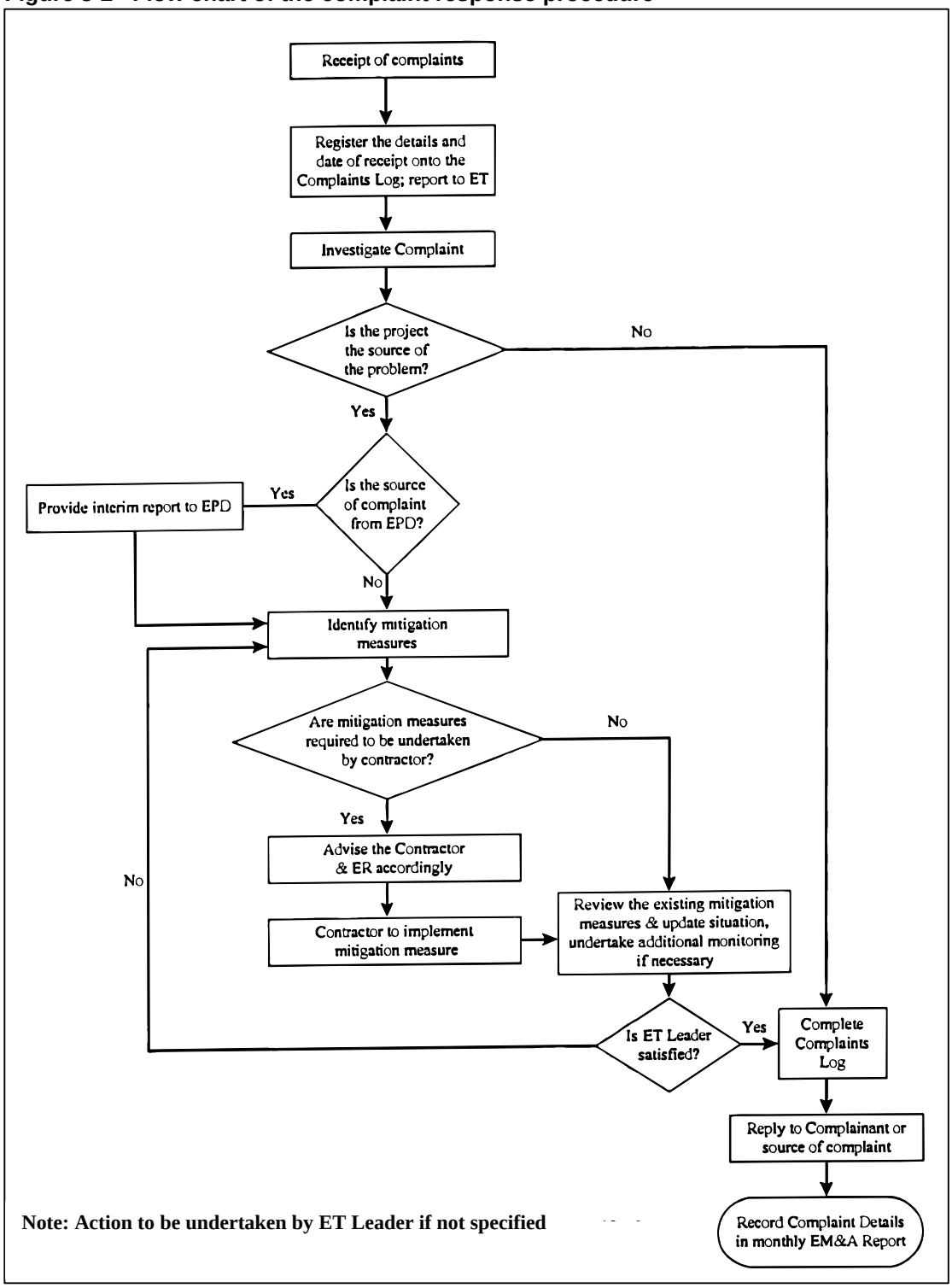
h) The ET will report on the investigation results and the subsequent actions to the source of complaint for responding to the complainant (If the source of complaint is via EPD, the results will be reported within the time frame assigned by EPD).

i) The ET will record the details of the complaint, investigation, subsequent actions and results in the monthly EM&A reports.

During the complaint investigation work undertaken by the ET, the CT and ER shall cooperate with the ET on providing all the necessary information and assistance for completion of the investigation. If mitigation measures are identified as necessary after the investigation, the CT shall promptly carry out the required mitigation to the satisfaction of ET. The ER shall ensure that the CT has carried out such identified measures.

A flow chart of the complaint response procedures is shown in Figure 3-2 for reference.

Figure 3-2 Flow chart of the complaint response procedure



4. AIR QUALITY

4.1 Monitoring Parameters and Equipment

Impact air quality monitoring was conducted in terms of both 1-hour and 24-hour TSP using a direct reading meter, MIE Data-RAM Portable Real Time Aerosol Monitor (MIE) and High Volume Sampler (HVS) respectively. Table 4-1 shows the equipment list for air quality monitoring.

Table 4-1 Equipment list for air quality monitoring

Equipment	Manufacturer & Model No.	Measurement Parameter	Qty.
High Volume Sampler	GS-2310105 & TE-5170	24-hour TSP	11
Fibreglass Filter	G810		--
HVS Calibration Kit	GMW-2535		1
Photometric Aerosol Monitor	MIE *personal*DataRAM	1-hour TSP	10
Hand Held Barometer	Cole-Parmer EB833	Pa, Temperature	2

4.2 Methodology

4.2.1 1-hour TSP Monitoring

The procedure for 1-hour TSP monitoring is described as follows:

The MIE monitor was switched on by pressing the ON/OFF button. The NEXT button was pressed to select Run or Ready mode.

The NEXT button was pressed subsequently to check the following settings:

i. data logging function: on
ii. log period: 5 minutes
iii. tag number: storage
iv. analogue output: 0-4.000mg/m^3
v. calibration factor:1.0
vi. averaging time: 10s
vii. battery charge: $\geq$50%
viii. remaining memory: $\geq$10%

The monitoring was started by pressing ENTER. The real-time concentration would display “CONC” and the time-averaged concentration would display “TWA”.

The monitoring was stopped by pressing EXIT and ENTER buttons.

The date and start time, weather, site condition and the downloaded monitoring results were recorded on specified field record sheet.

4.2.2 24-hour TSP Monitoring

24-hour TSP by using a High Volume Sampler (HVS). The HVS should be in compliance with the following specifications:

- 0.6 – 1.7 m^3/min (20 – 60SCFM);
- equipped with a timing/control device with +/- 5 minutes accuracy for 24 hours operation;
- installed with elapsed time meter with +/- 2 minutes accuracy for 24 hours operation;
- capable of providing a minimum exposed area of 406 cm^2(63in^2);
- flow control accuracy: +/-2.5% deviation over 24-hr sampling period;
- equipped with a shelter to protect the filter and sampler;
- incorporated with an electronic mass flow rate controller or other equivalent devices;
- equipped with a flow recorder for continuous monitoring;
- provided with a peaked roof inlet;
- incorporated with a manometer;
- able to hold and seal the filter paper to the sampler housing at horizontal position;
- easy to change the filter; and
- capable of operating continuously for a 24-hour period.

4.2.3 Maintenance and Calibration

The HVS and their accessories were frequently checked and maintained in accordance with the manufacturer's operation & maintenance manual. Maintenance includes the checking of the supporting screen and the gasket, and routine replacement of motor carbon brushes for the blower motor. The power cords and power supply were checked each time before sampling to ensure proper operation.

The HVS are calibrated at 2-month intervals using GMW-2535 Calibration Kit. The calibration kit will be re-calibrated by the manufacturer after one year of use. The calibration certificates of the HVS and the calibration kit are provided in Appendix D. The next calibration will be conducted on or before 1 April 2005 for the HVS and 10 February 2006 for the GMW-2535.

The MIE monitor and its accessories were frequently checked and maintained in accordance with the manufacturer's operation & maintenance manual to ensure proper operation. Maintenance includes the checking of batteries, zero and sensitive adjustment and filter replacement.

The MIE monitor is returned to the manufacturer for calibration bi-annually. The calibration certificates are provided in Appendix E. The next calibration dates for the MIE monitors are given in Table 4-2.

Table 4-2 Calibration dates of 1-hour TSP monitoring equipment

1-hour TPS monitoring equipment	Serial number	Last calibration date	Next calibration date (on or before)
MIE Data-RAM Portable Real Time Aerosol Monitor	4496	25-Sep-03	25-Sep-05
	4715	21-Nov-03	21-Nov-05
	4615	15-Jan-04	15-Jan-06
	4705	15-Jan-04	15-Jan-06
	4492	27-Jul-04	27-Jul-06
	4736	27-Jul-04	27-Jul-06
	3809	06-Oct-04	06-Oct-06
	3893	06-Oct-04	06-Oct-06
	4243	06-Oct-04	06-Oct-06

4.3 Results and Observations

4.3.1 Weather conditions and other factors

The weather condition varied from fine to cloudy during the air quality monitoring period in March 2005.

The construction site had been under normal operation during the air quality monitoring period and no unusual operation or dust from other source was observed.

4.3.2 Summary Results

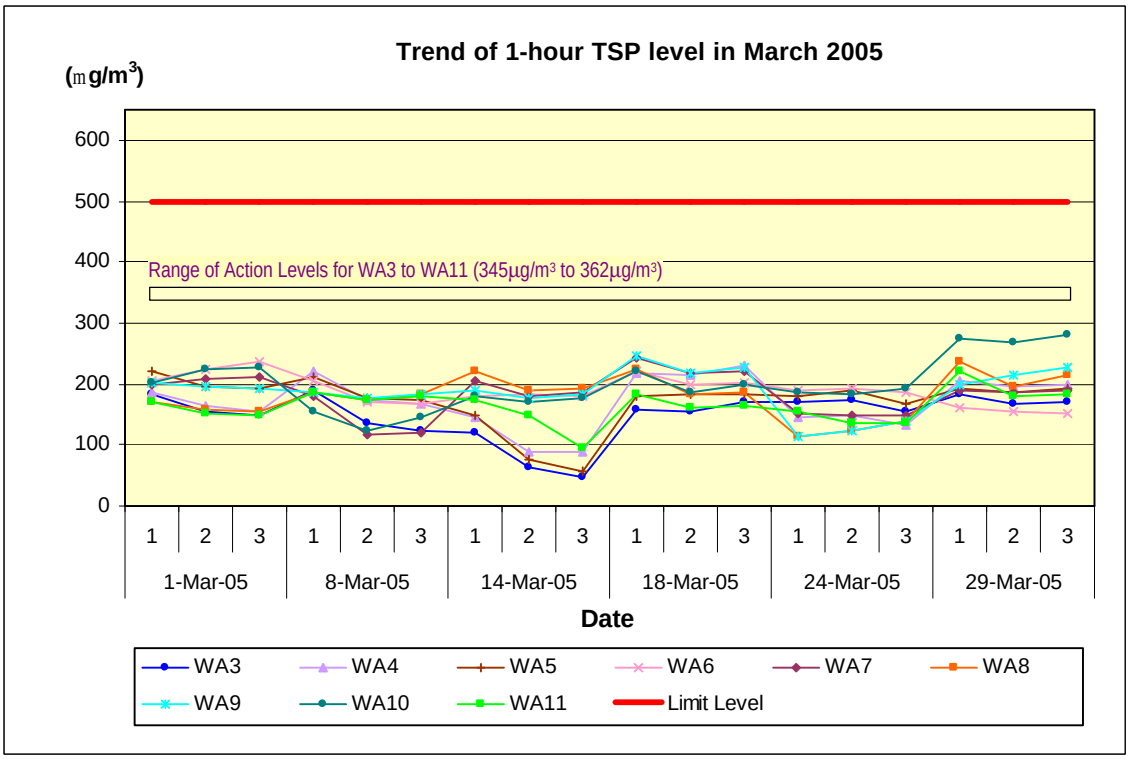
1-hour TSP

A total of 6 sets of 3 consecutive 1-hour TSP measurements had been taken on 1, 8, 14, 18, 24 and 29 March 2005.

The highest 1-hour TSP level was 244.9µg/m^3 recorded at Carpark, Phase 2, Block 6, Sea Crest Villa (WA9) on 18 March 2005 while the lowest 1-hour TSP level was 46.9µg/m^3 recorded at G/F, Regent Heights, Hong Kong Garden (WA3) on 14 March 2005. There was no exceedance of the A/L Levels during the monitoring period.

The detailed monitoring results of 1-hour TSP are given in Appendix F and the 1-hour TSP level at each monitoring location are plotted and presented in Figure 4-1.

Figure 4-1 Graphical presentation of 1-hour TSP levels for March 2005



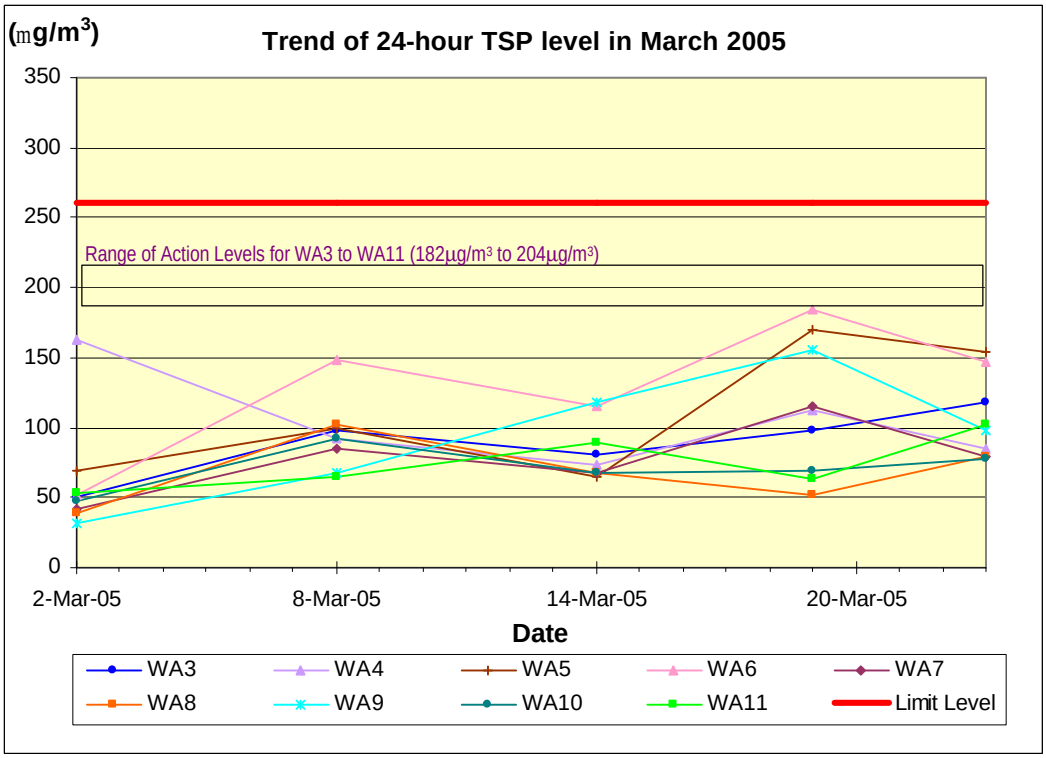
24-hourTSP

A total of 5 sets of 24-hour TSP measurement had been taken on 2, 8, 14, 19, 23 and 30 March 2005.

The highest 24-hour TSP level was 183.7μg/m^3 recorded at G/F, Tsing Lung Tau Temple (WA6) on 19 March 2005 while the lowest 24-hour TSP level was 32.0μg/m^3 recorded at Carpark L3, Phase 2, Block 6, Sea Crest Villa (WA9) on 2 March 2005. There was no exceedance of the A/L Levels during the monitoring period.

The detailed monitoring results of 24-hour TSP are given in Appendix G and the 24-hour TSP level at each monitoring location are plotted and presented in Figure 4-2.

Figure 4-2 Graphical presentation of 24-hour TSP levels for March 2005



4.3.3 Wind Monitoring Data

The detailed wind monitoring data for the air quality monitoring period in March 2005 extracted from Hong Kong Observatory – Tsing Yi Wind Monitoring Station is attached in Appendix H.

5. NOISE

5.1 Monitoring Equipment

An integrating sound level meter was used for the noise monitoring. The sound level meter equipment are listed in Table 5-1.

Table 5-1 Equipment list for construction noise monitoring

Equipment	Manufacturer & Model No.	Precision Grade	Qty.
Integrating sound level meter	Brüel & Kjær 2231	IEC 651 Type 1 IEC 804 Type 1	2
Integrating sound level meter	Brüel & Kjær 2238		3
Windshield	Brüel & Kjær UA0237		6
Acoustical calibrator	Brüel & Kjær 4230	IEC 942 Type 1	2
Acoustical calibrator	Brüel & Kjær 4226		1
LCD wind speed indicator	Kestrel Vane Anemometer	--	2

5.2 Methodology

5.2.1 Field Measurement

- The sound level meter and the battery were checked to ensure that they were in proper condition.
- The sound level meter was set on a tripod at 1.2m above ground and at 1m from the exterior of the building façade.
- Before conducting the measurement, the sound level meter was calibrated by an acoustical calibrator.
- The measurement parameter was set to A-weighted sound pressure level. The time weighting was set in fast response and the time period of measurement at 30 minutes.
- The wind speed was checked during noise monitoring to ensure the steady wind speed did not exceed 5m/s, or wind with gusts did not exceed 10m/s.
- Any abnormal conditions that generated intrusive noise during the measurement were recorded on the field record sheet.
- After each measurement, the equivalent continuous sound pressure level (L_{eq}), L_{10} and L_{90} were recorded on the field record sheet.
- The sound level meter was re-calibrated by the acoustical calibrator to confirm that there was no significant drift of reading.

5.2.2 Equipment Maintenance and Calibration

The sound level meter complies with the standards of IEC 651 (Fast, Slow, Impulse rms detector tests) and IEC 804 (L_{eq} functions). The acoustical calibrator model no. 4230 is in compliance with IEC 942. Both equipment are calibrated annually in-house using Brüel & Kjær (B&K) calibrator model no. 4226.

The National Physical Laboratory in Teddington, London, which is accredited by National Measurement accreditation Service (NAMAS), annually calibrates the B&K calibrator model no. 4226. All in-house calibrations that are undertaken can be traced back to the National Physical Laboratory. The calibration certificates of the noise monitoring equipment are given Appendix I. The next calibration will be conducted on or before 15 July 2005 for the sound level meters and the acoustical calibrators.

5.3 Results and Observations

5.3.1 Weather Conditions and Other Factors

The weather condition varied from fine to cloudy during the noise monitoring period in March 2005.

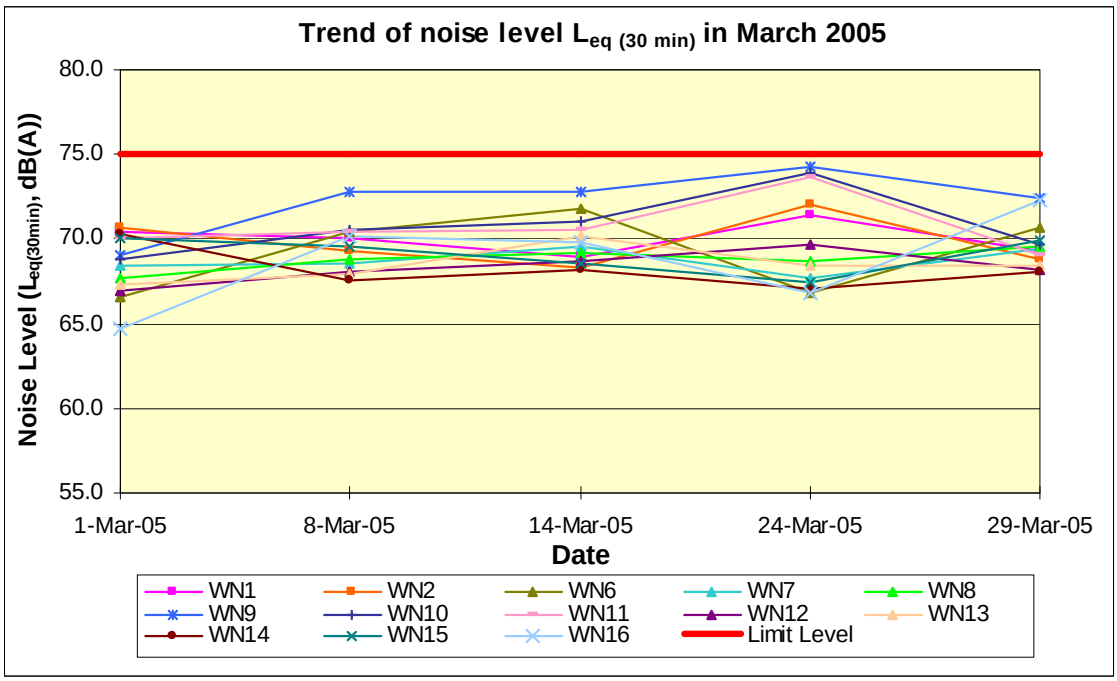
The construction site had been under normal operation during the noise monitoring period and no unusual operation was observed. Traffic noise had been noticed at some noise monitoring locations during the noise monitoring period.

5.3.2 Summary Results

A total of 5 set of noise measurement had been conducted between 0700-1900 hours on 1, 8, 14, 24 and 29 March 2005. The detailed construction noise monitoring results are given in Appendix J.

A total of 5 sets of daytime (0700 – 1900 hours) noise monitoring had been taken during the reporting month. The highest noise level was 74dB(A) recorded at Village House 1, Tsing Lung Tau (WN9) on 24 March 2005 while the lowest noise level was 65dB(A) recorded at Lido Garden (WN16) on 1 March 2005. The noise levels at each monitoring location are plotted and presented in Figure 5-1.

Figure 5-1 Graphical presentation of daytime noise levels for March 2005



6. WATER QUALITY (DESGINATED PROJECT)

6.1 Water Quality Equipment

Monitoring of Turbidity (Tby) in NTU, Dissolved Oxygen (DO) in mg/L and Suspended Solids (SS) in mg/L were carried out by the ET to ensure that any deteriorating water quality could be readily detected and timely action be taken to rectify the situation. The Tby and DO were measured in-situ while the SS was determined in the laboratory. A summary of the water quality monitoring equipment is provided in Table 6-1.

Table 6-1 Water quality monitoring equipment

Equipment	Manufacturer & Model No.	Qty
Handheld Salinity, Conductivity & Temperature System	YSI Model 30	1
Dissolved Oxygen Meter	YSI Model 52	1
pH meter	Hanna	1
Turbidimeter	HACH 2100P	1
Nephelometer	Analite Model 156	1

6.2 Methodology

Dissolved Oxygen and Temperature Measuring Equipment

The equipment to measure DO and temperature complies with the following:

i. The instrument shall be a portable, weatherproof dissolved oxygen measuring instrument complete with cable and use a DC power source. It shall be capable of measuring:

- A dissolved oxygen level in the range of 0-20 mg/L and 0-200% saturation; and
- A temperature of 0-45^{o}C.

ii. It shall have a membrane electrode with automatic temperature compensation complete with a cable. Sufficient stocks of spare electrodes and cables shall be available for replacement where necessary (e.g. YSI model 59 meter, YSI 5739 probe, YSI 5795A submersible stirrer with reel and cable or an approved similar instrument).

iii. Should salinity compensation not be integrated in the DO equipment, in-situ salinity shall be measured to calibrate the DO equipment prior to each DO measurement.

Turbidity Measurement Instrument

The instrument is a portable, weatherproof turbidity-measuring instrument complete with comprehensive operations manual. The equipment shall use a DC power source. It shall have a photoelectric sensor capable of measuring turbidity between 0-1000

NTU and be completed with a cable (e.g. Hach model 2100P or an approved similar instrument).

Suspended Solids

The following equipment is required to monitor the SS:

i. A water sampler comprising a transparent PVC cylinder, with a capacity of not less than 2 litres and which can be effectively sealed with latex cups at both ends. The sampler shall have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth (e.g. Kahlsico Water Sampler or an approved similar instrument).

ii. Water samples for SS measurement of both the marine and freshwater environment shall be collected in high density polythene bottles, packed in ice (cooled at $4^{o}C$ without being frozen) and delivered to the laboratory as soon as possible after collection.

Water Depth Detector

A portable, battery-operated echo sounder was used for the determination of water depth at each designated monitoring. This unit can either be handheld or affixed to the bottom of the monitoring boat, if the same vessel is to be used throughout the monitoring programme.

Salinity

A portable salinometer capable of measuring salinity in the range of 0-40 ppt shall be provided for measuring salinity of the water at each monitoring location and setting salinity compensation on the DO Meter.

Location of the Monitoring Site

A hand-held or boat-fixed type Differential Global Positioning System (DGPS) or other equivalent instrument of similar accuracy shall be provided and used during monitoring to ensure the monitoring vessel is at the correct location before taking measurements. For the monitoring locations in the water courses a hand-held DGPS, together with a suitably scaled map shall be used.

6.2.1 Calibration and Accuracy of Instrumentation

All in-situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes were checked with certified standard solutions before each use. Wet bulb calibration for a DO meter shall be carried out before measurement at each monitoring location.

For the on site calibration of field equipment, the BS 1427:1993, “Guide to Field and on-site test methods for the analysis of waters” shall be followed.

6.3 Marine Monitoring

As reported by the Contractor, major sea works at level below +2.5mPD had been completed in July 2003. The proposal on suspension of marine monitoring was submitted to IC(E), HyD, EPD and AFCD for comments on 25 September 2003. It was confirmed with IC(E) and AFCD that suspension of marine monitoring was acceptable if there is no "active" marine work being carried out. In future, if there is any marine work on or below +2.5mPD, the Contractor shall notify the relevant parties one month in advance and resume the marine monitoring. Subsequently, as instructed by the Contractor/ HyD, the marine monitoring was suspended since during the period from October 2003 to 31 July 2004. However, as instructed by the Contractor, the planned sand placement activities were conducted at Seawall B. Marine impact monitoring near Seawall B (i.e. WW1, WW2, WW3, WW4, WR-E-1234, WR-F-1234 and FCZ1) was resumed from 2 August to 27 August 2004. Since sand placement activities at Seawall B were ceased in August 2004, marine water monitoring was again suspended since September 2004.

7. LANDSCAPE AND VISUAL MONITORING AND AUDIT

The landscape and visual monitoring and audits were carried out on 3, 17 and 24 March 2005 by a Registered Landscape Architect.

The audit findings and recommendations are summarised in the following paragraphs.

7.1 Summary of Inspection – 3 March 2005

7.1.1 Matters Arising from Previous Inspections

- The Contractor had cleared away the scattered construction waste piles at RW-01 area.
- The Contractor had emptied the waste container bin found at footbridge FB-02 area.
- The Contractor had cleared away the garbage pile at Slope 6 area.
- Tree protection to existing tree at Slope 6SW-D/C186 was still outstanding. The Contractor was reminded to carry out proper tree protection of existing tree as soon as possible.
- The Contractor was reminded to carry out assessment of the stability of the retained tree (T44) at Angler's Beach to ensure the tree is stable.
- No dry surface condition was observed during the inspection.

7.1.2 Site Clearance and Formation Works

- Construction waste piles were found at retaining wall RW13 area and also on the opposite slope. The Contractor was requested to clear it away as soon as possible.

7.1.3 Tree Felling and Transplanting Works

- No tree transplanting work was carried out during the inspection period.

7.1.4 Recommendations

- The Contractor was reminded to carry out proper tree protection to ensure existing trees retained are not damaged.
- The Contractor was reminded to clear away all scattered litter, garbage, etc. as found on site, and keep the site in a tidy condition at all times.

7.2 Summary of Inspection – 17 March 2005

7.2.1 Matters Arising from Previous Inspections

- The Contractor had cleared away the construction waste piles found at retaining wall RW13 area and also on the opposite slope. However, new construction waste

pile was found at RW-13 area, and the Contractor was requested to clear it away as soon as possible.

- Tree protection to existing tree at Slope 6SW-D/C186 was outstanding. The Contractor was reminded to carry out proper tree protection of existing tree as soon as possible.

- The Contractor was reminded to carry out assessment of the stability of the retained tree (T44) at Angler's Beach to ensure the tree is stable.

- No dry surface condition was observed during the inspection.

7.2.2 Site Clearance and Formation Works

- Scrap wood pile was found at NM-02 area. The Contractor was requested to clear it away as soon as possible.

- Construction waste pile was found in front of Site Office. The Contractor was requested to clear it away as soon as possible.

7.2.3 Tree Felling and Transplanting Works

- No tree transplanting work was carried out during the inspection period.

7.2.4 Recommendations

- The Contractor was reminded to carry out proper tree protection to ensure existing trees retained are not damaged.

- The Contractor was reminded to clear away all scattered litter, garbage, etc. as found on site, and keep the site in a tidy condition at all times.

- The Contractor was reminded to carry out more frequent watering of the site during dry periods to prevent dust nuisance.

7.3 Summary of Inspection – 24 March 2005

7.3.1 Matters Arising from Previous Inspections

- The Contractor had cleared away the construction waste pile found at retaining wall RW13 area.

- The Contractor had cleared away the scrap wood pile found at NM-02 area. However, new scrap wood pile and construction waste piles were found and the Contractor was requested to cleared it away as soon as possible.

- The Contractor had cleared away the construction waste pile found in front of Site Office. However, a garbage bin was found to be full and the Contractor was requested to clear it away as soon as possible.

- Tree protection to existing tree at Slope 6SW-D/C186 was outstanding. The Contractor was reminded to carry out proper tree protection of existing tree as soon as possible.

- The Contractor was reminded to carry out assessment of the stability of the retained tree (T44) at Angler's Beach to ensure the tree is stable.

- Dry surface condition was observed at seawall 'C' area. The Contractor was reminded to carry out more frequent watering of the site to prevent dust nuisance.

7.3.2 Site Clearance and Formation Works

- A large construction waste pile was found at RW-01 area. The Contractor was requested to clear it away as soon as possible.

- Scrap wood pile was found at Slope 8 area. The Contractor was requested to clear it away as soon as possible.

- Scattered construction waste piles were found at seawall 'C' area. The Contractor was requested to clear it away as soon as possible.

- Construction waste piles were also found at footbridge FB-03 and Ma Wan Pier areas. The Contractor was requested to clear it away as soon as possible.

7.3.3 Tree Felling and Transplanting Works

- No tree transplanting work was carried out during the inspection period.

7.3.4 Recommendations

- The Contractor was reminded to carry out proper tree protection to ensure existing trees retained are not damaged.

- The Contractor was reminded to clear away all scattered litter, garbage, etc. as found on site, and keep the site in a tidy condition at all times.

- The Contractor was reminded to carry out more frequent watering of the site during dry periods to prevent dust nuisance.

7.4 Tree Transplanting Survival Rate

7.4.1 Tree Transplanting Survival Rate

- The tree transplanting survival rate as reported by the Contractor for the period up to the end of March is 100%.

7.5 Audit Schedule

7.5.1 Audit Schedule for April 2005

- The next audits are schedule to be conducted on 14 and 28 April 2005.

The Landscape and Visual Monitoring & Audit Report for March 2005 prepared by the Registered Landscape Architect is attached in Appendix K.

8. SITE INSPECTION, WASTE DISOSPAL, ENVIRONMENTAL COMPLAINTS, ENVIRONMENTAL LICENSES AND NON-COMPLIANCE RECORDS

8.1 Site Audit Results

Weekly environmental site audits were carried out on 3, 10, 17, 24 and 31 March 2005. The environmental concerns identified in the site audits are summarised in Table 8-1.

Table 8-1 Summary of environmental concerns identified in site audits in March 2005

Date of Issue Raised	Observation	Advice from EA	CT's Response / Environmental Outcomes	Closing Date
Water Quality				
04-03-2005	Mud trails were found at temporary entrance next to W20.	To clean the public road.	Mud trails were cleaned.	17-03-2005
10-03-2005	Muddy effluent overflow from the desilting tank at FB01.	To desilt and pump out the muddy water.	Muddy effluent was desilted and discharged.	24-03-2005
17-03-2005	Temporary drainage near wheel washing bay at Area 9A & 9B was silty.	To clean the temporary drainage.	Temporary drainage was cleaned.	24-03-2005
17-03-2005	Mud trails were found on public road outside site entrance of FB01.	To clean the public road.	Mud trails were cleaned.	24-03-2005
24-03-2005	Mud trails were found on public road under FB02.	To clean the public road.	Mud trails were cleaned.	31-03-2005
31-03-2005	Stagnant water was found in ponding area outside Meada's site office	To fill up the ponding area.	Ponding area was filled.	07-04-2005
31-03-2005	Mud trails were found on public road under FB01.	To clean the public road.	Mud trails were cleaned.	07-04-2005
Air Quality				
10-03-2005	Rock breaking at Slope 8 was not sprayed with water.	To implement dust suppression measures.	Mud tails were cleaned.	17-03-2005
Construction Noise				
No non-compliance was found.				
Handling of Wastes and Chemicals				
17-03-2005	Waste accumulated in rubbish bin along the site.	To remove waste from site.	Waste in rubbish bin was disposed.	24-03-2005
24-03-2005	Waste accumulated at RERW01.	To remove waste from site.	Waste was collected and disposed.	31-03-2005
24-03-2005	Oil stains were found near drip tray of generator at Outfall I.	To remove oil stains by sand.	Oil stains were absorbed by sand.	31-03-2005
31-03-2005	Waste accumulated near Slope 8.	To remove waste from site.	Waste was collected and disposed.	07-04-2005

8.2 Waste Disposal

The Contractor had properly disposed of the waste material in the reporting month, and the disposal quantity in the reporting month is summarised in Table 8-2.

Table 8-2 Waste disposal quantity in March 2005

Type of waste or material		Disposal at	No. of loads or quantities	Remarks
C&D waste		WENT Landfill	5 loads	--
C&D material		Public Filling Area in Tuen Mun	1799 loads	--
Grease trap waste		Interim Grease Trap Waste Treatment Facility at WENT Landfill	0	--
Chemical waste	Spent lube oil	Collected by licensed collector	0	--

8.3 Complaint Record

There were two environmental complaints received in March 2005. A log record on the environmental complaints is given in Appendix L and a cumulative statistics on environmental complaints is given in Table 8-3.

Table 8-3 Cumulative statistics on environmental complaints

No. of complaints received in the reporting month	No. of outstanding complaints	Cumulative no. of complaints received since the commencement of project
0	0	35

8.4 Non-compliances

There were no non-compliances for both the air quality and noise monitoring during the reporting period.

8.5 Notification of Summons and Successful Prosecution

There was neither notification of summons nor prosecution received during the reporting month.

8.6 Environmental Licenses

There was no new environmental license granted during the reporting period.

9. REFERENCES

[1] Mouchel Halcrow Joint Venture. 2001. Castle Peak Road Improvement between Area 2 and Ka Loon Tsuen, Tsuen Wan West Contract No. HY/99/18, Environmental Monitoring & Audit Manual.

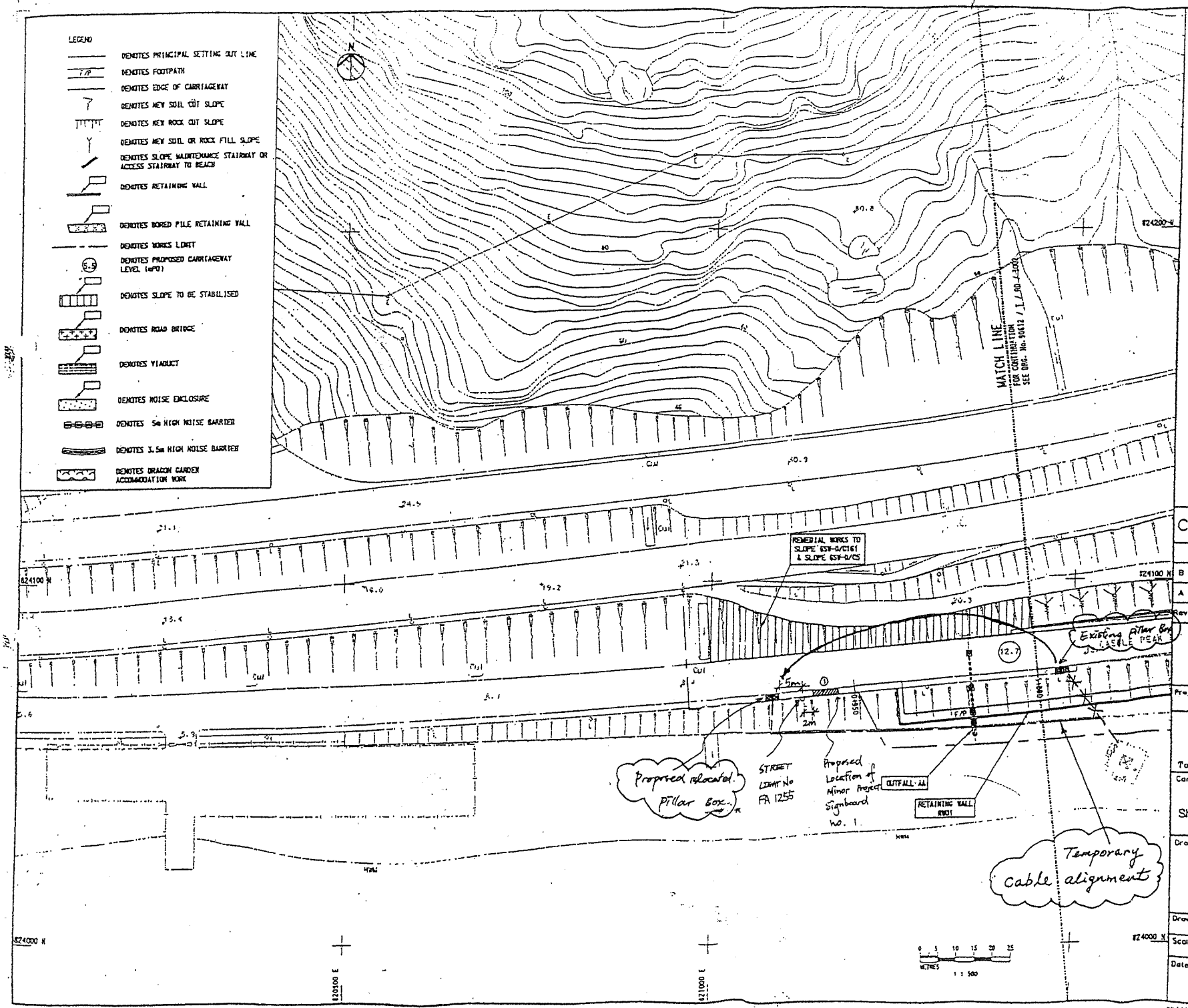
[2] Ove Arup & Partners Hong Kong Limited. July 2002. Contract No. HY/99/18 Castle Peak Road Improvement between Shem Tseng and Ka Lung Tsuen, Tsuen Wan, Environmental Baseline Monitoring Report (Second Issue).

[3] Mouchel Halcrow Joint Venture. 2001. D&C Consultancy Agreement No. CE 1/96 Castle Peak Road Improvement between Area 2 and Ka Loon Tsuen, Tsuen Wan, Tree Survey Report & Tree Felling Application Revision D.

[4] Mouchel Halcrow Joint Venture. Contract No. HY/99/18 March 2002. D&C Consultancy Agreement No. CE 1/96 Castle Peak Road Improvement between Area 2 and Ka Loon Tsuen, Tsuen Wan, Supplementary Tree Survey Report & Tree Felling Application Revision A.

APPENDIX A

Detailed site layout plans



NOTES :

1. ALL CO-ORDINATES ARE IN ACCORDANCE WITH THE 1980 HONG KONG METRIC GRID SYSTEM.
2. ALL LEVELS ARE IN METRES ABOVE THE PRINCIPAL DATUM (mPD) AND RELATE TO THE SETTING OUT LINES.

Legend :

▨ - Minor Signboard
(size : 7.2m (L) X 1.5m (width))

CONTRACT DRAWING

Rev	Issue Status	Amendment	By	Chk	App	Date
B	2nd Issue	Contract Issue	SP	RC		31/01
A	First Issue	Tender Issue	SP	DC	PS	JUN 01

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Project No. 6553TH
Contract No. HY/99/18

Mouchel Halcrow JV
Sub-Consultants
ACL Asia, MVA Asia Ltd.,
Townland Consultants Ltd., Chesterton Petty Ltd.

Contract Title
Castle Peak Road Improvement Between Sham Tseng and Ka Loon Tsuen, Tsuen Wan

Drawing Title
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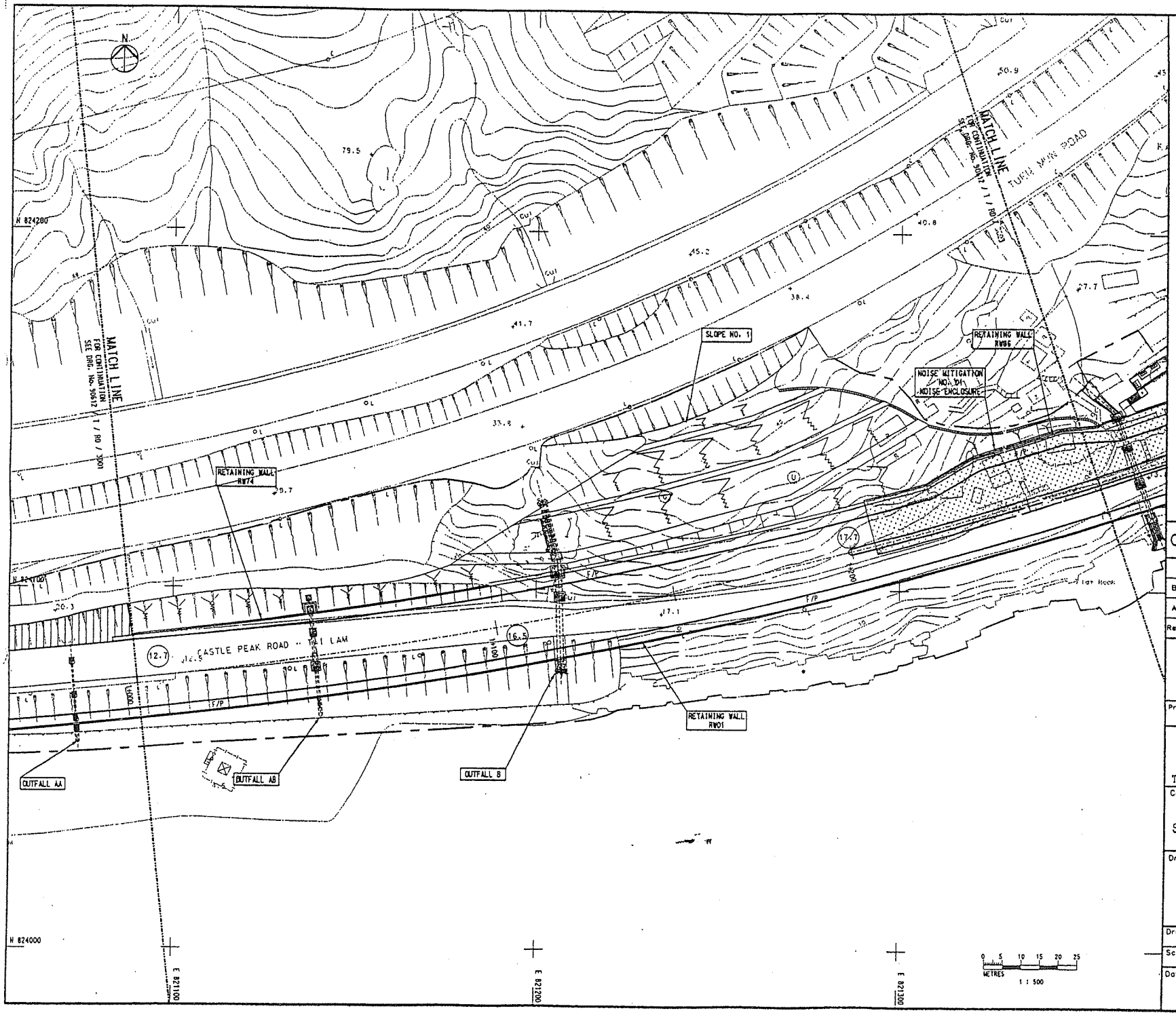

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A	First Issue	Tender Issue	SP	DC	PS	JUN 01

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Project No. 6553TH

Contract No. HY / 99 / 18

Mouchel Halcrow . JV
Sub-Consultants
ACL Asia, MVA Asia Ltd.,
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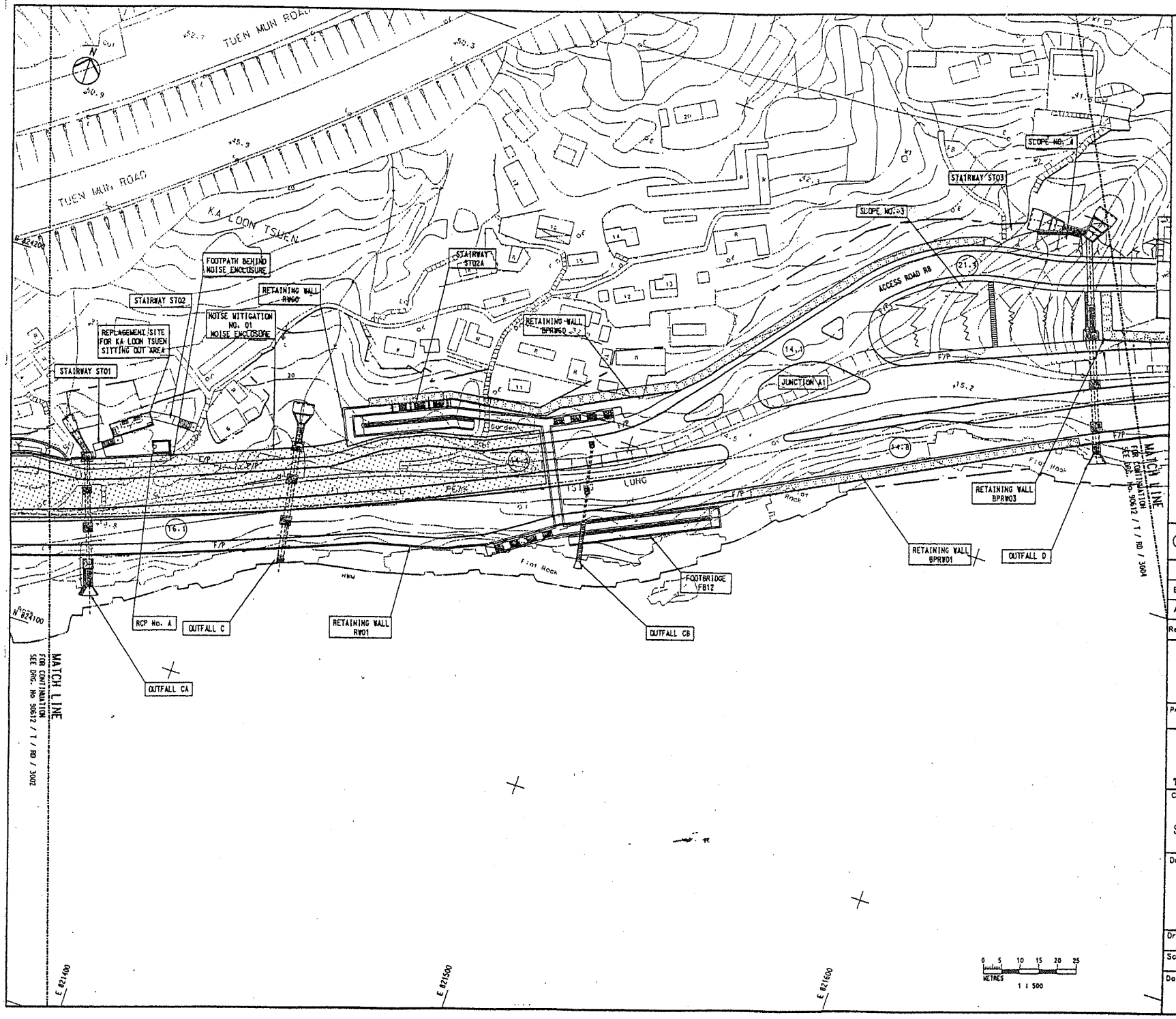

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A	First Issue	Tender Issue	SP	DC	PS	JUN

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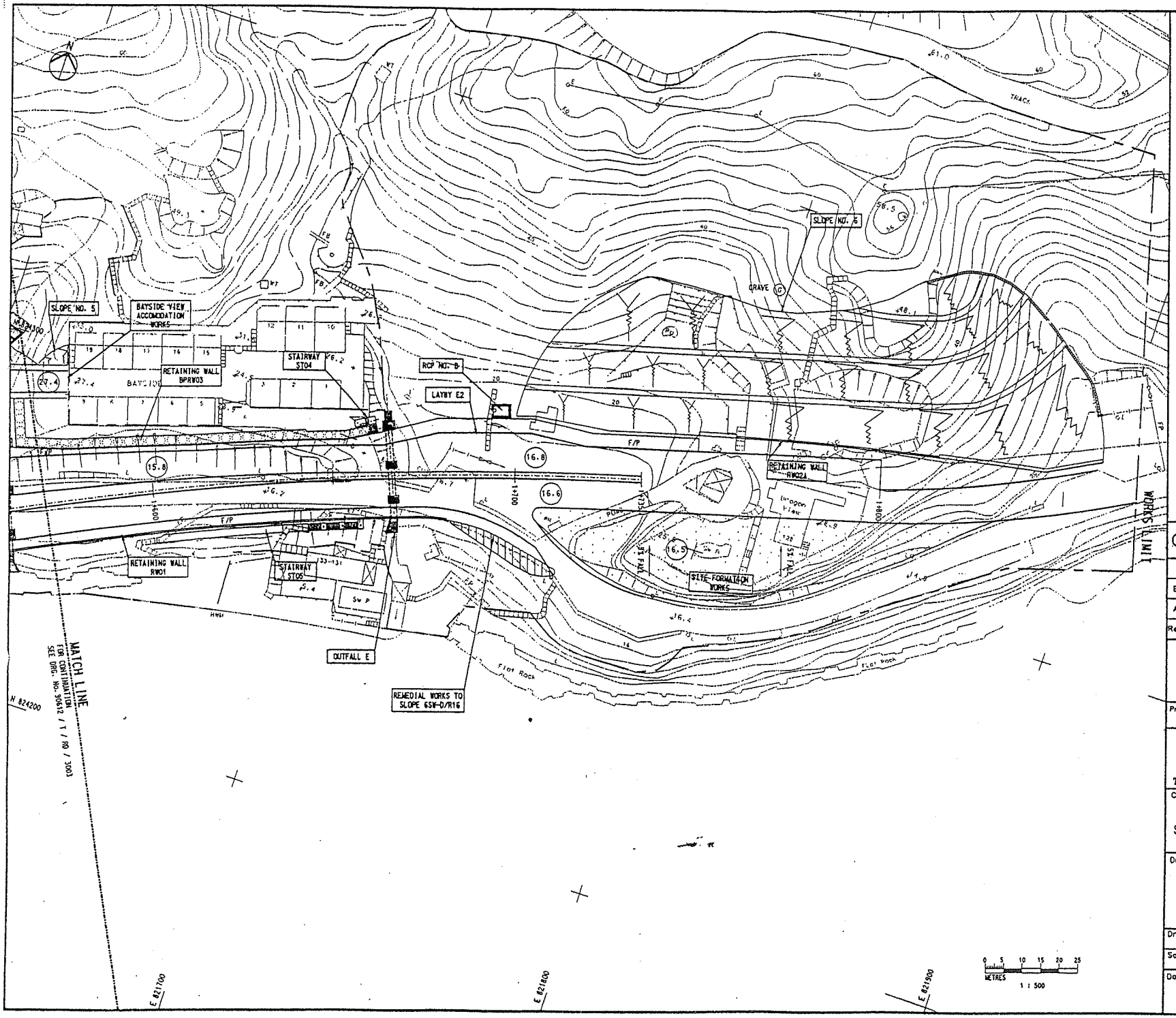

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A	First Issue	Tender Issue	SP	DC	PS	JUN 01

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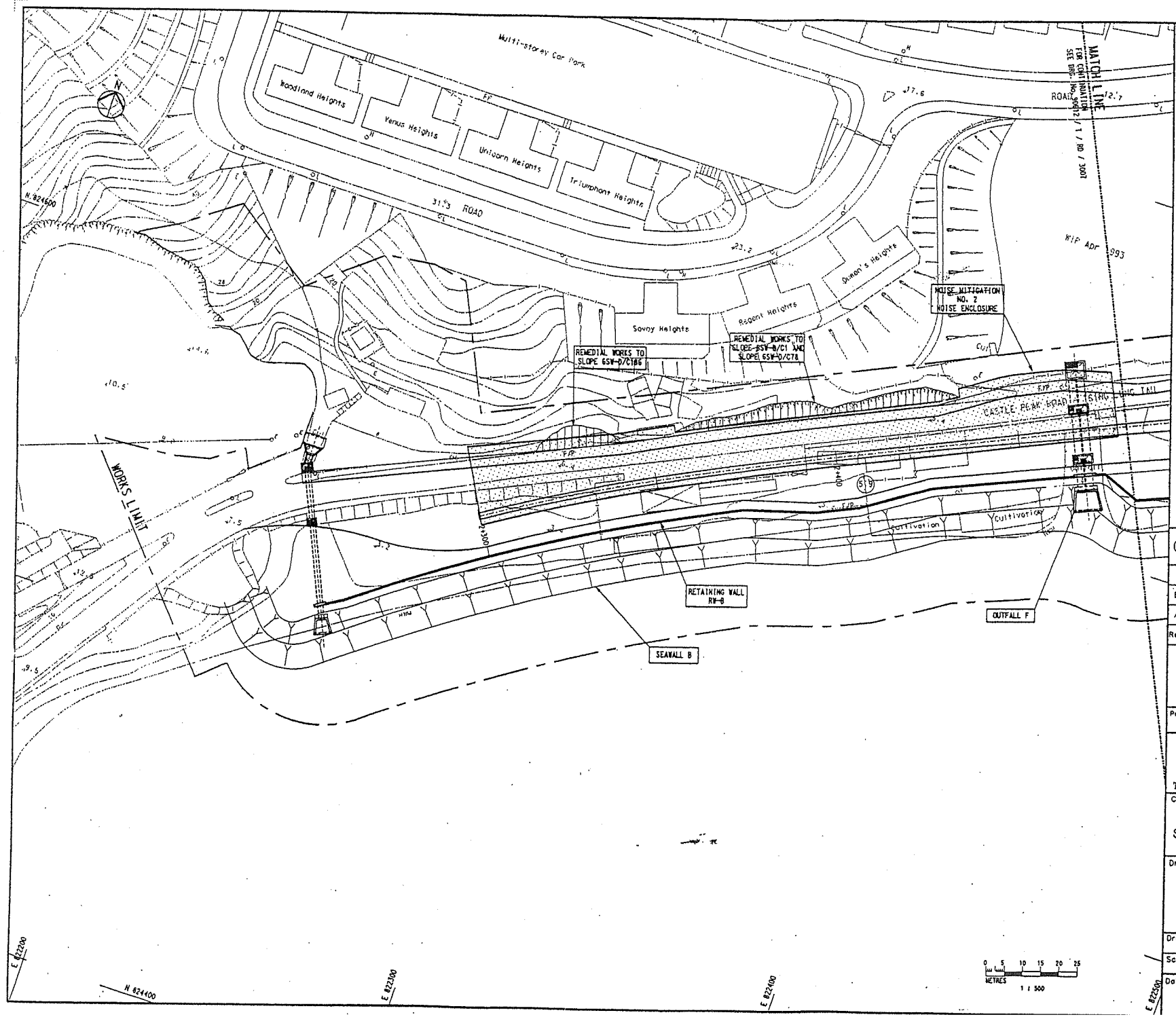

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A	First Issue	Tender Issue	SP	DC	PS	JUN 0

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Drawing Title

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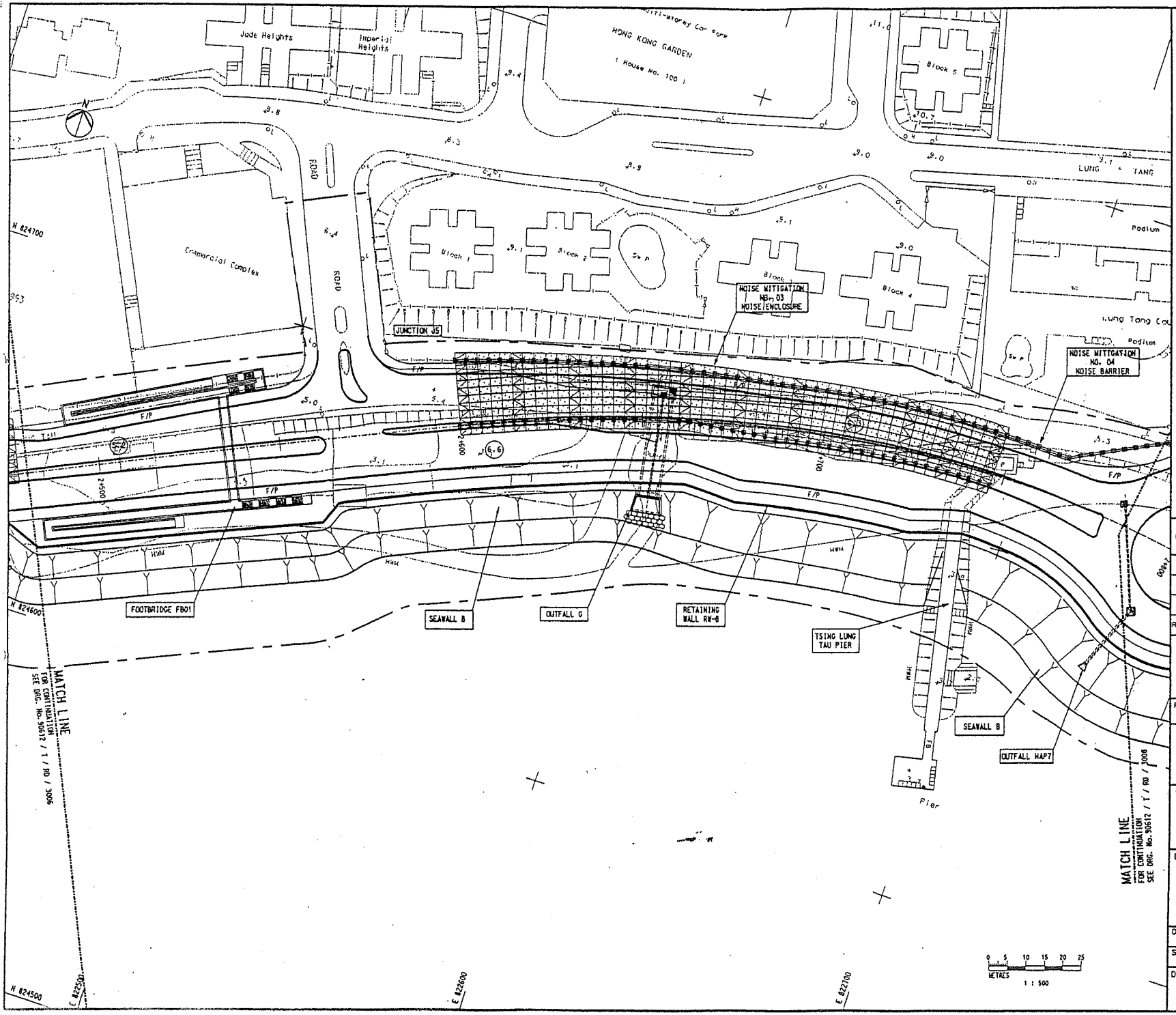

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Contract Title

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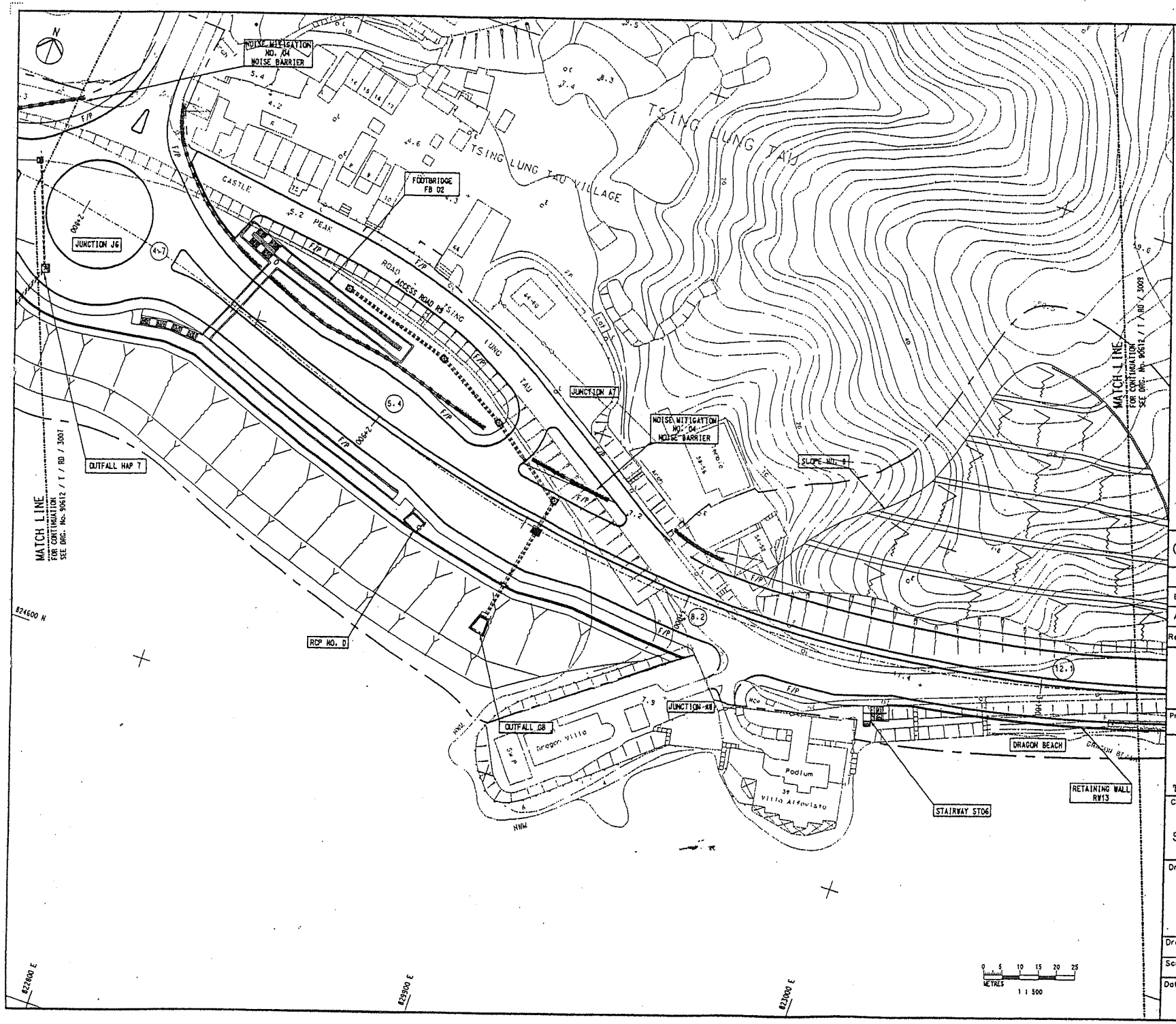

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A	First Issue	Tender Issue	SP	DC	PS	JUN 01

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Project No.	Contract No.
6553TH	HY / 99 / 18

Mouchel Halcrow · JV
Sub-Consultants
ACL Asia, MVA Asia Ltd.,
Townland Consultants Ltd., Chesterton Petty Ltd.

Contract Title

Castle Peak Road Improvement Between Sham Tseng and Ka Loon Tsuen, Tsuen Wan

Drawing Title

SCHEME GENERAL ARRANGEMENT
CHAINAGE 2785 TO 3130

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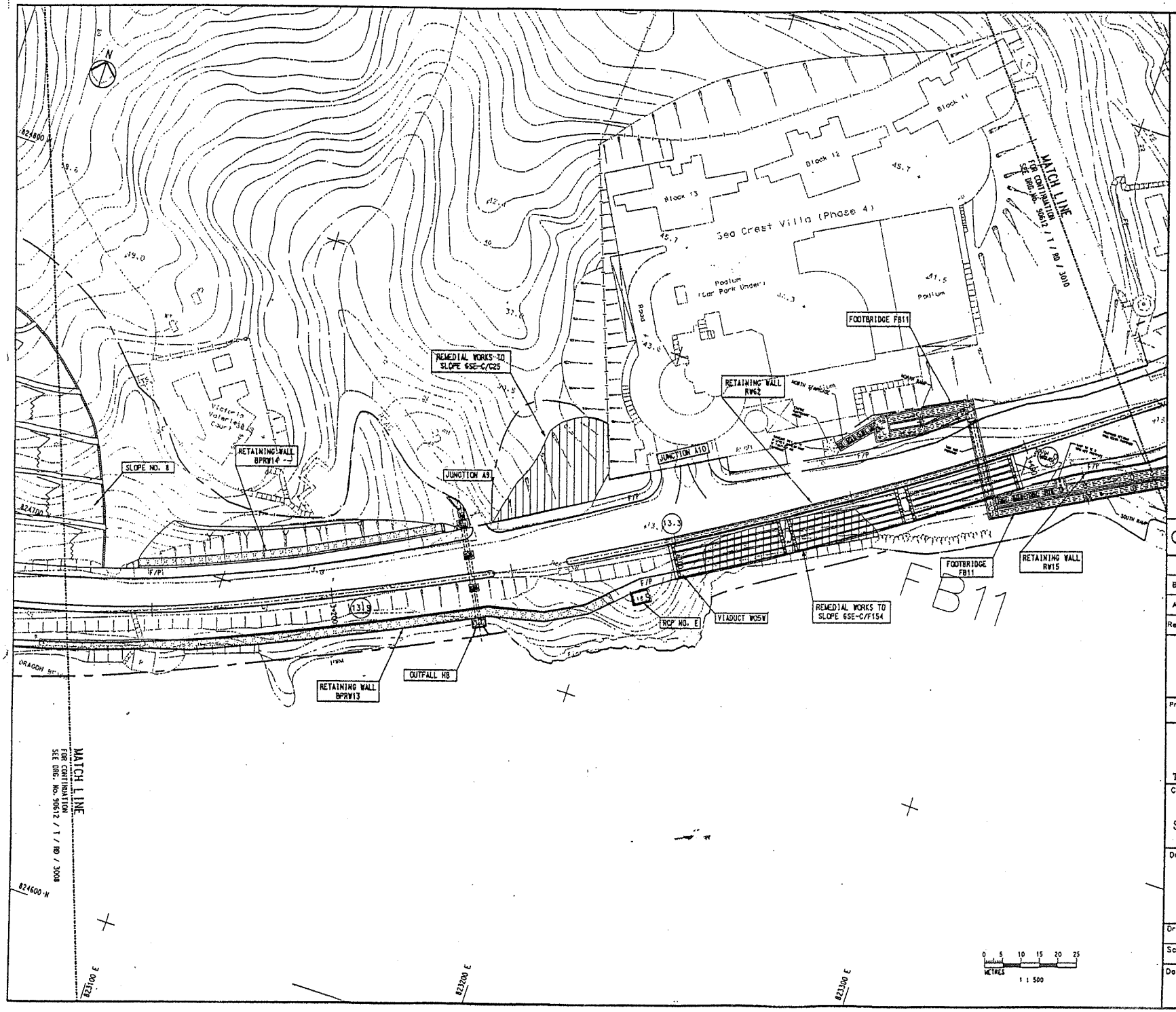

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Project No. 6553TH

Contract No. HY / 99 / 18

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Contract Title

Castle Peak Road Improvement Between Sham Tseng and Ka Loon Tsuen, Tsuen Wan

Drawing Title

SCHEME GENERAL ARRANGEMENT
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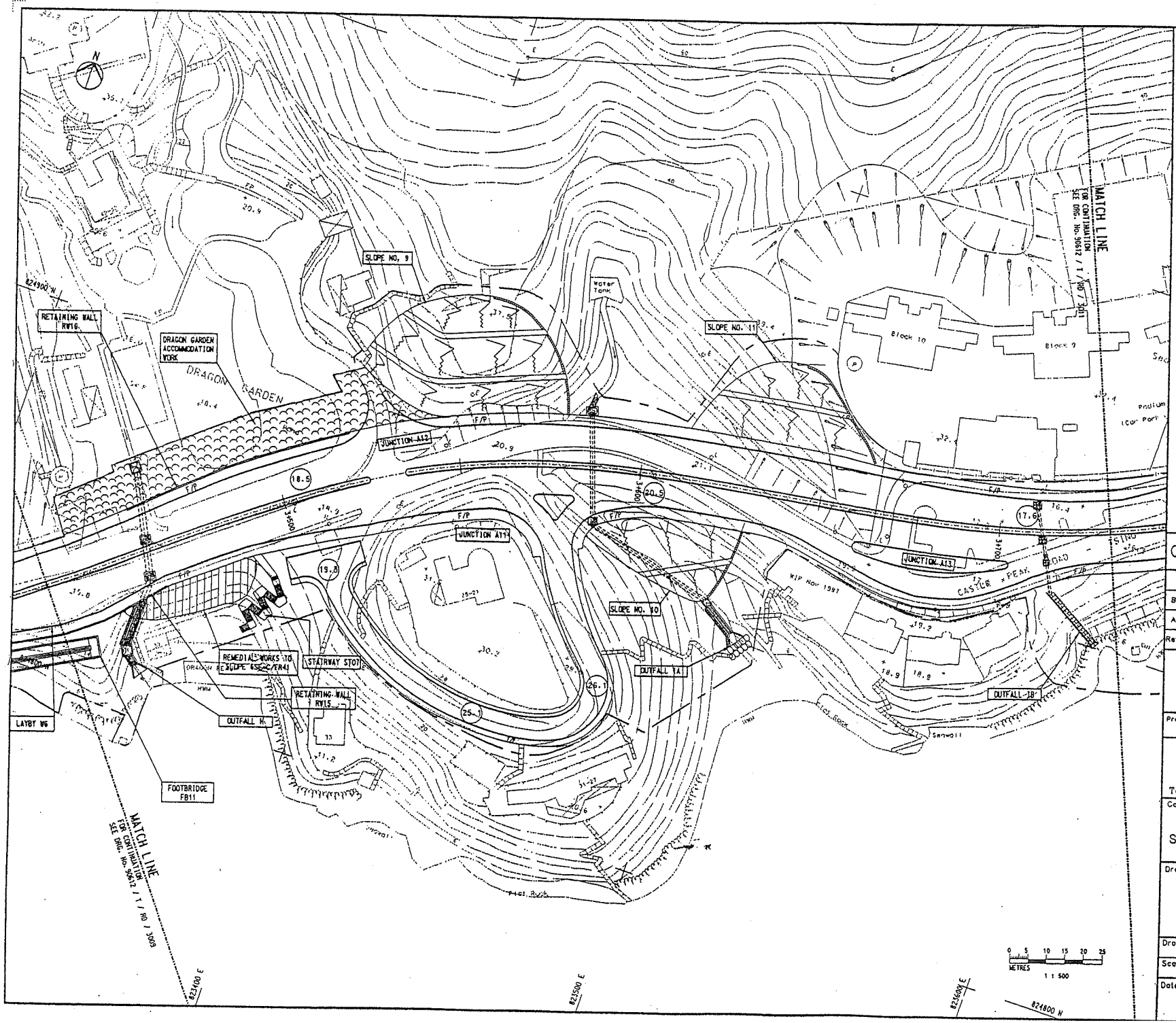

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Project No.	Contract No.
6553TH	HY /99 /18

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Contract Title

Castle Peak Road Improvement Between Sham Tseng and Ka Loon Tsuen, Tsuen Wan

Drawing Title

SCHEME GENERAL ARRANGEMENT
CHAINAGE 3430 TO 3730

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Scale	CAD File No.	Date
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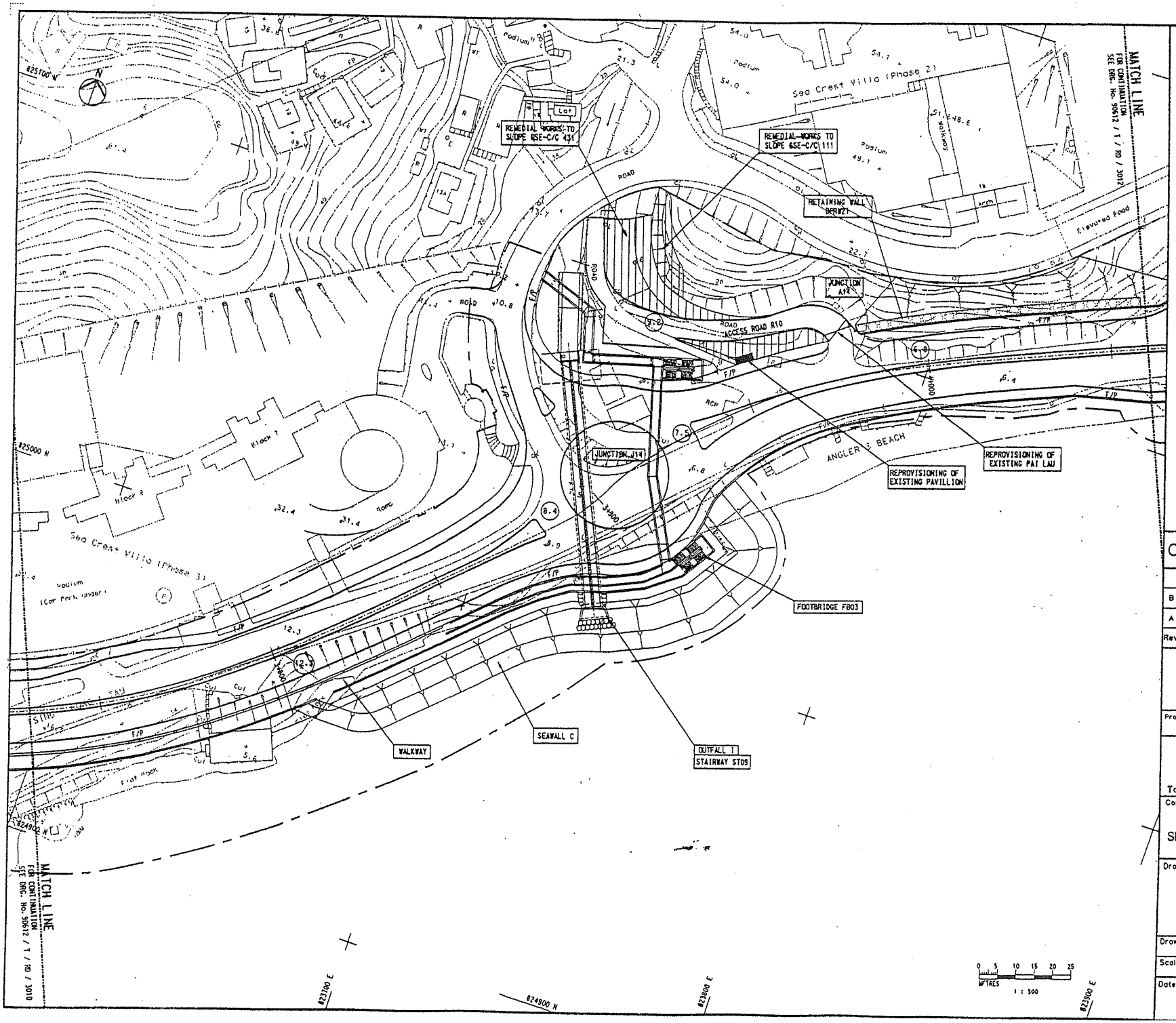
Date Issued	Drawing No.	Rev.
JUNE 2001	90612/T/RD/3010	B



NOTES

1. FOR GENERAL NOTES AND LEGEND REFER TO DRAWING No. 90612 / T / RD / 3001.

CONTRACT DRAWING

Rev	Issue Status	Amendment	By	Chk.	App.	Date
B	2nd Issue	Contract Issue	SP	DC	PS	5/11/01
A	First Issue	Tender Issue	SP	DC	PS	JUN 01

Major Works Project Management Office,
Highways Department,
Hong Kong

Project No.	Contract No.
6553TH	HY / 99 / 18

Mouchel Halcrow - JV
Sub-Consultants
ACL Asia, MVA Asia Ltd.,
Townland Consultants Ltd., Chesterton Petty Ltd.

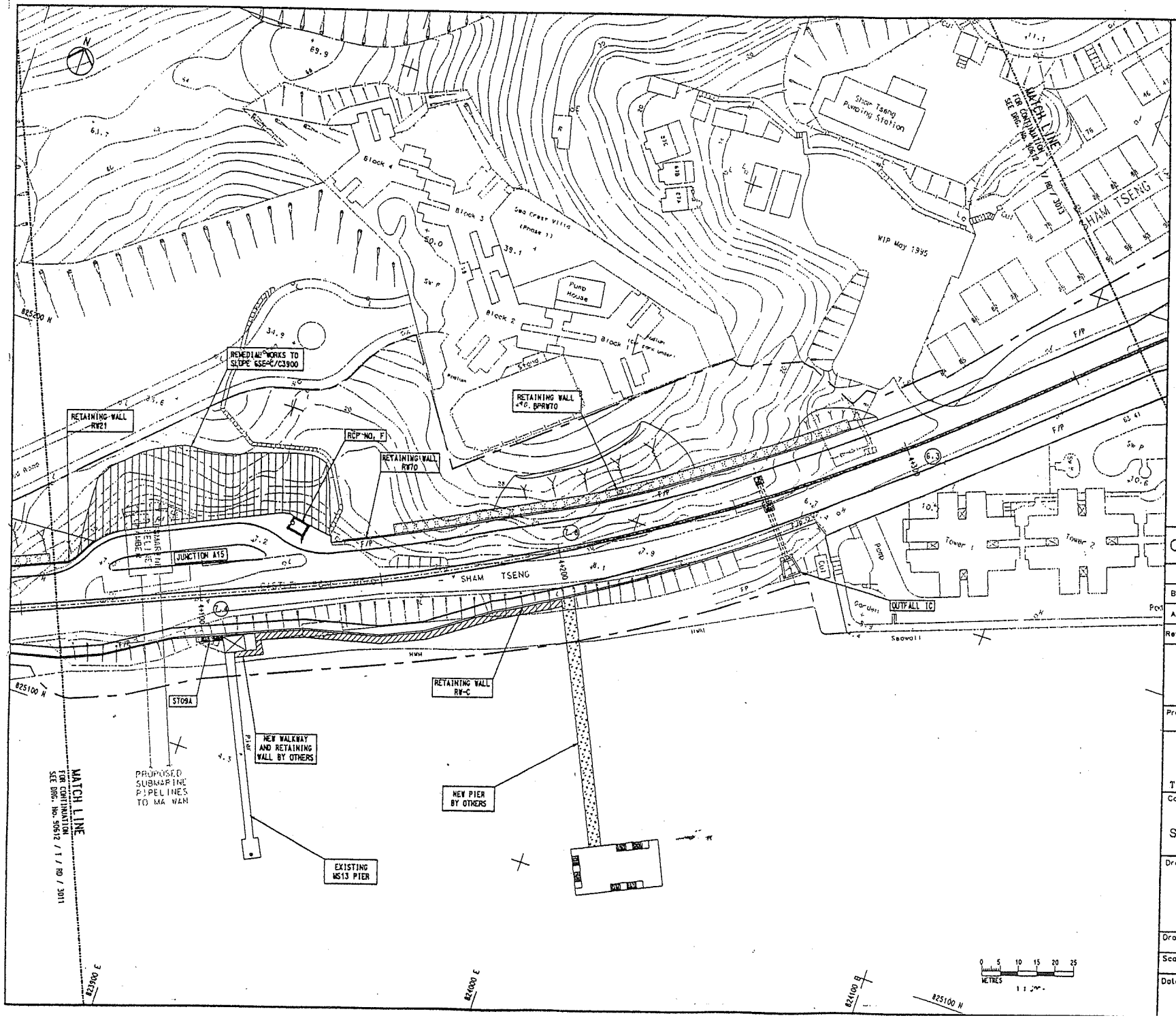
Contract Title

Castle Peak Road Improvement Between Sham Tseng and Ka Loon Tsuen, Tsuen Wan

Drawing Title

SCHEME GENERAL ARRANGEMENT
CHAINAGE 3730 TO 4060

Drawn	Checked	Approved
WDD	JWTL	PS
Scale	CAD File No.	Date
1 : 500	RD3011.DGN	JUNE 2001
Date Issued	Drawing No.	Rev
JUNE 2001	90612/T/RD/3011	B



NOTES

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CONTRACT DRAWING

Rev	Issue Status	Amendment	By	Chk.	App.	Date
B	2nd Issue	Contract Issue	SP	DC	PS	JUN 0
A	First Issue	Tender Issue	SP	DC	PS	JUN 0

Major Works Project Management Office,
Highways Department,
Hong Kong

Project No.	Contract No.
6553TH	HY /99 /18

Mouchel Halcrow JV
Sub-Consultants
ACL Asia, MVA Asia Ltd.,
Townland Consultants Ltd., Chesterton Petty Ltd.

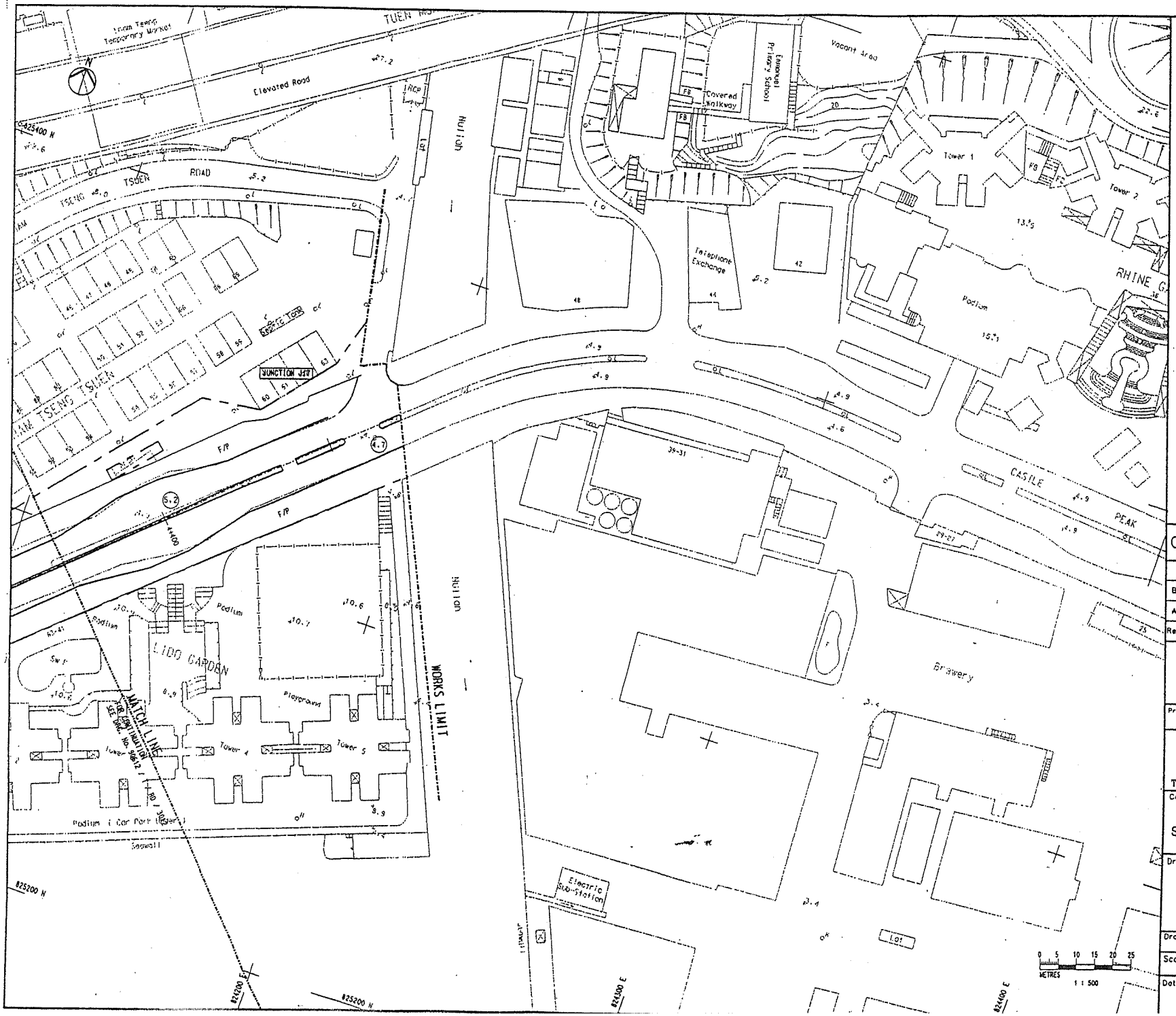
Contract Title

Castle Peak Road Improvement Between Sham Tseng and Ka Loon Tsuen, Tsuen Wan

Drawing Title

SCHEME GENERAL ARRANGEMENT
CHAINAGE 4060 TO 4370

Drawn	Checked	Approved
WDD	JWTL	PS
Scale	CAD File No.	Date
1 : 500	RD3012.DGN	JUNE 2001
Date Issued	Drawing No.	Rev.
JUNE 2001	90612/T/RD/3012	B



NOTE

1. FOR GENERAL NOTES AND LEGEND REFER TO DRAWING NO. 90612 / T / RD / 3001.

CONTRACT DRAWING

Rev	Issue Status	Amendment	By	Chk.	App.	Date
B	2nd Issue	Contract Issue	SP	DC	PS	5/11/01
A	First Issue	Tender Issue	SP	DC	PS	JUN 01

Major Works Project Management Office,
Highways Department,
Hong Kong

Project No. 6553TH

Contract No. HY /99 /18

Mouchel Halcrow - JV
Sub-Consultants
ACL Asia, MVA Asia Ltd.,
Townland Consultants Ltd., Chesterton Petty Ltd.

Contract Title

Castle Peak Road Improvement Between Sham Tseng and Ka Loon Tsuen, Tsuen Wan

Drawing Title

SCHEME GENERAL ARRANGEMENT
CHAINAGE 4370 TO 4470

Drawn	Checked	Approved
WDD	JWTL	PS

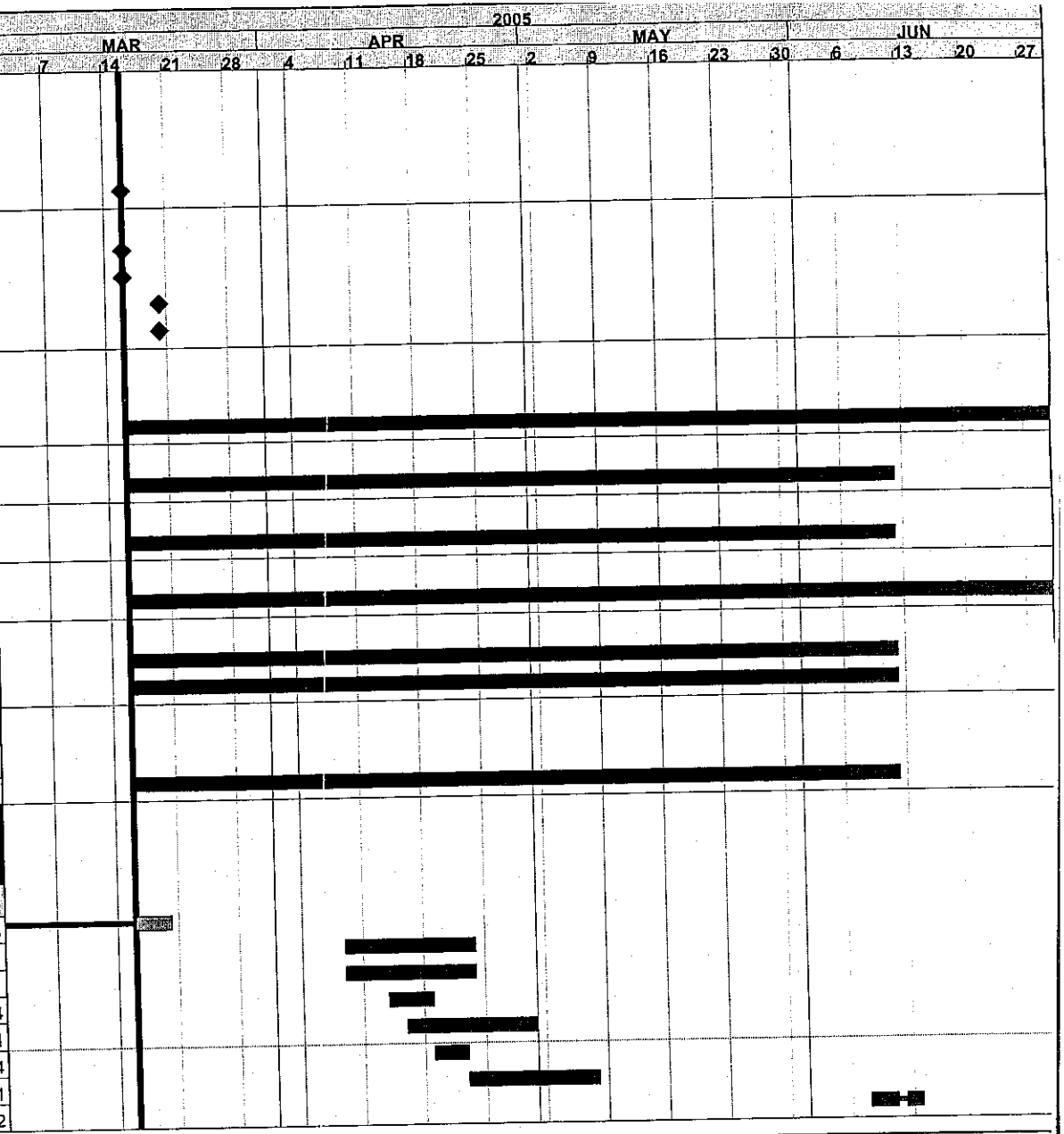
Scale	CAD File No.	Date
1 : 500	RD3013.DGN	JUNE 2001

Date Issued	Drawing No.	Rev.
JUNE 2001	90612/T/RD/3013	B

APPENDIX B

Construction programme

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
CPR Improvement bet Sham Tseng & Ka Loon Tsuen					
Important Dates					
Portions Possession Dates					
00-AD0W2	Possession of Portion No. W2	0	16MAR05*		-72
Portions Handover Dates					
00-VD6	Handover Portion No. 6 to Employer	0		15MAR05*	-15
00-VD7	Handover Portion No. 7 to Employer	0		15MAR05*	-15
00-VD0W1	Handover Portion No. W1 to Employer	0		19MAR05*	-177
00-VD0W3	Handover Portion No. W3 to Employer	0		19MAR05*	-177
1. Preliminaries					
Planning & Programming					
01-0108	Maintain Programming & Submit Progress Reports	1,236	24NOV01A	10AUG05	0
Waste Management					
01-1166	Implement & Monitor WMP	1,171	21DEC01A	11JUN05	0
Maintenance of Traffic Flow					
01-1153	Maintain Traffic Flow	1,171	24NOV01A	11JUN05	0
Environmental Monitoring & Audit					
01-11702	Implement & Maintin Impact Monitor & Audit	1,601	08MAR02A	10AUG06	0
Interfacing and Coordination					
01-1173	Coordination/Integration with Interfacing Works	1,171	01DEC01A	11JUN05	0
01-1174	Provide Reasonable Access to Other Contractors	1,171	01DEC01A	11JUN05	0
16. Site Safety					
Safety Management System					
16-1612	Implement & Maintain Safety Management System	1,151	14DEC01A	11JUN05	0
CPR from Chainage 0+900 to Chainage 1+870					
1. Preliminaries					
Proposed Utility Works					
01-120256	Proposed CATV on E/B C,way CH1800-1860	8	05AUG04A	19MAR05	66
01-12071	Proposed HKT on W/B C,way CH1205-1464	13	09APR05	23APR05	-81
01-12083	Proposed HKBN on W/B C,way CH1205-1464	13	09APR05	23APR05	-81
01-120712	HKT Cross Rd. Ducts at W/B CH1285	4	14APR05	18APR05	-84
01-12072	Proposed CLP on W/B C,way CH1205-1464	13	16APR05	30APR05	-81
01-120722	CLP Cross Rd. Ducts at W/B CH1345	4	19APR05	22APR05	-84
01-1207	Proposed CATV on W/B C,way CH1205-1464	13	23APR05	07MAY05	-81
01-121922	CLP Cross Rd. Ducts at W/B CH1555	4	08JUN05	13JUN05	-82



Start Date 23NOV01
Finish Date 20DEC06
Data Date 16MAR05
Run Date 30MAR05 08:25

Early Bar
Progress Bar
Critical Activity

W39C

Sheet 1 of 13

Maeda Corporation

HY/99/18 - Castle Peak Road Improvement

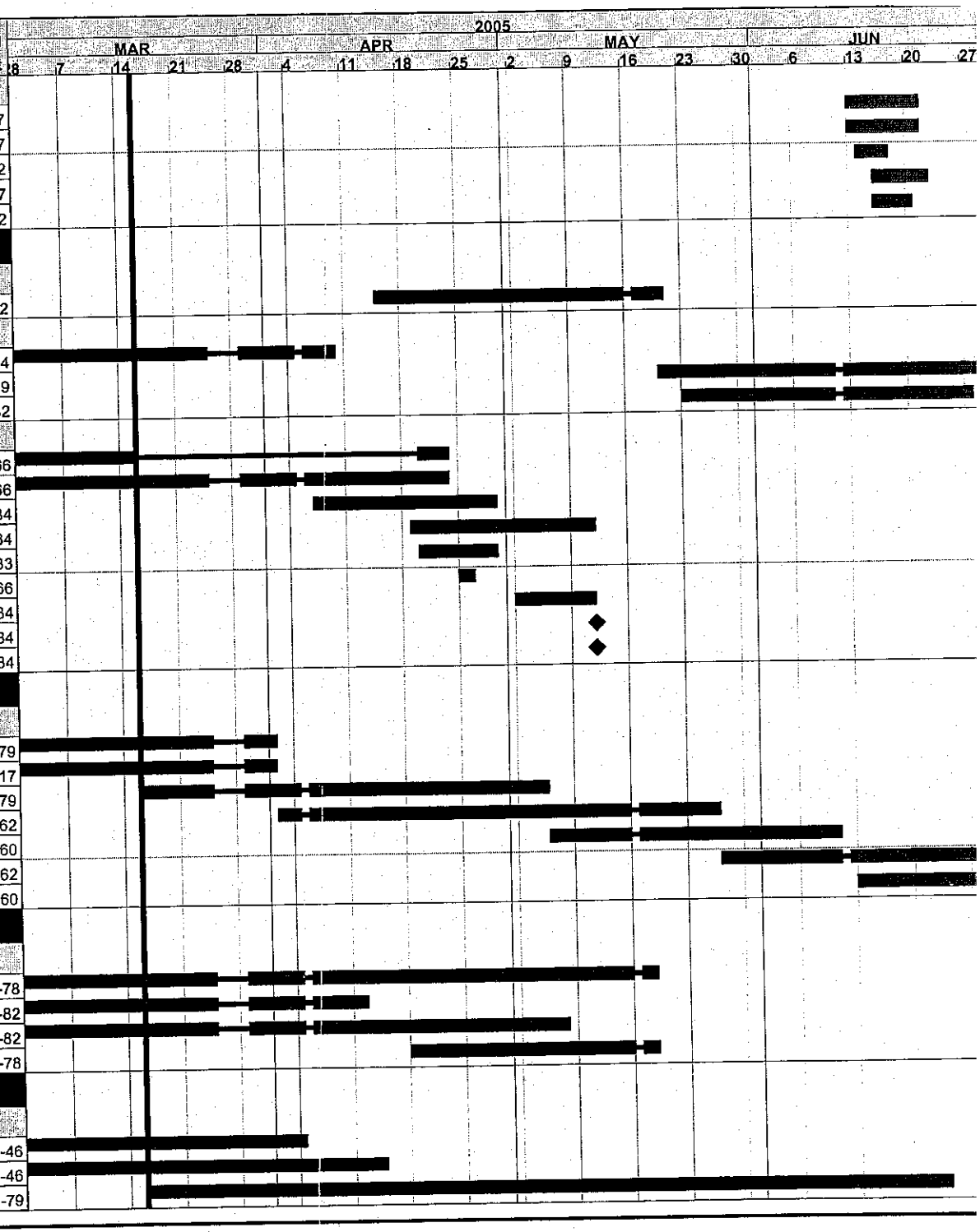
3 - Month Rolling Progamme

MAEDA

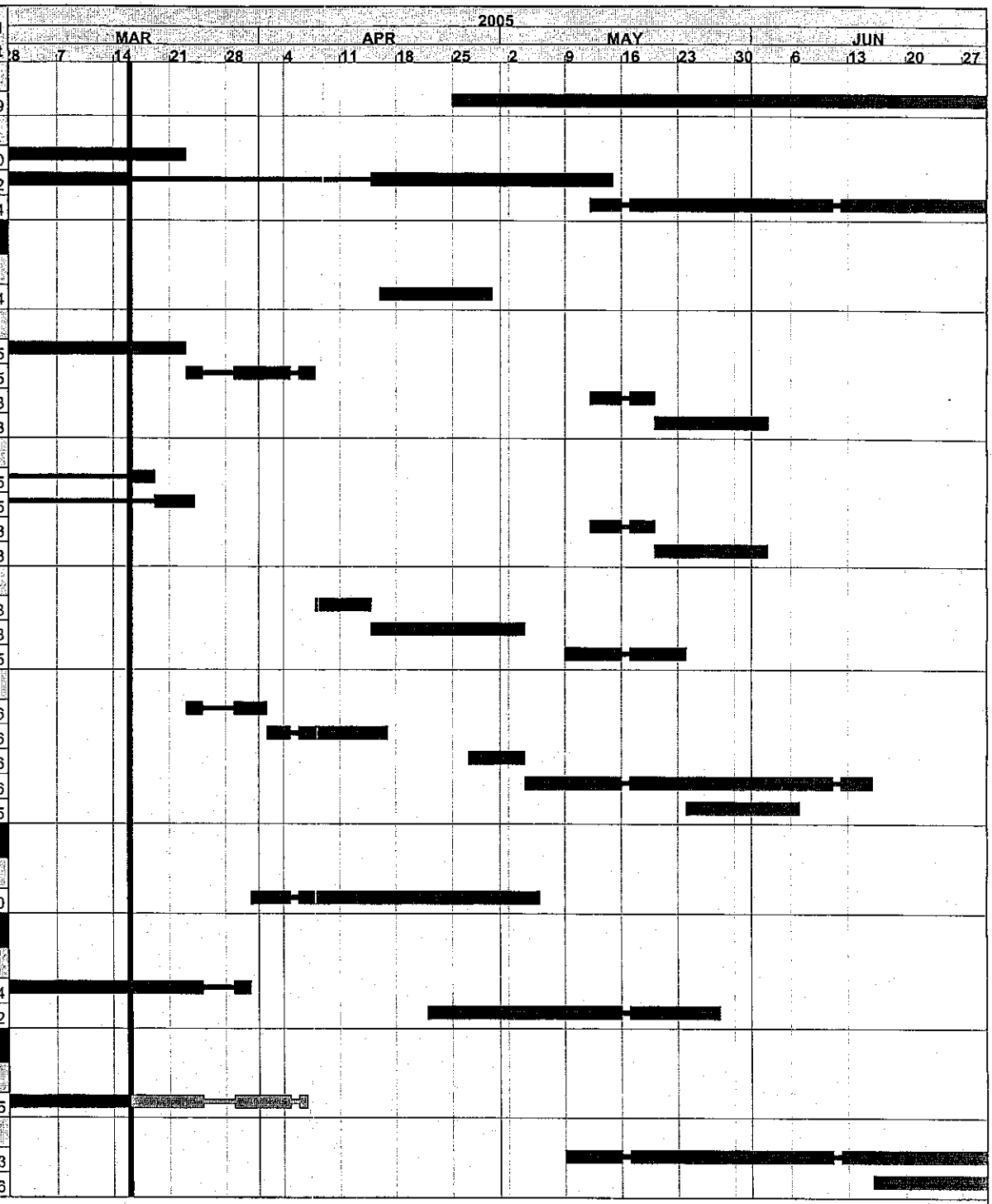
March 2005

Date	Revision	Checked	Approved
30JUL03	revision 01		
17SEP03	revision 02		
22MAR04	revision 03		
28SEP04	revision 03A		
05JAN05	revision 03B		

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
Proposed Utility Works					
01-12193	Proposed HKT on W/B C.way CH1550-1700	8	13JUN05	21JUN05	-67
01-12195	Proposed HKBN on W/B C.way CH1550-1700	8	13JUN05	21JUN05	-67
01-121932	HKT Cross Rd. Ducts at W/B CH1670	4	14JUN05	17JUN05	-82
01-120714	HKT Cross Rd. Ducts at E/B CH1285	6	16JUN05	22JUN05	-77
01-12196	Proposed CATV on E/B C.way CH1680-1700	4	16JUN05	20JUN05	-52
3. Roadworks					
Earthworks					
03-3013	Backfill behind RW01; CH1554-1700	30	15APR05	20MAY05	-82
Drainage Works					
03-3121	Drainage along W/B C'way bet CH1205-1464	44	01FEB05A	09APR05	-84
03-3131	Drainage along E/B C'way bet CH1280-1464	40	20MAY05	07JUL05	-79
03-3126	Drainage along W/B C'way bet CH1550-1700	30	23MAY05	27JUN05	-82
Road Works					
03-32182	Construct rd pave & f/p; Access Rd R8	12	22NOV04A	23APR05	-66
03-32180	Demolish elxst. RW2a & Install Gate,Bay Side Vil	39	10JAN05A	23APR05	-66
03-3111	Formation/sub-base, kerbs; W/B CH1205-1464	20	07APR05	29APR05	-84
03-31112	Construct rd pave & f/p; W/B CH1205-1464	20	19APR05	11MAY05	-84
03-3113	Lay sub-base, kerbs & edgings; W/B CH1464-1550	9	20APR05	29APR05	-83
03-32184	Rd finishes, marking & lighting; Access Rd R8	2	25APR05	26APR05	-66
03-31132	Construct rd pave & f/p; W/B CH1464-1550	9	02MAY05	11MAY05	-84
03-31113	Divert Traffic to W/B C'Way CH1205-1464	0		11MAY05	-84
03-31133	Divert Traffic to W/B C'Way CH1464-1550	0		11MAY05	-84
5. Footbridges					
Footbridge FB12					
05-53202	South Columns & Column head For FB12; 9 Nos.	50	03JAN05A	01APR05	-79
05-53606	Erect Steelwork & Roofing for FB12 (North)	30	06JAN05A	01APR05	-17
05-5350	Construct Ramp for FB12 (South)	40	16MAR05	05MAY05	-79
05-5340	Const./Erect Deck of Main Span for FB12	45	02APR05	26MAY05	-62
05-53504	Construct Stairway for FB12 (South)	30	06MAY05	10JUN05	-60
05-53402	Erect Steelwork & Roofing of Main Span for FB12	45	27MAY05	21JUL05	-62
05-53506	Erect Steelwork & Roofing for FB12 (South)	30	13JUN05	19JUL05	-60
6. Retaining Walls					
L-Shaped Walls					
06-6105	Retaining Wall RW01 (CH1554-1680); 13 bays	146*	17NOV04A	18MAY05	-78
06-61051	Excavate/temp soil nailing for bays 53-65	100	17NOV04A	12APR05	-82
06-61052	Construct base/wall for bays 53-65	80	01FEB05A	07MAY05	-82
06-61054	Construct plinth for bays 53-65	26	18APR05	18MAY05	-78
7. Noise Structures					
Procurement of Noise Barrier					
07-7060	Fabrication of Steel Members for Noise Barrier	120	17MAY04A	04APR05	-46
07-7080	Delivery of Steel Members for Noise Barrier	90	19JUL04A	14APR05	-46
07-7070	Fabrication of Panels for Noise Barrier	100	16MAR05	23JUN05	-79

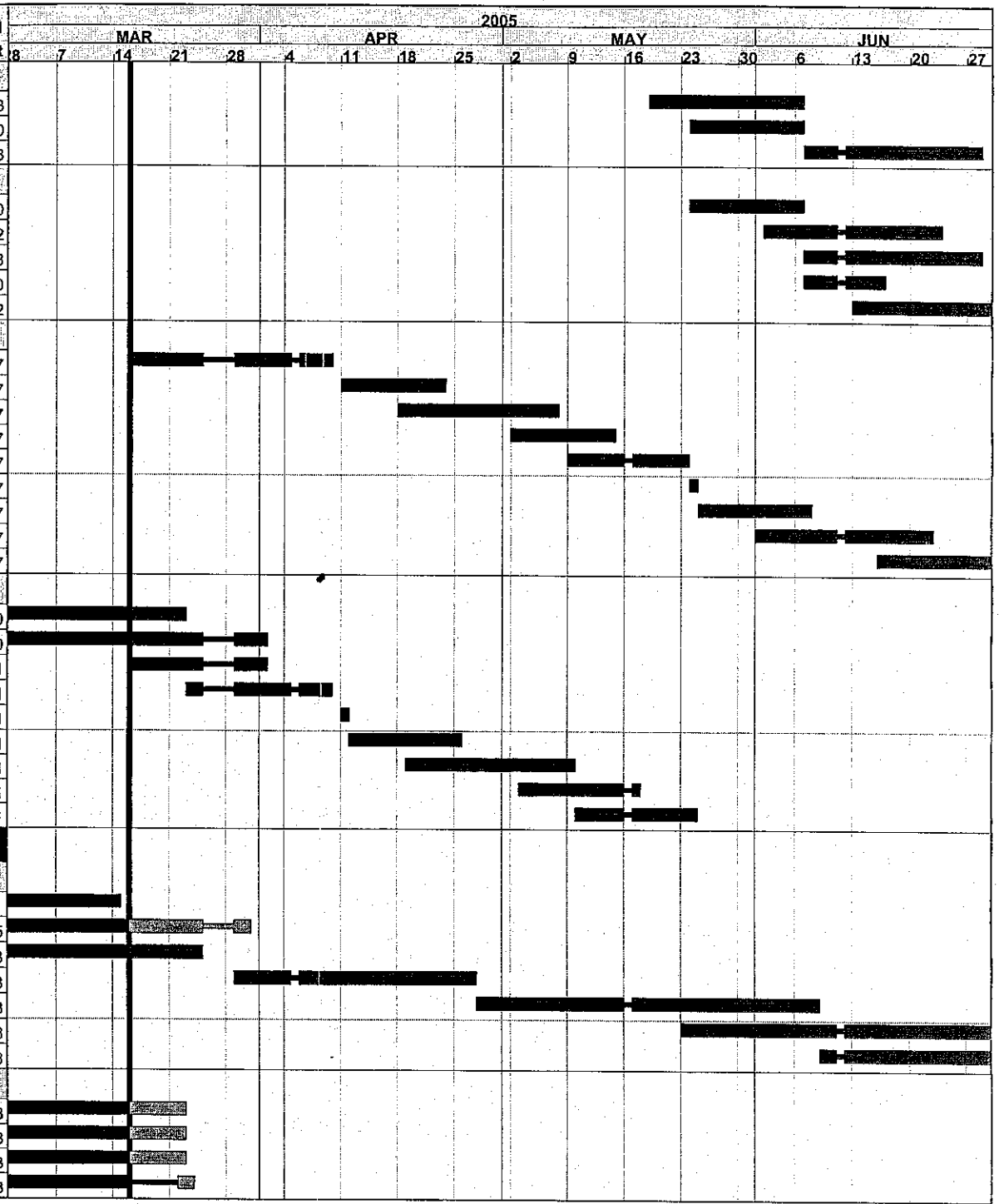


Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
Procurement of Noise Barrier					
07-7090	Delivery of Panels for Noise Barrier	90	25APR05	23JUL05	-79
Noise Mitigation No. 01					
07-7121	Foundation of NM01 (S); CH1320-1405 (bays 23-28)	45	22JAN05A	22MAR05	-80
07-7123	Erect Steel Members at South Supports for NM01	30	16FEB05A	14MAY05	-32
07-7111	Foundation of NM01 (N); CH1300-1350 (bays 8-10)	40	12MAY05	29JUN05	-84
8. Culverts and Outfalls					
Culvert-Outfall CA					
08-83028	1.2m DI pipe/Catchpit/Cascade; Outside RW01	12	16APR05	29APR05	-84
Culvert-Outfall C					
08-84028	Rock breaking for Step Channel; Outside RW01	10	19JAN05A	22MAR05	-65
08-84029	1.5m DI pipe/Step Channel; Outside RW01	10	23MAR05	07APR05	-65
08-8403	Excavate Culvert-Outfall C (within Exist CPR)	6	12MAY05	19MAY05	-63
08-84032	Const. Culvert-Outfall C (within Exist CPR)	12	20MAY05	02JUN05	-63
Culvert-Outfall CB					
08-81603	Exc. Culvert-Outfall CB (Middle Portion)	6	10JAN05A	18MAR05	-25
08-816032	Const. Culvert-Outfall CB (Middle Portion)	12	11JAN05A	23MAR05	-25
08-81601	Exc. Culvert-Outfall CB (North of Exist CPR)	6	12MAY05	19MAY05	-63
08-816012	Const. Culvert-Outfall CB (North of Exist CPR)	12	20MAY05	02JUN05	-63
Culvert-Outfall D					
08-8503	Exc. Culvert-Outfall D (South)	6	08APR05	14APR05	-68
08-85032	Const. 2 Manholes & 1.5m Conc. Pipe (South)	16	15APR05	03MAY05	-68
08-85033	Const. 1.5m Stepped Channel & Outlet (South)	12	09MAY05	23MAY05	-65
Culvert-Outfall E					
08-8602	Exc. Culvert-Outfall E (South)	6	23MAR05	01APR05	-66
08-86022	Const. 1 Manhole & 1.5m Conc. Pipe (South)	12	02APR05	16APR05	-66
08-8603	Exc. Culvert-Outfall E (SMHE1-Inlet)	6	27APR05	03MAY05	-66
08-86032	Const. Culvert-Outfall E (SMHE1-Inlet)	35	04MAY05	15JUN05	-66
08-86023	Const. 1.5m Stepped Channel (South)	12	24MAY05	06JUN05	-65
10. Geotechnical & Slope Works					
Existing Slope Works					
10-102112	Remedial Works to Slope No. D/R16 (skin wall)	30	31MAR05	05MAY05	-80
12. Entrusted Watermains					
Entrusted Water Mains					
12-1202	DN1000FW/Associated Wks (W/B C'way	44	05JAN05A	30MAR05	-84
12-1205	DN1000FW/Associated Wks (W/B C'way	30	22APR05	27MAY05	-82
13. Reprovisioning of LCSD & FEHD Facilities					
FEHD Facilities					
13-1340	Reprovision of Sitting Out Area at Ka Loon Tsuen	75	13SEP03A	06APR05	55
Stairways					
13-1315	Construct Stairway ST05 & Ramp ST05A	90	09MAY05	25AUG05	-63
13-1314	Construct Stairway ST04	30	16JUN05	22JUL05	-66

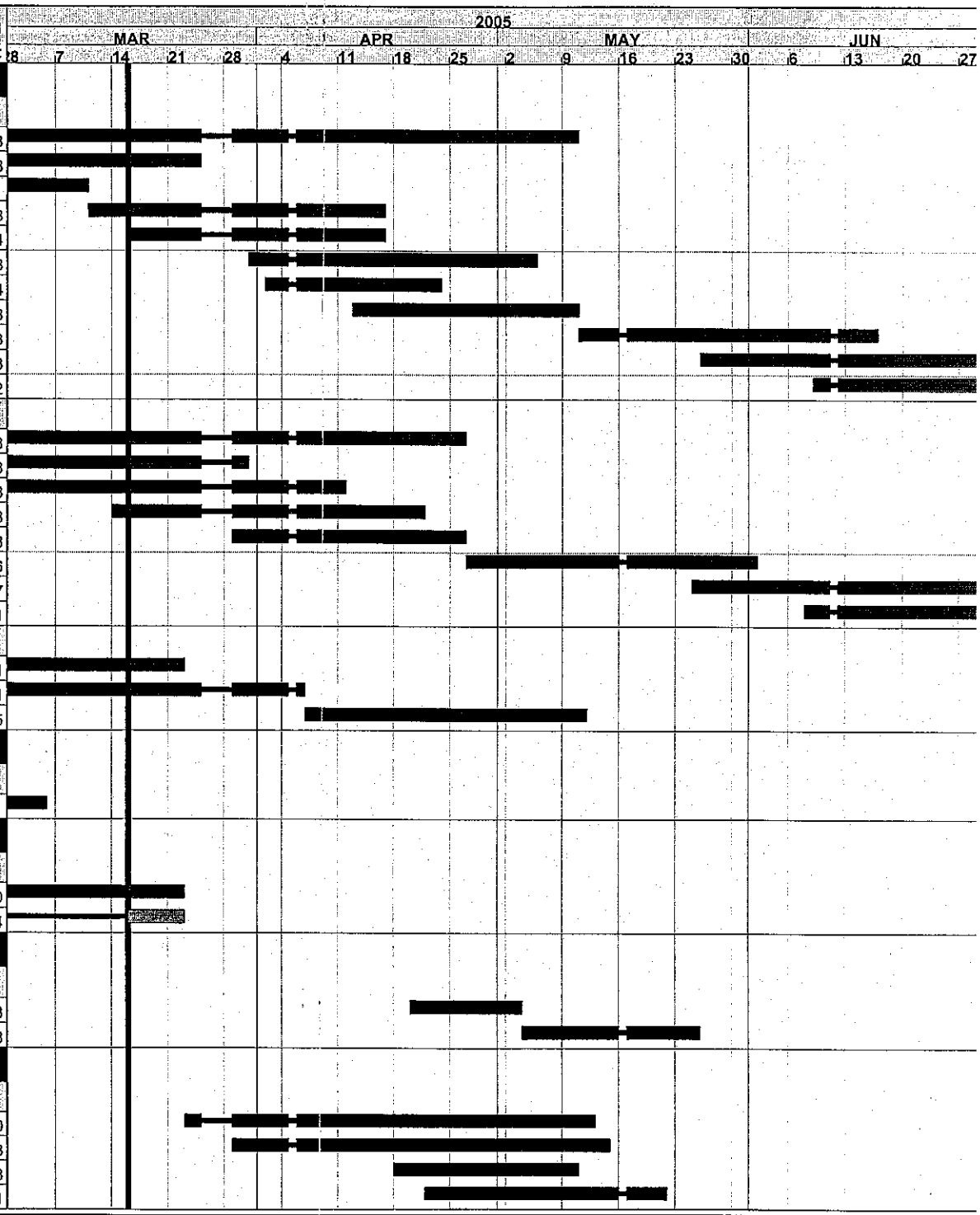


Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
14. Landscape Works					
Landscape Softworks					
14-14115	L'scape Works in Slope No. 6	40	16MAR05*	05MAY05	-103
14-14114	L'scape Works in Slope No. 1	30	06MAY05	10JUN05	-103
14-14119	L'scape Works bet CPR CH1205-1705	150	20MAY05	17NOV05	-82
14-14116	L'scape Works in Slopes C161 & D/C5	36	13JUN05	26JUL05	-103
18. Variation Works					
Vehicular Parapets					
VO-24920	Additional Vehicular Parapets at CH 1205-1465	50	24JAN05A	16APR05	-84
VO-24940	Additional Vehicular Parapets at CH 1555-1685	30	06MAY05	10JUN05	-82
CPR from Chainage 2+210 to Chainage 3+010					
1. Preliminaries					
Proposed Utility Works					
01-12153	Proposed CATV on E/B C,way CH2580-2800	11	06MAY05	19MAY05	-37
01-12143	Proposed CATV on E/B C,way CH2300-2580	14	09MAY05	25MAY05	-42
01-12155	Proposed HKT on E/B C,way CH2580-2800	11	13MAY05	26MAY05	-37
01-12157	Proposed HKBN on E/B C,way CH2580-2800	11	13MAY05	26MAY05	-37
01-12145	Proposed HKT on E/B C,way CH2300-2580	14	17MAY05	01JUN05	-42
01-12147	Proposed HKBN on E/B C,way CH2300-2580	14	17MAY05	01JUN05	-42
01-12154	Proposed HT on E/B C,way CH2580-2800	11	21MAY05	02JUN05	-37
01-12144	Proposed HT on E/B C,way CH2300-2580	14	24MAY05	08JUN05	-42
01-12156	Proposed CLP on E/B C,way CH2580-2800	11	28MAY05	09JUN05	-37
01-12146	Proposed CLP on E/B C,way CH2300-2580	14	31MAY05	16JUN05	-42
Programme for SA No. 3					
01-0110	Programme for SA No. 3	547*	29SEP03A	28MAR05	-29
01-0118	Prepare final SA	12	25NOV03A	21MAR05	-29
01-0114	Review & endorse detailed design by ICE/MHJV/QS	12	28NOV03A	20MAR05	-29
01-0119	Prepare formal copies of SA for execution SA	7	22MAR05	28MAR05	-29
01-01110	Execute SA	0		28MAR05	-29
3. Roadworks					
Utility Diversion					
03-3212	Protect/Divert Exist. UUs at E/B CH 2580-2800	30	29JAN05A	22MAR05	-48
03-3214	Trial Pits to locate DN525 pipe at R9; SI362	12	09MAR05A	22MAR05	-90
Earthworks					
03-3204	Backfill/Road formation at E/B CH2300-2580	30	13APR05	18MAY05	-42
03-3205	Road formation at E/B C'way CH2580-2800	30	30APR05	04JUN05	-41
Drainage Works					
03-32243	Drainage(F4.1-4.3) at E/B CH2480-2580	25	29MAR05	27APR05	-29
03-32252	Drainage Works at E/B CH2580-2610/CH2695-2750	30	13APR05	18MAY05	-48
03-3226	Drainage Works at Access Road R9 at West	20	13MAY05	06JUN05	-90
03-32262	Drainage Works at Access Road R9 at East	20	17MAY05	08JUN05	-53

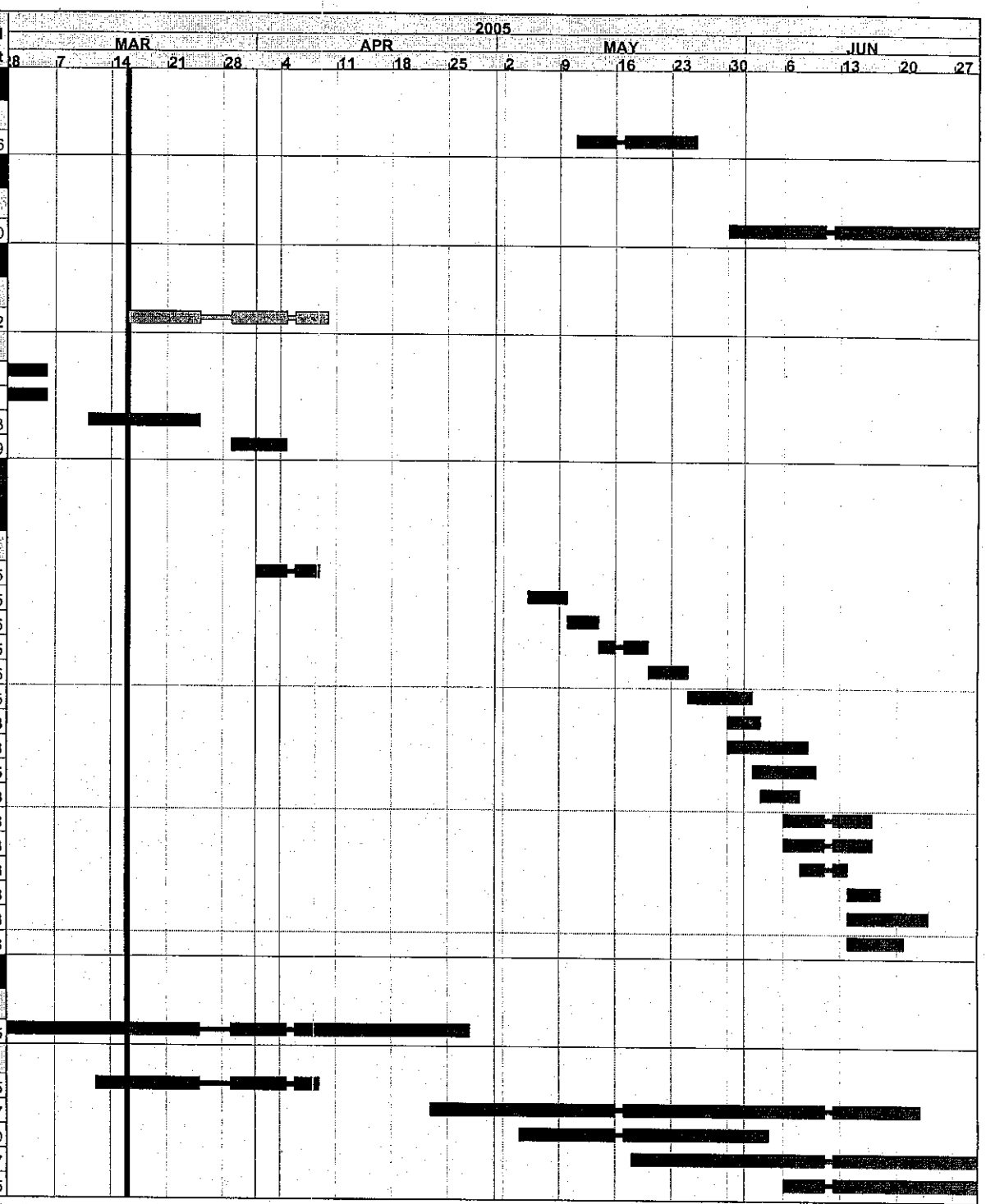
Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
Pipe Works (Local Supply Watermains)					
03-3235	Pipe Works on E/B C'way bet CH2610-2720	16	19MAY05	06JUN05	-48
03-3236	Pipe Works on at Access Road R9 at West	12	24MAY05	06JUN05	-90
03-32352	Testing & Connection of Pipeworks at CH2610-2720	18	07JUN05	28JUN05	-48
Road Works					
03-3160	Formation/ sub-base, kerbs; Access Rd R9 at West	12	24MAY05	06JUN05	-90
03-3148	Lay sub-base, kerbs & edgings; E/B CH2300-2580	18	02JUN05	23JUN05	-42
03-3149	Lay sub-base, kerbs & edgings; E/B CH2580-2800	18	07JUN05	28JUN05	-48
03-31602	Construct rd pave & f/p; Access Rd R9 at West	8	07JUN05	16JUN05	-90
03-31482	Construct rd pave & f/p; E/B CH2300-2580	18	13JUN05	04JUL05	-42
Junction J5 (at Hong Kong Garden)					
J5-02	Endorse & implement TTA Scheme	18	16MAR05*	09APR05	-47
J5-04	Expose existing UUs at eastern lane of slip rd	12	11APR05	23APR05	-47
J5-06	Const. drainage within eastern lane of slip rd	18	18APR05	07MAY05	-47
J5-08	Lay UU cross rd	12	02MAY05	14MAY05	-47
J5-10	Const. eastern lane of slip rd	12	09MAY05	23MAY05	-47
J5-12	Close western lane of slip road to HK Garden	1	24MAY05	24MAY05	-47
J5-14	Expose existing UUs at western lane of slip rd	12	25MAY05	07JUN05	-47
J5-16	Const. drainage both storm & sewer at west lane	18	01JUN05	22JUN05	-47
J5-18	Lay UU cross rd	12	16JUN05	29JUN05	-47
Junction J6 (at Lung Yu Road)					
J6-04	Expose existing UUs at eastern lane	12	17FEB05A	22MAR05	-90
J6-06	Const. drainage both storm & sewer at east lane	18	21FEB05A	01APR05	-90
J6-08	Lay UU cross rd	12	16MAR05	01APR05	-11
J6-10	Const. eastern lane of Lung Yuen Rd	12	23MAR05	09APR05	-11
J6-12	Close western lane of Lung Yuen Rd	1	11APR05	11APR05	-11
J6-14	Expose existing UUs at western lane	12	12APR05	25APR05	-11
J6-16	Const. drainage both storm & sewer at west lane	18	19APR05	09MAY05	-11
J6-18	Lay UU cross rd	12	03MAY05	17MAY05	-11
J6-20	Const. wester lane of Lung Yuen Rd	12	10MAY05	24MAY05	-11
5. Footbridges					
Footbridge FB01					
05-51112	Piling Works at North Supports for FB01;12 Nos.	72	03SEP04A	14MAR05A	
05-51506	Erect Steelwork & Roofing for FB01 (South)	30	22NOV04A	30MAR05	15
05-5113	Demobilize Piling Rig & Pile Test; FB01 (N)	18	28JAN05A	24MAR05	-88
05-5130	North Pile caps for FB01; 5 Nos.	25	29MAR05	27APR05	-88
05-51302	North Columns & Column head for FB01; 9 Nos.	35	28APR05	08JUN05	-88
05-5140	Const./Erect Deck of Main Span for FB01	45	23MAY05	15JUL05	-88
05-5160	Construct Ramp for FB01 (North)	45	09JUN05	03AUG05	-88
Footbridge FB02					
05-52706	Erect Steelwork & Roofing for FB02 (North)	30	14JUL04A	22MAR05	63
05-52606	Erect Steelwork & Roofing for FB02 (South)	30	21SEP04A	22MAR05	63
05-52502	Erect Steelwork & Roofing of Main Span for FB02	30	25SEP04A	22MAR05	63
05-5280	E&M and Finishing Works for Footbridge FB02	30	06DEC04A	23MAR05	63



Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
7. Noise Structures					
Noise Mitigation No. 02					
07-7221	Foundation of NM02 (North)	89*	19JAN05A	10MAY05	-58
07-72212	Excavation/formation for NM02 (14-23)	30	07FEB05A	24MAR05	-58
07-72213	Construct base for NM02 (Bays 24-26)	24	21FEB05A	10MAR05A	
07-72214	Construct base for NM02 (Bays 14-23)	30	11MAR05A	16APR05	-58
07-72215	Construct wall stem for NM02 (Bays 24-26)	24	16MAR05	16APR05	-44
07-72216	Construct wall stem for NM02 (Bays 14-23)	30	31MAR05	05MAY05	-58
07-72217	Const. R.C. barriers/columns; NM02 (Bays 24-26)	18	02APR05	23APR05	-44
07-72218	Const. R.C. barriers/columns; NM02 (Bays 14-23)	24	13APR05	10MAY05	-58
07-7212	Erect Steel Members at North Supports for NM02	30	11MAY05	16JUN05	-58
07-7213	Erect Wall Panels at North Supports for NM02	30	26MAY05	30JUN05	-58
07-7230	Erect Roof Steel Members for NM02	30	09JUN05	15JUL05	-52
Noise Mitigation No. 03					
07-7321	Foundation of NM03 (North)	52*	21FEB05A	26APR05	-48
07-73212	Excavation/formation for NM03 (North)	30	21FEB05A	30MAR05	-48
07-73214	Construct base for NM03 (North)	30	28FEB05A	11APR05	-48
07-73216	Construct wall stem for NM03 (North)	30	14MAR05A	21APR05	-48
07-73218	Const. R.C. barriers/columns; NM03 (North)	24	29MAR05	26APR05	-48
07-7312	Erect Steel Members at North Supports for NM03	30	27APR05	01JUN05	-46
07-7313	Erect Wall Panels at North Supports for NM03	30	25MAY05	29JUN05	-57
07-7330	Erect Roof Steel Members for NM03	30	08JUN05	14JUL05	-51
Noise Mitigation No. 04					
07-740412	Foundation of NM04 (bays 12-13)	30	16FEB05A	22MAR05	-51
07-7404	Foundation of NM04 (bays 1-4))	50	21FEB05A	06APR05	-21
07-7408	Erect Frame for NM04 (bays 1-4 & 12-13)	30	07APR05	11MAY05	-5
8. Culverts and Outfalls					
Culvert-Outfall GB					
08-8920	Culvert-Outfall GB (SMHGB6.1 & pipes); VO 165	18	21FEB05A	05MAR05A	
9. Seawalls and Marine Works					
L-Shaped Walls					
09-91331	Reprovision of Pavillion at Sea Wall B	522*	19JUN03A	22MAR05	-90
09-91333	Roofing/staircase/flooring & finishings	40	07JUN04A	22MAR05	64
10. Geotechnical & Slope Works					
Existing Slope Works					
09-924224	Drainage along Toe of Slope 6SW-D/C186	12	20APR05	03MAY05	-28
09-921246	Drainage, Toe of Slope 6SW-D/C1&78/VO386G	18	04MAY05	25MAY05	-28
11. Entrusted Sewerage Works					
Entrusted Sewers/Drains					
11-1132	Sewer Works at Access Road R9 at West	40	23MAR05	12MAY05	-90
11-11322	Sewer Works at Access Road R9 at East	40	29MAR05	14MAY05	-53
11-11312	Sewer Works at CPR CH2580-2650	20	18APR05	10MAY05	-8
11-1131	Sewer Works at CPR CH2650-2750	25	22APR05	21MAY05	-41

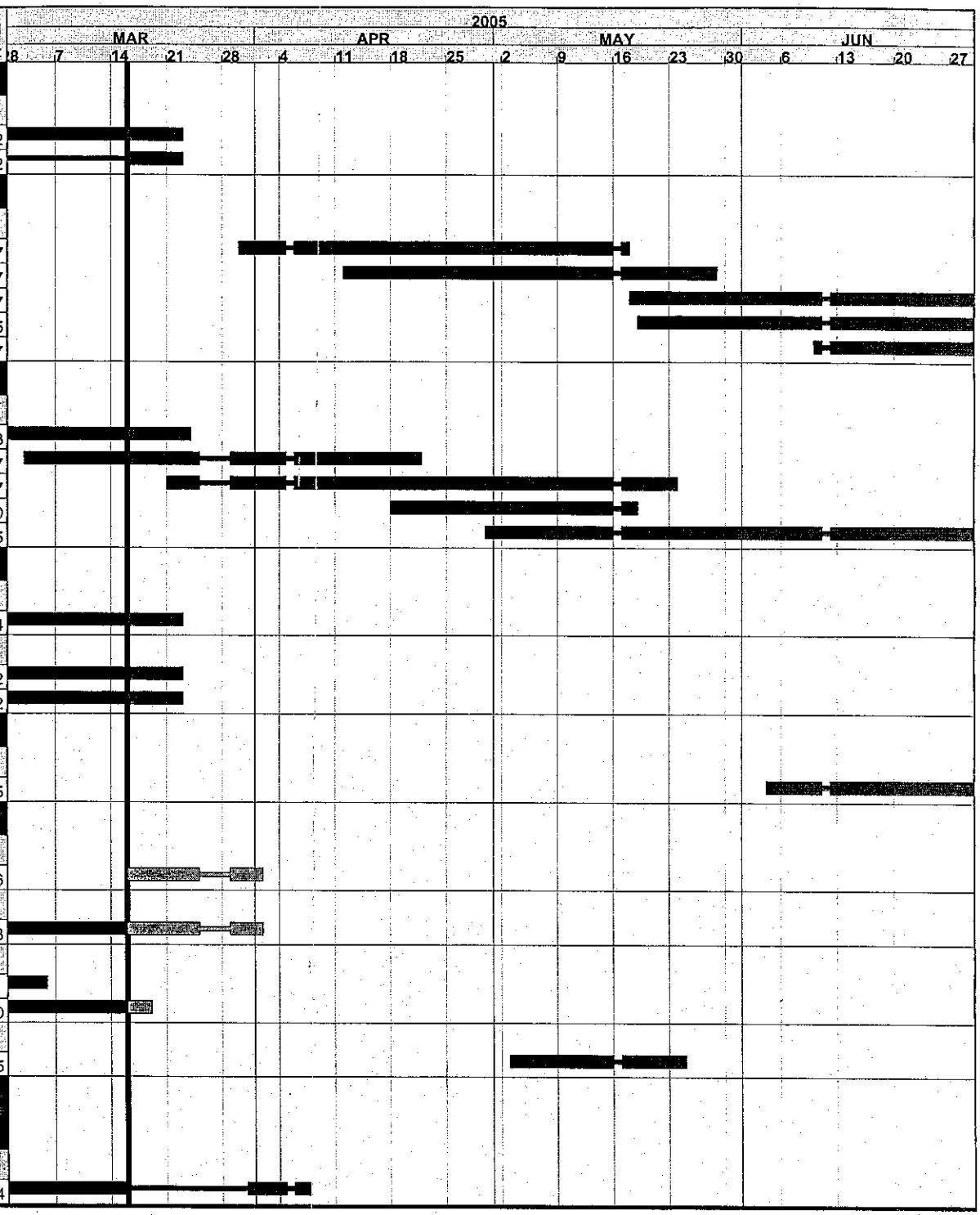


Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
12. Entrusted Watermains					
Entrusted Water Mains					
12-1232	DN150 cross rd & fire hydrant at CH L600	12	11MAY05	25MAY05	-16
14. Landscape Works					
Landscape Softworks					
14-14111	Landscape Works CH2300-3010	150	30MAY05	26NOV05	-90
18. Variation Works					
Add. Fishermen's Access Staircase at Sewall B					
VO-35600	Construct Fishermen's Access Staircase; VO356	18	16MAR05	09APR05	52
Additional Works at Western Toe of Slope 8					
VO-30302	Site Clearane/ Excavate for L-shape wall; VO303	10	18FEB05A	05MAR05A	
VO-30306	Backfill & Slope Toe Formation; VO303	12	21FEB05A	05MAR05A	
VO-30304	Construct L-shape wall; VO303	12	11MAR05A	24MAR05	-53
VO-30308	Drainage Works; VO303	6	29MAR05	04APR05	-19
CPR from Chainage 3+010 to Chainage 3+730					
1. Preliminaries					
Proposed Utility Works					
01-1243	Gasmain on W/B CH3300-3460 incl. Cross Rd. Ducts	6	01APR05	08APR05	-95
01-125522	CATV Cross Rd. Ducts at W/B CH3525	4	05MAY05	09MAY05	-25
01-125544	HKT Cross Rd. Ducts at W/B CH3470	4	10MAY05	13MAY05	-25
01-125561	CLP Cross Rd. Ducts at W/B CH3415	4	14MAY05	19MAY05	-25
01-125563	CLP Cross Rd. Ducts at W/B CH3480	4	20MAY05	24MAY05	-25
01-1241	Proposed CLP on W/B C,way CH3400-3530	7	25MAY05	01JUN05	-25
01-121264	HKT Cross Rd. Ducts at E/B CH2995	4	30MAY05	02JUN05	-43
01-12433	Proposed CATV on E/B C,way CH2950-3130	9	30MAY05	08JUN05	-48
01-12412	Proposed HKT on W/B C,way CH3400-3530	7	02JUN05	09JUN05	-25
01-124022	CATV Cross Rd. Ducts at E/B CH3030	4	03JUN05	07JUN05	-43
01-12435	Proposed HKT on E/B C,way CH2950-3130	9	06JUN05	16JUN05	-48
01-12437	Proposed HKBN on E/B C,way CH2950-3130	9	06JUN05	16JUN05	-48
01-124023	HT Cross Rd. Ducts at E/B CH3035	4	08JUN05	13JUN05	-43
01-124002	CLP Cross Rd. Ducts at E/B CH3080	4	14JUN05	17JUN05	-43
01-12434	Proposed HT on E/B C,way CH2950-3130	9	14JUN05	23JUN05	-48
01-12438	NWT Cross Rd. Ducts at E/B CH2990-3000	6	14JUN05	20JUN05	-48
3. Roadworks					
Earthworks					
03-3242	Earthworks at W/B C'way CH3400-3530	212*	09AUG04A	27APR05	-45
Drainage Works					
03-33202	Drainage Works on W/B C'way bet CH3300-3400	20	12MAR05A	08APR05	-95
03-3323	Drainage Works on E/B C'way bet CH3000-3130	50	23APR05	22JUN05	-87
03-3321	Drainage Works on W/B C'way bet CH3400-3530	26	04MAY05	03JUN05	-50
03-33231	Drainage Works on E/B C'way bet CH3130-3250	50	18MAY05	16JUL05	-87
03-33232	Drainage Works on E/B C'way bet CH3250-3460	50	06JUN05	05AUG05	-95

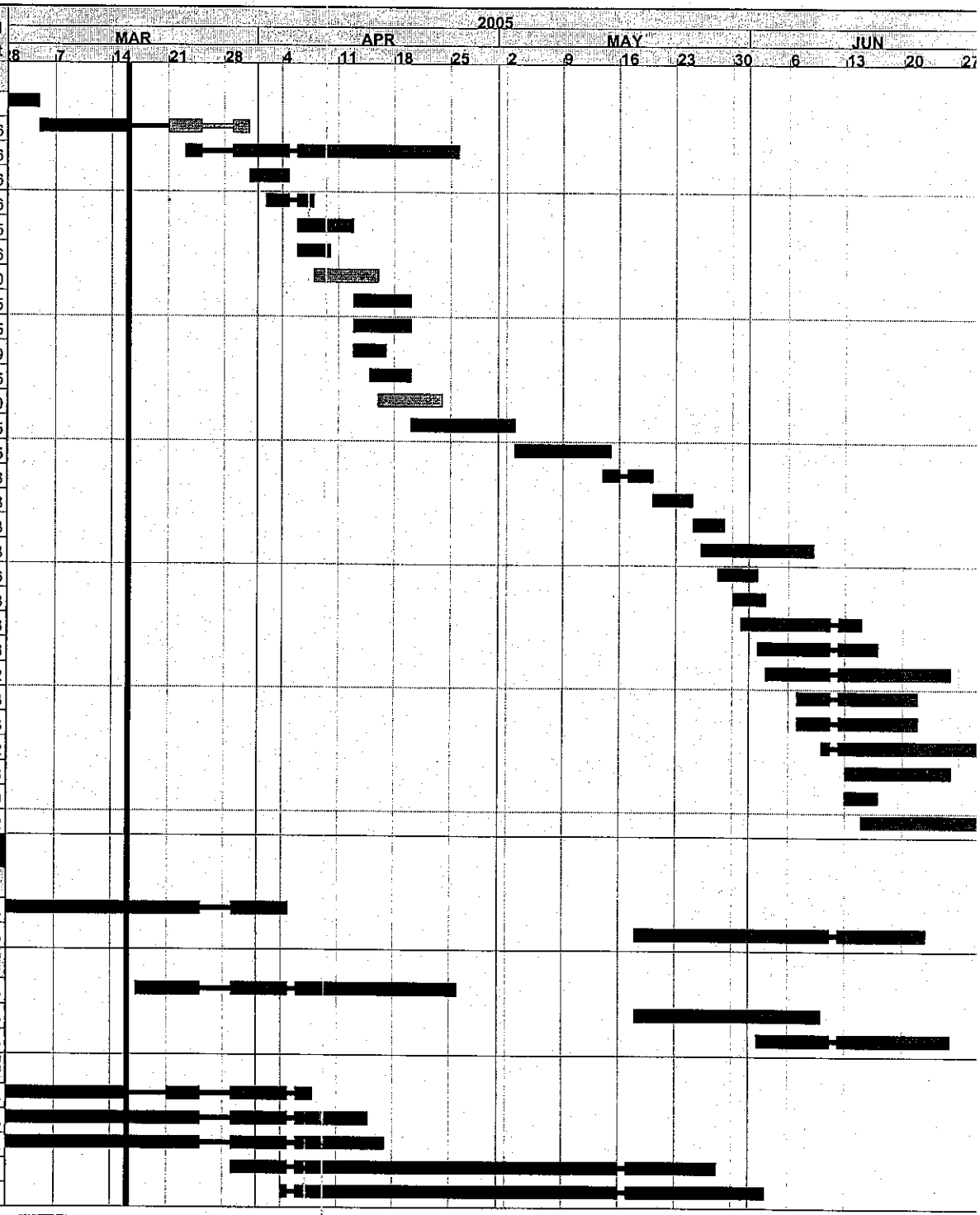


Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
Pipe Works (Local Supply Watermains)					
03-3330	Pipe Works on E/B C'way bet CH3010-3130	30	30MAY05	05JUL05	-87
03-3332	Pipe Works on W/B C'way bet CH3440-3530	13	04JUN05	20JUN05	-50
Road Works					
03-3340	Dragon Garden Accommodation	896*	12APR02A	23APR05	-108
03-334008	Remove Temporary Hoarding & Reinstatement	35	28APR04A	23APR05	40
03-33145	Lay sub-base, kerbs & edgings; W/B CH3300-3400	10	09APR05	20APR05	-95
03-33146	Construct rd pave & f/p; W/B CH3300-3400	10	19APR05	29APR05	-95
03-33161	Divert Traffic on W/B Perma C'way CH3300-3400	0		29APR05	-95
R.E. Wall REV05					
Reinforced Earth Wall REV05					
REV014	L-shaped wall & Plinth	40	03JAN05A	24MAR05	-95
REV016	P1 Parapets	30	03JAN05A	24MAR05	-95
5. Footbridges					
Footbridge FB11					
05-55202	South Columns & column head for FB11; 9 Nos.	40	09DEC03A	22MAR05	-23
05-5550	Construct Ramp for FB11 (South)	60	01FEB05A	27APR05	-23
05-55606	Erect Steelwork & Roofing for FB11 (North)	30	07MAR05A	18APR05	15
05-55504	Construct Stairway for FB11 (South)	30	19MAR05	27APR05	-23
05-55506	Erect Steelwork & Roofing for FB11 (South)	30	28APR05	02JUN05	-23
05-5540	Const./Erect Deck of Main Span for FB11	45	30APR05	23JUN05	-52
6. Retaining Walls					
Reinforced Earth Wall 14					
RE1410	Excavation/Temp. soil nail/Cleaning the base	85	01DEC04A	19MAR05	-87
RE1412	Mass conc./Install panel & mesh/Backfill/coping	60	21MAR05	03JUN05	-87
RE1414	Filling/Trim slope/Drainage & Maint. stair	40	04JUN05	23JUL05	-83
L-Shaped Walls					
06-6580	Construct Retaining Wall RW15	228*	09AUG04A	17MAY05	-50
06-65805	Excavation for RW15; bays 4-6	18	14JAN05A	17MAR05	-50
06-65806	Base/wall for RW15; bays 4-6	40	21FEB05A	15APR05	-45
06-65807	Backfill for RW15; bays 4-6	10	16APR05	27APR05	-45
06-65808	Plinth for RW15; bays 4-6	16	28APR05	17MAY05	-25
8. Culverts and Outfalls					
Culvert - Outfall HB					
08-81020	Temp. Works & Exc. Culvert-Outfall HB (N)	21	10JAN05A	29MAR05	-82
08-810202	Const. Culvert-Outfall HB (Remaining Portion)	30	30MAR05	04MAY05	-82
Culvert-Outfall H					
08-81130	Exc. Culvert-Outfall H (Remaining Portion)	12	18MAR05	04APR05	-50
08-811302	Const. SMHH2; Outfall H	10	06APR05	16APR05	-50
08-811303	Const. 1.65m pipe with conc. suround; Outfall H	10	18APR05	28APR05	-50
08-811304	Const. 1.65m cascade; Outfall H	10	29APR05	10MAY05	-50

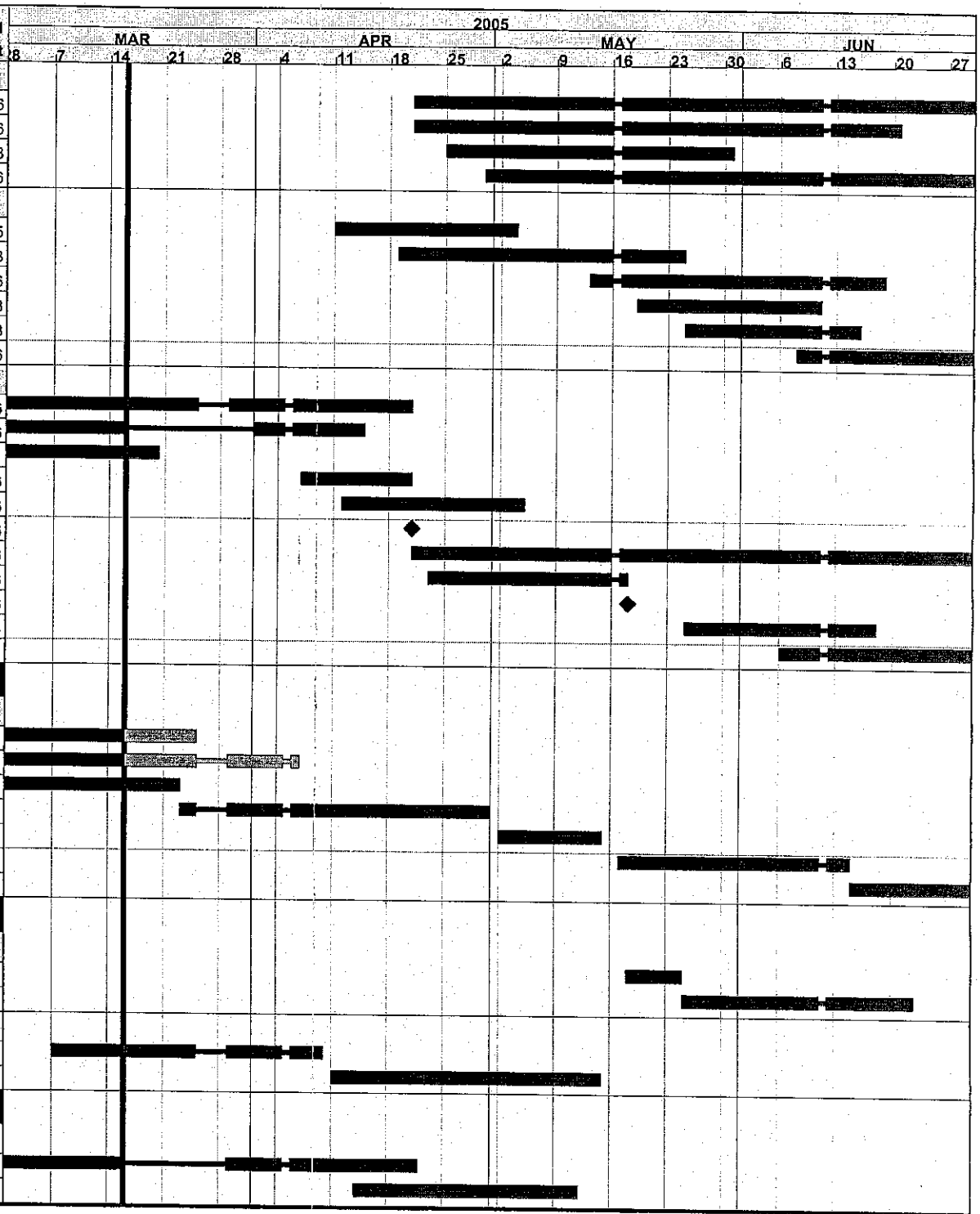
Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
10. Geotechnical & Slope Works					
Existing Slope Works					
10-1092	Remedial Works to Slope No. FR41	492*	26JUL03A	22MAR05	-32
10-10928	Fill behind RW104 & Finishing Work	16	07JAN04A	22MAR05	-32
11. Entrusted Sewerage Works					
Entrusted Sewers/Drains					
11-114001	350mm Twin Rising Mains at CH 3000-3130	40	30MAR05	17MAY05	-87
11-114002	350mm Twin Rising Mains at CH 3130-3250	40	12APR05	28MAY05	-87
11-1140	Sewer at E/B CH3000-3130	40	18MAY05	05JUL05	-87
11-114003	350mm Twin Rising Mains at CH 3250-3460	40	19MAY05	06JUL05	-95
11-11401	Sewer at E/B bet CH3130-3250	40	10JUN05	29JUL05	-87
12. Entrusted Watermains					
Entrusted Water Mains					
12-12212	DN1000FW/Associated Wks(W/B C'way	26	18DEC04A	23MAR05	-33
12-1230	DN1000FW/Associated Wks E/B CH2970-3130	50	03MAR05A	21APR05	-87
12-12301	DN1000FW/Associated Wks E/B CH3130-3250	50	21MAR05	23MAY05	-87
12-1221	DN1000FW/Associated Wks(W/B C'way CH3400-3470	26	18APR05	18MAY05	-50
12-12302	DN1000FW/Associated Wks E/B CH3250-3400	50	30APR05	29JUN05	-95
13. Reprovisioning of LCSD & FEHD Facilities					
FEHD Facilities					
13-13212	Drainage System for RCP E; SI 357	24	21FEB05A	22MAR05	-84
Stairways					
13-1332	Construct Stairway ST07	122*	25OCT04A	22MAR05	-32
13-13328	Finishing & railing; ST07	12	17JAN05A	22MAR05	-32
14. Landscape Works					
Landscape Softworks					
14-14101	Landscape Works bet CH3010-3730	150	04JUN05	02DEC05	-95
18. Variation Works					
New Slope No. 9					
10-10536	Drainage at Crest & West End of Slope(VO 412)	12	16MAR05	01APR05	46
New Slope No. 11					
10-10757	Reprovsion of B. Fence; V.O. No. 133	45	07FEB04A	01APR05	58
Culvert-Outfall IA					
08-81235	Backfill & M. Stairway	6	07FEB05A	05MAR05A	
08-81238	Reinstate Slope/Drainage incl. Hydroseeding	12	01MAR05A	18MAR05	40
Vehicular Parapets					
VO-24960	Additional Vehicular Parapets at CH 3400-3425	18	03MAY05	24MAY05	-25
CPR from Chainage 3+730 to Chainage 4+470					
1. Preliminaries					
Proposed Utility Works					
01-12471	Additional Gasmain on E/B C.way CH4330-4470	21	07DEC04A	07APR05	-84



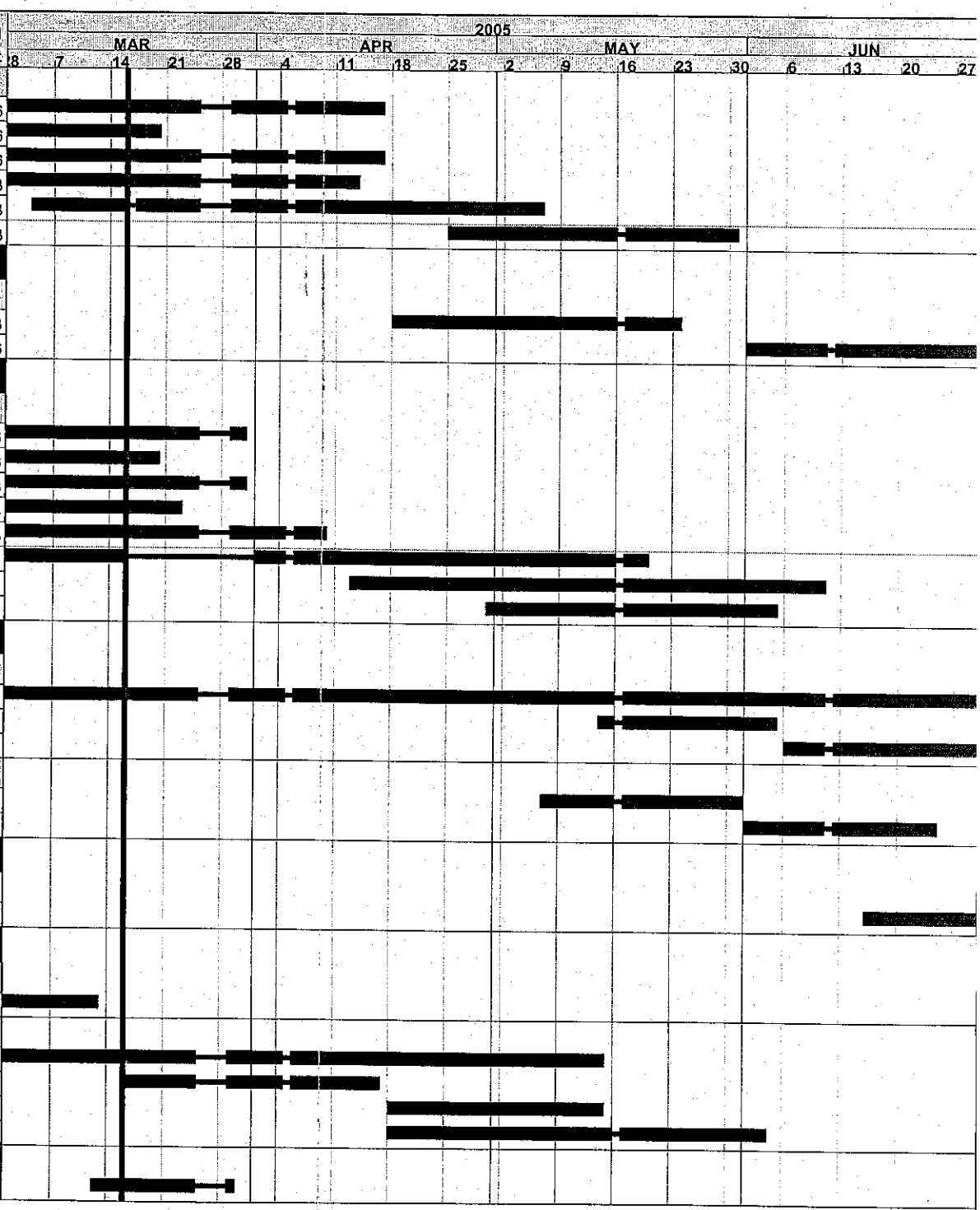
Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
Proposed Utility Works					
01-1247383	CLP C. Rd. Ducts at E/B Slow Lane CH4320	4	26FEB05A	04MAR05A	
01-124738	Proposed CLP on E/B C.way CH4330-4470	7	05MAR05A	30MAR05	46
01-1244	Proposed Gasmain on W/B C.way CH3670-3850	25	23MAR05	25APR05	-96
01-124842	HKT Cross Rd. Ducts at E/B Slow Lane CH4363	4	31MAR05	04APR05	-86
01-1247352	HT Cross Rd. Ducts at E/B Slow Lane CH4361	4	02APR05	07APR05	-86
01-124442	Proposed CLP on W/B C.way CH3850-3910	6	06APR05	12APR05	-95
01-1247381	CATV Cross Rd. Ducts at Slow Lane E/B CH4374	4	06APR05	09APR05	-86
01-124733	Proposed CATV on E/B C.way CH4330-4470	7	08APR05	15APR05	40
01-124432	Proposed HKT on W/B C.way CH3850-3910	6	13APR05	19APR05	-95
01-124434	Proposed HKBN on W/B C.way CH3850-3910	6	13APR05	19APR05	-95
01-124554	HKT Cross Rd. Ducts at W/B CH3670	4	13APR05	16APR05	-89
01-124431	HKBN Cross Rd. Ducts at W/B CH3870	4	15APR05	19APR05	-95
01-124735	Proposed HT on E/B C.way CH4330-4470	7	16APR05	23APR05	40
01-12444	Proposed CLP on W/B C.way CH3630-3850	11	20APR05	02MAY05	-95
01-12443	Proposed HKT on W/B C.way CH3630-3850	11	03MAY05	14MAY05	-95
01-124631	CLP Cross Rd. Ducts at W/B CH3970	4	14MAY05	19MAY05	-108
01-124633	CLP Cross Rd. Ducts at W/B CH4100	4	20MAY05	24MAY05	-108
01-124621	HKT Cross Rd. Ducts at W/B CH4133	4	25MAY05	28MAY05	-108
01-1257	Proposed Gasmain on E/B C.way CH3850-3900	12	26MAY05	08JUN05	-108
01-124635	CLP Cross Rd. Ducts at W/B CH4180	4	28MAY05	01JUN05	-96
01-124964	HKT Cross Rd. Ducts at W/B CH3970	4	30MAY05	02JUN05	-108
01-12472	Proposed NWT on E/B C.way CH3900	12	31MAY05	14JUN05	-108
01-12481	Proposed CATV on E/B C.way CH3850-3900	12	02JUN05	16JUN05	-108
01-12463	Proposed CLP on W/B C.way CH3910-4330	19	03JUN05	25JUN05	-102
01-124812	Proposed HKBN on E/B C.way CH3670-3850	12	07JUN05	21JUN05	-108
01-12494	Proposed HKT on E/B C.way CH3850-3900	12	07JUN05	21JUN05	-108
01-12462	Proposed HKT on W/B C. say CH3910-4330	19	10JUN05	04JUL05	-102
01-12482	Proposed HT on E/B C.way CH3850-3900	12	13JUN05	25JUN05	-108
01-124844	HKT Cross Rd. Ducts at W/B CH4363	4	13JUN05	16JUN05	-69
01-124622	Proposed HKBN on W/B C.way CH3910-4330	19	15JUN05	07JUL05	-102
3. Roadworks					
Utility Diversion					
03-34506	Expose/protect UUs at E/B CH 3850-3900	30	01FEB05A	04APR05	-108
03-34505	Expose/protect UUs at E/B CH 3630-3850	30	18MAY05	22JUN05	-96
Earthworks					
03-3401	Road formation at W/B C'way CH3630-3850	30	17MAR05	25APR05	-96
03-3402	Road Formation at W/B CH3950-4150	20	18MAY05	09JUN05	-108
03-34022	Road Formation at W/B CH4150-4330	20	02JUN05	25JUN05	-96
Drainage Works					
03-3465	Construct drainage/backfill at E/B CH4300-4470	148	25AUG04A	07APR05	-86
03-34201	Drainage Works at W/B C'way CH3610-3700	30	24JAN05A	14APR05	-95
03-3420	Drainage Works at W/B C'way CH3700-3850	30	07FEB05A	16APR05	-96
03-34212	Drainage Works at W/B C'way CH4150-4330	50	29MAR05	27MAY05	-96
03-3421	Drainage Works at W/B C'way CH3950-4150	50	04APR05	02JUN05	-108



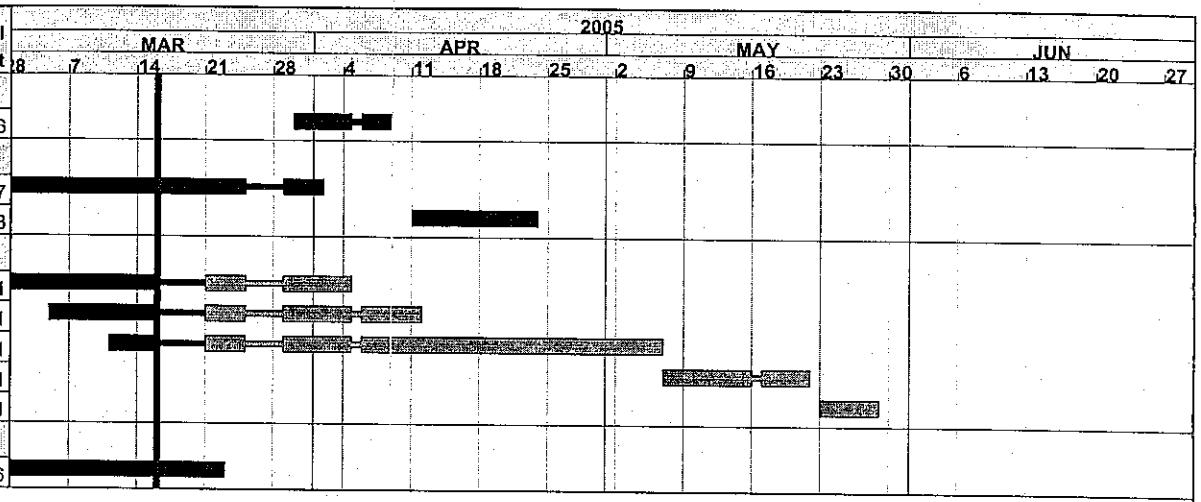
Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
Drainage Works					
03-3425	Drainage Works at W/B C'way CH4330-4470	58*	21APR05	29JUN05	-86
03-34252	Trial pits/Shet piling/excavate for drainage	50	21APR05	20JUN05	-86
03-3423	Drainage Works at E/B C'way CH3850-3900	30	25APR05	30MAY05	-108
03-34254	Construct drainage/backfill at W/B CH4330-4470	50	30APR05	29JUN05	-86
Pipe Works (Local Supply Watermains)					
03-34310	Pipe Works at W/B C'way bet CH3600-3700	20	11APR05	03MAY05	-95
03-3434	Pipe Works at W/B C'way bet CH3950-4150	30	19APR05	24MAY05	-108
03-34342	Pipe Works at W/B C'way bet CH4150-4330	30	13MAY05	18JUN05	-96
03-3440	Pipe Works at E/B C'way bet CH3850-3900	20	19MAY05	10JUN05	-108
03-34341	Pipe Testing & Connection at CH3950-4150	18	25MAY05	15JUN05	-108
03-3441	Pipe Works at W/B C'way bet CH4330-4370	30	08JUN05	14JUL05	-86
Road Works					
03-34534	Stage 3 TTA (works at E/B slow lane)	219*	23JUL04A	20APR05	-86
03-34561	lay sub-base, kerbs & edgings; E/B CH4330-4470	12	15DEC04A	14APR05	-86
03-34556	Construct rd pave; R10	8	20DEC04A	19MAR05	-61
03-345423	Construct rd pave & f/p; E/B CH4330-4470	12	07APR05	20APR05	-86
03-3450	Lay sub-base, kerbs & edgings; W/B CH3630-3850	20	12APR05	04MAY05	-96
03-3412	Divert Traffic to E/B C'way CH4330-4470	0		20APR05	-86
03-34535	Stage 4 TTA (works at W/B carriage way)	88*	21APR05	05AUG05	-86
03-34502	Construct rd pave & f/p; W/B CH3630-3850	20	23APR05	17MAY05	-96
03-3452	Divert Traffic to W/B Perma C'way CH3630-3850	0		17MAY05	-96
03-3451	Lay sub-base, kerbs & edgings; W/B CH3950-44150	20	25MAY05	17JUN05	-108
03-34512	Construct rd pave & f/p; W/B CH3950-4150	20	06JUN05	29JUN05	-108
5. Footbridges					
Footbridge FB03					
05-54606	Erect Steelwork & Roofing for FB03 (North)	30	08NOV04A	24MAR05	17
05-54508	Erect Steelwork & Roofing for FB03 (South)	30	08JAN05A	06APR05	10
05-54121	GI Report/Receive Founding Levels; FB03(M)	12	17FEB05A	22MAR05	-97
05-54122	Piling and Pile Testing (2 Nos.); FB03 (Middle)	30	23MAR05	30APR05	-97
05-54123	Middle Pile cap for FB01; 1 Nos.	12	02MAY05	14MAY05	-97
05-54124	Middle Column & Column head for FB01	24	17MAY05	14JUN05	-97
05-5440	Const./Erect Deck of Main Span for FB03	50	15JUN05	13AUG05	-97
8. Culverts and Outfalls					
Culvert-Outfall IB					
08-81510	Exc. Culvert-Outfall IB (within E/B of CPR)	6	18MAY05	24MAY05	-89
08-815102	Const. Culvert-Outfall IB (within E/B of CPR)	24	25MAY05	22JUN05	-89
Culvert-Outfall I					
08-81330	Excavate Culvert bays 5-7; Outfall I	24	07MAR05A	09APR05	-108
08-813302	Const. Culvert bays 5-7; Outfall I	30	11APR05	14MAY05	-108
9. Seawalls and Marine Works					
Seawall C (460 m Length)					
09-9264	Granular Fill behind RW-C; Bays 25-33	24	28FEB05A	21APR05	-96
09-9262	Granular Fill behind RW-C; Bays 1-6/17-24	24	14APR05	11MAY05	-108



Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
L-Shaped Walls					
09-9250	Construct Retaining Wall RW-C	359*	29JAN04A	16APR05	-96
09-925072	Protect slope/excavate for RW-C;Bays 25-33	60	13NOV04A	19MAR05	-96
09-92509	Construct Retaining Wall RW-C; bay 25-33	50	08JAN05A	16APR05	-96
09-925073	Protect slope/excavate for RW-C;Bays 5-6/17-21	40	10JAN05A	13APR05	-108
09-925092	Construct Retaining Wall RW-C; bay 4-6/17-21	48	04MAR05A	06MAY05	-108
09-925062	Construct Retaining Wall RW-C; bays 1-2	30	25APR05	30MAY05	-103
11. Entrusted Sewerage Works					
Entrusted Sewers/Drains					
11-1123	Sewer Works at E/B C'way bet CH3850-3900	30	18APR05	23MAY05	-108
11-1122	Sewer Works at E/B C'way bet CH3670-3850	45	01JUN05	26JUL05	-96
12. Entrusted Watermains					
Entrusted Water Mains					
12-1225	DN1000FW/Associated Wks E/B bet CH4320-4470	202*	23JUL04A	30MAR05	-86
12-12252	Trial pits/Sheet piling/excavate at CH4320-4470	161	23JUL04A	19MAR05	-86
12-12254	DN1000FW/Associated E/B Wks bet CH 4320-4470	152	13AUG04A	30MAR05	-86
12-1222	DN1000FW/Associated Wks W/B bet CH3700-3850	30	10JAN05A	22MAR05	-96
12-12221	DN1000FW/Associated Wks W/B bet CH3610-3700	30	22FEB05A	09APR05	-95
12-1223	DN1000FW/Associated Wks W/B bet CH3910-4150	48	23FEB05A	19MAY05	-108
12-12232	DN1000FW/Associated Wks W/B bet CH4150-4300	50	13APR05	10JUN05	-96
12-1224	DN1000FW/Associated Wks W/B bet CH4300-4320	30	30APR05	04JUN05	-84
13. Reprovisioning of LCSD & FEHD Facilities					
FEHD Facilities					
13-1350	Reprovision Pavillion & Pai Lau	469*	22DEC03A	27JUL05	-108
13-1353	Substructure of Pavilion	18	14MAY05	04JUN05	-108
13-1354	Superstructure of Pavilion	42	06JUN05	27JUL05	-108
Stairways					
13-1334	Construct Stairway ST09	20	07MAY05	31MAY05	-11
13-1335	Construct Stairway ST09A	20	01JUN05	24JUN05	-11
14. Landscape Works					
Landscape Softworks					
14-14102	Landscape Works bet CH3730-4470	150	16JUN05	13DEC05	-104
18. Variation Works					
Footbridge FB03					
03-340027	Reprovision of L.A. No.12	12	10DEC04A	12MAR05A	
Stairways					
13-1336	Const. New Pavilion/ret. wall/stair; VO 211	146*	15NOV04A	14MAY05	-62
13-13364	Const. RW-C1; VO 211	24	16MAR05	16APR05	-62
13-13366	Const. New Pavilion/stair; VO 211	24	18APR05	14MAY05	-62
13-1337	Const. cantilever walkway, RWC bay 29-33; VO 211	40	18APR05	03JUN05	-78
Additional Outfall MI; VO 244					
08-81826	Excavation for 675mm twin pipes at exist. CPR	12	12MAR05A	29MAR05	-86



Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
Additional Outfall MI; VO 244					
08-81827	Construct 675mm twin pipes at exist. CPR	8	30MAR05	08APR05	-86
Additional Works at RW-C; Bays 2-4					
VO-39508	Temp. works/Excavation/Mass concrete; Bay 4	30	24JAN05A	01APR05	-97
VO-39509	Temp. works/Excavation/Mass concrete; Bay 2	12	11APR05	23APR05	-103
Remedial Works to Existing Feature No. 6SE-C/C22					
VO-30904	Remove existing shortcrete	12	28FEB05A	04APR05	11
VO-30906	Construct 12 nos. test nails	18	05MAR05A	11APR05	11
VO-30908	Construct 202 nos. soil nails	40	11MAR05A	06MAY05	11
VO-30910	Construct drainage & maint. stairway	12	07MAY05	21MAY05	11
VO-30912	Lay erosoin mat and hydroseeding	6	23MAY05	28MAY05	11
Vehicular Parapets					
VO-24970	Additional Vehicular Parapets at CH 3735-3850	30	25FEB05A	22MAR05	-96



APPENDIX C

Monitoring schedule for March 2005 and April 2005

Environmental Monitoring and Audit Schedule - March 2005

Note 1: **L30** denotes $L_{eq(30\ min)}$ monitoring
Note 2: **TSP** denotes Total Suspended Particulate monitoring
Note 3: **MW** denotes Marine Water Quality monitoring
Note 4: **L&V** denotes Landscape and Visual audit and monitoring

Mar-2005						
Sunday	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
		1 L30 3 x 1-hour TSP	2 24-hour TSP	3 Site Inpsection + L&V x	4	5
6	7	8 L30 3 x 1-hour TSP 24-hour TSP	9 x	10 Site Inpsection	11	12
13	14 L30 3 x 1-hour TSP 24-hour TSP	15 x	16	17 Site Inpsection + L&V	18 3 x 1-hour TSP	19 24-hour TSP
20	21 x	22	23 24-hour TSP	24 L30 3 x 1-hour TSP Site Inpsection + L&V	25	26
27 x	28	29 L30 3 x 1-hour TSP	30 24-hour TSP	31 Site Inpsection		

Tentative Environmental Monitoring and Audit Schedule - April 2005

Note 1: **L30** denotes $L_{eq(30\ min)}$ monitoring
Note 2: **TSP** denotes Total Suspended Particulate monitoring
Note 3: **MW** denotes Marine Water Quality monitoring
Note 4: **L&V** denotes Landscape and Visual audit and monitoring

Apr-2005						
Sunday	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
					1	2 x
3	4 L30 3 x 1-hour TSP	5	6 24-hour TSP	7 Site Inpsection	8 x	9
10	11	12 24-hour TSP L30 3 x 1-hour TSP	13	14 Site Inpsection + L&V x	15 3 x 1-hour TSP	16
17	18 24-hour TSP	19	20 x	21 L30 3 x 1-hour TSP Site Inpsection	22	23 24-hour TSP
24	25	26 x	27 L30 + 3 x 1-hour TSP	28 Site Inpsection + L&V	29 24-hour TSP	30 x

APPENDIX D

Calibration certificates of 24-hour TSP monitoring equipment

Ove Arup Partners (Hong Kong) Limited

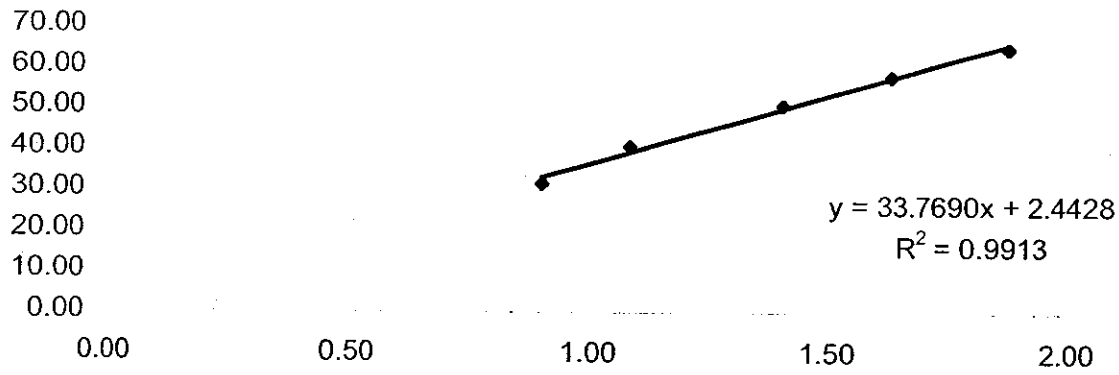
High Volume Air Sampler Calibration Worksheet

Calibration date	31-Jan-05	**Barometric pressure**	762 mm Hg
Calibration due date	01-Apr-05	**Tempature (°C)**	18 °C
Sampler location	WA3 - Hong Kong Garden (Regent Heights)	**Tempature (K)**	291 K
Sampler model	TE-5170	**P_{std}**	760 mm Hg
Sampler serial number	0505	**T_{std}**	298 K

Calibrator model	GMW-2535
Calibrator serial number	1201
Slope of the standard curve, m_s	1.93285
Intercept of the standard curve, b_s	0.00398

Resistance Plate No.	Manometer Reading (inch H_2O)	Flow Recorder Reading (CFM)	Calculated Q_{std} (m^3/min)	Continuous Flow Recorder Reading IC (CFM)
5	3.00	31.00	0.91	31.41
7	4.30	40.00	1.09	40.53
10	7.20	50.00	1.40	50.66
13	9.70	57.00	1.63	57.76
18	12.80	64.00	1.87	64.85

Calibration Curve



Linear Regression

Sampler slope (m) :	**33.7690**
Sampler intercept (b) :	**2.4428**
Correlation coefficient (R^2) :	**0.9913**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____ Date: 31-1-05

Checked by: _____ Date: 1-2-05

Ove Arup Partners (Hong Kong) Limited

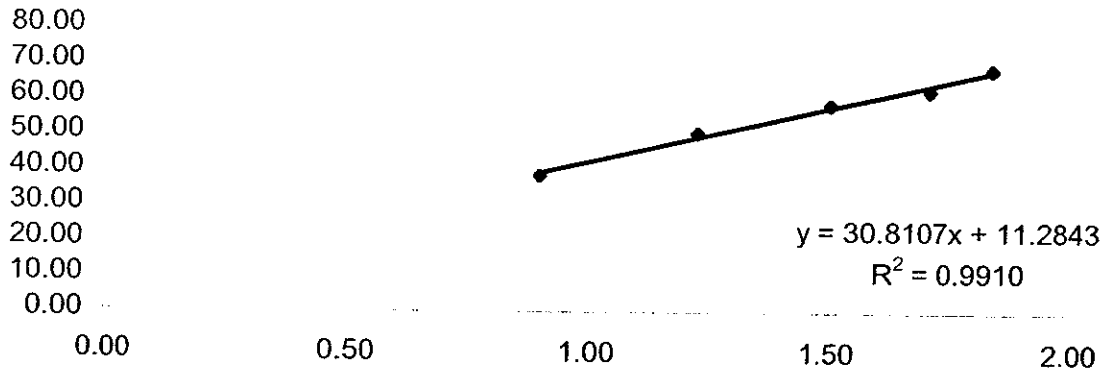
High Volume Air Sampler Calibration Worksheet

Calibration date	24-Feb-05	**Barometric pressure**	757.5 mm Hg
Calibration due date	25-Apr-05	**Tempature (°C)**	20 °C
Sampler location	WA4 - Hong Kong Garden (Between Blk1 & Blk2)	**Tempature (K)**	293 K
Sampler model	TE-5170	**P_{std}**	760 mm Hg
Sampler serial number	0512	**T_{std}**	298 K

Calibrator model	GMW-2535
Calibrator serial number	1201
Slope of the standard curve, m_s	1.93285
Intercept of the standard curve, b_s	0.00398

Resistance Plate No.	Manometer Reading (inch H_2O)	Flow Recorder Reading (CFM)	Calculated Q_{std} (m^3/min)	Continuous Flow Recorder Reading IC (CFM)
5	3.00	38.00	0.90	38.26
7	5.60	50.00	1.23	50.34
10	8.40	58.00	1.51	58.40
13	10.80	62.00	1.71	62.42
18	12.50	68.00	1.84	68.46

Calibration Curve



Linear Regression

Sampler slope (m) : **30.8107**
Sampler intercept (b) : **11.2843**
Correlation coefficient (R^2) : **0.9910**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____ Date: 24-2-2005

Checked by: _____ Date: 25-2-2005

Ove Arup Partners (Hong Kong) Limited

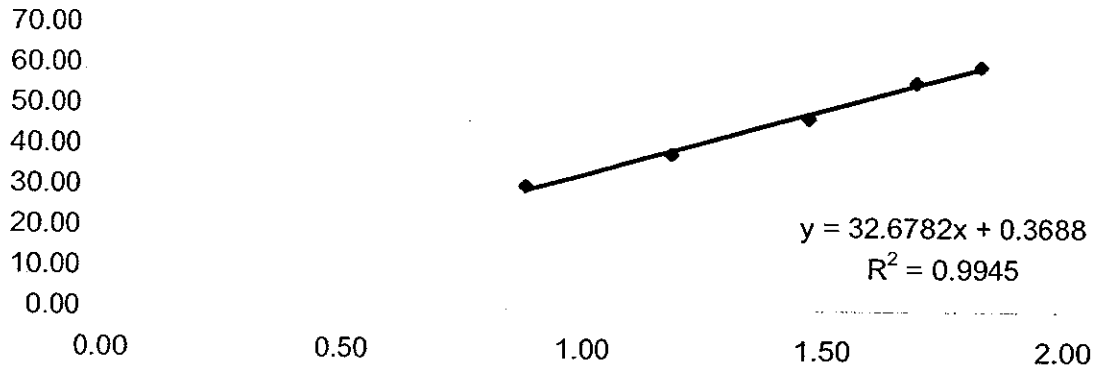
High Volume Air Sampler Calibration Worksheet

Calibration date	24-Feb-05	**Barometric pressure**	757.5 mm Hg
Calibration due date	25-Apr-05	**Tempature (°C)**	20 °C
Sampler location	WA5 - Hong Kong Garden (Blk4)	**Tempature (K)**	293 K
Sampler model	TE-5170	P_{std}	760 mm Hg
Sampler serial number	0511	T_{std}	298 K

Calibrator model	GMW-2535
Calibrator serial number	1201
Slope of the standard curve, m_s	1.93285
Intercept of the standard curve, b_s	0.00398

Resistance Plate No.	Manometer Reading (inch H_2O)	Flow Recorder Reading (CFM)	Calculated Q_{std} (m^3/min)	Continuous Flow Recorder Reading IC (CFM)
5	2.90	30.00	0.89	30.21
7	5.20	38.00	1.19	38.26
10	8.00	47.00	1.47	47.32
13	10.60	56.00	1.69	56.38
18	12.30	60.00	1.82	60.41

Calibration Curve



Linear Regression

Sampler slope (m) :	**32.6782**
Sampler intercept (b) :	**0.3688**
Correlation coefficient (R^2) :	**0.9945**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____ Date: 24-2-2005

Checked by: _____ Date: 25.2.2005

Ove Arup Partners (Hong Kong) Limited

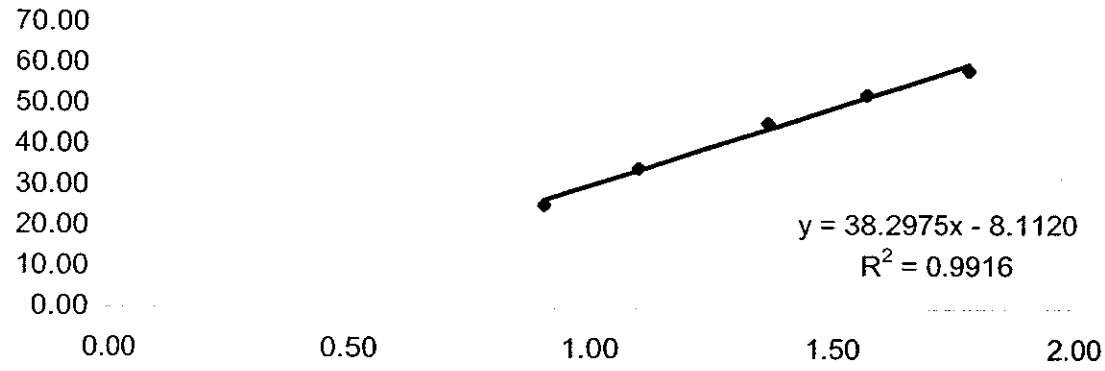
High Volume Air Sampler Calibration Worksheet

Calibration date	31-Jan-05	**Barometric pressure**	762 mm Hg
Calibration due date	01-Apr-05	**Tempature (°C)**	18 °C
Sampler location	WA6 - Tsing Lung Tau Temple	**Tempature (K)**	291 K
Sampler model	TE-5170	**P_{std}**	760 mm Hg
Sampler serial number	0529	**T_{std}**	298 K

Calibrator model	GMW-2535
Calibrator serial number	1201
Slope of the standard curve, m_s	1.93285
Intercept of the standard curve, b_s	0.00398

Resistance Plate No.	Manometer Reading (inch H_2O)	Flow Recorder Reading (CFM)	Calculated Q_{std} (m^3/min)	Continuous Flow Recorder Reading IC (CFM)
5	3.00	25.00	0.91	25.33
7	4.40	34.00	1.10	34.45
10	6.80	45.00	1.37	45.60
13	9.00	52.00	1.57	52.69
18	11.58	58.00	1.78	58.77

Calibration Curve



Linear Regression

Sampler slope (m) :	**38.2975**
Sampler intercept (b) :	**-8.1120**
Correlation coefficient (R^2) :	**0.9916**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____ Date: 31-1-05

Checked by: _____ Date: 1-2-05

Ove Arup Partners (Hong Kong) Limited

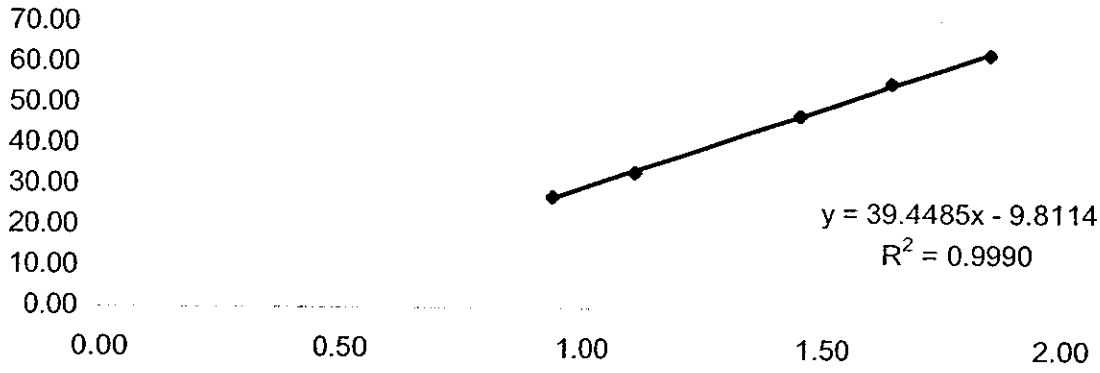
High Volume Air Sampler Calibration Worksheet

Calibration date	31-Jan-05	**Barometric pressure**	762 mm Hg
Calibration due date	01-Apr-05	**Tempature (°C)**	18 °C
Sampler location	WA7 - Sea Crest Villa (Phase 4 Blk 12)	**Tempature (K)**	291 K
Sampler model	TE-5170	P_{std}	760 mm Hg
Sampler serial number	0517	T_{std}	298 K

Calibrator model	GMW-2541
Calibrator serial number	1201
Slope of the standard curve, m_s	1.93285
Intercept of the standard curve, b_s	0.00398

Resistance Plate No.	Manometer Reading (inch H_2O)	Flow Recorder Reading (CFM)	Calculated Q_{std} (m^3/min)	Continuous Flow Recorder Reading IC (CFM)
5	3.20	27.00	0.94	27.36
7	4.50	33.00	1.11	33.44
10	7.70	47.00	1.45	47.62
13	9.90	55.00	1.65	55.73
18	12.50	62.00	1.85	62.82

Calibration Curve



Linear Regression

Sampler slope (m) :	**39.4485**
Sampler intercept (b) :	**-9.8114**
Correlation coefficient (R^2) :	**0.9990**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____ Date: 31-1-05

Checked by: _____ Date: 1-2-05

Ove Arup Partners (Hong Kong) Limited

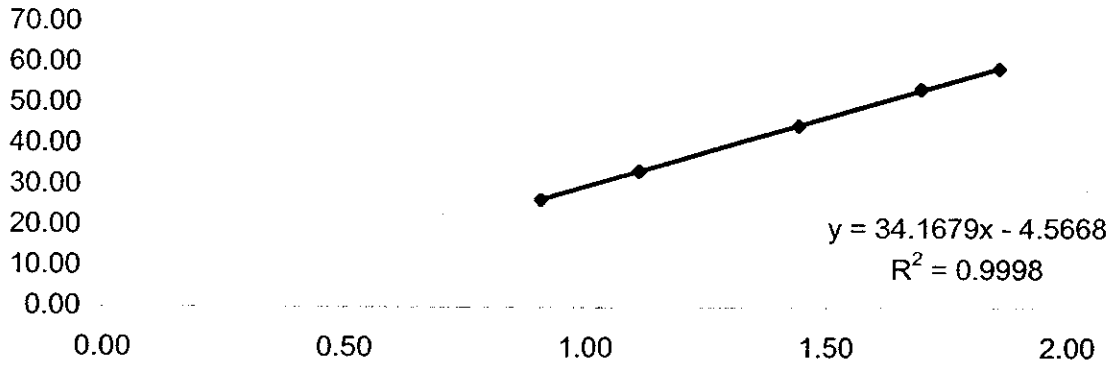
High Volume Air Sampler Calibration Worksheet

Calibration date	31-Jan-05	**Barometric pressure**	762 mm Hg
Calibration due date	01-Apr-05	**Tempature (°C)**	18 °C
Sampler location	WA8 - Sea Crest Villa (Phase 3 Block 8)	**Tempature (K)**	291 K
Sampler model	TE-5170	**P_{std}**	760 mm Hg
Sampler serial number	0526	**T_{std}**	298 K

Calibrator model	GMW-2535
Calibrator serial number	1201
Slope of the standard curve, m_s	1.93285
Intercept of the standard curve, b_s	0.00398

Resistance Plate No.	Manometer Reading (inch H_2O)	Flow Recorder Reading (CFM)	Calculated Q_{std} (m^3/min)	Continuous Flow Recorder Reading IC (CFM)
5	3.00	26.00	0.91	26.35
7	4.50	33.00	1.11	33.44
10	7.60	44.00	1.44	44.58
13	10.50	53.00	1.70	53.70
18	12.60	58.00	1.86	58.77

Calibration Curve



Linear Regression

Sampler slope (m) :	**34.1679**
Sampler intercept (b) :	**-4.5668**
Correlation coefficient (R^2) :	**0.9998**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____ Date: 31-1-05

Checked by: _____ Date: 1-2-05

Ove Arup Partners (Hong Kong) Limited

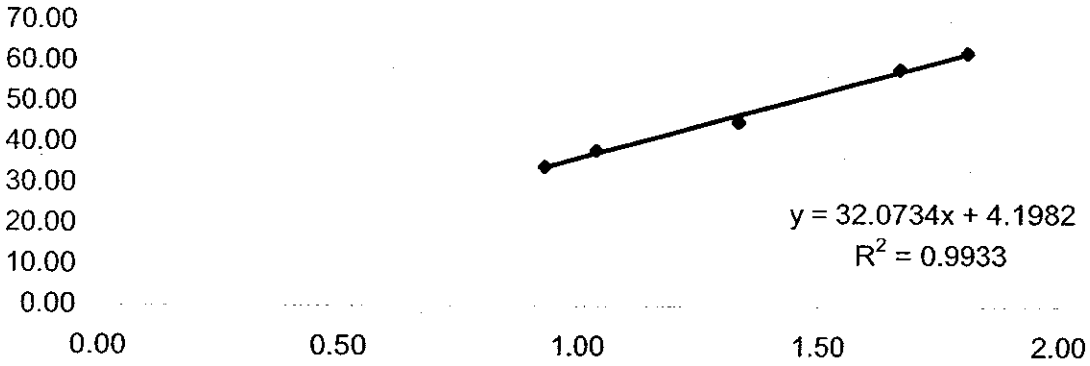
High Volume Air Sampler Calibration Worksheet

Calibration date	24-Feb-05	**Barometric pressure**	757.5 mm Hg
Calibration due date	25-Apr-05	**Tempature (°C)**	20 °C
Sampler location	WA9 - Sea Crest Villa (Phase 2 Blk 6)	**Tempature (K)**	293 K
Sampler model	TE-5170	**P_{std}**	760 mm Hg
Sampler serial number	0523	**T_{std}**	298 K

Calibrator model	GMW-2535
Calibrator serial number	1201
Slope of the standard curve, m_s	1.93285
Intercept of the standard curve, b_s	0.00398

Resistance Plate No.	Manometer Reading (inch H_2O)	Flow Recorder Reading (CFM)	Calculated Q_{std} (m^3/min)	Continuous Flow Recorder Reading IC (CFM)
5	3.20	34.00	0.93	34.23
7	4.00	38.00	1.04	38.26
10	6.60	45.00	1.34	45.31
13	10.30	58.00	1.67	58.40
18	12.10	62.00	1.81	62.42

Calibration Curve



Linear Regression

Sampler slope (m) :	**32.0734**
Sampler intercept (b) :	**4.1982**
Correlation coefficient (R^2) :	**0.9933**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____ Date: 24-2-2005

Checked by: _____ Date: 25.2.2005

G:\env\project\23437\env_data\dust\WCP09-0523\0523-Worksheet

Ove Arup Partners (Hong Kong) Limited

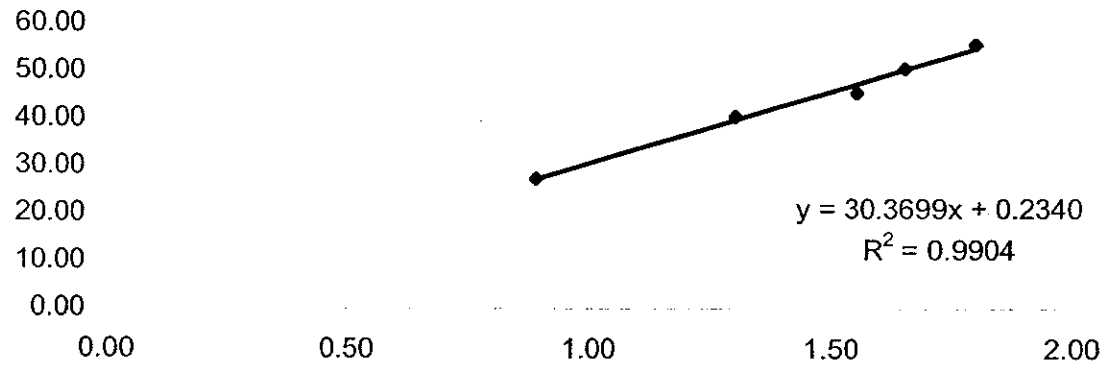
High Volume Air Sampler Calibration Worksheet

Calibration date	31-Jan-05	**Barometric pressure**	762 mm Hg
Calibration due date	01-Apr-05	**Tempature (°C)**	18 °C
Sampler location	WA10 - Sea Crest Villa (Phase 1 Blk 1)	**Tempature (K)**	291 K
Sampler model	TE-5170	**P_{std}**	760 mm Hg
Sampler serial number	0507	**T_{std}**	298 K

Calibrator model	GMW-2535
Calibrator serial number	1201
Slope of the standard curve, m_s	1.93285
Intercept of the standard curve, b_s	0.00398

Resistance Plate No.	Manometer Reading (inch H_2O)	Flow Recorder Reading (CFM)	Calculated Q_{std} (m^3/min)	Continuous Flow Recorder Reading IC (CFM)
5	2.90	27.00	0.89	27.36
7	6.20	40.00	1.30	40.53
10	8.80	45.00	1.55	45.60
13	10.00	50.00	1.66	50.66
18	11.80	55.00	1.80	55.73

Calibration Curve



Linear Regression

Sampler slope (m) :	**30.3699**
Sampler intercept (b) :	**0.2340**
Correlation coefficient (R^2) :	**0.9904**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____ Date: 31-1-05

Checked by: _____ Date: 1-2-05

Ove Arup Partners (Hong Kong) Limited

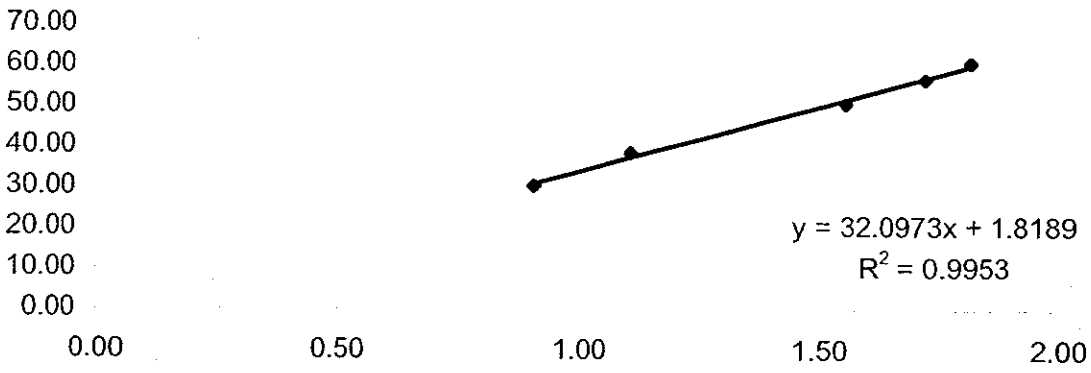
High Volume Air Sampler Calibration Worksheet

Calibration date	31-Jan-05	**Barometric pressure**	762 mm Hg
Calibration due date	01-Apr-05	**Tempature (°C)**	18 °C
Sampler location	WA11 - Lido Garden Tower 1	**Tempature (K)**	291 K
Sampler model	TE-5170	P_{std}	760 mm Hg
Sampler serial number	0521	T_{std}	298 K

Calibrator model	GMW-2535
Calibrator serial number	1201
Slope of the standard curve, m_s	1.93285
Intercept of the standard curve, b_s	0.00398

Resistance Plate No.	Manometer Reading (inch H_2O)	Flow Recorder Reading (CFM)	Calculated Q_{std} (m^3/min)	Continuous Flow Recorder Reading IC (CFM)
5	3.00	30.00	0.91	30.40
7	4.50	38.00	1.11	38.50
10	8.80	50.00	1.55	50.66
13	10.80	56.00	1.72	56.74
18	12.00	60.00	1.81	60.80

Calibration Curve



Linear Regression

Sampler slope (m) :	**32.0973**
Sampler intercept (b) :	**1.8189**
Correlation coefficient (R^2) :	**0.9953**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: _____ Date: 31-1-05

Checked by: _____ Date: 1-2-05

G:\env\project\23437\env_data\dust\WCP11-0521\0521-Worksheet

APPENDIX E

Calibration certificates of 1-hour TSP monitoring equipment

MIE

Thermo Andersen
500 Technology Ct., Smyrna, GA 30082
Toll-Free: 1-800-241-6898 Tel: 770-319-9999
Fax: 770-319-0336 www.Thermoandersen.com

*Personal*DataRAM Calibration Certificate

Record the serial number	S/N 3809
Record the calibration ratio:	.993
Record the average pDR concentration:	1132 µg/m³
Record the calibration Master average concentration:	841 µg/m³
Record the pDR background concentration:	299 µg/m³
Temperature	77 °F
Humidity	37 %
Technician:	Date: 10-31-2002

Rev. 5/01

Thermo Andersen

500 Technology Court
Smyrna, GA 30082-5211

(770) 319-9999
Fax: (770) 319-0336
www.thermoandersen.com

PERSONAL DATA RAM CALIBRATION CERTIFICATE

Record Serial #----------4239

Record Calibration Ratio----------1.014

Record Average PDR Concentration----------2045

Record Calibration Master average concentration—1830

Record the PDR background concentration----------192

Temperature----------79

Humidity----------25

Technician: J.G.
Date: 12-17-02

MIE

Thermo Andersen
500 Technology Ct., Smyrna, GA 30082
Toll-Free: 1-800-241-6898 Tel: 770-319-9999
Fax: 770-319-0336 www.Thermoandersen.com

*Personal*DataRAM Calibration Certificate

Record the serial number	S/N 4243
Record the calibration ratio:	1.005
Record the average pDR concentration:	1988 ug/m³
Record the calibration Master average concentration:	1780 ug/m³
Record the pDR background concentration:	204 ug/m³
Temperature	77 °F
Humidity	36 %
Technician: J. B	Date: 10-31-2002

Rev. 5/01

THERMO ELECTRON
27 FORGE PARKWAY
FRANKLIN MA 02038
TOLL-FREE: 866-282-0430
TEL: 508-553-6949
FAX: 508-541-8366
WWW.THERMO.COM

MASTER # 2026

PERSONAL DATARAM CALIBRATION CERTIFICATE

SERIAL NUMBER:	4492
CALIBRATION RATIO:	1/002
AVG. PDR-1000 CONCENTRATION:	822 ug/m3
CALIBRATION MASTER AVG. CONCENTRATION:	653 ug/m3
PDR BACKROUND CONCENTRATION:	166 ug/m3
TEMPERATURE:	74F
HUMIDITY:	53%

TECHNICIAN: RAMON

DATE: 6/12/03

MIE

Thermo Andersen
500 Technology Ct., Smyrna, GA 30082
Toll-Free: 1-800-241-6898 Tel: 770-319-9999
Fax: 770-319-0336 www.Thermoandersen.com

*Personal*DataRAM Calibration Certificate

Record the serial number	S/N 4496
Record the calibration ratio:	0.998
Record the average pDR concentration:	1249 $\mu g/m^3$
Record the calibration Master average concentration:	1070 $\mu g/m^3$
Record the pDR background concentration:	189 $\mu g/m^3$
Temperature	75 °F
Humidity	45 %
Technician: Raman	Date: 9-25-03

THERMO ELECTRON
27 FORGE PARKWAY
FRANKLIN MA 02038
TOLL-FREE: 866-282-0430
TEL: 508-553-6949
FAX: 508-541-8366
WWW.THERMO.COM

MASTER # 2026

PDR-1000 CALIBRATION CERTIFICATE

This calibration is traceable to the National Institute of Standards and Testing

SERIAL NUMBER:	4615
CALIBRATION RATIO:	1.008
AVG. PDR-1000 CONCENTRATION:	151 ug/m3
CALIBRATION MASTER AVG. CONCENTRATION:	140 ug/m3
DR BACKROUND CONCENTRATION:	123 ug/m3
TEMPERATURE:	69F
HUMIDITY:	18%

TECHNICIAN: H Rachepelle DATE: 1/15/04

THERMO ELECTRON
27 FORGE PARKWAY
FRANKLIN MA 02038
TOLL-FREE: 866-282-0430
TEL: 508-553-6949
FAX: 508-541-8366
WWW.THERMO.COM

MASTER # 2026

PDR-1000 CALIBRATION CERTIFICATE

This calibration is traceable to the National Institute of Standards and Testing

SERIAL NUMBER:	4705
CALIBRATION RATIO:	.991
AVG. PDR-1000 CONCENTRATION:	176 ug/m3
CALIBRATION MASTER AVG. CONCENTRATION:	174 ug/m3
DR BACKROUND CONCENTRATION:	141 ug/m3
TEMPERATURE:	69F
HUMIDITY:	18%

TECHNICIAN: D Lachapelle DATE: 1/15/04

MIE

Thermo Andersen
500 Technology Ct., Smyrna, GA 30082
Toll-Free:1-800-241-6898 Tel: 770-319-9999
Fax: 770-319-0336 www.Thermoandersen.com

*Personal*DataRAM Calibration Certificate

Record the serial number	S/N 4715
Record the calibration ratio:	0.994
Record the average pDR concentration:	382 $\mu g/m^3$
Record the calibration Master average concentration:	326 $\mu g/m^3$
Record the pDR background concentration:	124 $\mu g/m^3$
Temperature	72 °F
Humidity	33 %
Technician: Ramon	Date: 11-21-03

MIE

Thermo Andersen
500 Technology Ct., Smyrna, GA 30082
Toll-Free: 1-800-241-6898 Tel: 770-319-9999
Fax: 770-319-0336 www.Thermoandersen.com

*Personal*DataRAM Calibration Certificate

Record the serial number	S/N 4736
Record the calibration ratio:	1.004
Record the average pDR concentration:	772 $\mu g/m^3$
Record the calibration Master average concentration:	651 $\mu g/m^3$
Record the pDR background concentration:	160 $\mu g/m^3$
Temperature	74 °F
Humidity	33 %
Technician: Ramon	Date: 11-21-03

APPENDIX F

Detailed air quality (1-hour TSP) monitoring results

Details of 1-Hour TSP Monitoring

Date	Receptor No.	Set No.	Time periods		Weather condition	Site condition	Temp. (°C)	Pressure (mmHg)	1-hour TSP Level (μg/m³)	Remarks
			Start	Finish						
1-Mar-05	WA3	1	8:58	9:58	Fine	Normal Operation	15.0	765.0	182.3	
1-Mar-05	WA3	2	9:58	10:58	Fine	Normal Operation	15.0	765.0	156.1	
1-Mar-05	WA3	3	10:58	11:58	Fine	Normal Operation	15.0	765.0	147.0	
1-Mar-05	WA4	1	8:59	9:59	Fine	Normal Operation	15.0	765.0	184.8	
1-Mar-05	WA4	2	9:59	10:59	Fine	Normal Operation	15.0	765.0	163.5	
1-Mar-05	WA4	3	10:59	11:59	Fine	Normal Operation	15.0	765.0	155.3	
1-Mar-05	WA5	1	9:00	10:00	Fine	Normal Operation	15.0	765.0	220.7	
1-Mar-05	WA5	2	10:00	11:00	Fine	Normal Operation	15.0	765.0	197.0	
1-Mar-05	WA5	3	11:00	12:00	Fine	Normal Operation	15.0	765.0	192.6	
1-Mar-05	WA6	1	8:57	9:57	Fine	Normal Operation	15.0	765.0	205.1	
1-Mar-05	WA6	2	9:57	10:57	Fine	Normal Operation	15.0	765.0	224.5	
1-Mar-05	WA6	3	10:57	11:57	Fine	Normal Operation	15.0	765.0	236.1	
1-Mar-05	WA7	1	8:51	9:51	Fine	Normal Operation	15.0	765.0	197.8	
1-Mar-05	WA7	2	9:51	10:51	Fine	Normal Operation	15.0	765.0	208.7	
1-Mar-05	WA7	3	10:51	11:51	Fine	Normal Operation	15.0	765.0	212.2	
1-Mar-05	WA8	1	13:11	14:11	Fine	Normal Operation	15.0	765.0	171.7	
1-Mar-05	WA8	2	14:11	15:11	Fine	Normal Operation	15.0	765.0	159.2	
1-Mar-05	WA8	3	15:11	16:11	Fine	Normal Operation	15.0	765.0	154.8	
1-Mar-05	WA9	1	13:13	14:13	Fine	Normal Operation	15.0	765.0	203.1	
1-Mar-05	WA9	2	14:13	15:13	Fine	Normal Operation	15.0	765.0	195.0	
1-Mar-05	WA9	3	15:13	16:13	Fine	Normal Operation	15.0	765.0	193.0	
1-Mar-05	WA10	1	8:49	9:49	Fine	Normal Operation	15.0	765.0	200.4	
1-Mar-05	WA10	2	9:49	10:49	Fine	Normal Operation	15.0	765.0	223.1	
1-Mar-05	WA10	3	10:49	11:49	Fine	Normal Operation	15.0	765.0	227.6	
1-Mar-05	WA11	1	13:08	14:08	Fine	Normal Operation	15.0	765.0	171.9	
1-Mar-05	WA11	2	14:08	15:08	Fine	Normal Operation	15.0	765.0	152.4	
1-Mar-05	WA11	3	15:08	16:08	Fine	Normal Operation	15.0	765.0	149.8	
8-Mar-05	WA3	1	8:37	9:37	Sunny	Normal Operation	23.0	765.0	190.4	
8-Mar-05	WA3	2	9:37	10:37	Sunny	Normal Operation	23.0	765.0	136.8	
8-Mar-05	WA3	3	10:37	11:37	Sunny	Normal Operation	23.0	765.0	122.4	
8-Mar-05	WA4	1	8:42	9:42	Sunny	Normal Operation	23.0	765.0	219.5	
8-Mar-05	WA4	2	9:42	10:42	Sunny	Normal Operation	23.0	765.0	174.3	
8-Mar-05	WA4	3	10:42	11:42	Sunny	Normal Operation	23.0	765.0	167.4	
8-Mar-05	WA5	1	8:34	9:34	Sunny	Normal Operation	23.0	765.0	210.0	
8-Mar-05	WA5	2	9:34	10:34	Sunny	Normal Operation	23.0	765.0	177.6	
8-Mar-05	WA5	3	10:34	11:34	Sunny	Normal Operation	23.0	765.0	172.5	
8-Mar-05	WA6	1	8:36	9:36	Sunny	Normal Operation	23.0	765.0	203.6	
8-Mar-05	WA6	2	9:36	10:36	Sunny	Normal Operation	23.0	765.0	171.7	
8-Mar-05	WA6	3	10:36	11:36	Sunny	Normal Operation	23.0	765.0	166.4	
8-Mar-05	WA7	1	8:30	9:30	Sunny	Normal Operation	23.0	765.0	178.7	
8-Mar-05	WA7	2	9:30	10:30	Sunny	Normal Operation	23.0	765.0	115.7	
8-Mar-05	WA7	3	10:30	11:30	Sunny	Normal Operation	23.0	765.0	121.0	
8-Mar-05	WA8	1	13:28	14:28	Sunny	Normal Operation	23.0	765.0	186.7	
8-Mar-05	WA8	2	14:28	15:28	Sunny	Normal Operation	23.0	765.0	174.2	
8-Mar-05	WA8	3	15:28	16:28	Sunny	Normal Operation	23.0	765.0	182.9	
8-Mar-05	WA9	1	13:20	14:20	Sunny	Normal Operation	23.0	765.0	186.3	
8-Mar-05	WA9	2	14:20	15:20	Sunny	Normal Operation	23.0	765.0	177.6	
8-Mar-05	WA9	3	15:20	16:20	Sunny	Normal Operation	23.0	765.0	183.8	
8-Mar-05	WA10	1	13:24	14:24	Sunny	Normal Operation	23.0	765.0	155.2	
8-Mar-05	WA10	2	14:24	15:24	Sunny	Normal Operation	23.0	765.0	124.0	
8-Mar-05	WA10	3	15:24	16:24	Sunny	Normal Operation	23.0	765.0	145.9	
8-Mar-05	WA11	1	13:22	14:22	Sunny	Normal Operation	23.0	765.0	186.8	
8-Mar-05	WA11	2	14:22	15:22	Sunny	Normal Operation	23.0	765.0	172.4	
8-Mar-05	WA11	3	15:22	16:22	Sunny	Normal Operation	23.0	765.0	181.0	
14-Mar-05	WA3	1	8:50	9:50	Fine	Normal Operation	13.0	765.0	120.3	
14-Mar-05	WA3	2	9:50	10:50	Fine	Normal Operation	13.0	765.0	63.6	
14-Mar-05	WA3	3	10:50	11:50	Fine	Normal Operation	13.0	765.0	46.9	
14-Mar-05	WA4	1	8:42	9:42	Fine	Normal Operation	13.0	765.0	146.6	
14-Mar-05	WA4	2	9:42	10:42	Fine	Normal Operation	13.0	765.0	87.8	
14-Mar-05	WA4	3	10:42	11:42	Fine	Normal Operation	13.0	765.0	87.8	
14-Mar-05	WA5	1	8:49	9:49	Fine	Normal Operation	13.0	765.0	148.3	
14-Mar-05	WA5	2	9:49	10:49	Fine	Normal Operation	13.0	765.0	75.1	
14-Mar-05	WA5	3	10:49	11:49	Fine	Normal Operation	13.0	765.0	56.9	
14-Mar-05	WA6	1	8:51	9:51	Fine	Normal Operation	13.0	765.0	179.9	
14-Mar-05	WA6	2	9:51	10:51	Fine	Normal Operation	13.0	765.0	183.0	
14-Mar-05	WA6	3	10:51	11:51	Fine	Normal Operation	13.0	765.0	180.5	
14-Mar-05	WA7	1	13:12	14:12	Fine	Normal Operation	13.0	765.0	204.3	
14-Mar-05	WA7	2	14:12	15:12	Fine	Normal Operation	13.0	765.0	180.4	
14-Mar-05	WA7	3	15:12	16:12	Fine	Normal Operation	13.0	765.0	184.9	
14-Mar-05	WA8	1	13:17	14:17	Fine	Normal Operation	13.0	765.0	220.1	
14-Mar-05	WA8	2	14:17	15:17	Fine	Normal Operation	13.0	765.0	188.4	
14-Mar-05	WA8	3	15:17	16:17	Fine	Normal Operation	13.0	765.0	193.3	
14-Mar-05	WA9	1	8:30	9:30	Fine	Normal Operation	13.0	765.0	188.6	
14-Mar-05	WA9	2	9:30	10:30	Fine	Normal Operation	13.0	765.0	175.3	
14-Mar-05	WA9	3	10:30	11:30	Fine	Normal Operation	13.0	765.0	182.3	
14-Mar-05	WA10	1	8:36	9:36	Fine	Normal Operation	13.0	765.0	180.6	
14-Mar-05	WA10	2	9:36	10:36	Fine	Normal Operation	13.0	765.0	169.1	
14-Mar-05	WA10	3	10:36	11:36	Fine	Normal Operation	13.0	765.0	175.2	
14-Mar-05	WA11	1	13:04	14:04	Fine	Normal Operation	13.0	765.0	173.9	
14-Mar-05	WA11	2	14:04	15:04	Fine	Normal Operation	13.0	765.0	149.4	
14-Mar-05	WA11	3	15:04	16:04	Fine	Normal Operation	13.0	765.0	94.6	

Details of 1-Hour TSP Monitoring

Date	Receptor No.	Set No.	Time periods Start	Time periods Finish	Weather condition	Site condition	Temp. (°C)	Pressure (mmHg)	1-hour TSP Level (μg/m³)	Remarks
18-Mar-05	WA3	1	14:25	15:25	Fine	Normal Operation	19.0	764.0	158.8	
18-Mar-05	WA3	2	15:25	16:25	Fine	Normal Operation	19.0	764.0	154.8	
18-Mar-05	WA3	3	16:25	17:25	Fine	Normal Operation	19.0	764.0	168.8	
18-Mar-05	WA4	1	14:24	15:24	Fine	Normal Operation	19.0	764.0	218.0	
18-Mar-05	WA4	2	15:24	16:24	Fine	Normal Operation	19.0	764.0	213.3	
18-Mar-05	WA4	3	16:24	17:24	Fine	Normal Operation	19.0	764.0	230.9	
18-Mar-05	WA5	1	13:46	14:46	Fine	Normal Operation	19.0	764.0	179.5	
18-Mar-05	WA5	2	14:46	15:46	Fine	Normal Operation	19.0	764.0	182.3	
18-Mar-05	WA5	3	15:46	16:46	Fine	Normal Operation	19.0	764.0	182.6	
18-Mar-05	WA6	1	13:36	14:36	Fine	Normal Operation	19.0	764.0	221.3	
18-Mar-05	WA6	2	14:36	15:36	Fine	Normal Operation	19.0	764.0	200.2	
18-Mar-05	WA6	3	15:36	16:36	Fine	Normal Operation	19.0	764.0	202.6	
18-Mar-05	WA7	1	13:42	14:42	Fine	Normal Operation	19.0	764.0	241.9	
18-Mar-05	WA7	2	14:42	15:42	Fine	Normal Operation	19.0	764.0	218.4	
18-Mar-05	WA7	3	15:42	16:42	Fine	Normal Operation	19.0	764.0	219.9	
18-Mar-05	WA8	1	14:17	15:17	Fine	Normal Operation	19.0	764.0	222.6	
18-Mar-05	WA8	2	15:17	16:17	Fine	Normal Operation	19.0	764.0	183.8	
18-Mar-05	WA8	3	16:17	17:17	Fine	Normal Operation	19.0	764.0	187.4	
18-Mar-05	WA9	1	14:12	15:12	Fine	Normal Operation	19.0	764.0	244.9	
18-Mar-05	WA9	2	15:12	16:12	Fine	Normal Operation	19.0	764.0	216.4	
18-Mar-05	WA9	3	16:12	17:12	Fine	Normal Operation	19.0	764.0	226.2	
18-Mar-05	WA10	1	14:09	15:09	Fine	Normal Operation	19.0	764.0	221.5	
18-Mar-05	WA10	2	15:09	16:09	Fine	Normal Operation	19.0	764.0	187.4	
18-Mar-05	WA10	3	16:09	17:09	Fine	Normal Operation	19.0	764.0	197.8	
18-Mar-05	WA11	1	13:39	14:39	Fine	Normal Operation	19.0	764.0	182.6	
18-Mar-05	WA11	2	14:39	15:39	Fine	Normal Operation	19.0	764.0	161.5	
18-Mar-05	WA11	3	15:39	16:39	Fine	Normal Operation	19.0	764.0	163.5	
24-Mar-05	WA3	1	8:40	9:40	Fine	Normal Operation	23.0	767.0	170.3	
24-Mar-05	WA3	2	9:40	10:40	Fine	Normal Operation	23.0	767.0	173.3	
24-Mar-05	WA3	3	10:40	11:40	Fine	Normal Operation	23.0	767.0	154.7	
24-Mar-05	WA4	1	8:49	9:49	Fine	Normal Operation	23.0	767.0	144.5	
24-Mar-05	WA4	2	9:49	10:49	Fine	Normal Operation	23.0	767.0	148.5	
24-Mar-05	WA4	3	10:49	11:49	Fine	Normal Operation	23.0	767.0	131.8	
24-Mar-05	WA5	1	8:48	9:48	Fine	Normal Operation	23.0	767.0	178.4	
24-Mar-05	WA5	2	9:48	10:48	Fine	Normal Operation	23.0	767.0	190.5	
24-Mar-05	WA5	3	10:48	11:48	Fine	Normal Operation	23.0	767.0	166.4	
24-Mar-05	WA6	1	8:46	9:46	Fine	Normal Operation	23.0	767.0	189.5	
24-Mar-05	WA6	2	9:46	10:46	Fine	Normal Operation	23.0	767.0	193.8	
24-Mar-05	WA6	3	10:46	11:46	Fine	Normal Operation	23.0	767.0	185.0	
24-Mar-05	WA7	1	13:59	14:59	Fine	Normal Operation	23.0	767.0	150.1	
24-Mar-05	WA7	2	14:59	15:59	Fine	Normal Operation	23.0	767.0	149.5	
24-Mar-05	WA7	3	15:59	16:59	Fine	Normal Operation	23.0	767.0	149.1	
24-Mar-05	WA8	1	14:08	15:08	Fine	Normal Operation	23.0	767.0	112.6	
24-Mar-05	WA8	2	15:08	16:08	Fine	Normal Operation	23.0	767.0	122.4	
24-Mar-05	WA8	3	16:08	17:08	Fine	Normal Operation	23.0	767.0	138.2	
24-Mar-05	WA9	1	14:08	15:08	Fine	Normal Operation	23.0	767.0	112.6	
24-Mar-05	WA9	2	15:08	16:08	Fine	Normal Operation	23.0	767.0	122.4	
24-Mar-05	WA9	3	16:08	17:08	Fine	Normal Operation	23.0	767.0	138.2	
24-Mar-05	WA10	1	14:05	15:05	Fine	Normal Operation	23.0	767.0	185.9	
24-Mar-05	WA10	2	15:05	16:05	Fine	Normal Operation	23.0	767.0	184.2	
24-Mar-05	WA10	3	16:05	17:05	Fine	Normal Operation	23.0	767.0	193.4	
24-Mar-05	WA11	1	9:00	10:00	Fine	Normal Operation	23.0	767.0	154.1	
24-Mar-05	WA11	2	10:00	11:00	Fine	Normal Operation	23.0	767.0	136.3	
24-Mar-05	WA11	3	11:00	12:00	Fine	Normal Operation	23.0	767.0	136.0	
29-Mar-05	WA3	1	8:39	9:39	Fine	Normal Operation	23.0	766.0	183.2	
29-Mar-05	WA3	2	9:39	10:39	Fine	Normal Operation	23.0	766.0	167.2	
29-Mar-05	WA3	3	10:39	11:39	Fine	Normal Operation	23.0	766.0	169.7	
29-Mar-05	WA4	1	8:45	9:45	Fine	Normal Operation	23.0	766.0	203.9	
29-Mar-05	WA4	2	9:45	10:45	Fine	Normal Operation	23.0	766.0	195.5	
29-Mar-05	WA4	3	10:45	11:45	Fine	Normal Operation	23.0	766.0	200.3	
29-Mar-05	WA5	1	8:57	9:57	Fine	Normal Operation	23.0	766.0	192.6	
29-Mar-05	WA5	2	9:57	10:57	Fine	Normal Operation	23.0	766.0	186.0	
29-Mar-05	WA5	3	10:57	11:57	Fine	Normal Operation	23.0	766.0	192.5	
29-Mar-05	WA6	1	13:16	14:16	Fine	Normal Operation	23.0	766.0	161.3	
29-Mar-05	WA6	2	14:16	15:16	Fine	Normal Operation	23.0	766.0	154.2	
29-Mar-05	WA6	3	15:16	16:16	Fine	Normal Operation	23.0	766.0	151.3	
29-Mar-05	WA7	1	13:03	14:03	Fine	Normal Operation	23.0	766.0	190.9	
29-Mar-05	WA7	2	14:03	15:03	Fine	Normal Operation	23.0	766.0	185.3	
29-Mar-05	WA7	3	15:03	16:03	Fine	Normal Operation	23.0	766.0	190.1	
29-Mar-05	WA8	1	13:12	14:12	Fine	Normal Operation	23.0	766.0	235.2	
29-Mar-05	WA8	2	14:12	15:12	Fine	Normal Operation	23.0	766.0	196.5	
29-Mar-05	WA8	3	15:12	16:12	Fine	Normal Operation	23.0	766.0	213.2	
29-Mar-05	WA9	1	13:54	14:54	Fine	Normal Operation	23.0	766.0	198.5	
29-Mar-05	WA9	2	14:54	15:54	Fine	Normal Operation	23.0	766.0	215.3	
29-Mar-05	WA9	3	15:54	16:54	Fine	Normal Operation	23.0	766.0	227.7	
29-Mar-05	WA10	1	13:45	14:45	Fine	Normal Operation	23.0	766.0	275.8	
29-Mar-05	WA10	2	14:45	15:45	Fine	Normal Operation	23.0	766.0	269.1	
29-Mar-05	WA10	3	15:45	16:45	Fine	Normal Operation	23.0	766.0	280.0	
29-Mar-05	WA11	1	8:41	9:41	Fine	Normal Operation	23.0	766.0	221.3	
29-Mar-05	WA11	2	9:41	10:41	Fine	Normal Operation	23.0	766.0	179.1	
29-Mar-05	WA11	3	10:41	11:41	Fine	Normal Operation	23.0	766.0	181.7	

APPENDIX G

Detailed air quality (24-hour TSP) monitoring results

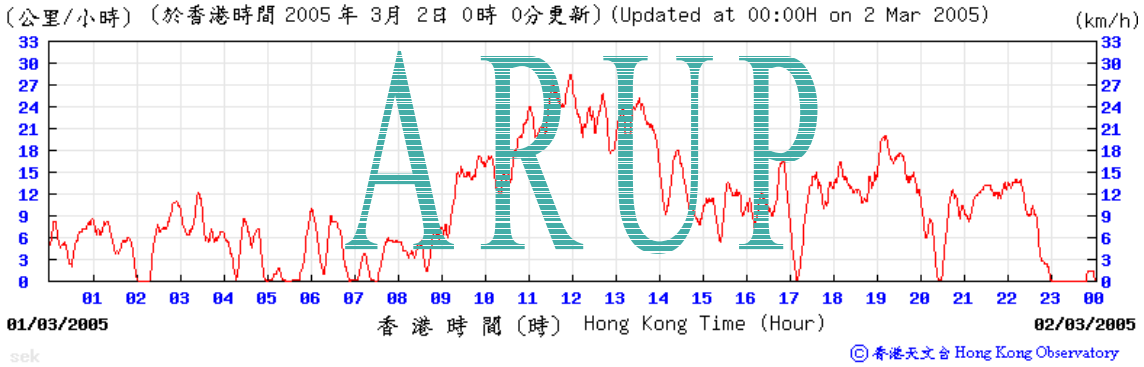
Details of 24-Hour TSP Monitoring

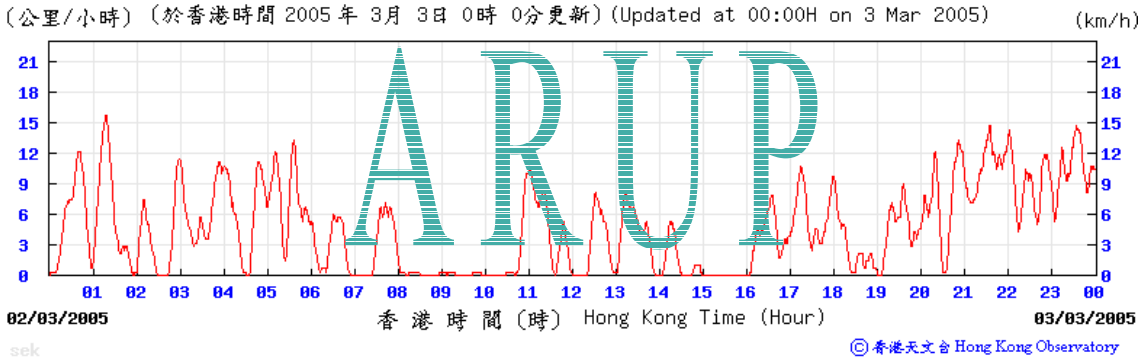
Date	Receptor No.	Weather condition	Site condition	Filter Weight (g)		TSP weight (g)	Flow Rate (m^3/min)		Average Flow Rate (m^3/min)	Elapse Time		Sampling Time (mins.)	Total vol. (m^3)	24-hour TSP Level ($\mu g/m^3$)	Remarks
				Initial	Final		Initial	Final		Start	Finish				
2-Mar-05	WA3	Fine	Normal Operation	2.8930	2.9794	0.0864	1.2036	1.1466	1.1751	4845.29	4869.29	1440.00	1692.14	51.1	
2-Mar-05	WA4	Fine	Normal Operation	2.6926	2.9596	0.2670	1.1321	1.1367	1.1344	4910.30	4934.31	1440.60	1634.22	163.4	
2-Mar-05	WA5	Fine	Normal Operation	2.8960	3.0190	0.1230	1.2445	1.2483	1.2464	4900.27	4924.27	1440.00	1794.82	68.5	
2-Mar-05	WA6	Fine	Normal Operation	2.9031	3.0085	0.1054	1.3905	1.3941	1.3923	4245.21	4269.22	1440.60	2005.75	52.5	
2-Mar-05	WA7	Fine	Normal Operation	2.8882	2.9699	0.0817	1.3410	1.3443	1.3427	4915.23	4939.23	1440.00	1933.42	42.3	
2-Mar-05	WA8	Fine	Normal Operation	2.9006	2.9911	0.0905	1.6349	1.6395	1.6372	4968.92	4992.92	1440.00	2357.57	38.4	
2-Mar-05	WA9	Fine	Normal Operation	2.9125	2.9625	0.0500	1.0846	1.0883	1.0865	4982.06	5006.06	1440.00	1564.49	32.0	
2-Mar-05	WA10	Fine	Normal Operation	2.8905	2.9507	0.0602	0.8706	0.8733	0.8720	4871.90	4895.91	1440.60	1256.13	47.9	
2-Mar-05	WA11	Fine	Normal Operation	2.9017	2.9709	0.0692	0.9022	0.9051	0.9037	5069.11	5093.12	1440.60	1301.80	53.2	
8-Mar-05	WA3	Sunny	Normal Operation	2.8827	3.0509	0.1682	1.1727	1.2249	1.1988	4869.29	4893.29	1440.00	1726.27	97.4	
8-Mar-05	WA4	Sunny	Normal Operation	2.8926	3.0209	0.1283	0.9651	0.9564	0.9608	4958.31	4982.31	1440.00	1383.48	92.7	
8-Mar-05	WA5	Sunny	Normal Operation	2.8976	3.0758	0.1782	1.2439	1.2358	1.2399	4924.27	4948.27	1440.00	1785.38	99.8	
8-Mar-05	WA6	Sunny	Normal Operation	2.9013	3.1971	0.2958	1.3900	1.3823	1.3862	4269.22	4293.22	1440.00	1996.06	148.2	
8-Mar-05	WA7	Sunny	Normal Operation	2.8990	3.0442	0.1452	1.1845	1.1784	1.1815	4939.23	4963.23	1440.00	1701.29	85.3	
8-Mar-05	WA8	Sunny	Normal Operation	2.9100	3.1069	0.1969	1.3342	1.3263	1.3303	4992.82	5016.82	1440.00	1915.56	102.8	
8-Mar-05	WA9	Sunny	Normal Operation	2.8912	2.9900	0.0988	1.0201	1.0126	1.0164	5006.06	5030.06	1440.00	1463.54	67.5	
8-Mar-05	WA10	Sunny	Normal Operation	2.8892	3.0813	0.1921	1.4442	1.4348	1.4395	4895.91	4919.91	1440.00	2072.88	92.7	
8-Mar-05	WA11	Sunny	Normal Operation	2.8992	3.0127	0.1135	1.2213	1.2129	1.2171	5093.12	5117.12	1440.00	1752.62	64.8	
14-Mar-05	WA3	Fine	Normal Operation	2.9024	3.0628	0.1604	1.3965	1.3850	1.3908	4893.29	4917.29	1440.00	2002.68	80.1	
14-Mar-05	WA4	Fine	Normal Operation	2.9013	3.0045	0.1032	0.9753	0.9648	0.9701	4982.31	5006.31	1440.00	1396.87	73.9	
14-Mar-05	WA5	Fine	Normal Operation	2.8834	2.9991	0.1157	1.2536	1.2437	1.2487	4948.27	4972.27	1440.00	1798.06	64.3	
14-Mar-05	WA6	Fine	Normal Operation	2.9018	3.1056	0.2038	1.2371	1.2291	1.2331	4293.22	4317.22	1440.00	1775.66	114.8	
14-Mar-05	WA7	Fine	Normal Operation	2.9008	3.0278	0.1270	1.2965	1.2883	1.2924	4963.23	4987.23	1440.00	1861.06	68.2	
14-Mar-05	WA8	Fine	Normal Operation	2.8957	3.0631	0.1674	1.7063	1.6940	1.7002	5016.82	5040.82	1440.00	2448.22	68.4	
14-Mar-05	WA9	Fine	Normal Operation	2.8096	3.0274	0.2178	1.2867	1.2756	1.2812	5030.06	5054.06	1440.00	1844.86	118.1	
14-Mar-05	WA10	Fine	Normal Operation	2.9017	3.0259	0.1242	1.2853	1.2751	1.2802	4919.91	4943.91	1440.00	1843.49	67.4	
14-Mar-05	WA11	Fine	Normal Operation	2.9140	3.0644	0.1504	1.1667	1.1571	1.1619	5117.12	5141.12	1440.00	1673.14	89.9	
19-Mar-05	WA3	Cloudy	Normal Operation	2.9155	3.1699	0.2544	1.7981	1.7950	1.7966	4917.29	4941.29	1440.00	2587.03	98.3	
19-Mar-05	WA4	Cloudy	Normal Operation	2.9164	3.0718	0.1554	0.9564	0.9541	0.9553	5006.31	5030.31	1440.00	1375.56	113.0	
19-Mar-05	WA5	Cloudy	Normal Operation	2.9108	3.2518	0.3410	1.3916	1.3893	1.3905	4972.27	4996.27	1440.00	2002.25	170.3	
19-Mar-05	WA6	Cloudy	Normal Operation	2.8976	3.2349	0.3373	1.2759	1.2741	1.2750	4317.22	4341.22	1440.00	1836.00	183.7	
19-Mar-05	WA7	Cloudy	Normal Operation	2.8884	3.1090	0.2206	1.3334	1.3315	1.3325	4987.23	5011.23	1440.00	1918.73	115.0	
19-Mar-05	WA8	Cloudy	Normal Operation	2.8858	2.9859	0.1001	1.3263	1.3243	1.3253	5040.82	5064.82	1440.00	1908.43	52.5	
19-Mar-05	WA9	Cloudy	Normal Operation	2.9160	3.1720	0.2560	1.1397	1.1375	1.1386	5054.06	5078.06	1440.00	1639.58	156.1	
19-Mar-05	WA10	Cloudy	Normal Operation	2.9170	3.0569	0.1399	1.4012	1.3988	1.4000	4943.97	4967.97	1440.00	2016.00	69.4	
19-Mar-05	WA11	Cloudy	Normal Operation	2.9279	3.0382	0.1103	1.2129	1.2108	1.2119	5141.12	5165.12	1440.00	1745.06	63.2	
23-Mar-05	WA3	Fine	Normal Operation	2.8752	3.0548	0.1796	1.0606	1.0420	1.0513	4941.29	4965.30	1440.60	1514.50	118.6	
23-Mar-05	WA4	Fine	Normal Operation	2.9038	3.0193	0.1155	0.9408	0.9541	0.9475	5030.31	5054.31	1440.00	1364.33	84.7	
23-Mar-05	WA5	Fine	Normal Operation	2.9217	3.1949	0.2732	1.2211	1.2336	1.2274	4996.27	5020.27	1440.00	1767.38	154.6	
23-Mar-05	WA6	Fine	Normal Operation	2.9351	3.2258	0.2907	1.3685	1.3803	1.3744	4341.22	4365.22	1440.00	1979.14	146.9	
23-Mar-05	WA7	Fine	Normal Operation	2.9319	3.0724	0.1405	1.1675	1.2800	1.2238	5011.23	5035.24	1440.60	1762.93	79.7	
23-Mar-05	WA8	Fine	Normal Operation	2.9298	3.0883	0.1585	1.3123	1.4434	1.3779	5064.82	5088.82	1440.00	1984.10	79.9	
23-Mar-05	WA9	Fine	Normal Operation	2.9299	3.1117	0.1818	1.2816	1.2961	1.2889	5076.06	5100.07	1440.60	1856.72	97.9	
23-Mar-05	WA10	Fine	Normal Operation	2.9073	3.0395	0.1322	1.1526	1.1979	1.1753	4967.91	4991.91	1440.00	1692.36	78.1	
23-Mar-05	WA11	Fine	Normal Operation	2.9086	3.0294	0.1208	0.8216	0.8305	0.8261	5165.12	5189.12	1440.00	1189.51	101.6	
30-Mar-05	WA3	Cloudy	Normal Operation	2.9357	3.0689	0.1332	1.2409	1.2499	1.2454	4965.30	4989.30	1440.00	1793.38	74.3	
30-Mar-05	WA4	Cloudy	Normal Operation	2.9288	3.0198	0.0910	0.9422	0.9512	0.9467	5054.31	5078.01	1422.00	1346.21	67.6	
30-Mar-05	WA5	Cloudy	Normal Operation	2.9157	3.0949	0.1792	1.2224	1.2309	1.2267	5020.27	5044.27	1440.00	1766.38	101.5	
30-Mar-05	WA6	Cloudy	Normal Operation	2.9221	3.1556	0.2335	1.3961	1.4042	1.4002	4365.22	4389.22	1440.00	2016.22	115.8	
30-Mar-05	WA7	Cloudy	Normal Operation	2.9199	2.9914	0.0715	1.0152	1.0204	1.0178	5035.24	5059.24	1440.00	1465.63	48.8	
30-Mar-05	WA8	Cloudy	Normal Operation	2.9157	3.0299	0.1142	1.2546	1.2622	1.2584	5088.82	5112.89	1444.20	1817.38	62.8	
30-Mar-05	WA9	Cloudy	Normal Operation	2.9183	2.9909	0.0726	1.1260	1.1347	1.1304	5100.07	5124.07	1440.00	1627.70	44.6	
30-Mar-05	WA10	Cloudy	Normal Operation	2.9150	2.9915	0.0765	0.9879	0.9947	0.9913	4991.91	5015.91	1440.00	1427.47	53.6	
30-Mar-05	WA11	Cloudy	Normal Operation	2.9193	3.0019	0.0826	1.1993	1.2079	1.2036	5189.12	5213.12	1440.00	1733.18	47.7	

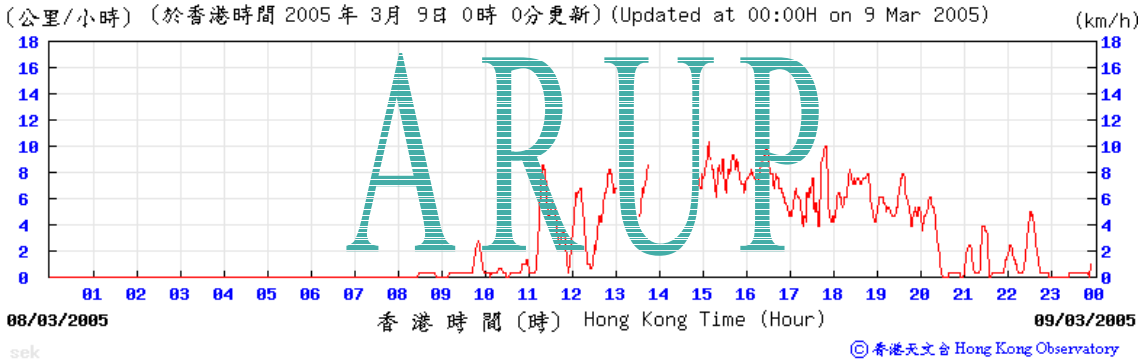
APPENDIX H

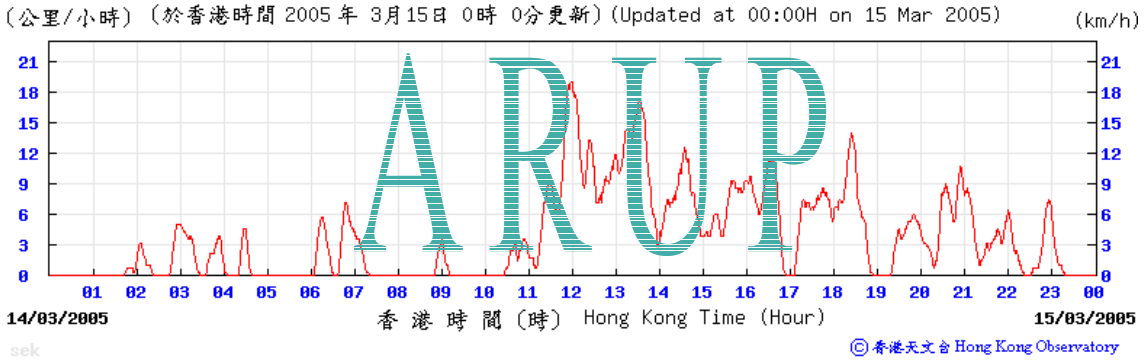
Detailed wind monitoring data for the air quality monitoring period

Wind Monitoring Data – Wind Speed during air quality monitoring in March 2005









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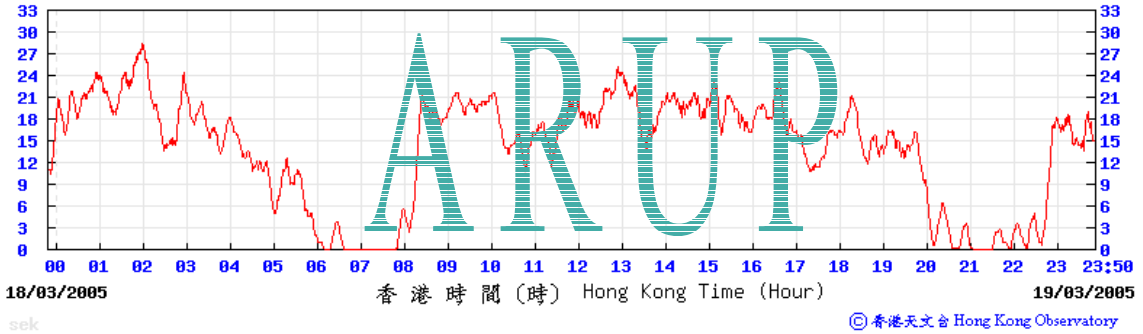

sek

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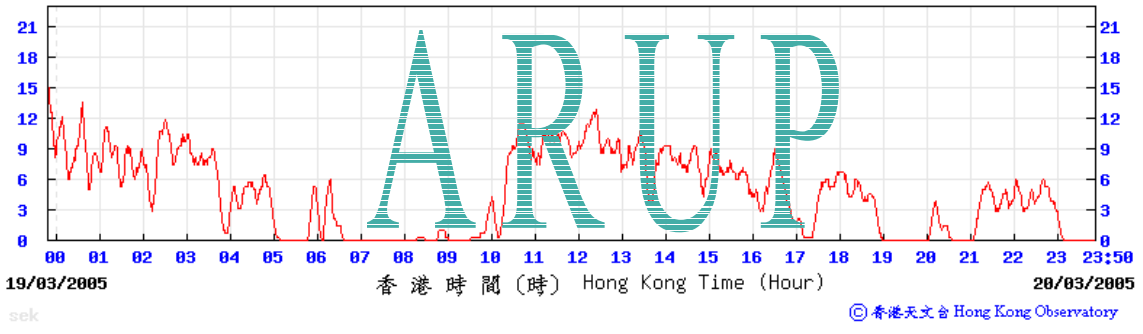

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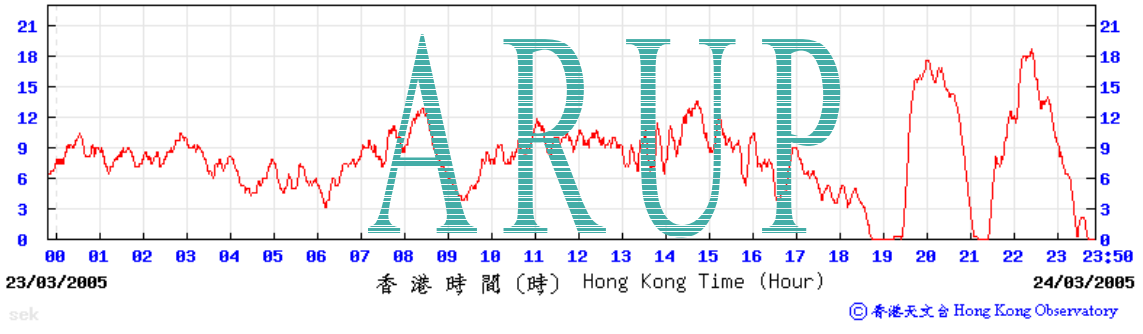

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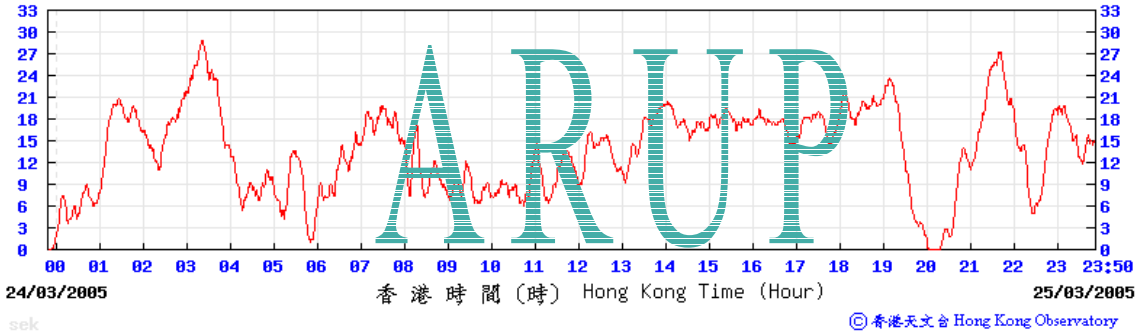
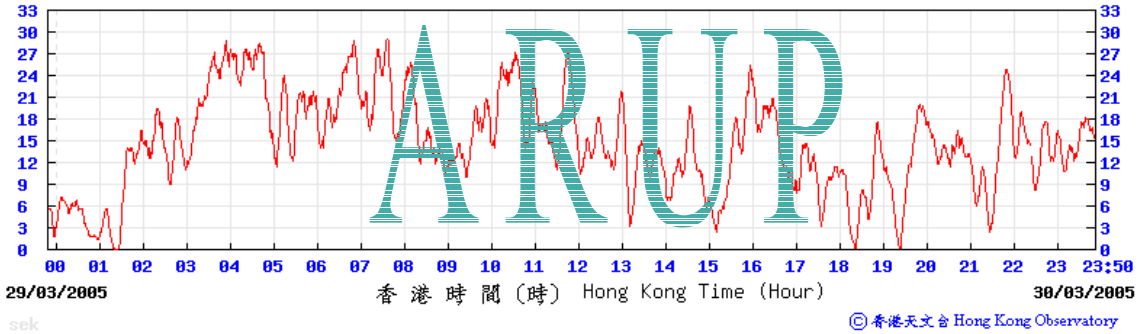


sek

(公里/小時) (於香港時間 2005 年 3月30日23時50分更新) (Updated at 23:50H on 30 Mar 2005) (km/h)



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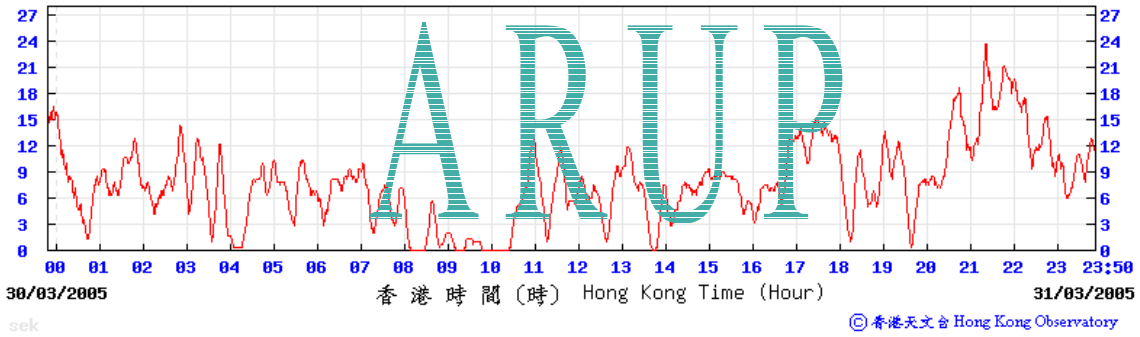

APPENDIX I

Calibration certificates of noise monitoring equipment

ArupAcoustics

ARUP

Level 5 Festival Walk
80 Tat Chee Avenue
Kowloon Tong, Kowloon
HONG KONG

Tel: +852 2268 3216

Fax: +852 2268 3950

AAc Certificate No. 2004002

CERTIFICATE OF CONFORMITY

Description of Test Instrument	Type No	Serial No
Bruel & Kjaer Acoustic Calibrator	4231	2314016

Date of Test: 16 July 2004

Carried out by: Steven Wong

Signature:

Approved by: William Ng

Signature:

Ambient Conditions During Test	
Atmospheric Pressure:	1KPa
Air Temperature:	28°C
Relative Humidity:	58%

This document is to certify that the above Test Instrumentation did conform to the manufacturer's original specification on the date of the test. Any adjustments that were required to bring the instrumentation back into specification are duly noted in this document. The tests were carried out using the reference calibrator described below.

Description of Reference Calibrator	Type No	Serial No
Brüel & Kjær Multi Frequency Calibrator	4226	1531372
Brüel & Kjær Coupler	UA0915	1531372

Certificate of Calibration Serial No.	12701
By Brüel & Kjær (UK) Ltd Calibration Date:	20 April 2004
NAMAS Accredited Calibration Laboratory No.	0174

The reference calibrator, Type 4226, has traceable calibration back to National Measurement Standards. As such it is used as Arup Acoustics own 'Primary Standard' and is used only for controlled laboratory calibration tests on all sound measuring equipment owned by Arup Acoustics.

Footnote:

Arup Acoustics is not a registered NAMAS accredited calibration laboratory. This certificate is for internal use only (unless otherwise authorised) and is part of Arup Acoustics development and commitment to QC and QA procedures.

ArupAcoustics

ARUP

Level 5 Festival Walk
80 Tat Chee Avenue
Kowloon Tong, Kowloon
HONG KONG

Tel: +852 2268 3216

Fax: +852 2268 3950

AAc Certificate No. 2004001

CERTIFICATE OF CONFORMITY

Description of Test Instrument	Type No	Serial No
Bruel & Kjaer Acoustic Calibrator	4230	1233887

Date of Test: 16 July 2004

Carried out by: Steven Wong

Signature:

Approved by: William Ng

Signature: Wm Ng

Ambient Conditions During Test	
Atmospheric Pressure:	1KPa
Air Temperature:	28°C
Relative Humidity:	58%

This document is to certify that the above Test Instrumentation did conform to the manufacturer's original specification on the date of the test. Any adjustments that were required to bring the instrumentation back into specification are duly noted in this document. The tests were carried out using the reference calibrator described below.

Description of Reference Calibrator	Type No	Serial No
Brüel & Kjær Multi Frequency Calibrator	4226	1531372
Brüel & Kjær Coupler	UA0915	1531372

Certificate of Calibration Serial No.	12701
By Brüel & Kjær (UK) Ltd Calibration Date:	20 April 2004
NAMAS Accredited Calibration Laboratory No.	0174

The reference calibrator, Type 4226, has traceable calibration back to National Measurement Standards. As such it is used as Arup Acoustics own 'Primary Standard' and is used only for controlled laboratory calibration tests on all sound measuring equipment owned by Arup Acoustics.

Footnote:

Arup Acoustics is not a registered NAMAS accredited calibration laboratory. This certificate is for internal use only (unless otherwise authorised) and is part of Arup Acoustics development and commitment to QC and QA procedures.

CERTIFICATE OF CALIBRATION

Certificate No. : 2KS040905-3 **Page** 1 **of** 2

Calibration of :

Description	:	Sound Level Meter	,	Microphone
Manufacture	:	Brüel & Kjær		
Type No.	:	2238	,	4188
Serial No.	:	2320694	,	2274284

Client :

Ove Arup & Partners Hong Kong Ltd.
Level 5, Festival Walk,
80 Tat Chee Avenue,
Kowloon Tong, Kowloon,
Hong Kong.

Calibration Conditions :

Air Temperature	:	23.2	**°C**
Air Pressure	:	101.2	**kPa**
Relative Humidity	:	59	**%**

Test Specifications :

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC 60651 and IEC 60804 type 1, and vendor specific procedures.

The measurements has been performed with the assistance of :
Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999
The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain the required accuracy level.

Test Result :

A list of the performed (sub) tests is stated on page 2 of this certificate. Actual Measurement are documented on worksheet.

Date of Calibration : 10 September, 2004
Calibrated By :

Fox Ng

Certificate issued : 10 September, 2004
Approved signatory :

Jacky Leung

Unit 706 7/F., Miramar Tower, 132 Nathan Road, Tsim Sha Tsui, Kowloon, Hong Kong
香港九龍尖沙咀彌敦道132號美麗華大廈7樓706室

Tel : (852) 2548 7486
Fax : (852) 2858 1168

Spectris Offices in China: Beijing • Guangzhou • Hong Kong • Shanghai • Shenyang
Technical Centres in China : Guangzhou • Wuhan • Chengdu
Web Site: www.spectris.com

spectris

CERTIFICATE OF CALIBRATION

Certificate No. : 2KS040905-3 **Page** 2 **of** 2

Results :

List of performed (sub) test with test status:

"OK" Means the result of the (sub)test is Inside the tolerances stated in the test specifications.

" - " Means the result of the (sub)test is Outside these tolerances.

Test :	Subtest :	Status :
Noise	A	OK
Noise	C	OK
Noise	Lin	OK
Frequency Weighting	A	OK
Frequency Weighting	C	OK
Frequency Weighting	Lin	OK
Level Range Control	1000 Hz	OK
Linearity Range	SPL 10dB 4000 Hz	OK
Linearity Range	SPL 1dB 1000 Hz	OK
Linearity Range	Leq	OK
Linearity Range	SEL	OK
RMS Detector	CF 3	OK
RMS Detector	CF 5	OK
RMS Detector	CF 10	OK
RMS Detector	Symmetry	OK
Time Weighting	Difference Indication	OK
Time Weighting	Single Burst FAST	OK
Time Weighting	Single Burst SLOW	OK
Time Weighting	Single Burst IMPULSE	OK
Time Weighting	Repetitive Burst	OK
Time Weighting	Peak	OK
Time Averaging		OK
Pulse Range		OK
Overload	SPL	OK
Overload	SEL	OK
Acoustic Response	A	OK
Acoustic Response	Lin	OK

Calibration Equipment :

Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999

Description :	Make & Model :	Serial No. :	Last Cal. Date :	Traceable to:
Digital Multi-meter	Datron 1281	27361	08 Oct, 2003	HKSCL (HOKLAS)
Sine/Noise Generator	B&K 1049	1314978	Test	B&K Conformance
Test Waveform Generator	B&K 5918	1482949	Test	B&K Conformance
Acoustical Calibrator	B&K 4226	1551627	22 Jun, 2004	NPL via B&K (UKAS)

Calibrated By :
Date : 10 September, 2004

Checked By :
Date : 10 September, 2004

CERTIFICATE OF CALIBRATION

Certificate No. : 2KS040905-4 **Page** 1 **of** 2

Calibration of :

Description	: Sound Level Meter	,	Microphone
Manufacture	: Brüel & Kjær		
Type No.	: 2238	,	4188
Serial No.	: 2320696	,	2274286

Client :

Ove Arup & Partners Hong Kong Ltd.
Level 5, Festival Walk,
80 Tat Chee Avenue,
Kowloon Tong, Kowloon,
Hong Kong.

Calibration Conditions :

Air Temperature	:	23.2	**°C**
Air Pressure	:	101.2	**kPa**
Relative Humidity	:	59	**%**

Test Specifications :

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC 60651 and IEC 60804 type 1, and vendor specific procedures.

The measurements has been performed with the assistance of :
Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999
The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain the required accuracy level.

Test Result :

A list of the performed (sub) tests is stated on page 2 of this certificate. Actual Measurement are documented on worksheet.

Date of Calibration : 10 September, 2004
Calibrated By :

Fox Ng

Certificate issued : 10 September, 2004
Approved signatory :

Jacky Leung

spectris

CERTIFICATE OF CALIBRATION

Certificate No. : 2KS040905-4 **Page** 2 **of** 2

Results :

List of performed (sub) test with test status:
"OK" Means the result of the (sub)test is Inside the tolerances stated in the test specifications.
" - " Means the result of the (sub)test is Outside these tolerances.

Test :	Subtest :	Status :
Noise	A	OK
Noise	C	OK
Noise	Lin	OK
Frequency Weighting	A	OK
Frequency Weighting	C	OK
Frequency Weighting	Lin	OK
Level Range Control	1000 Hz	OK
Linearity Range	SPL 10dB 4000 Hz	OK
Linearity Range	SPL 1dB 1000 Hz	OK
Linearity Range	Leq	OK
Linearity Range	SEL	OK
RMS Detector	CF 3	OK
RMS Detector	CF 5	OK
RMS Detector	CF 10	OK
RMS Detector	Symmetry	OK
Time Weighting	Difference Indication	OK
Time Weighting	Single Burst FAST	OK
Time Weighting	Single Burst SLOW	OK
Time Weighting	Single Burst IMPULSE	OK
Time Weighting	Repetitive Burst	OK
Time Weighting	Peak	OK
Time Averaging		OK
Pulse Range		OK
Overload	SPL	OK
Overload	SEL	OK
Acoustic Response	A	OK
Acoustic Response	Lin	OK

Calibration Equipment :

Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999

Description :	Make & Model :	Serial No. :	Last Cal. Date :	Traceable to:
Digital Multi-meter	Datron 1281	27361	08 Oct, 2003	HKSCL (HOKLAS)
Sine/Noise Generator	B&K 1049	1314978	Test	B&K Conformance
Test Waveform Generator	B&K 5918	1482949	Test	B&K Conformance
Acoustical Calibrator	B&K 4226	1551627	22 Jun, 2004	NPL via B&K (UKAS)

Calibrated By :
Date : 10 September, 2004

Checked By :
Date : 10 September, 2004

CERTIFICATE OF CALIBRATION

Certificate No. : 2KS040905-5 **Page** 1 **of** 2

Calibration of :

Description	:	Sound Level Meter	,	Microphone
Manufacture	:	Brüel & Kjær		
Type No.	:	2238	,	4188
Serial No.	:	2320707	,	2179479

Client :

Ove Arup & Partners Hong Kong Ltd.
Level 5, Festival Walk,
80 Tat Chee Avenue,
Kowloon Tong, Kowloon,
Hong Kong.

Calibration Conditions :

Air Temperature	:	23.1	**°C**
Air Pressure	:	101.4	**kPa**
Relative Humidity	:	58	**%**

Test Specifications :

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC 60651 and IEC 60804 type 1, and vendor specific procedures.

The measurements has been performed with the assistance of :
Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999
The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain the required accuracy level.

Test Result :

A list of the performed (sub) tests is stated on page 2 of this certificate. Actual Measurement are documented on worksheet.

Date of Calibration : 09 September, 2004
Calibrated By :

Fox Ng

Certificate issued : 10 September, 2004
Approved signatory :

Jacky Leung

Unit 706 7/F., Miramar Tower, 132 Nathan Road, Tsim Sha Tsui, Kowloon, Hong Kong
香港九龍尖沙咀彌敦道132號美麗華大廈7樓706室

Tel : (852) 2548 7486
Fax : (852) 2858 1168

Spectris Offices in China: Beijing • Guangzhou • Hong Kong • Shanghai • Shenyang
Technical Centres in China : Guangzhou • Wuhan • Chengdu
Web Site: www.spectris.com

spectris

CERTIFICATE OF CALIBRATION

Certificate No. : 2KS040905-5 **Page 2 of 2**

Results :

List of performed (sub) test with test status:

"OK" Means the result of the (sub)test is Inside the tolerances stated in the test specifications.

" - " Means the result of the (sub)test is Outside these tolerances.

Test :	Subtest :	Status :
Noise	A	OK
Noise	C	OK
Noise	Lin	OK
Frequency Weighting	A	OK
Frequency Weighting	C	OK
Frequency Weighting	Lin	OK
Level Range Control	1000 Hz	OK
Linearity Range	SPL 10dB 4000 Hz	OK
Linearity Range	SPL 1dB 1000 Hz	OK
Linearity Range	Leq	OK
Linearity Range	SEL	OK
RMS Detector	CF 3	OK
RMS Detector	CF 5	OK
RMS Detector	CF 10	OK
RMS Detector	Symmetry	OK
Time Weighting	Difference Indication	OK
Time Weighting	Single Burst FAST	OK
Time Weighting	Single Burst SLOW	OK
Time Weighting	Single Burst IMPULSE	OK
Time Weighting	Repetitive Burst	OK
Time Weighting	Peak	OK
Time Averaging		OK
Pulse Range		OK
Overload	SPL	OK
Overload	SEL	OK
Acoustic Response	A	OK
Acoustic Response	Lin	OK

Calibration Equipment :

Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999

Description :	Make & Model :	Serial No. :	Last Cal. Date :	Traceable to:
Digital Multi-meter	Datron 1281	27361	08 Oct, 2003	HKSCL (HOKLAS)
Sine/Noise Generator	B&K 1049	1314978	Test	B&K Conformance
Test Waveform Generator	B&K 5918	1482949	Test	B&K Conformance
Acoustical Calibrator	B&K 4226	1551627	22 Jun, 2004	NPL via B&K (UKAS)

Calibrated By :
Date : 09 September, 2004

Checked By :
Date : 10 September, 2004

Brüel & Kjær

SPECTRIS CHINA LIMITED
思百吉中國有限公司

CERTIFICATE OF CALIBRATION

Certificate No. : 2KS040905-1

Calibration of :

Description	:	Sound Level Meter	,	Microphone
Manufacture	:	Brüel & Kjær		
Type No.	:	2231	,	4188
Serial No.	:	1294630	,	2179478

Client : Ove Arup & Partners Hong Kong Ltd.
Level 5, Festival Walk,
80 Tat Chee Avenue,
Kowloon Tong, Kowloon,
Hong Kong.

Calibration Conditions :

Air Temperature	:	23.2	**°C**
Air Pressure	:	101.2	**kPa**
Relative Humidity	:	59	**%**

Test Specifications :

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC 60651 and IEC 60804 type 1, and vendor specific procedures.

The measurements has been performed with the assistance of :
Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 C2231_10, Ver.03.11.1995
The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain the required accuracy level.

Test Result :

A list of the performed (sub) tests is stated on page 2 of this certificate. Actual Measurement are documented on worksheet.

Date of Calibration: 10 September, 2004
Calibrated By :

Fox Ng

Certificate issued: 10 September, 2004
Approved Signatory :

Jacky Leung

Unit 706 7/F., Miramar Tower, 132 Nathan Road, Tsim Sha Tsui, Kowloon, Hong Kong
香港九龍尖沙咀彌敦道132號美麗華大廈7樓706室
Tel : (852) 2548 7486
Fax : (852) 2858 1168

spectris

CERTIFICATE OF CALIBRATION

Results :

List of performed (sub) test with test status:
"OK" Means the result of the (sub)test is Inside the tolerances stated in the test specifications.
" - " Means the result of the (sub)test is Outside these tolerances.

Test :	Subtest :	Status :
Noise	A	OK
Noise	C	OK
Noise	Lin	OK
Noise	Lin Lim	OK
Frequency Weighting	A	OK
Frequency Weighting	C	OK
Frequency Weighting	Lin	OK
Frequency Weighting	Lin Lim	OK
Frequency Weighting	Random	OK
Level Range Control	4000 Hz	OK
Linearity Range	SPL 10dB 1000 Hz	OK
Linearity Range	SPL 1dB 4000 Hz	OK
Linearity Range	Leq	OK
Linearity Range	SEL	OK
RMS Detector	CF 3	OK
RMS Detector	CF 5	OK
RMS Detector	CF 10	OK
RMS Detector	Symmetry	OK
Time Weighting	Difference Indication	OK
Time Weighting	Single Burst FAST	OK
Time Weighting	Single Burst SLOW	OK
Time Weighting	Single Burst IMPULSE	OK
Time Weighting	Repetitive Burst	OK
Time Weighting	Peak	OK
Time Averaging	Leq-SEL	OK
Pulse Range	SEL-Leq	OK
Overload	SPL	OK
Overload	SEL	OK
Internal Reference		OK
Acoustic Response	A	OK
Acoustic Response	Lin	OK

Calibration Equipment :

Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 C2231_10, Ver.03.11.1995

Description :	Make & Model :	Serial No. :	Last Cal. Date :	Traceable To
Digital Multi-meter	Datron 1281	27361	08 Oct 2003	HKSCL(HOKLAS)
Sine/Noise Generator	B&K 1049	1314978	Test	B&K Conformance
Test Waveform Generator	B&K 5918	1482949	Test	B&K Conformance
Acoustical Calibrator	B&K 4226	1551627	22 Jun, 2004	NPL via B&K (UKAS)

Calibrated By : Fox Ng
Date :10 September, 2004

Checked By : Vanly
Date : 10 September, 2004

Brüel & Kjær

SPECTRIS CHINA LIMITED
思百吉中國有限公司

CERTIFICATE OF CALIBRATION

Certificate No. : 2KS040905-2 **Page** 1 **of** 2

Calibration of :

Description	:	Sound Level Meter	,	Microphone
Manufacture	:	Brüel & Kjær		
Type No.	:	2231	,	4188
Serial No.	:	1709184	,	2179476

Client : Ove Arup & Partners Hong Kong Ltd.
Level 5, Festival Walk,
80 Tat Chee Avenue,
Kowloon Tong, Kowloon,
Hong Kong.

Calibration Conditions :

Air Temperature	:	23.2	**°C**
Air Pressure	:	101.2	**kPa**
Relative Humidity	:	59	**%**

Test Specifications :

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC 60651 and IEC 60804 type 1, and vendor specific procedures.

The measurements has been performed with the assistance of :
Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 C2231_10, Ver.03.11.1995
The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain the required accuracy level.

Test Result :

A list of the performed (sub) tests is stated on page 2 of this certificate. Actual Measurement are documented on worksheet.

Date of Calibration: 10 September, 2004
Calibrated By :

Fox Ng

Certificate issued: 10 September, 2004
Approved Signatory :

Jacky Leung

Unit 706 7/F., Miramar Tower, 132 Nathan Road, Tsim Sha Tsui, Kowloon, Hong Kong
香港九龍尖沙咀彌敦道132號美麗華大廈7樓706室
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CERTIFICATE OF CALIBRATION

Results :

List of performed (sub) test with test status:
"OK" Means the result of the (sub)test is Inside the tolerances stated in the test specifications.
" - " Means the result of the (sub)test is Outside these tolerances.

Test :	Subtest :	Status :
Noise	A	OK
Noise	C	OK
Noise	Lin	OK
Noise	Lin Lim	OK
Frequency Weighting	A	OK
Frequency Weighting	C	OK
Frequency Weighting	Lin	OK
Frequency Weighting	Lin Lim	OK
Frequency Weighting	Random	OK
Level Range Control	4000 Hz	OK
Linearity Range	SPL 10dB 1000 Hz	OK
Linearity Range	SPL 1dB 4000 Hz	OK
Linearity Range	Leq	OK
Linearity Range	SEL	OK
RMS Detector	CF 3	OK
RMS Detector	CF 5	OK
RMS Detector	CF 10	OK
RMS Detector	Symmetry	OK
Time Weighting	Difference Indication	OK
Time Weighting	Single Burst FAST	OK
Time Weighting	Single Burst SLOW	OK
Time Weighting	Single Burst IMPULSE	OK
Time Weighting	Repetitive Burst	OK
Time Weighting	Peak	OK
Time Averaging	Leq-SEL	OK
Pulse Range	SEL-Leq	OK
Overload	SPL	OK
Overload	SEL	OK
Internal Reference		OK
Acoustic Response	A	OK
Acoustic Response	Lin	OK

Calibration Equipment :

Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 C2231_10, Ver.03.11.1995

Description :	Make & Model :	Serial No. :	Last Cal. Date :	Traceable To
Digital Multi-meter	Datron 1281	27361	08 Oct 2003	HKSCL(HOKLAS)
Sine/Noise Generator	B&K 1049	1314978	Test	B&K Conformance
Test Waveform Generator	B&K 5918	1482949	Test	B&K Conformance
Acoustical Calibrator	B&K 4226	1551627	22 Jun, 2004	NPL via B&K (UKAS)

Calibrated By : Rex Ng
Date :10 September, 2004

Checked By :
Date : 10 September, 2004

APPENDIX J

Detailed noise monitoring results

Details of Noise Impact Monitoring

Date	NSR No.	Time periods		Weather condition	Avg. wind speed (m/s)	Noise Level dB(A)			Influencing factors/ Site condition
		Start	Finish			L_{eq}	L_{10}	L_{90}	
1-Mar-05	WN1	11:00	11:30	Fine	1.0	70.4	71.5	69.0	Normal Operation
1-Mar-05	WN2	10:30	11:00	Fine	0.9	70.7	72.0	69.0	Normal Operation
1-Mar-05	WN6	13:30	14:00	Fine	1.8	66.6	68.5	64.5	Normal Operation
1-Mar-05	WN7	14:30	15:00	Fine	1.4	68.4	69.5	67.0	Normal Operation
1-Mar-05	WN8	15:30	16:00	Fine	1.0	67.7	69.0	66.0	Normal Operation
1-Mar-05	WN9	16:30	17:00	Fine	0.2	69.1	70.5	67.0	Normal Operation
1-Mar-05	WN10	10:30	11:00	Fine	0.3	68.8	70.0	67.5	Normal Operation
1-Mar-05	WN11	11:30	12:00	Fine	0.5	70.0	71.5	68.0	Normal Operation
1-Mar-05	WN12	13:30	14:00	Fine	0.7	66.9	68.5	65.0	Normal Operation
1-Mar-05	WN13	14:15	14:45	Fine	0.5	67.3	69.0	65.5	Normal Operation
1-Mar-05	WN14	15:00	15:30	Fine	0.6	70.3	72.0	68.5	Normal Operation
1-Mar-05	WN15	15:45	16:15	Fine	0.8	70.1	71.5	68.5	Normal Operation
1-Mar-05	WN16	16:30	17:00	Fine	0.3	64.7	66.5	63.0	Normal Operation
8-Mar-05	WN1	16:30	17:00	Sunny	1.2	70.1	72.0	68.5	Normal Operation
8-Mar-05	WN2	17:15	17:45	Sunny	0.9	69.3	71.0	68.0	Normal Operation
8-Mar-05	WN6	9:30	10:00	Sunny	2.2	70.4	73.0	65.0	Normal Operation
8-Mar-05	WN7	10:15	10:45	Sunny	1.8	68.6	71.0	63.5	Normal Operation
8-Mar-05	WN8	11:00	11:30	Sunny	1.8	68.8	71.5	64.0	Normal Operation
8-Mar-05	WN9	13:00	13:30	Sunny	1.5	72.8	75.0	68.0	Normal Operation
8-Mar-05	WN10	13:45	14:15	Sunny	1.6	70.6	74.5	66.0	Normal Operation
8-Mar-05	WN11	14:45	15:15	Sunny	1.6	70.4	74.0	66.0	Normal Operation
8-Mar-05	WN12	15:40	16:10	Sunny	1.7	68.1	72.0	64.0	Normal Operation
8-Mar-05	WN13	14:55	15:25	Sunny	1.9	67.9	71.0	63.5	Normal Operation
8-Mar-05	WN14	14:15	14:45	Sunny	1.3	67.6	70.5	64.0	Normal Operation
8-Mar-05	WN15	13:35	14:05	Sunny	1.7	69.6	73.0	65.0	Normal Operation
8-Mar-05	WN16	13:00	13:30	Sunny	2.0	70.2	74.0	66.0	Normal Operation
14-Mar-05	WN1	14:15	14:45	Fine	1.8	68.9	71.5	64.0	Normal Operation
14-Mar-05	WN2	15:00	15:30	Fine	1.5	68.3	71.5	63.5	Normal Operation
14-Mar-05	WN6	9:00	9:30	Fine	2.6	71.8	75.0	66.0	Normal Operation
14-Mar-05	WN7	9:45	10:15	Fine	2.0	69.5	74.0	65.5	Normal Operation
14-Mar-05	WN8	10:30	11:00	Fine	1.9	69.2	73.5	65.0	Normal Operation
14-Mar-05	WN9	11:15	11:45	Fine	1.8	72.8	76.0	67.0	Normal Operation
14-Mar-05	WN10	13:00	13:30	Fine	1.6	71.1	75.0	66.5	Normal Operation
14-Mar-05	WN11	14:45	15:15	Fine	1.7	70.6	74.0	65.5	Normal Operation
14-Mar-05	WN12	13:45	14:15	Fine	1.4	68.7	71.5	64.5	Normal Operation
14-Mar-05	WN13	13:00	13:30	Fine	1.5	70.2	74.0	66.0	Normal Operation
14-Mar-05	WN14	11:00	11:30	Fine	1.2	68.2	72.5	64.5	Normal Operation
14-Mar-05	WN15	10:00	10:30	Fine	1.9	68.5	72.5	65.0	Normal Operation
14-Mar-05	WN16	9:15	9:45	Fine	1.9	69.8	73.0	66.0	Normal Operation
24-Mar-05	WN1	8:00	8:30	Fine	1.0	71.4	72.5	69.5	Normal Operation
24-Mar-05	WN2	8:40	9:10	Fine	0.8	72.0	73.0	70.0	Normal Operation
24-Mar-05	WN6	9:30	10:00	Fine	2.3	66.8	68.5	65.0	Normal Operation
24-Mar-05	WN7	10:15	10:45	Fine	1.7	67.7	69.5	66.0	Normal Operation
24-Mar-05	WN8	11:00	11:30	Fine	1.4	68.7	70.5	67.0	Normal Operation
24-Mar-05	WN9	13:15	13:45	Fine	0.4	74.3	76.5	73.0	Normal Operation
24-Mar-05	WN10	14:00	14:30	Fine	0.3	73.9	75.5	72.0	Normal Operation
24-Mar-05	WN11	14:40	15:10	Fine	0.7	73.7	75.5	72.0	Normal Operation
24-Mar-05	WN12	16:15	16:45	Fine	0.6	69.7	72.0	68.0	Normal Operation
24-Mar-05	WN13	15:30	16:00	Fine	0.9	68.4	69.0	66.5	Normal Operation
24-Mar-05	WN14	14:45	15:15	Fine	0.5	67.1	68.5	65.0	Normal Operation
24-Mar-05	WN15	14:00	14:30	Fine	0.7	67.4	69.0	65.5	Normal Operation
24-Mar-05	WN16	13:15	13:45	Fine	0.2	66.8	68.0	64.5	Normal Operation
29-Mar-05	WN1	14:50	15:20	Fine	1.7	69.3	72.0	67.5	Normal Operation
29-Mar-05	WN2	15:30	16:00	Fine	1.6	68.8	71.5	67.0	Normal Operation
29-Mar-05	WN6	9:25	9:55	Fine	2.3	70.7	72.5	68.0	Normal Operation
29-Mar-05	WN7	10:00	10:30	Fine	2.0	69.4	72.0	67.0	Normal Operation
29-Mar-05	WN8	10:40	11:10	Fine	1.9	69.6	73.0	67.5	Normal Operation
29-Mar-05	WN9	11:30	12:00	Fine	1.8	72.4	74.5	70.0	Normal Operation
29-Mar-05	WN10	13:20	13:50	Fine	1.6	69.7	73.0	68.5	Normal Operation
29-Mar-05	WN11	14:45	15:15	Fine	1.4	69.1	72.0	67.0	Normal Operation
29-Mar-05	WN12	14:00	14:30	Fine	1.9	68.2	71.0	66.0	Normal Operation
29-Mar-05	WN13	13:15	13:45	Fine	1.6	68.4	71.5	66.5	Normal Operation
29-Mar-05	WN14	11:00	11:30	Fine	1.3	68.0	70.5	66.0	Normal Operation
29-Mar-05	WN15	10:15	10:45	Fine	1.9	69.9	72.5	67.5	Normal Operation
29-Mar-05	WN16	9:30	10:00	Fine	2.2	72.3	74.0	70.0	Normal Operation

APPENDIX K

Landscape and visual monitoring and audit report

Contract No. HY/99/18
Castle Peak Road Improvements between Sham Tseng and Ka Loon Tsuen

Landscape & Visual Audit and Monitoring

Monthly Inspection Report No. 37

(March 2005)

Prepared by

URBIS LIMITED

Prepared by :	*Tran Tuan Huy*	31st March 2005
Approved by :	*Alexander Duggie*	31st March 2005

1.0 INTRODUCTION

This is a Landscape and Visual Audit conducted to fulfill the requirements of the EIA during the Construction and Operational Phases of the project, and is based on the procedures and requirements as set out in the Castle Peak Road Improvements between Area 2 and Ka Loon Tsuen, Tsuen Wan - Environmental Monitoring and Audit Manual – West Contract.

Under the EIA, the proposed mitigation measures include both the planting works and treatment to structures. As stated in 6.4.2 of the EM & A, all measures undertaken by both the Contractor and the Landscape Contractor during the construction phase and the first 12 months of the operational phase shall be audited on a bi-weekly and bi-monthly basis respectively to ensure compliance with the intended aims of the mitigation measures.

2.0 SCOPE OF AUDIT

The broad scope of the audit on mitigation measures is as detailed below:

2.1 Planting Proposals

- Regular inspection of the agreed works areas to ensure no unnecessary intrusion by the Contractor outside the limit of the works;
- Regular review of the progress of engineering works to identify the earliest practical opportunity for the landscape works;
- Monitoring of tree transplanting and planting operations;
- Monitoring of works around the area of existing trees to be retained and protected;
- Monitoring of protection works for existing trees;
- Ensure planting works are carried out in accordance with the Specification and within the right planting season;
- Monitoring of the maintenance operations during the Establishment Period to ensure all plants are well watered and nutrients applied.

2.2 Standard Treatment to Structures

- Monitoring and review to ensure the proposed architectural treatments to retaining walls, viaducts, bridges, and noise barriers are implemented in accordance with the approved design, and where appropriate, to soften the hard edges to structures with planting works.

3.0 INSPECTIONS

3.1 Summary of Inspection – 3rd March 2005

3.1.1 Matters Arising from Previous Inspections

- The Contractor had cleared away the scattered construction waste piles at RW-01 area.
- The Contractor had emptied the waste container bin found at footbridge FB-02 area.
- The Contractor had cleared away the garbage pile at Slope 6 area.
- Tree protection to existing tree at Slope 6SW-D/C186 was still outstanding. The Contractor was reminded to carry out proper tree protection of existing tree as soon as possible.
- The Contractor was reminded to carry out assessment of the stability of the retained tree (T44) at Angler's Beach to ensure the tree is stable.
- No dry surface condition was observed during the inspection.

3.1.2 Site Clearance and Formation Works

- Construction waste piles were found at retaining wall RW13 area and also on the opposite slope. The Contractor was requested to clear it away as soon as possible.

3.1.3 Tree Felling and Transplanting Works

- No tree transplanting works was carried out during the inspection period.

3.1.4 Recommendations

- The Contractor was reminded to carry out proper tree protection to ensure existing trees retained are not damaged.
- The Contractor was reminded to clear away all scattered litter, garbage, etc. as found on site, and keep the site in a tidy condition at all times.

3.2 Summary of Inspection – 17th March 2005

3.2.1 Matters Arising from Previous Inspections

- The Contractor had cleared away the construction waste piles found at retaining wall RW13 area and also on the opposite slope. However, new construction waste pile was found at RW-13 area, and the Contractor was requested to clear it away as soon as possible.

- Tree protection to existing tree at Slope 6SW-D/C186 was outstanding. The Contractor was reminded to carry out proper tree protection of existing tree as soon as possible.

- The Contractor was reminded to carry out assessment of the stability of the retained tree (T44) at Angler's Beach to ensure the tree is stable.

- No dry surface condition was observed during the inspection.

3.2.2 Site Clearance and Formation Works

- Scrap wood pile was found at NM-02 area. The Contractor was requested to clear it away as soon as possible.

- Construction waste pile was found in front of Site Office. The Contractor was requested to clear it away as soon as possible.

3.2.3 Tree Felling and Transplanting Works

- No tree transplanting work was carried out during the inspection period.

3.2.4 Recommendations

- The Contractor was reminded to carry out proper tree protection to ensure existing trees retained are not damaged.

- The Contractor was reminded to clear away all scattered litter, garbage, etc. as found on site, and keep the site in a tidy condition at all times.

- The Contractor was reminded to carry out more frequent watering of the site during dry periods to prevent dust nuisance.

3.3 Summary of Inspection – 24th March 2005

3.3.1 Matters Arising from Previous Inspections

- The Contractor had cleared away the construction waste pile found at retaining wall RW13 area.
- The Contractor had cleared away the scrap wood pile found at NM-02 area. However, new scrap wood pile and construction waste piles were found and the Contractor was requested to cleared it away as soon as possible.
- The Contractor had cleared away the construction waste pile found in front of Site Office. However, a garbage bin was found to be full and the Contractor was requested to clear it away as soon as possible.
- Tree protection to existing tree at Slope 6SW-D/C186 was outstanding. The Contractor was reminded to carry out proper tree protection of existing tree as soon as possible.
- The Contractor was reminded to carry out assessment of the stability of the retained tree (T44) at Angler's Beach to ensure the tree is stable.
- Dry surface condition was observed at seawall 'C' area. The Contractor was reminded to carry out more frequent watering of the site to prevent dust nuisance.

3.3.2 Site Clearance and Formation Works

- A large construction waste pile was found at RW-01 area. The Contractor was requested to clear it away as soon as possible.
- Scrap wood pile was found at Slope 8 area. The Contractor was requested to clear it away as soon as possible.
- Scattered construction waste piles were found at seawall 'C' area. The Contractor was requested to clear it away as soon as possible.
- Construction waste piles were also found at footbridge FB-03 and Ma Wan Pier areas. The Contractor was requested to clear it away as soon as possible.

3.3.3 Tree Felling and Transplanting Works

- No tree transplanting work was carried out during the inspection period.

3.3.4 Recommendations

- The Contractor was reminded to carry out proper tree protection to ensure existing trees retained are not damaged.
- The Contractor was reminded to clear away all scattered litter, garbage, etc. as found on site, and keep the site in a tidy condition at all times.
- The Contractor was reminded to carry out more frequent watering of the site during dry periods to prevent dust nuisance.

4.0 TREE TRANSPLANTING SURVIVAL RATE

4.1 Tree Transplanting Survival Rate

The tree transplanting survival rate as reported by the Contractor for the period up to the end of March is 100%.

5.0 AUDIT SCHEULE

5.1 Audit Schedule for April 2005

The next audits are schedule to be conducted on 14th, and 28th April 2005.

APPENDIX L

Log record on environmental complaints

Log Record on Environmental Complaints

No.	Date of Complaint Received	Description	Propopsed Actions	Completion Date	Remarks
029	12-Aug-02	Complaint from Mr. Au regarding muddy water washing out from Kowloon Bound Lane from the construction site	Enlarge concrete paving at site entrance; further improvement to the existing temporary drainage system to minimise wash-off of waste water to the adjacent road; and make sure temporary water supply points are properly turned off during lunch break or other times when they are not in use.	16-Aug-02	
036	31-Aug-02	Complaint from Mrs. Chung regarding the generation of fugitive dust from the construction site in front of Tsing Lung Tau Village	Frequent watering of the related works area with the aid of water browser	31-Aug-02	
054	7-Dec-02	Complaint from Mr. Lo regarding the stagnant water ponding in front of the construction site at Sham Tseng	Explained to the complainant that the water ponding was a wheel washing bay	7-Dec-02	
067	3-Mar-03	Complaint from Hong Kong Garden Management Office regarding the noise from vehicular movement over the temporary road cover at Castle Peak Road provided by the Contractor	The Contractor has added extra welding to improve the rigidity of the temporary steel deck. The work was completed dring the off-peak hours in the period between 12-Mar-03 to 17-Mar-03.	17-Mar-03	The Contractor has taken noise readings and found that the noise level was within the baseline levels.
068	11-Mar-03	Complaint from Mr. Leung at Hong Kong Garden regarding the noise from evening road traffic, travelling over the steel decking plate on the adjacnt temporary road diversion.	The Contractor has added extra welding to improve the rigidity of the temporary steel deck. The work was completed dring the off-peak hours in the period between 12-Mar-03 to 17-Mar-03.	17-Mar-03	The Contractor has taken noise readings and found that the noise level was within the baseline levels.
070	6-Mar-03	Complaint from EPD regarding the reclamation works at Seawall B opposite to Hong Kong Garden on Sunday	The Contractor has previously informed the subcontractor of the statutory requirements as noise, dust emission, water discharge, and waste management. The Contractor agreed to keep vigilant in monitoring and survellance of the site and continue to remind the subcontractors of the statutory requirements.	10-Mar-03	The Contractor has formally closed all site area for the Chinese New Year. Entrances of all site area were barricaded before the Contractor's staff vacnated the sites on 30 January 2003.
070	6-Mar-03	Complaint from EPD regarding dust emission from the reclamation works at Seawall B opposite to Hong Kong Garden.	The Contractor has previously informed the subcontractor of the statutory requirements as noise, dust emission, water discharge, and waste management. The Contractor agreed to keep vigilant in monitoring and surveillance of the site and continue to remind the subcontractors of the statutory requirements.	10-Mar-03	The Contractor has investigated and confirmed that the marine works towards the eastern end of Seawall B was wet and the concreting works at the west end of the Seawall B were not dusty and no dust was emitted. Ground surface was also covered with crushed rock. The Contractor was also further reminded to spray water before and during unloading and moving of rock boulders and onto the haul road.
070	24-Mar-03	Complaint from EPD regarding daytime construction noise at Seawall B opposite to Hong Kong Garden.	The Contractor agreed to continuously monitor and review the operation in the vicinity opposite to Lung tang Court, in order to minimize the noise impact caused to the public. In addition the Contractor will respond to the complaints received on the 24- hours Contract Complaint Hotline 2496 2555 in the first instant.	31-Mar-03	No exceedance was recorded at the noise monitoring station WN6, WN7 and WN8 from January 2003 to March 2003. It was suspected that the noise was due to traffic noise together with operational noise of plant equipment at Seawall B. The Contractor was also reminded if reorganzation of working arrangement is necessary, mitigation proposal should be submitted to IC(E) for review. Additioinal noise monitoring shall also be conducted at the noise monitoring station WN8 once the mitigation proposal is implemented.

Log Record on Environmental Complaints

No.	Date of Complaint Received	Description	Propopsed Actions	Completion Date	Remarks
076	15-Apr-03	Complaint from Mr. Wong of TL 60 Management Limited regarding the noise nuisance generated from the vehicle movement over the temporary steel decking in front of Hong Kong Garden at Castle Peak Road provided by the Contractor.	The Contractor has replaced the isolated decking plate by 17 April 2003 and agreed to frequently inspect the condition of the steel decking. Further improvement works were completed on 25 April 2003.	25-Apr-03	
078	15-Apr-03	Complaint from Mr. Chau of Hong Kong Garden regarding the noise nuisance generated from vehicle movement over the temporary steel plate in front of the premises.	The Contractor has explained to Mr. Chau that the improvement works were completed on 25 April 2003 and agreed to carry out daily inspection to check the condition of the steel plate.	29-Apr-03	The complainant agreed that the noise nuisance has abated.
080	5-May-03	Complaint from Mr. Tsao / Mr. Chan of Mui Yuen, opposite to Bayside Villas regarding water leakage from the rocky slope behind his house and the damage of water pipes by cleaning works.	The water pipe was repaired on 9 May 2003. The Contractor has explained that the rocky slope was ouside the site boundary.	9-May-03	
082	7-May-03	Complaint from Ms. Chan regarding water ponding on existing footpath along Castle Peak Road near the Contractor's site office.	The Contractor has formed holes at existing upstand wall to drain off water trapped in the adjacent footpath and to patch up local depression at the affected footway with plain concrete.	19-May-03	
084	21-May-03	Complaint from Ms. Lam of Sea Crest Villa Phase I regarding construction noise from the slope works outside Sea Crest Villa Phase I.	The Contractor has observed low-noise emission construction equipment were being used at the time of inspection and proposed to speed up the works to limit the duration of daytime construction noise impact. The Contractor has provided additional information in their letter ref. HY/99/18/M45/300/40/10229 dated 25 June 2003. Additional noise monitoring had been taken by the Contractor on 22 May 2003 at WN15 obtaining the result of 66.6dB(A), which was below the limit level of 75dB(A). After reviewing the findings and investigation details, the Contractor confirmed that no further remedial actions was required.	25-Jun-03	The Contractor was requested to submit mitigation proposal to IC(E) for review and to implement the mitigation proposal. Additioinal noise monitoring is required to be conducted at the noise monitoring station WN15 once the mitigation proposal is implemented. The IC(E) had no comment on the Contractor's findings. Since no mitigation measures were implemented, additional noise monitoring was not conducted.
086	23-May-03	Complaint from Mr. So regarding stagnant water in the drainage and wheel washing bay near the entrance of Sea Crest Villa Phase IV and the damage of road surface near L1 main gate and CLP electricity supply room.	Explained to the complainant that the stagnant water inside the wheel washing bay was for cleaning of vehicle. The leakage found the temporary water pipe was repaired. The water and silt trapped in the U-channel near the main entrance of the estate was removed and the kerb on west side of the run-in to Gate L1 was reinstated.	29-May-03	The Contractor will properly maintain the wheel washing facility, regularly inspect and clean the drainage channel and the gully pots near the main entrance of the estate. The damaged paving slab and cable pit near the power supply room will be restored to original condition after completion of the adjacent substructure works around mid August 2003.
088	3-Jun-03	Complaint from EPD regarding construction dust from Seawall B.	The Contractor proposed to place the concerned area under higher priority and endeavor to water the concerned haul road more frequently during dry days.	6-Jun-03	No rock breaking activity has been observed in site audits since 5 June 2003. The haul road at Seawall B was observed wetted in the site audits. The Contractor was reminded to provide water spraying if there is rock breaking activity in this vicinity.

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088	3-Jun-03	Complaint from EPD regarding construction noise from Seawall B.	The Contractor reported that there may be occasional crashing noise for the piling works when rock level is reached. The Contractor has been providing mitigation measures, such as barrier and restriction of the rate of concerned works. The Contractor will also endeavor to expedite the works to reduce the duration of perceived daytime impact. The Contractor proposed to perform additional ad hoc inspections on Mondays, Wednesday and Fridays at the concerned area to confirm continual implementation of measures and to conduct additional noise monitoring where appropriate.	6-Jun-03	No rock breaking activity has been observed in site audits since 5 June 2003. Contractor has been reminded to submit mitigation proposal to IC(E) for review and to implement the mitigation proposal if provision of additional mitigation measures is required. The Contractor was also advised to provide portable noise barrier if there is rock breaking activity. Additioinal noise monitoring is also required to be conducted at the noise monitoring station WN8 once the mitigation proposal is implemented. The IC(E) had no comment on the Contractor's findings. Since no mitigation measures were implemented, additional noise monitoring was not conducted.
091	16-Jun-03	Complaint from Ms. Chan of Sea Crest Villa Phase 1 regarding noise from drilling works carried out at BPRW70 outside Sea Crest Villa Phase 1 before 07:00.	Upon investigation, the Contractor confirmed that there has been no construction work being conducted before 07:00. Nevertheless, the Contractor has scheduled the concerned work to be commenced at 08:00 as on 17 July 2003.	17-Jun-03	
092	16-Jun-03	Complaint from Mrs. Chung of Lido Garden regarding noise from drilling works carried out at BPRW70 opposite to Lido Garden before 07:00.	Upon investigation, the Contractor confirmed that there has been no construction work being conducted before 07:00. Nevertheless, the Contractor has scheduled the concerned work to be commenced at 08:00 as on 17 July 2003.	17-Jun-03	
097	27-Jun-03	Complaint from Mr Fok of Kai Shing Management Services regarding noise nuisance and the ponding of stagnant water arising from the construction activities outside Sea Crest Villa Phase III.	Upon investigation, the condition of water pumps installed separately at east end of the slope close to SCV Phase III and Pai Min Kok Stream Course has been checked. Noise generated from the ongoing construction works in these areas has been monitored. The rock breaking with jackhammer at PMK had been completed on 26 June 2003.	4-Jul-03	After further enquiry into the nature of the complaint, its appears that the complaint refers to the extended duration of construction works in the concerned area (i.e. inconvenienve caused due to lengthy works program). The Contrator's Mr Peter Ip has explained the nature of the works to the Management Office. There have been no further complaints from SCV Phase III since the briefing.
103	31-Jul-03	Complaint from Hong Kong Management Office regarding the noise generated by vehicles running over the steel decking plate on the Castle Peak Road close to Hong Kong Garden.	The existing steel decking plate had been repaired during off peak hours and regular inspection on the condition of steel plate and adjacent road surface was agreed to be conducted.	5-Aug-03	There had been no further complaints after the repair.
105	13-Aug-03	Complaint from Mr Chow of Sham Tseng regarding fell of all old trees along section of Castle Peak Road near Ma Wan Pier.	After investigation on the matter, it had been confirmed that the felling and the transplanting of group of trees along the Castle Peak Road near Ma Wan Pier had been carried out in compliance with approved plans and schedules. No follow up is required.	16-Aug-03	
108	11-Sep-03	Complaint from Mr Edith Lee of Sea Creat Villa Phase I complained that it was very dusty at her house and she found that there was no water spraying at the construction site of the slope near Ma Wan Pier.	After investigation on the matter, water browser was arranged for spraying through the haul road. Rock breaking location would be sprayed directly connected from water supply point. To follow up the case, water browser would be arranged every 2 to 3 hours depends on drying up condition. A worker would be arranged for spraying water through out the rock breaking process.	11-Sep-03	

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112	10-Oct-03	Complaint from Mr Cheung of FEHD that egarding the general refuse being accumulating on the pedestrian walkway between Sea Crest Villa Phase III and Phase II and the drainage channel at Pai Min Kok Village.	Investigation was conducted immediately on 11 October 2003. It was observed that the pedestrian walkway and Outfall I had been tidied up except at the corner of Sea Crest Villa Phase III where a broken umbrella and some broken traffic light was lying on the ground. Immediate action was taken to remove the broken umbrella and signal lights. The site area would be maintained regularly. It was noted that wooden formwork and construction materials might possibly been mistaken to be rubbish.	13-Oct-03	
114	25-Nov-03	Complaint log no. 114 was received on 25 November 2003 regarding the muddy water found on the beach opposite to Sea Crest Villa Phase III.	An inspection for the concerned site area at the interface between the beach and the construction site revealed that there was no evidence of active construction works adjacent to the beach or the presence of muddy water. There was also no evidence of muddy water discharge from Outfall I. The work programme for the following days leading up to the complaint was inspection and found that the bored piling activity had been completed and removed since 15 November 2003. The contractor would regularly monitor the area for muddy water. If potential discharge sources were identified, the Contractor would take action to rectify the situation.	26-Nov-03	
115	30-Nov-03	Complaint from Miss Chan of Sham Tseng Latrine was received on 30 November 2003 regarding the pond of foul water at the footway in front of Sham Tseng Latrine.	An inspection for the concerned site area was carried out. The water ponding was confirmed to be overflow from the terminal manhole, which was a part of public latrine system. The maintenance of the public latrine and the associated systems were the responsibility of FEHD. The Contractor had contacted FEHD to follow up the issue.	1-Dec-03	
116	6-Dec-03	Complaint from Mr Paul Wong of Hong Kong Garden Management Office was received on 6 December 2003 regarding construction noise during early hours of 8:00am.	Inspection of concern area and no abnormal construction activities was found. The Contractor had explained to the Complainer that no statutory permit was required for construction work other than percussive piling at 8:00am and the nature of works conducted at the area was well within permitted limits. ET was reminded the Contractor to implement noise mitigation proposal in accordance with EM&A Manual.	8-Dec-03	Noise generated from the ongoing construction works in these areas was monitored and no exceedance was found. As the Contractor had responded to the complainant and no further complaint was recorded, the Contractor proposed that no further remedial/ preventative measures were necessary.
123	20-Feb-04	Complaint from Mr Ho of TL60 Management Ltd was received on 20 February 2004 regarding noise arising from the temporary steel plates on road pavement near Blocks 1 & 2 of Hong Kong Garden	Condition of the decking plat was checked on 23 February 2004 and was repaired on 24 February 2004 during off peak hours.	24-Feb-04	Regular inspection will be conducted and adjacent works was be expedited to allow early road diversion for permanent removal of the steel plates.
139	9-Jul-04	Complaint from EPD was received on 9 July 2004 regarding noise arising from prescribed construction works or works using power mechanical equipment at night near Seawall-B area opposite to Hong Kong Garden	After investigation on the matter, there was no evidence of carrying out the prescribed constuction works or using power mechanical equipment between 1900 and 2300 on 3 July 2004.	23-Jul-04	
140	10-Jul-04	Complaint from Highway Department was received on 10 July 2004 regarding noise arising from rock breaking near Sea Crest Villa Phase 3	After investigation on the matter, there was no evidence of rock breaking activities undertaken in the vicinity of Sea Crest Villa Phase 3.	23-Jul-04	

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149	11-Aug-04	Complaint from EPD regarding the sandy wake of a marine vessel carrying sand to the beach reinstatement area of Seawall B	After investigation on the matter, the following action was proposed. The vessel and water depth should be thoroughly checked prior to sand placing. If shadow water need to be approached, another shallower vessel should be used. The land co-ordinator should cease the sand placing operation if muddy plumes were noticeable.	31-Aug-04	
154	25-Aug-04	Complaint from Ms Tang regarding littering on the slope close to the Sea Crest Villa Phase 2.	After investigation on the matter, there was no evidence that the problem was caused by any construction activities.	27-Aug-04	
156	18-Sep-04	Complaint from Mr Chu regarding excessive garbage trapped along the adjacent shore of Seawall B west end.	It was out of control over the accumulation of floating rubbish drifting toward the shore. However, the contractor would remove them as soon as possible.	20-Sep-04	
166	4-Nov-04	Complaint from Mr Wong regarding the accumulation of foul ground and sewage waters in the trench in front of the strip of restaurants at Sham Tseng.	Contractor placed a sludge separation plant to treat the accumulated water prior to discharge and pumped away the accumulated water as regularly as possible. An CNP has been attained for the pumping of concerned areas.	11-Nov-04	
172	5-Jan-05	Complaint from Mr Raymond Chan regarding the daytime construction noise started 7:30am over the past few days.	Contractor clarified with Mr Chan that construction work at 7:30am was within regulation guidelines. However, the contractor still agreed to arrange noisy activities be carried out after 8:00am.	5-Jan-05	
175	28-Jan-05	Complaint from Mr Kan regarding the rubbish discarded at the finished RERW slopes and Outfalls opposite to Sea Crest Villa Phase II and III.	Contractor inspected the concerned area, taken photographs and carry out maintenance works as requested.	31-Jan-05	