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
June 2005

Third 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 – June 2005

July 2005

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20 July 2005

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Our Ref: 910-06/E05-51618

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 (June 2005)

We refer to the electronic version of the captioned report submitted by your Mr. Fredrick Leung via e-mail on 8 July 2005 and subsequent revised page on 11 and 19 July 2005. We do not have further comment and endorsed the report.

Yours sincerely

Coleman Ng
Independent Checker (Environmental)
HYDER CONSULTING LIMITED

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TABLES

Table 3-1 TSP monitoring parameters and frequency
Table 3-2 Air quality monitoring locations
Table 3-3 Construction noise monitoring parameters and frequency
Table 3-4 Construction noise monitoring locations
Table 3-5a Water quality monitoring locations (Original)
Table 3-5b Water quality monitoring locations (New)
Table 3-6 Action and Limit Level for air quality
Table 3-7 Event/Action plan for air quality
Table 3-8 Action and Limit Levels for construction noise
Table 3-9 Event/Action plan for construction noise
Table 3-10 Action and Limit Levels of water quality
Table 3-11 Event/Action plan for water quality
Table 3-12 Event/Action plan for landscape and visual impact
Table 4-1 Equipment list for air quality monitoring
Table 4-2 Calibration dates of 1-hour TSP monitoring equipment
Table 5-1 Equipment list for construction noise monitoring
Table 6-1 Water quality monitoring equipment
Table 8-1 Summary of environmental concerns identified in site audits in June 2005
Table 8-2 Waste disposal quantity in June 2005
Table 8-3 Cumulative statistics on environmental complaints

FIGURES

Figure 1-1 Site location plan
Figure 3-1a Monitoring locations
Figure 3-1b Monitoring locations
Figure 3-1c Monitoring locations
Figure 3-1d Monitoring locations
Figure 3-1d Monitoring locations
Figure 3-1e Monitoring locations
Figure 3-2 Flow chart of the complaint response procedure
Figure 4-1 Graphical Presentation of 1-Hour TSP Levels for June 2005
Figure 4-2 Graphical presentation of 24-hour TSP levels for June 2005
Figure 5-1 Graphical presentation of daytime noise levels for June 2005

APPENDICES

APPENDIX A
Detailed site layout plans

APPENDIX B
Construction programme

APPENDIX C
Monitoring schedule for June 2005 and July 2005

APPENDIX D
Calibration certificates of 24-hour TSP monitoring equipment

APPENDIX E
Calibration certificates of 1-hour TSP monitoring equipment

APPENDIX F
Detailed air quality (1-hour TSP) monitoring results

APPENDIX G
Detailed air quality (24-hour TSP) monitoring results

APPENDIX H
Detailed wind monitoring data for the air quality monitoring period

APPENDIX I
Calibration certificates of noise monitoring equipment

APPENDIX J
Detailed noise monitoring results

APPENDIX K
Landscape and visual monitoring and audit report

APPENDIX L
Detail of the complaint

APPENDIX M
Log record on environmental complaints

CONTENTS

		Page
EXECUTIVE SUMMARY		**1**
1.	**INTRODUCTION**	**3**
1.1	Project Background	3
1.2	Designated Project	4
1.3	Impact EM&A Requirements	4
1.4	Purpose of the Report	4
2.	**ENVIRONMENTAL STATUS**	**5**
2.1	Construction Programme	5
2.2	Construction Activities of the Month	5
3.	**SUMMARY OF EM&A REQUIREMENTS**	**6**
3.1	Air Quality Monitoring	6
3.2	Construction Noise Monitoring	7
3.3	Water Quality (Designated Project)	8
3.4	Landscape and Visual Monitoring and Audit	13
3.5	3.5 Performance Limits and Event-Action Plans	13
3.6	Site Inspection and Environmental Complaint Handling	21
4.	**AIR QUALITY**	**24**
4.1	Monitoring Parameters and Equipment	24
4.2	Methodology	24
4.3	Results and Observations	27
5.	**NOISE**	**29**
5.1	Monitoring Equipment	29
5.2	Methodology	29
5.3	Results and Observations	30
6.	**WATER QUALITY (DESGINATED PROJECT)**	**31**
6.1	Water Quality Equipment	31
6.2	Methodology	31
6.3	Marine Monitoring	33
7.	**LANDSCAPE AND VISUAL MONITORING AND AUDIT**	**34**
7.1	Summary of Inspection – 9 June 2005	34
7.2	Summary of Inspection – 23 June 2005	35
7.3	Tree Transplanting Survival Rate	35
7.4	Audit Schedule	35
8.	**SITE INSPECTION, WASTE DISOSPAL, ENVIRONMENTAL COMPLAINTS, ENVIRONMENTAL LICENSES AND NON-COMPLIANCE RECORDS**	**36**
8.1	Site Audit Findings	36
8.2	Waste Disposal	37
8.3	Complaint Record	37
8.4	Non-compliances	38
8.5	Notification of Summons and Successful Prosecution	38
8.6	Environmental Licenses	38
9.	**REFERENCES**	**38**

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 41st monthly environmental monitoring and audit (EM&A) report presenting the progress of environmental monitoring and audit works for the period between 1 to 30 June 2005, including air quality monitoring and noise monitoring. Air quality was measured in terms of 1-hour Total Suspended Particulates (TSP) and 24-hour TSP. Noise was measured in terms of $Leq_{(30min)}$ with L_{10} and L_{90} measurements as references. Environmental works included the weekly environmental audit and the bi-weekly landscape and visual monitoring and audit.

Air Quality

A total of 5 sets of 3 consecutive 1-hour TSP measurements were conducted during the reporting month. The highest 1-hour TSP level of 337.8 $\mu g/m^3$ was recorded at G/F, Regent Height, Hong Kong Garden (WA4) on 10 June 2005 while the lowest 1-hour TSP level of 67.3 $\mu g/m^3$ was recorded at Car Park L3, Block 6, Phase 2, Sea Crest Villa (WA9) on 16 June 2005.

A total of 5 sets of 24-hours TSP measurement were conducted during the reporting month. The highest 24-hour TSP level of 144.6 $\mu g/m^3$ was recorded at G/F, Tsing Lung Tau Temple (WA6) on 3 June 2005 while the lowest 24-hour TSP level of 19.1 $\mu g/m^3$ was recorded at Podium, Block 1, Phase 1, Sea Crest Villa (WA10) on 15 June 2005.

There is no 1-hour and 24-hours exceedance of the Action and Limit (A/L) Levels registered during the monitoring period.

Noise

A total of 4 sets of daytime (0700 – 1900 hours) noise monitoring were conducted during the reporting month. The highest noise level of 74.5 dB(A) was recorded at G/F, Carpark, Lido Garden Tower 1 (WN16) on 6 June 2005 while the lowest noise level of 64.2 dB(A) was recorded at G/F, Hong Kong Garden (between Block 1 & 2) (WN7) on 28 June 2005.

No exceedance of the noise A/L Levels was recorded during the monitoring period.

Marine Water Quality

No marine water quality monitoring was conducted in June 2005.

Environmental Auditing

A total of 5 environmental site audits were conducted on a weekly basis in June 2005. No non-compliance with the environmental requirements was identified during the reporting period. The improvement actions against observations of the site audits for the Contractor included:

- **Water quality:** cleaning of open channels and mud trails.
- **Air quality:** exposed slope covering.
- **Construction Noise:** reduction of construction noise.
- **Waste Management:** clearing accumulated oil stain and proper storage of empty oil drums; improvement of house keeping of the store rooms.

- **Mosquito Control:** moisture control against stagnant water within the site.

Landscape and Visual

A total of 2 landscape and visual monitoring and audits were carried out on a biweekly basis in June 2005. The Registered Landscape Architect had recommended as follows:

- 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.
- No tree transplanting work was carried out during the month. Up to the end of June 2005, 100% tree transplanting survival rate was reported.
- As a number of slopes had been completed since last year, the Contractor was reminded to carry out the required planting works.

Waste Disposal

A total of 16 loads of Construction & Demolition (C&D) waste materials and a total of 737 loads of C&D materials (Public Fill) were disposed of at WENT Landfills and Public Filling Area in Tuen Mun respectively in June 2005. No chemical waste was disposed of in the reporting period.

Complaint Record

One environmental complaint was received on 10 June 2005 regarding the obstructions and mosquitoes found in the footway near Sea Crest Villa Phase 4. The Contractor took the following corrective actions on 14 June 2005 to rectify the situation: cleaning up the precast footbridge deck; realigning the existing mill barriers to widen the adjacent footbridge deck and spaying appropriate insecticide.

Non-compliances

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

Notification of Summons and Successful Prosecution

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

Environmental Licenses

No new CNP was granted during the reporting month.

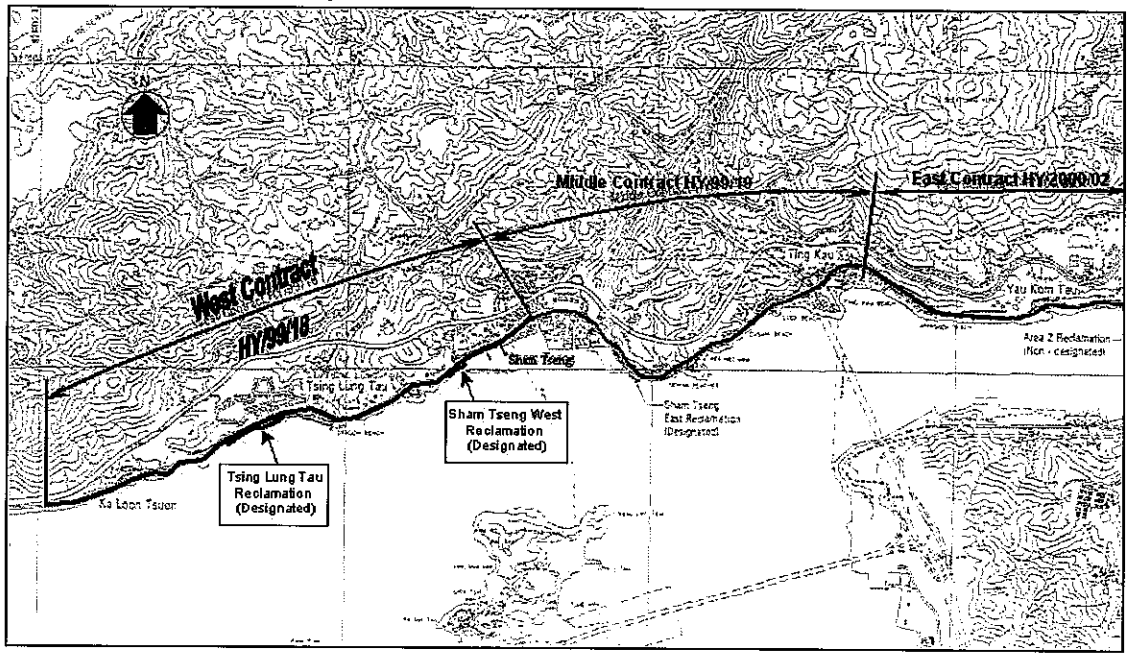
1. INTRODUCTION

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 45 months from December 2001 to August 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 fortieth 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 June to 31 June 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 June 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 June 2005 and the tentative schedule for July 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

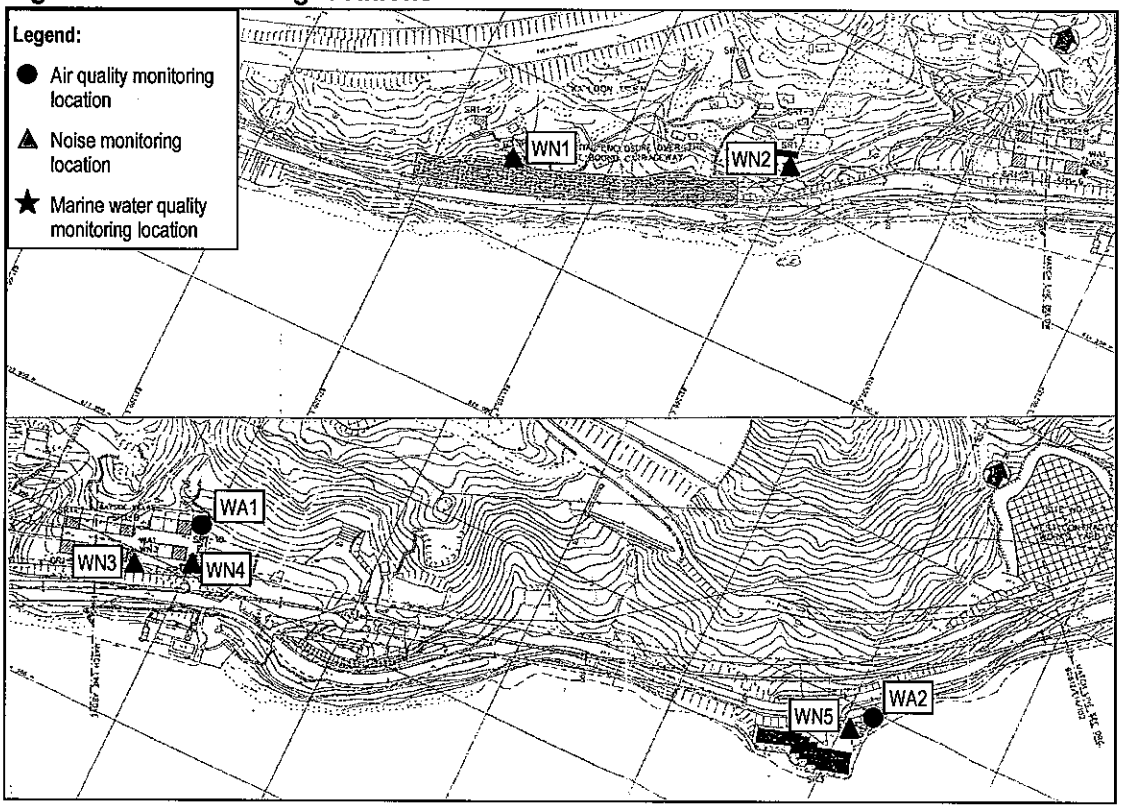


Figure 3-1b Monitoring locations

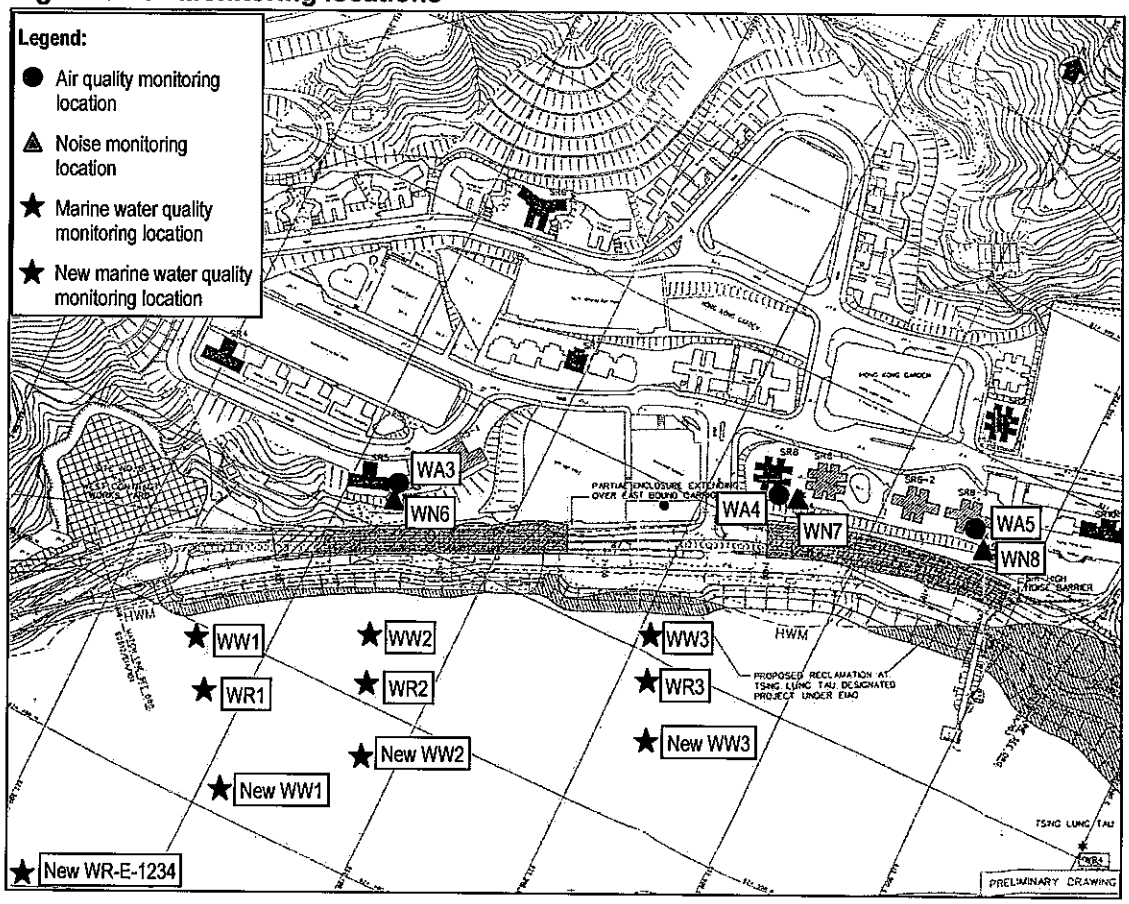


Figure 3-1c Monitoring locations

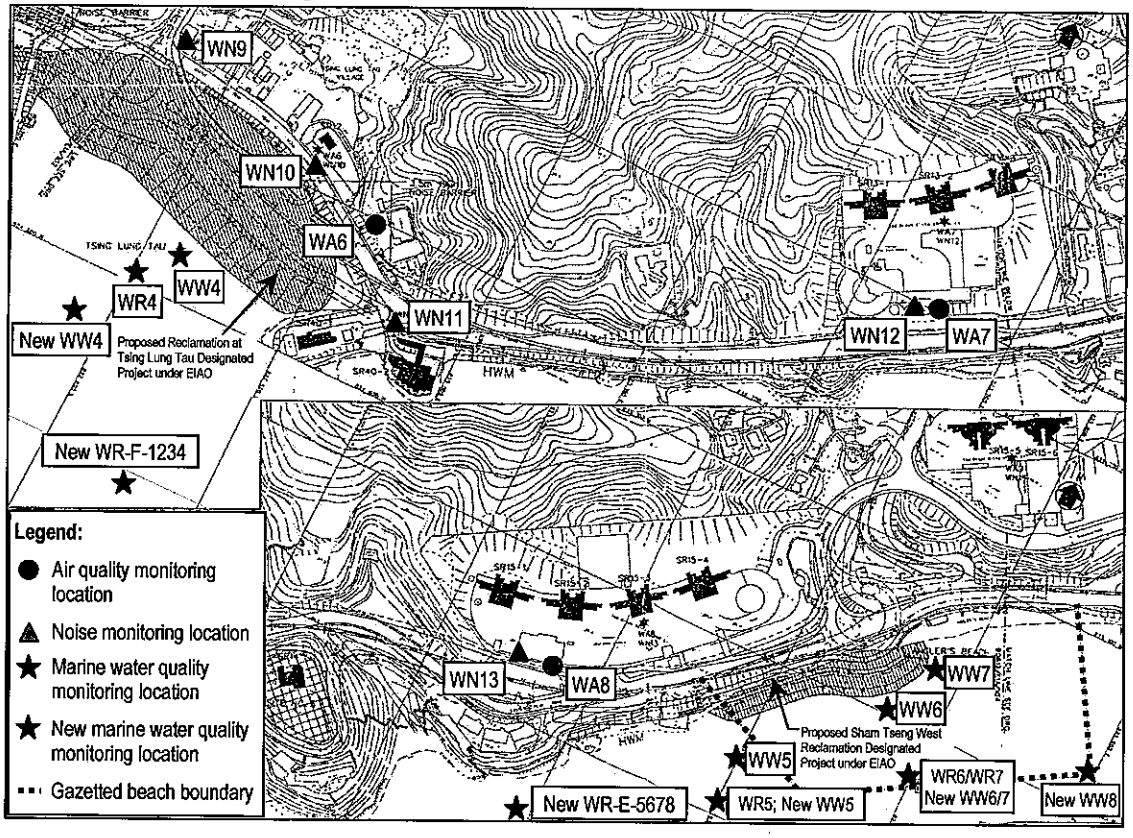


Figure 3-1d Monitoring locations

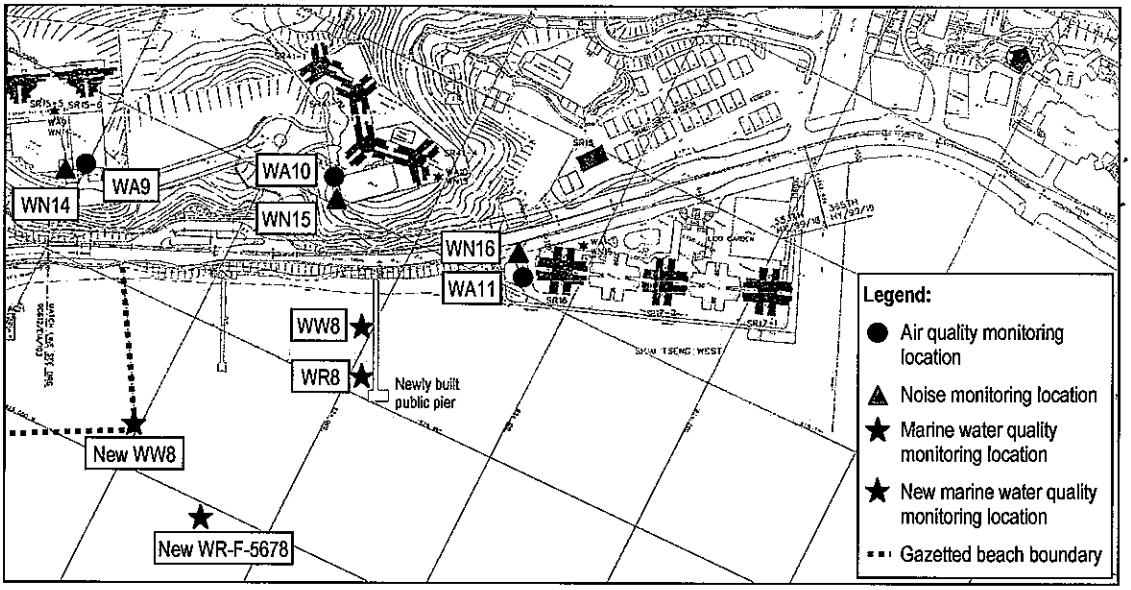
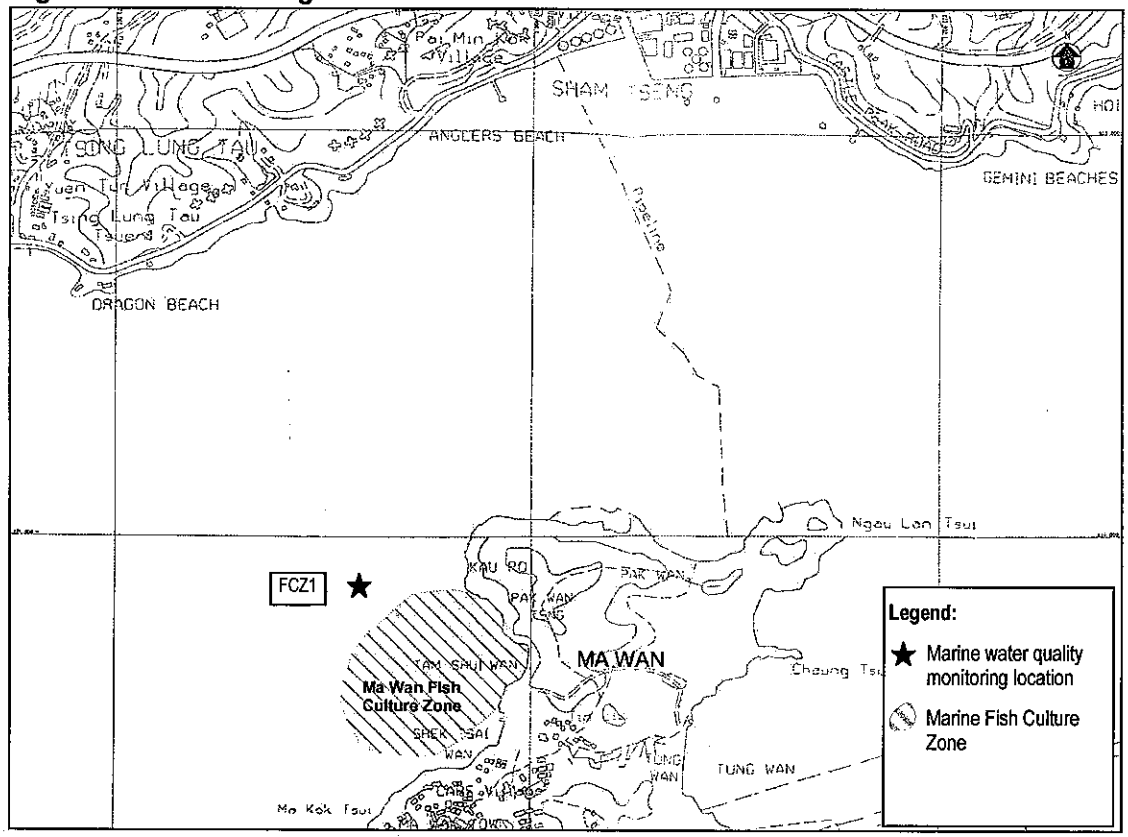


Figure 3-1e Monitoring locations



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 3.5Performance 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.

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 3-7 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.

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 June 2003, and will be finalised subject to agreement with EPD.

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.

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.

3.6 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 June 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.

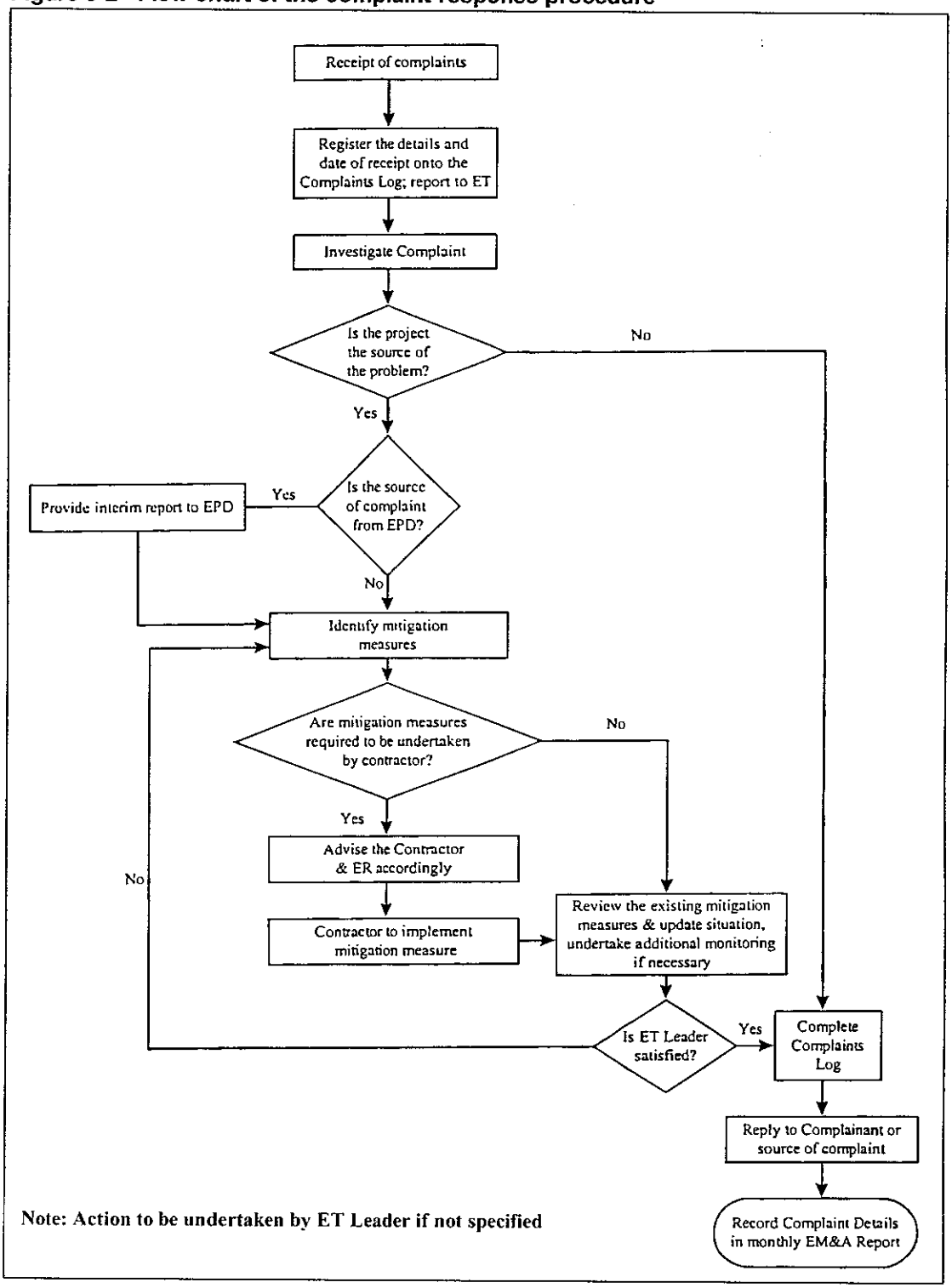
h) The ET will report on the investigation results and the subsequent actions to the source of complaint for responding to the complainant (If the source of complaint is via EPD, the results will be reported within the time frame assigned by EPD).

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 31 July 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
	4239	03-Feb-05	03-Feb-07

4.3 Results and Observations

4.3.1 Weather conditions and other factors

No adverse weather conditions, in particular adverse wind speed and wind direction that may significantly affect or invalidate the collected air quality monitoring data, were registered during the reporting period.

Neither unusual operation of the construction site nor abnormal TSP source was observed during the reporting period.

4.3.2 Summary of Results

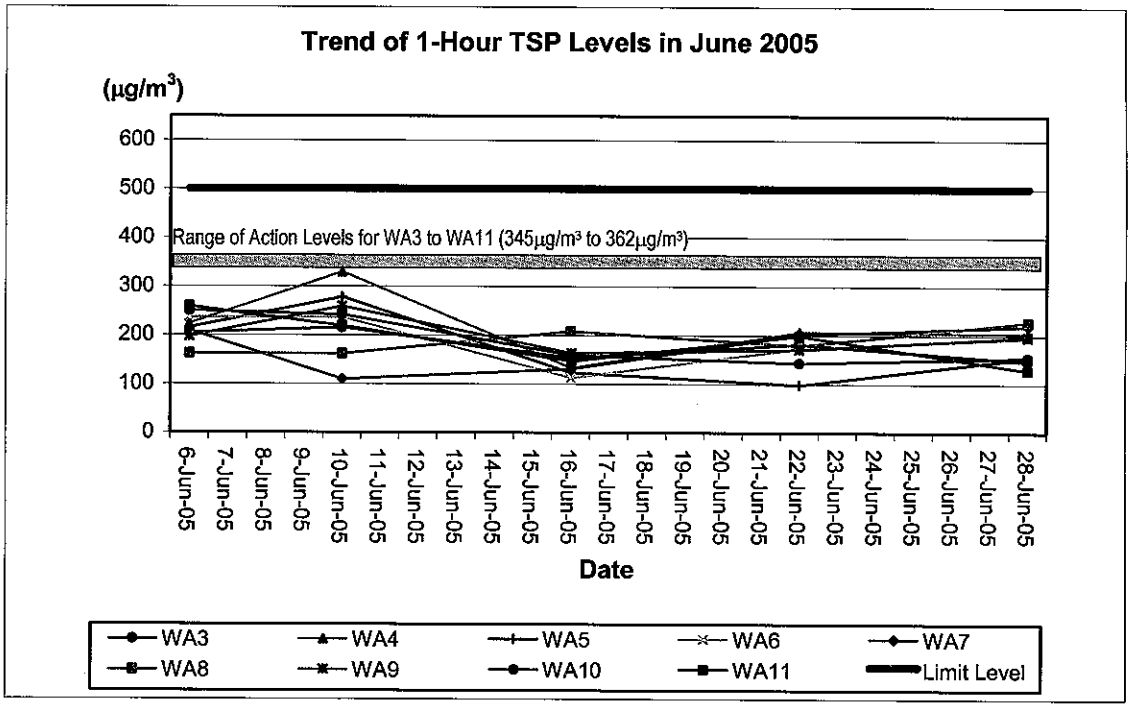
1-hour TSP

A total of 5 sets of 3 consecutive 1-hour TSP measurements were conducted on 6, 10, 16, 22 and 28 June 2005.

The highest 1-hour TSP level of 337.8 $\mu g/m^3$ was recorded at G/F, Regent Height, Hong Kong Garden (WA4) on 10 June 2005 while the lowest 1-hour TSP level of 67.3 $\mu g/m^3$ was recorded at Car Park L3, Block 6, Phase 2, Sea Crest Villa (WA9) on 16 June 2005. There was no exceedance of the A/L Levels during the monitoring period.

Detailed monitoring results of 1-hour TSP are given in Appendix F and graphical presentation of the 1-hour TSP levels at each monitoring location is illustrated in Figure 4-1.

Figure 4-1 Graphical Presentation of 1-Hour TSP Levels for June 2005



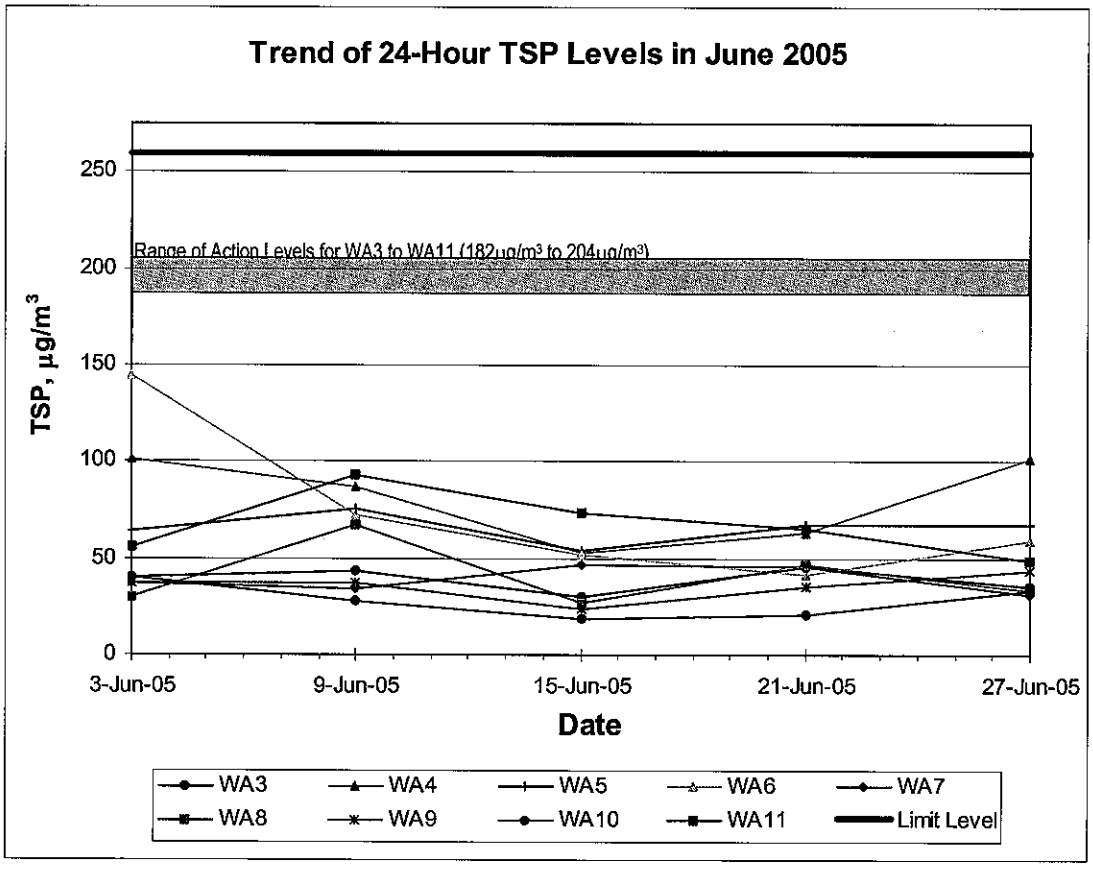
24-hourTSP

A total of 5 sets of 24-hour TSP measurement had been taken on 3, 9, 15, 21 and 27 June 2005.

The highest 24-hour TSP level of 144.6 $\mu g/m^3$ was recorded at G/F, Tsing Lung Tau Temple (WA6) on 3 June 2005 while the lowest 1-hour TSP level of 19.1 $\mu g/m^3$ was recorded at Podium, Block 1, Phase 1, Sea Crest Villa (WA10) on 15 June 2005. There was no exceedance of the A/L Levels during the monitoring period.

Detailed monitoring results of 24-hour TSP are given in Appendix F and graphical presentation of the 24-hour TSP levels at each monitoring location is illustrated in Figure 4-2.

Figure 4-2 Graphical Presentation of 24-Hour TSP Levels in June 2005



4.3.3 Wind Monitoring Data

Detailed wind monitoring data for the June 2005 are extracted from Hong Kong Observatory – Tsing Yi Wind Monitoring Station and presented in Appendix H.

5. NOISE

5.1 Monitoring Equipment

Details of the integrating sound level meters used in the noise monitoring are shown 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

No adverse weather conditions, in particular adverse wind speed & wind direction and fog & rain that may significantly affect or invalidate the collected noise monitoring data, were registered during the reporting period.

Neither unusual operation of the construction site nor abnormal noise source was observed during the reporting period.

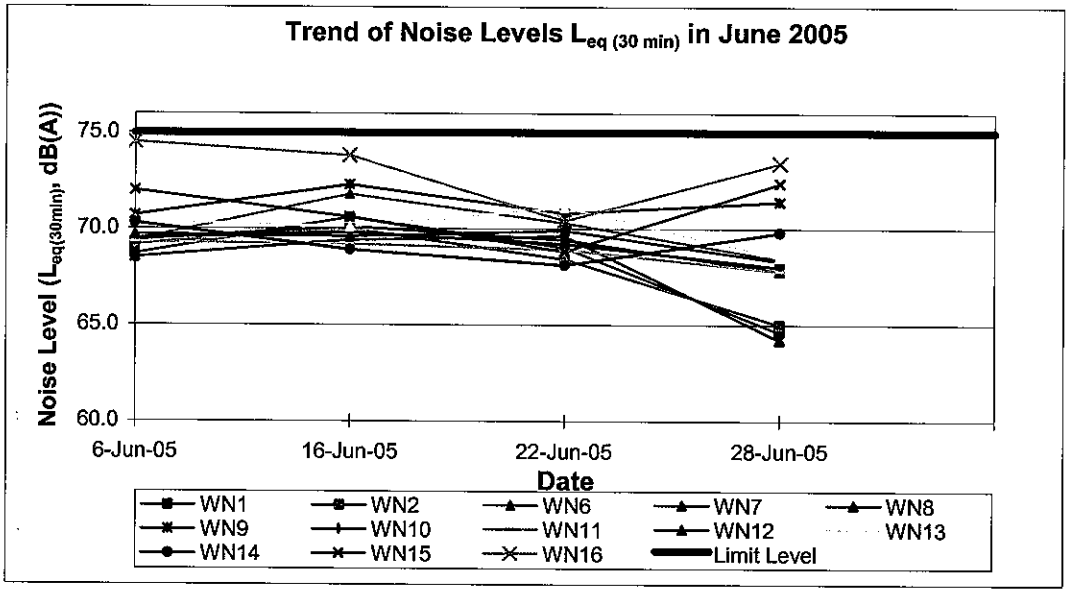
5.3.2 Summary of Results

A total of 4 set of noise measurement had been conducted between 0700-1900 hours on 6, 16, 22 and 28 June 2005.

The highest noise level of 74.5 dB(A) was recorded at G/F, Carpark, Lido Garden Tower 1 (WN16) on 6 June 2005 while the lowest noise level of 64.2 dB(A) was recorded at G/F, Hong Kong Garden (Between Blk 1 & 2) (WN7) on 28 June 2005.

Detailed construction noise monitoring results are given in Appendix J and graphical presentation of the noise levels at each monitoring location is illustrated in Figure 5-1.

Figure 5-1 Graphical Presentation of Day-time Noise Levels in June 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 was 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. Tby and DO were measured in-situ while 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 equipped with a 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°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 completed 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°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 salinity meter 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 9 and 23 June 2005 by a Registered Landscape Architect.

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

7.1 Summary of Inspection – 9 June 2005

7.1.1 Matters Arising from Previous Inspections

- The Contractor cleared the scattered litter at footbridge FB-02.
- The Contractor cleared away the construction wastes piles at NM-02, FB-02 and Slope 8 areas.
- Dry surface condition was observed at RW-01 area and NM-02. The Contractor was reminded to carry out more frequent watering of the area to prevent construction dust nuisance.

7.1.2 Site Clearance and Formation Works

- Construction waste piles were found at RW-01 area and also underneath FB-11 and FB-03. The Contractor was requested to clear it away as soon as possible.
- Empty cement bags and scrapt wood piles were found at NM-02 area. The Contractor was requested to clear it away as soon as possible.
- Untidy site conditions were observed at the area in front of the existing 6SE-C /C25 and Sea Crest Villa Phase 3. The Contractor was requested to tidy up the area 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 clear away all scattered litter, garbage, etc. as found within the construction site, and keep the site in a tidy condition at all times.
- The Contractor was reminded to carry out more frequent watering of the exposed dry and dusty areas during dry and windy days to prevent construction nuisance.
- A number of slopes were completed last year. The Contractor is reminded to carry out planting works as required as soon as possible.

7.2 Summary of Inspection – 23 June 2005

7.2.1 Matters Arising from Previous Inspections

- Contractor cleared the construction waste piles at RW-01 area .
- The Contractor cleared the empty cement bags and scrap wood piles at NM-02 area. New piles of construction waste and garbage were however observed. The Contractor was requested to clear it away as soon as possible.
- The Contractor tidied up the site area in front of the Sea Crest Villa Phase 3, except that of existing 6SE-C/C25. The Contractor was requested to tidy up the outstanding area as soon as possible.
- The Contractor cleared the construction waste piles at FB-11 and FB-03. New piles of construction waste and garbage were however observed at FB-03.The Contractor was requested to clear it away as soon as possible.
- No dry surface condition was observed during the inspection.

7.2.2 Site Clearance and Formation Works

- A construction waste pile was found at FB-01 area. The Contractor was requested to clear it all away as soon as possible.
- A construction waste pile was found at the entrance to Dragon Garden. 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 clear away all scattered litter, garbage, etc. and keep the site in a tidy condition at all times.
- A number of slopes were completed last year. The Contractor is reminded to carry out planting works as required as soon as possible.

7.3 Tree Transplanting Survival Rate

7.3.1 Tree Transplanting Survival Rate

- Tree transplanting survival rate of 100% was reported by the Contractor for the period up to the end of June 2005.

7.4 Audit Schedule

7.4.1 Audit Schedule for July 2005

- The next audits are scheduled on 7 and 21 July 2005.

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

8.1 Site Audit Findings

Five occasions of weekly environmental site audits were carried out on 2, 9, 16, 23 and 30 June 2005. Findings of the site audits are summarised in Table 8-1.

Table 8-1 Findings of Weekly Environmental Site Audit in June 2005

Date of ssue Raisec	Observation	Advice from EA	CT's Response / Environmental Outcomes	Closing Date
02 June 2005 (WC163)	. Muddy effluent at outfall opposite to SCV Phase 4 was found.	Contractor to improve the desilting efficiency.	Agreed with the EA's advice.	09 June 2005
	. Slope 8 was exposed.	Contractor to add more sandbags for bunding.	Agreed with the EA's advice.	09 June 2005
	. Mud trails were found on public road near FB01.	Contractor to clean.	Agreed with the EA's advice.	09 June 2005
	. Waste accumulated along NM02.	Contractor to clear.	Agreed with the EA's advice.	09 June 2005
	. Implementation of pest control was observed.	Contractor to maintain.	Agreed with the EA's advice.	09 June 2005
09 June 2005 (WC164)	. Stagnant water was found at RW01.	Contractor to dry off the stagnant water.	Agreed with the EA's advice.	16 June 2005
	. Mud trails were found on public road near FB03.	Contractor to clean.	Agreed with the EA's advice.	16 June 2005
	. Waste accumulated along NM03.	Contractor to clear.	Agreed with the EA's advice.	16 June 2005
	. No labeling for chemical stored in FB03.	Contractor to label.	Agreed with the EA's advice.	16 June 2005
	. Oil stains were found at FB03.	Contractor to clean.	Agreed with the EA's advice.	16 June 2005
16 June 2005 (WC165)	. Stagnant water was found at the end of Slope 6.	Contractor to dry off the stagnant water.	Agreed with the EA's advice.	23 June 2005
	. Waste accumulated along NM03.	Contractor to clear.	Agreed with the EA's advice.	23 June 2005
	. Implementation of pest control was observed.	Contractor to maintain.	Agreed with the EA's advice.	16 June 2005
23 June 2005	. Stagnant water and poor house keeping was observed within the store room near Slope 6.	Contractor to dry off the stagnant water and improve house keeping.	Agreed with the EA's advice.	30 June 2005
	. Mud trails were found on public road near Dragon Garden..	Contractor to clean.	Agreed with the EA's advice.	30 June 2005

Date of ssue Raisec	Observation	Advice from EA	CT's Response / Environmental Outcomes	Closing Date
	. Construction waste was piled at FB03	Contractor to clear.	Agreed with the EA's advice.	30 June 2005
30 June 2005	Refuse was found at RW01 W23 gate	Contractor to remove.	Agreed with the EA's advice.	To be followed-up in next environmental site audit.
	Drainage channel/U-Channel at RW01 near W23 was silty.	Contractor to clear.	Agreed with the EA's advice.	
	Implementation of mosquito control measures was observed.	Contractor to maintain.	Agreed with the EA's advice.	
	Rock drilling at Sea Crest Phase 3 was noisy.	Contractor to improved.	Agreed with the EA's advice.	
	Poor house keeping was observed within the stite near Sea Crest Phase 3.	Contractor to improved by replacing sandbags to rectify silt/sand leakage.	Agreed with the EA's advice.	

8.2 Waste Disposal

Disposal of waste material in the reporting month complied in general with the corresponding waste disposal requirements. The waste disposal quantity in the reporting month is summarised in Table 8-2.

Table 8-2 Waste disposal quantity in June 2005

Type of waste or material		Disposal at	No. of loads or quantities	Remarks
C&D waste		WENT Landfill	16 loads	--
C&D material		Public Filling Area in Tuen Mun	737 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

One environmental complaint was received on 10 June 2005 regarding the obstructions and mosquitoes found in the footway near Sea Crest Villa Phase 4. The following corrective actions were taken on 14 June 2005 to rectify the situation:

- Thorough cleaning up around the precast footbridge deck;
- Realigning the existing mill barriers to widen the adjacent footbridge deck; and
- Spaying appropriate insecticide.

Detail of the complaint is given in Appendix L. A log record on the environmental complaints is given in Appendix M and a cumulative statistics on environmental complaints is given in Table 8-3.

A log record on the environmental complaints is given in Appendix M 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	37

8.4 Non-compliances

Neither air quality nor noise non-compliance was registered during the reporting period.

8.5 Notification of Summons and Successful Prosecution

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

8.6 Environmental Licenses

No new CNP was 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.

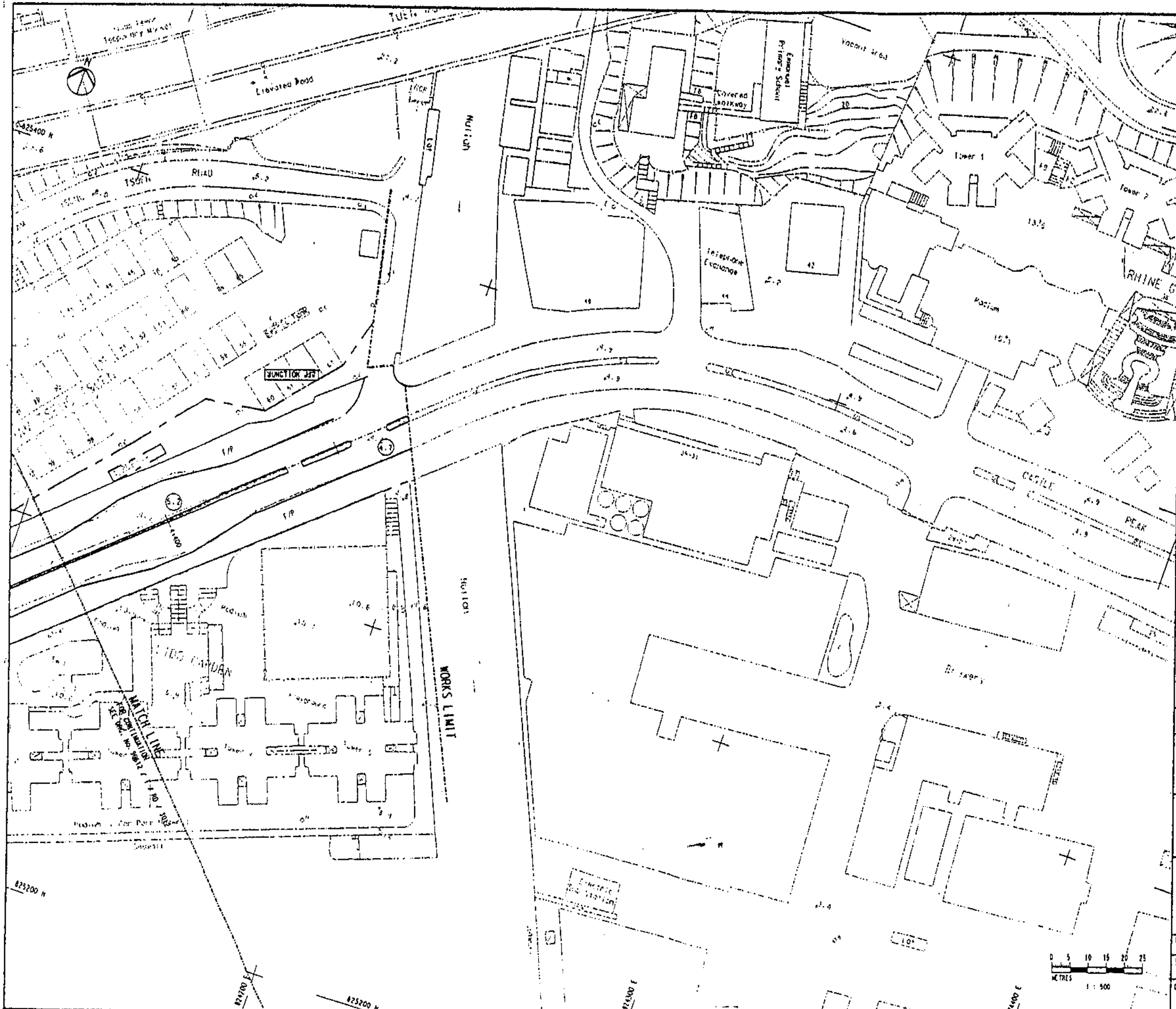
[2] Ove Arup & Partners Hong Kong Limited. July 2002. Contract No. HY/99/18 Castle Peak Road Improvement between Shem Tseng and Ka Lung Tsuen, Tsuen Wan, Environmental Baseline Monitoring Report (Second Issue).

[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



NOTE

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

CONTRACT DRAWING

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B	2nd Issue	Contract issue	SP	DC		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
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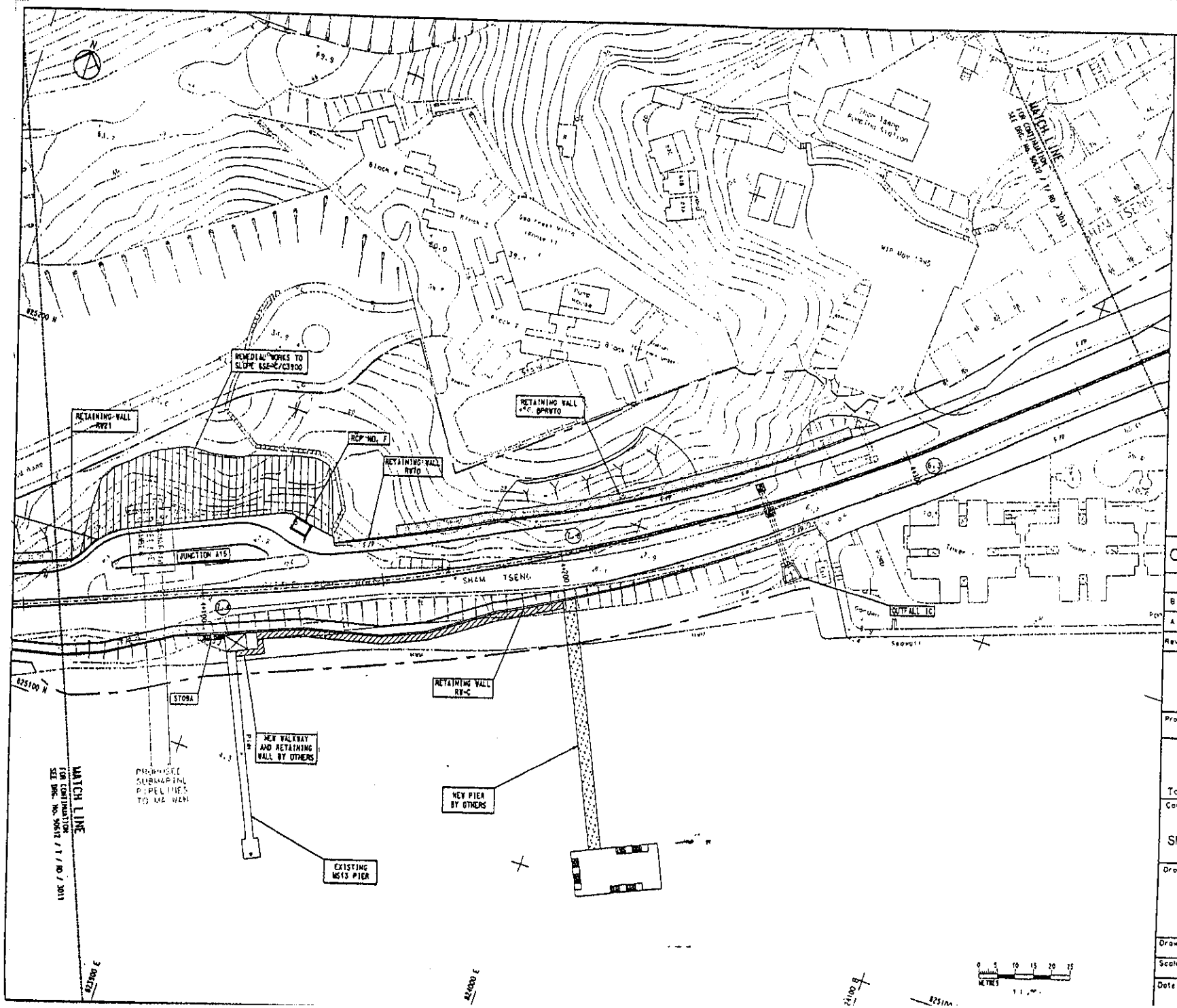

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A	First Issue	Tender Issue	SP	DC	PS	JUN

Major Works Project Management Office,
Highways Department,
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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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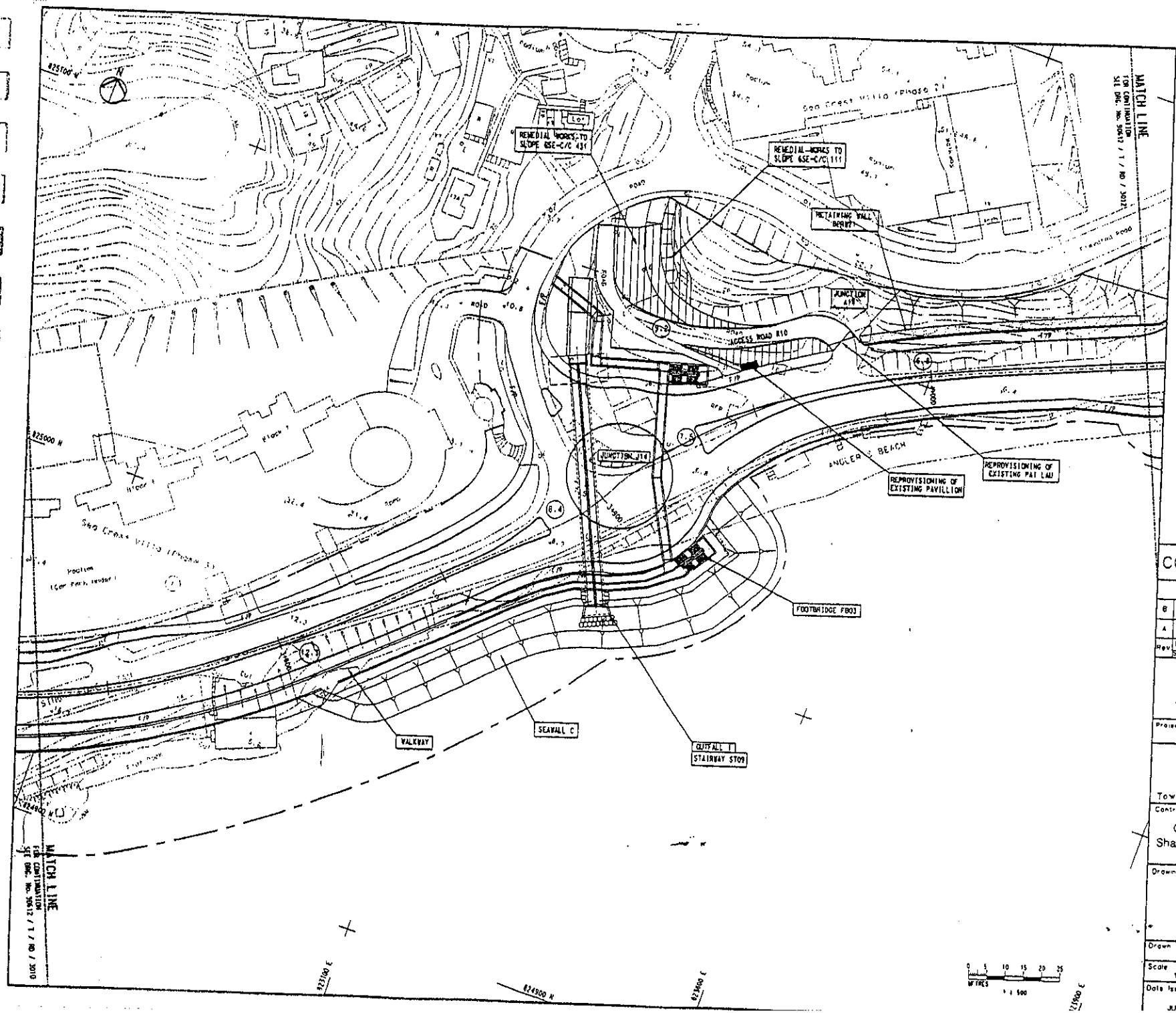

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A	First Issue	Tender Issue	SP	DC	PS	JUN 01

Major Works Project Management Office,
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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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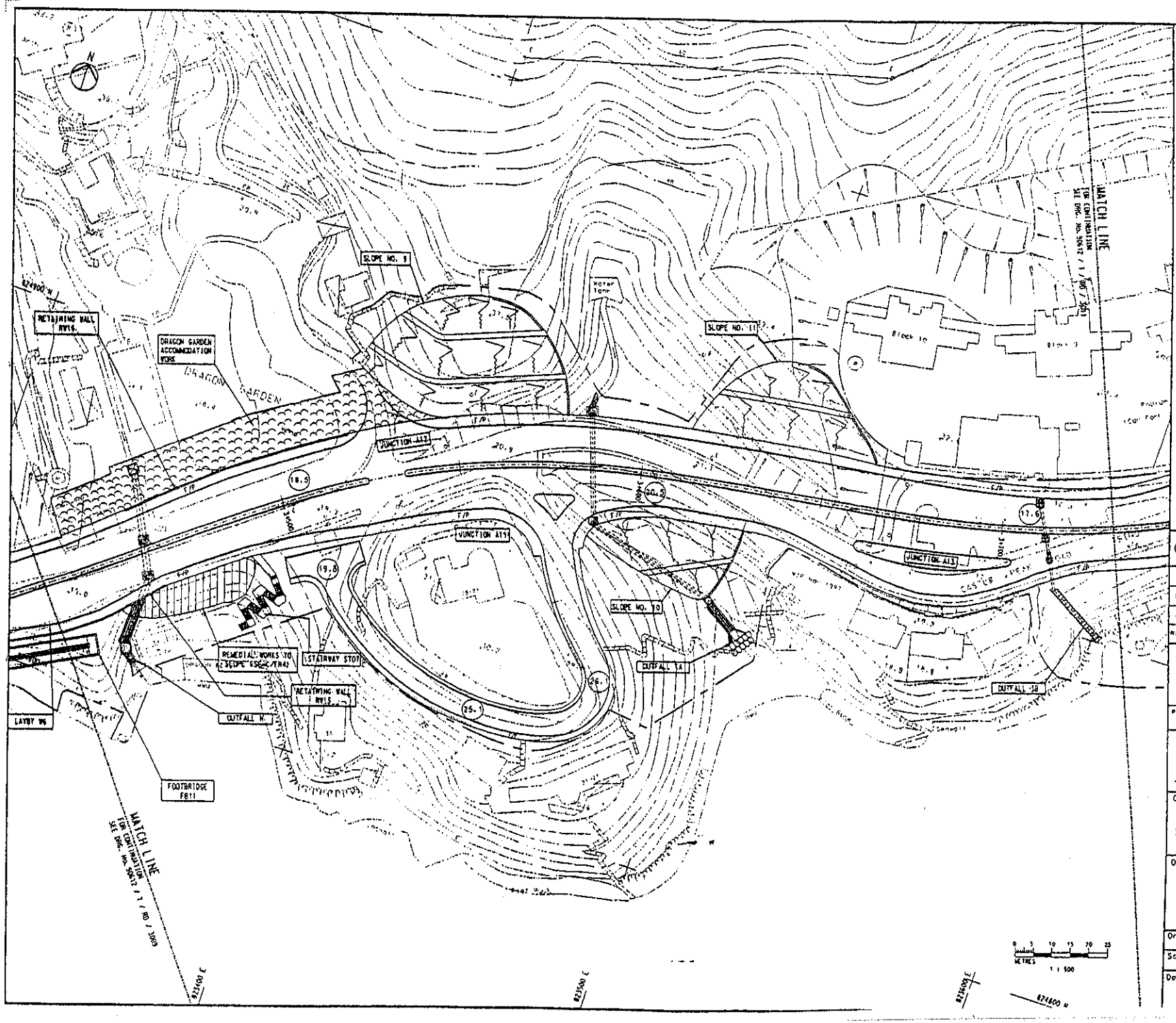

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A	First Issue	Tender Issue	SP	DC	PS	JUN

Major Works Project Management Office,
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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 Lt

Contract Title

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

Drawing Title

SCHEME GENERAL ARRANGEMENT
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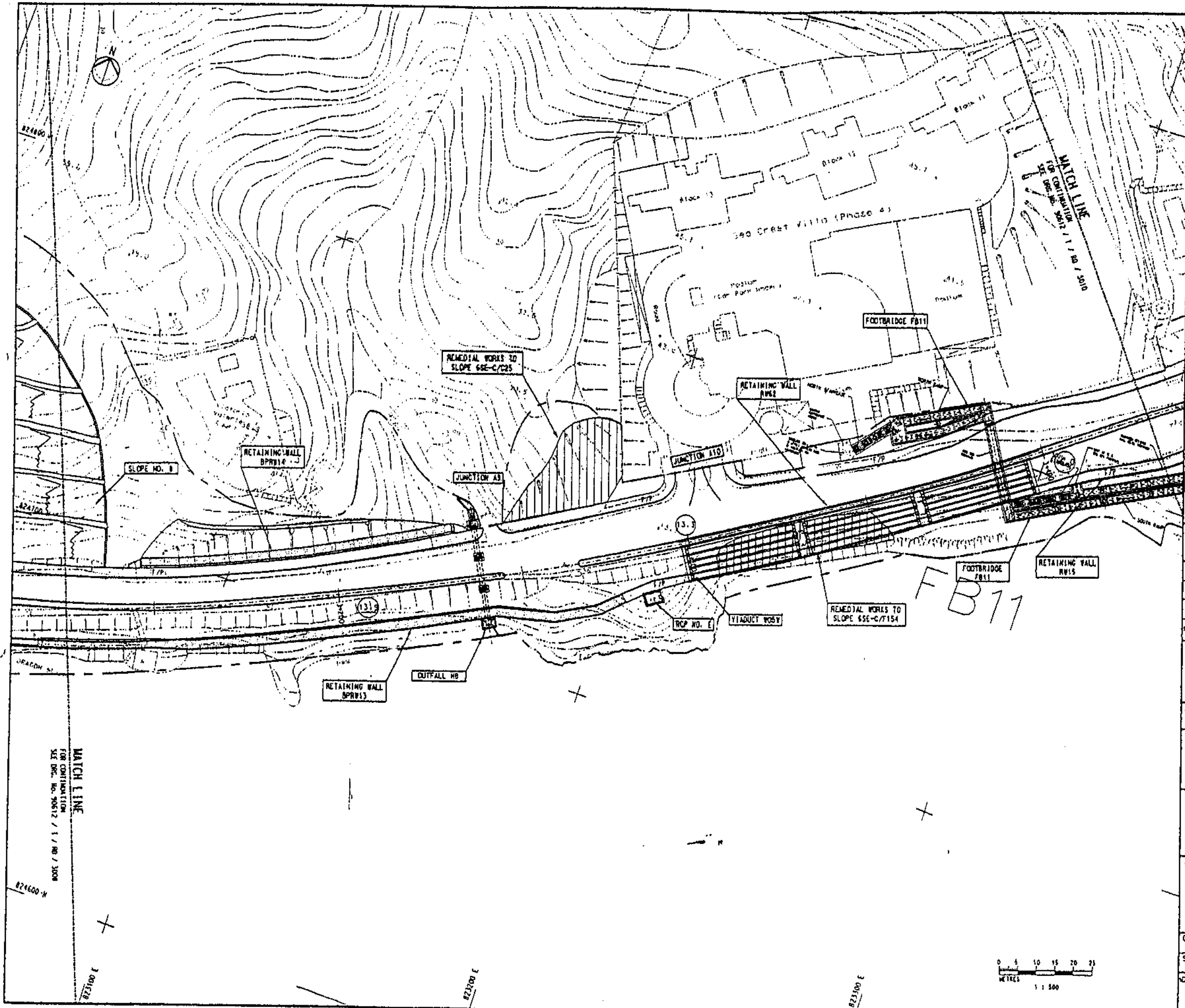

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CONTRACT DRAWING

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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
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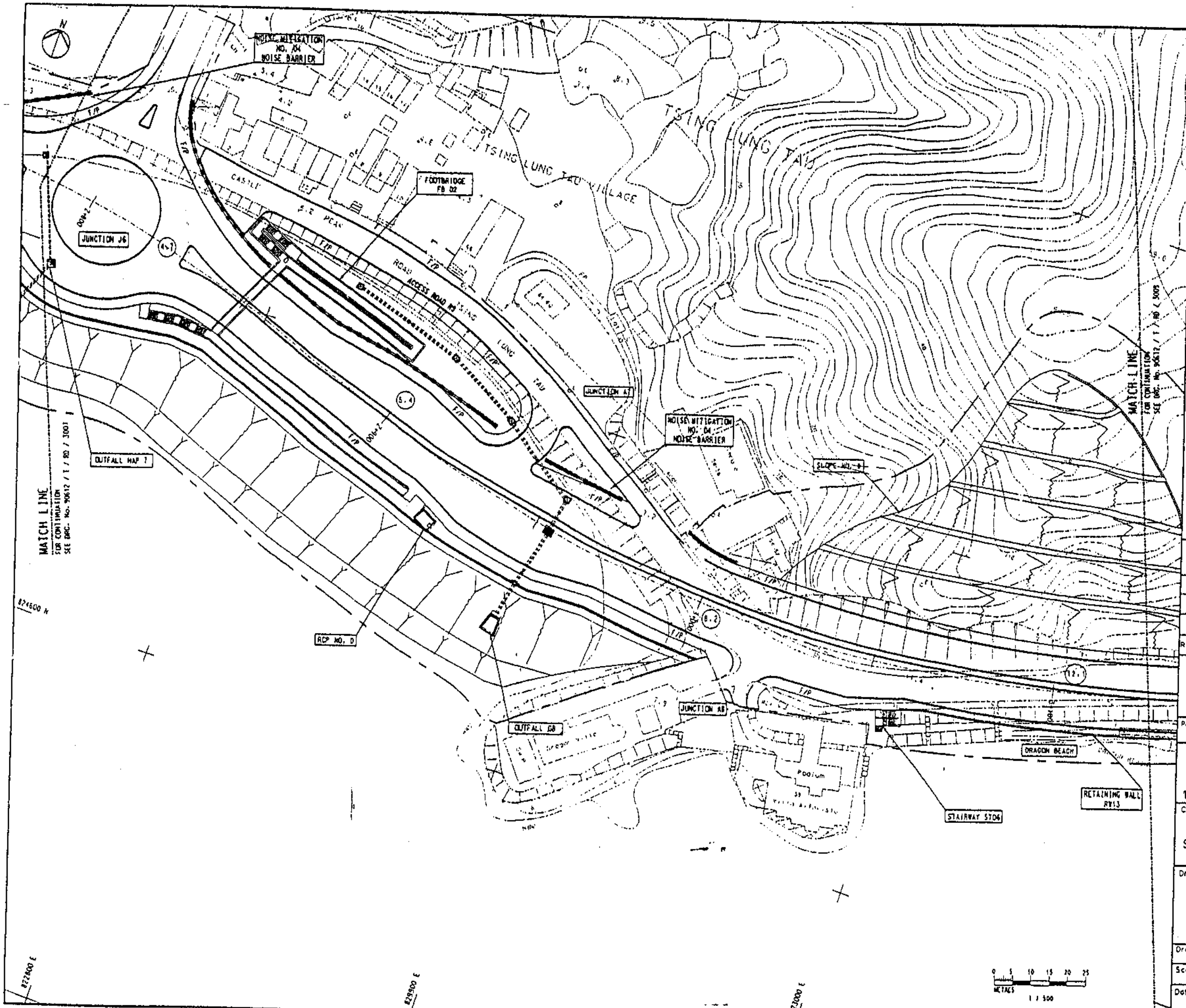

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Major Works Project Management Office,
Highways Department,
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Project No.	Contract No.
6553TH	HY / 99 / 18

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

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CHAINAGE 2785 TO 3130

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7.2 Summary of Inspection – 23 June 2005

7.2.1 Matters Arising from Previous Inspections

- Contractor cleared the construction waste piles at RW-01 area .
- The Contractor cleared the empty cement bags and scrap wood piles at NM-02 area. New piles of construction waste and garbage were however observed. The Contractor was requested to clear it away as soon as possible.
- The Contractor tidied up the site area in front of the Sea Crest Villa Phase 3, except that of existing 6SE-C/C25. The Contractor was requested to tidy up the outstanding area as soon as possible.
- The Contractor cleared the construction waste piles at FB-11 and FB-03. New piles of construction waste and garbage were however observed at FB-03.The Contractor was requested to clear it away as soon as possible.
- No dry surface condition was observed during the inspection.

7.2.2 Site Clearance and Formation Works

- A construction waste pile was found at FB-01 area. The Contractor was requested to clear it all away as soon as possible.
- A construction waste pile was found at the entrance to Dragon Garden. 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 clear away all scattered litter, garbage, etc. and keep the site in a tidy condition at all times.
- A number of slopes were completed last year. The Contractor is reminded to carry out planting works as required as soon as possible.

7.3 Tree Transplanting Survival Rate

7.3.1 Tree Transplanting Survival Rate

- Tree transplanting survival rate of 100% was reported by the Contractor for the period up to the end of June 2005.

7.4 Audit Schedule

7.4.1 Audit Schedule for July 2005

- The next audits are scheduled on 7 and 21 July 2005.

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

8.1 Site Audit Findings

Five occasions of weekly environmental site audits were carried out on 2, 9, 16, 23 and 30 June 2005. Findings of the site audits are summarised in Table 8-1.

Table 8-1 Findings of Weekly Environmental Site Audit in June 2005

Date of ssue Raisec	Observation	Advice from EA	CT's Response / Environmental Outcomes	Closing Date
02 June 2005 (WC163)	. Muddy effluent at outfall opposite to SCV Phase 4 was found.	Contractor to improve the desilting efficiency.	Agreed with the EA's advice.	09 June 2005
	. Slope 8 was exposed.	Contractor to add more sandbags for bunding.	Agreed with the EA's advice.	09 June 2005
	. Mud trails were found on public road near FB01.	Contractor to clean.	Agreed with the EA's advice.	09 June 2005
	. Waste accumulated along NM02.	Contractor to clear.	Agreed with the EA's advice.	09 June 2005
	. Implementation of pest control was observed.	Contractor to maintain.	Agreed with the EA's advice.	09 June 2005
09 June 2005 (WC164)	. Stagnant water was found at RW01.	Contractor to dry off the stagnant water.	Agreed with the EA's advice.	16 June 2005
	. Mud trails were found on public road near FB03.	Contractor to clean.	Agreed with the EA's advice.	16 June 2005
	. Waste accumulated along NM03.	Contractor to clear.	Agreed with the EA's advice.	16 June 2005
	. No labeling for chemical stored in FB03.	Contractor to label.	Agreed with the EA's advice.	16 June 2005
	. Oil stains were found at FB03.	Contractor to clean.	Agreed with the EA's advice.	16 June 2005
16 June 2005 (WC165)	. Stagnant water was found at the end of Slope 6.	Contractor to dry off the stagnant water.	Agreed with the EA's advice.	23 June 2005
	. Waste accumulated along NM03.	Contractor to clear.	Agreed with the EA's advice.	23 June 2005
	. Implementation of pest control was observed.	Contractor to maintain.	Agreed with the EA's advice.	16 June 2005
23 June 2005	. Stagnant water and poor house keeping was observed within the store room near Slope 6.	Contractor to dry off the stagnant water and improve house keeping.	Agreed with the EA's advice.	30 June 2005
	. Mud trails were found on public road near Dragon Garden..	Contractor to clean.	Agreed with the EA's advice.	30 June 2005

Date of ssue Raisec	Observation	Advice from EA	CT's Response / Environmental Outcomes	Closing Date
	. Construction waste was piled at FB03	Contractor to clear.	Agreed with the EA's advice.	30 June 2005
30 June 2005	Refuse was found at RW01 W23 gate	Contractor to remove.	Agreed with the EA's advice.	To be followed-up in next environmental site audit.
	Drainage channel/U-Channel at RW01 near W23 was silty.	Contractor to clear.	Agreed with the EA's advice.	
	Implementation of mosquito control measures was observed.	Contractor to maintain.	Agreed with the EA's advice.	
	Rock drilling at Sea Crest Phase 3 was noisy.	Contractor to improved.	Agreed with the EA's advice.	
	Poor house keeping was observed within the stite near Sea Crest Phase 3.	Contractor to improved by replacing sandbags to rectify silt/sand leakage.	Agreed with the EA's advice.	

8.2 Waste Disposal

Disposal of waste material in the reporting month complied in general with the corresponding waste disposal requirements. The waste disposal quantity in the reporting month is summarised in Table 8-2.

Table 8-2 Waste disposal quantity in June 2005

Type of waste or material		Disposal at	No. of loads or quantities	Remarks
C&D waste		WENT Landfill	16 loads	--
C&D material		Public Filling Area in Tuen Mun	737 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

One environmental complaint was received on 10 June 2005 regarding the obstructions and mosquitoes found in the footway near Sea Crest Villa Phase 4. The following corrective actions were taken on 14 June 2005 to rectify the situation:

- Thorough cleaning up around the precast footbridge deck;
- Realigning the existing mill barriers to widen the adjacent footbridge deck; and
- Spaying appropriate insecticide.

Detail of the complaint is given in Appendix L. A log record on the environmental complaints is given in Appendix M and a cumulative statistics on environmental complaints is given in Table 8-3.

A log record on the environmental complaints is given in Appendix M 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	37

8.4 Non-compliances

Neither air quality nor noise non-compliance was registered during the reporting period.

8.5 Notification of Summons and Successful Prosecution

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

8.6 Environmental Licenses

No new CNP was 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.

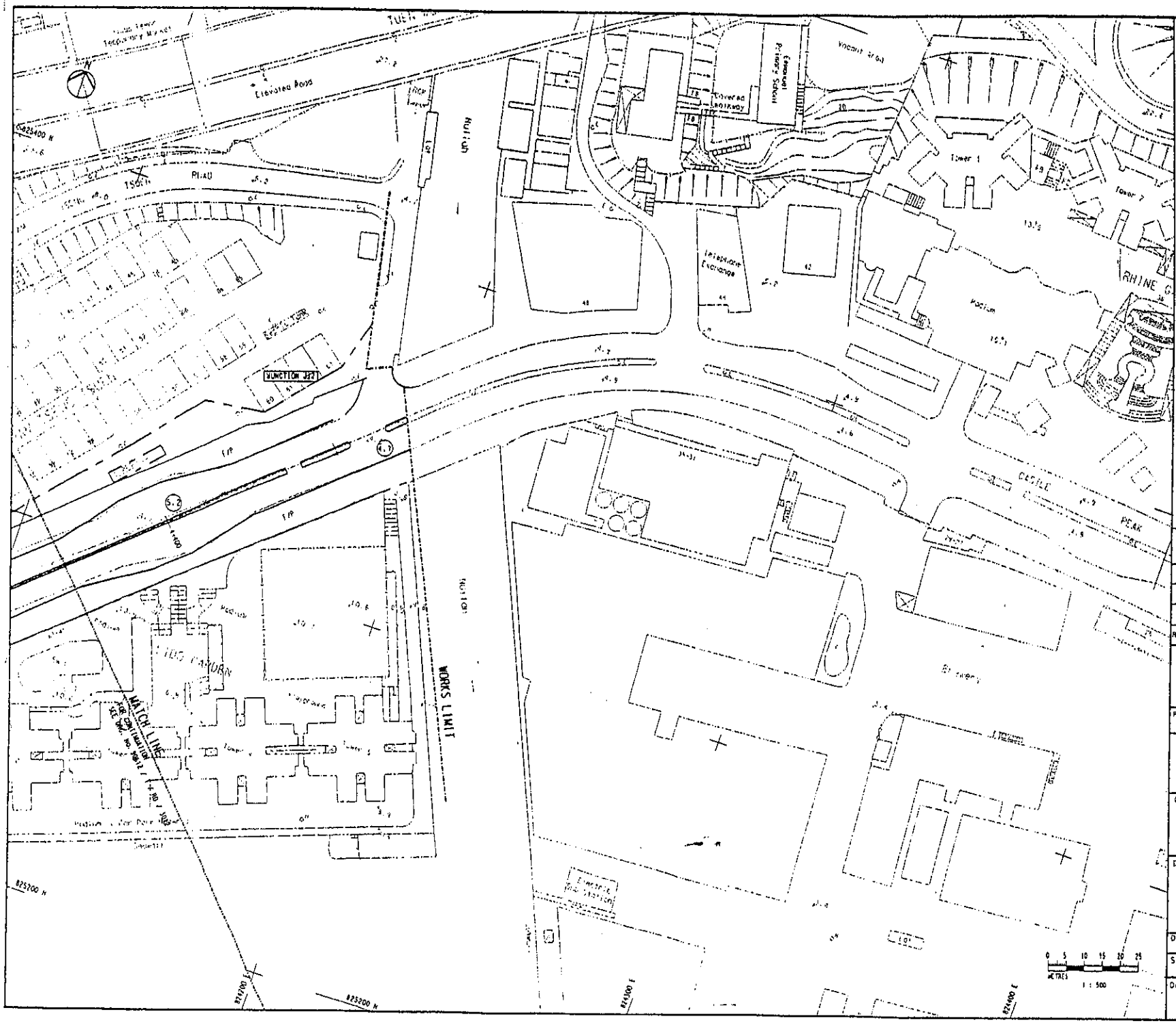
[2] Ove Arup & Partners Hong Kong Limited. July 2002. Contract No. HY/99/18 Castle Peak Road Improvement between Shem Tseng and Ka Lung Tsuen, Tsuen Wan, Environmental Baseline Monitoring Report (Second Issue).

[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



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	JUN 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

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WDD	JWTL	PS

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Date Issued	Drawing No.	Rev.
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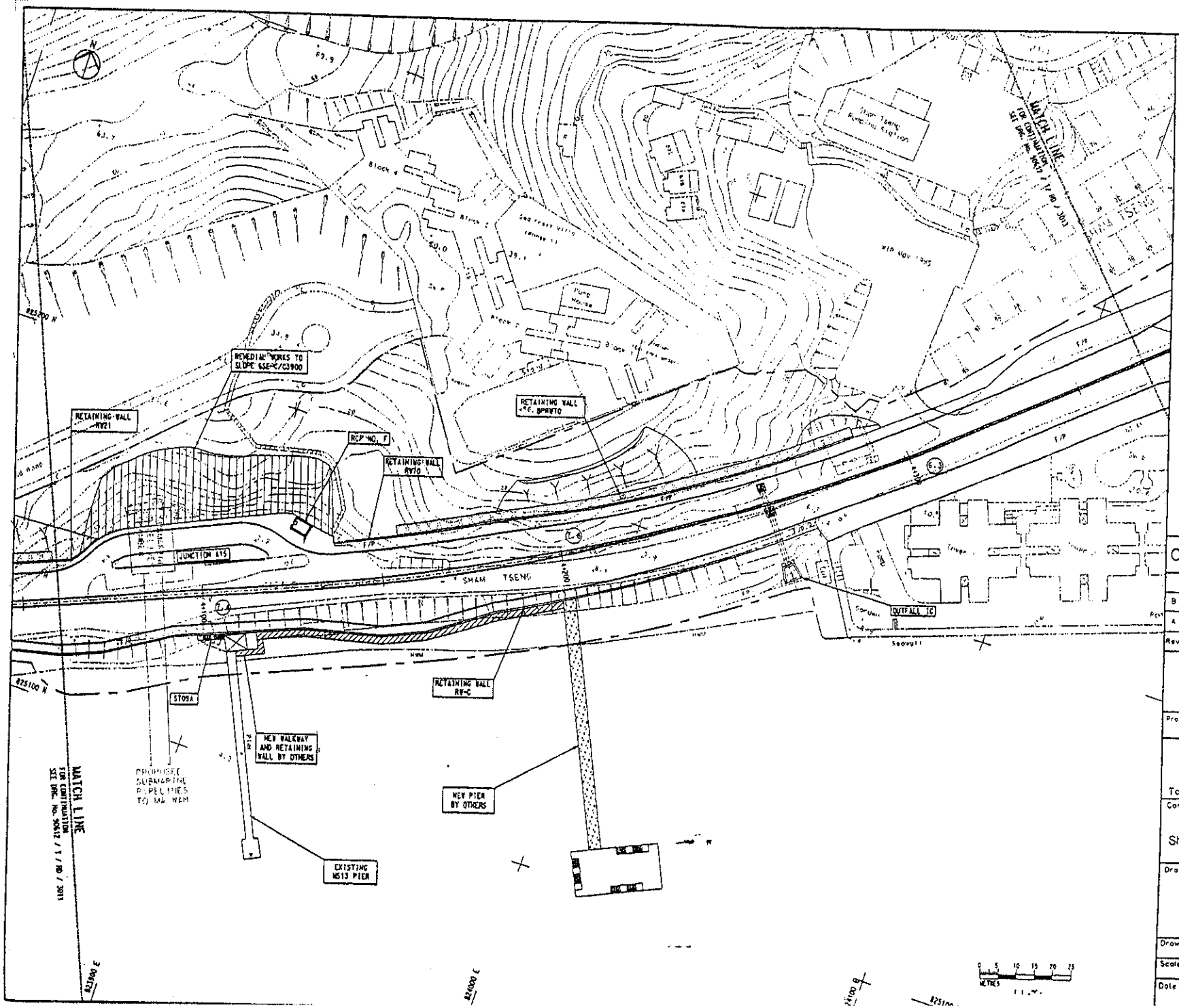
31 OCT 2001



NOTES

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CONTRACT DRAWING

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A	First Issue	Tender Issue	SP	DC	PS	JUN

Major Works Project Management Office,
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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
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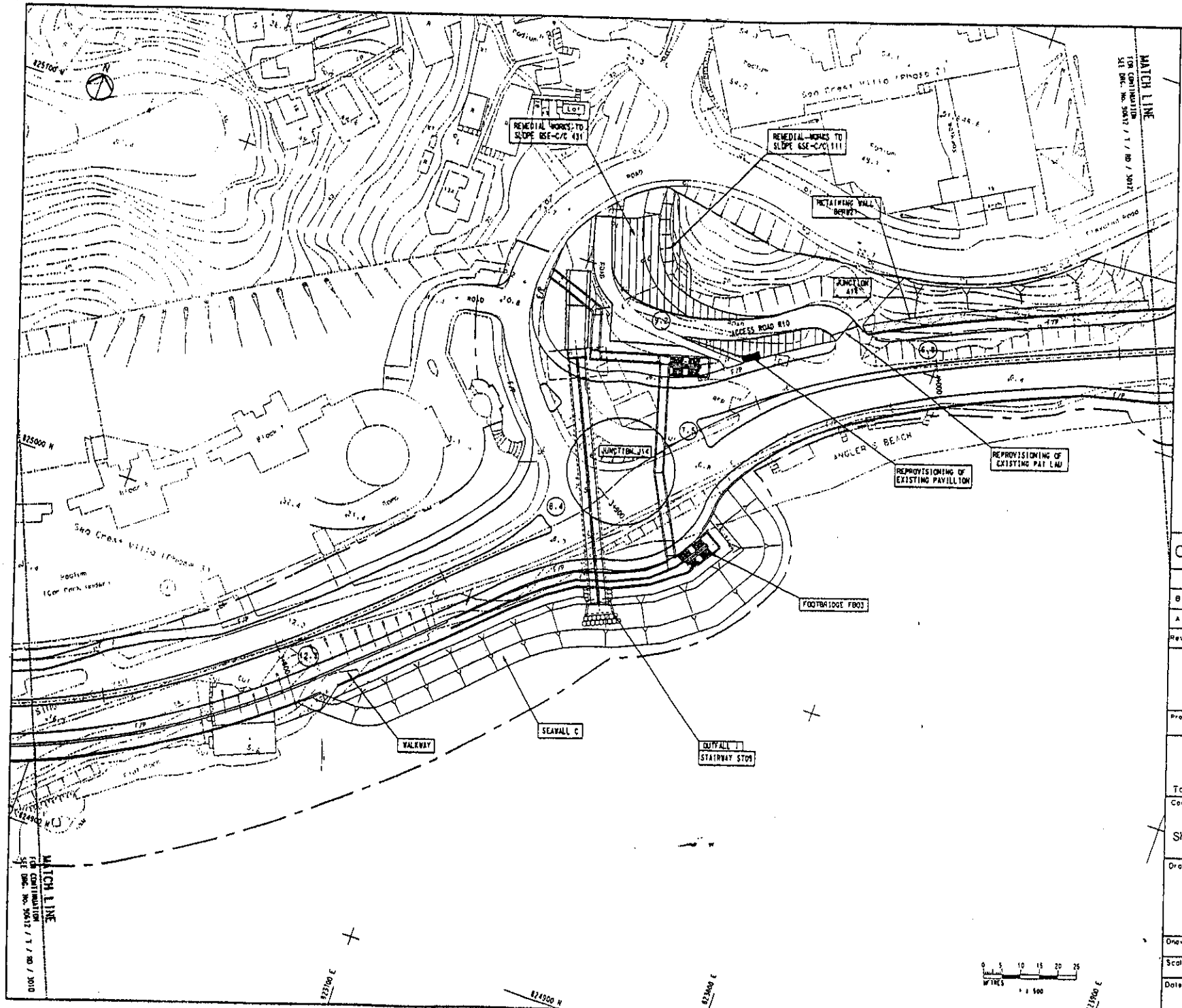

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CONTRACT DRAWING

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B	2nd Issue	Contract Issue	SP	DC	PS	JUN 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
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Contract Title

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Drawing Title

SCHEME GENERAL ARRANGEMENT
CHAINAGE 3730 TO 4060

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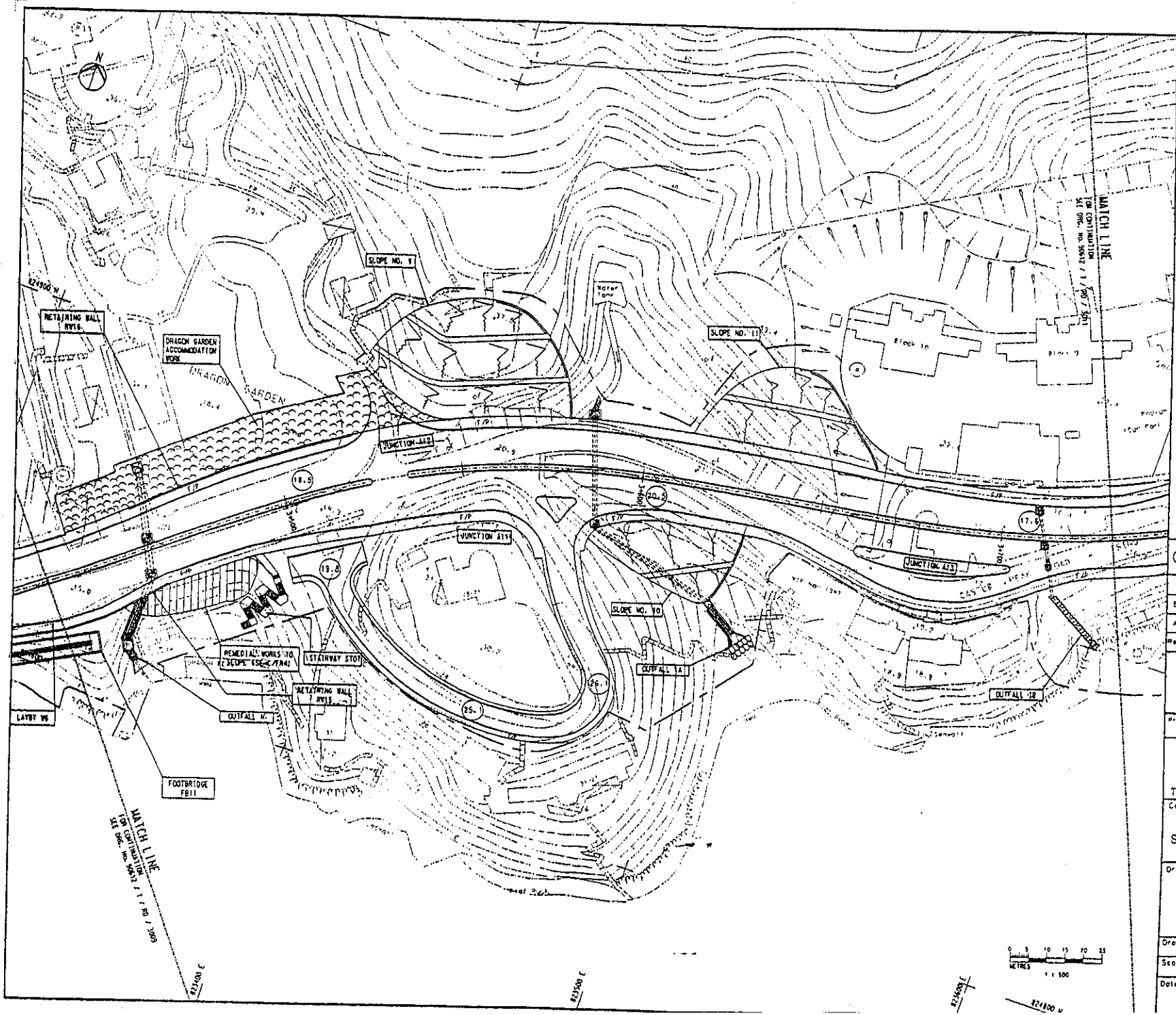

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CONTRACT DRAWING

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B	2nd Issue	Contract Issue	SP	DC	PS	JUN
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Project No. 6553TH | Contract No. HY / 99 / 18

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

Drawing Title
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CHAINAGE 3430 TO 3730

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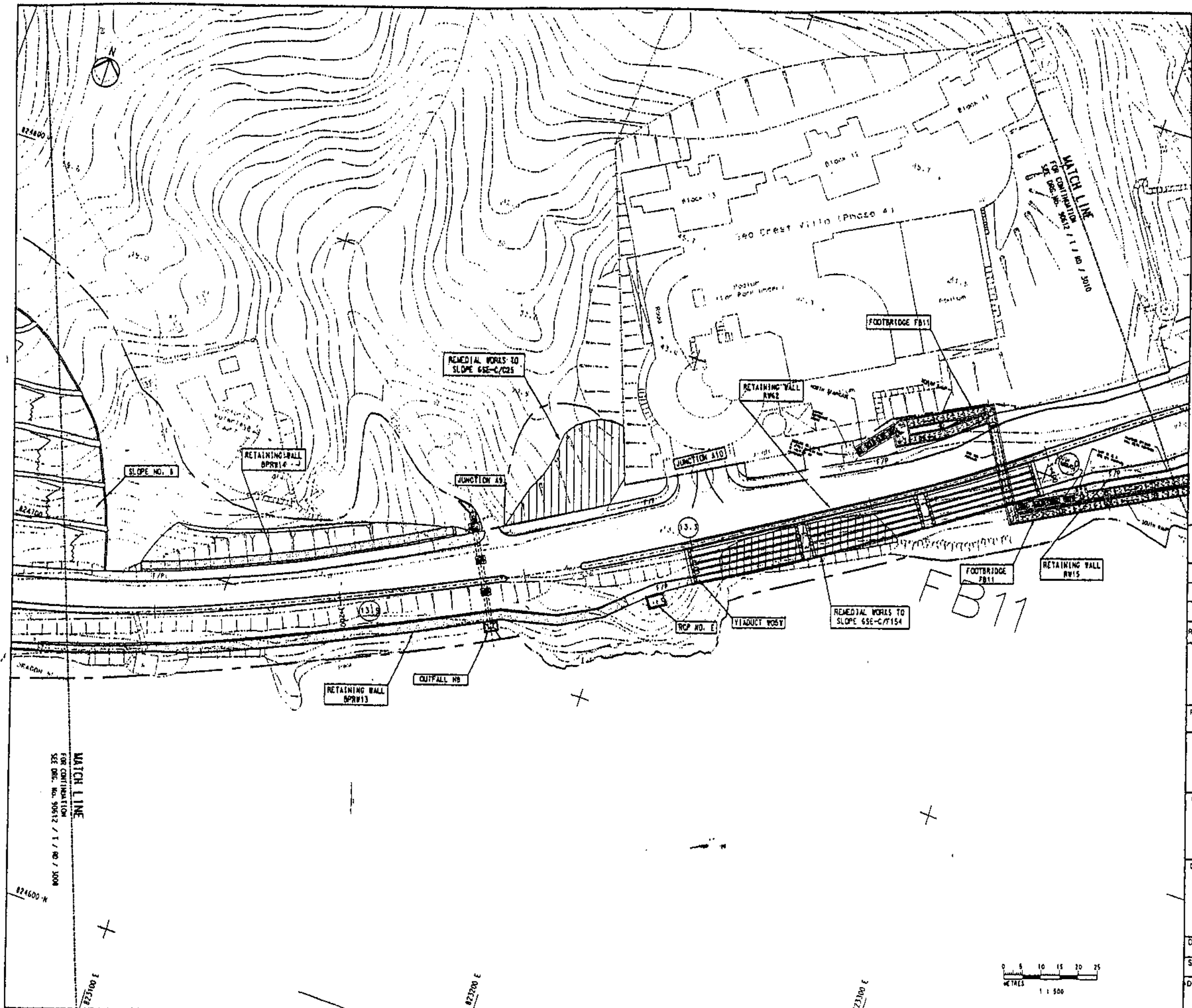

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A	First Issue	Tender Issue	SP	DC	PS	JUN 01

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

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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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CHAINAGE 3130 TO 3430

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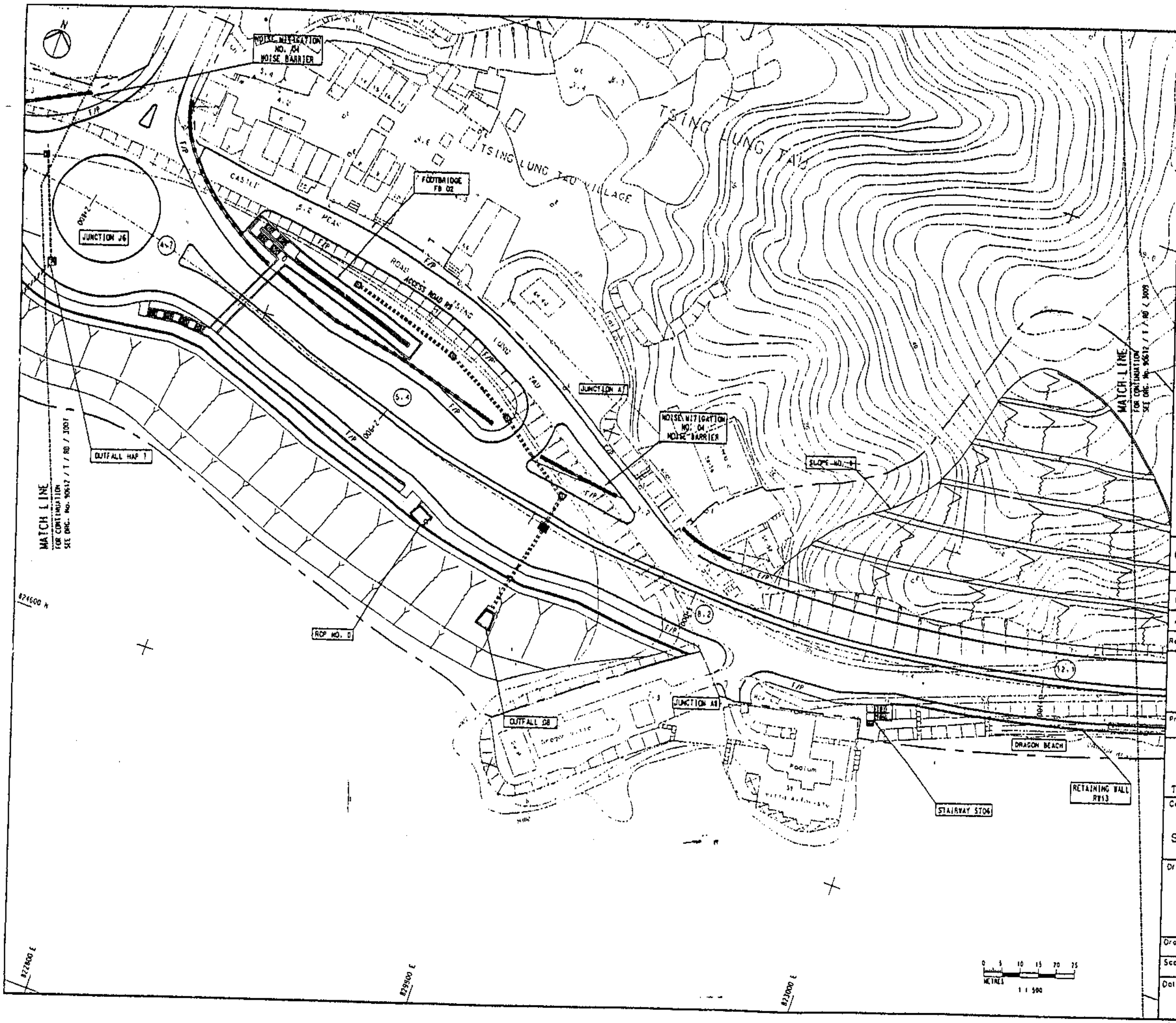

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A	First Issue	Tender Issue	SP	DC	PS	JUN 01

Major Works Project Management Office,
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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

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CHAINAGE 2785 TO 3130

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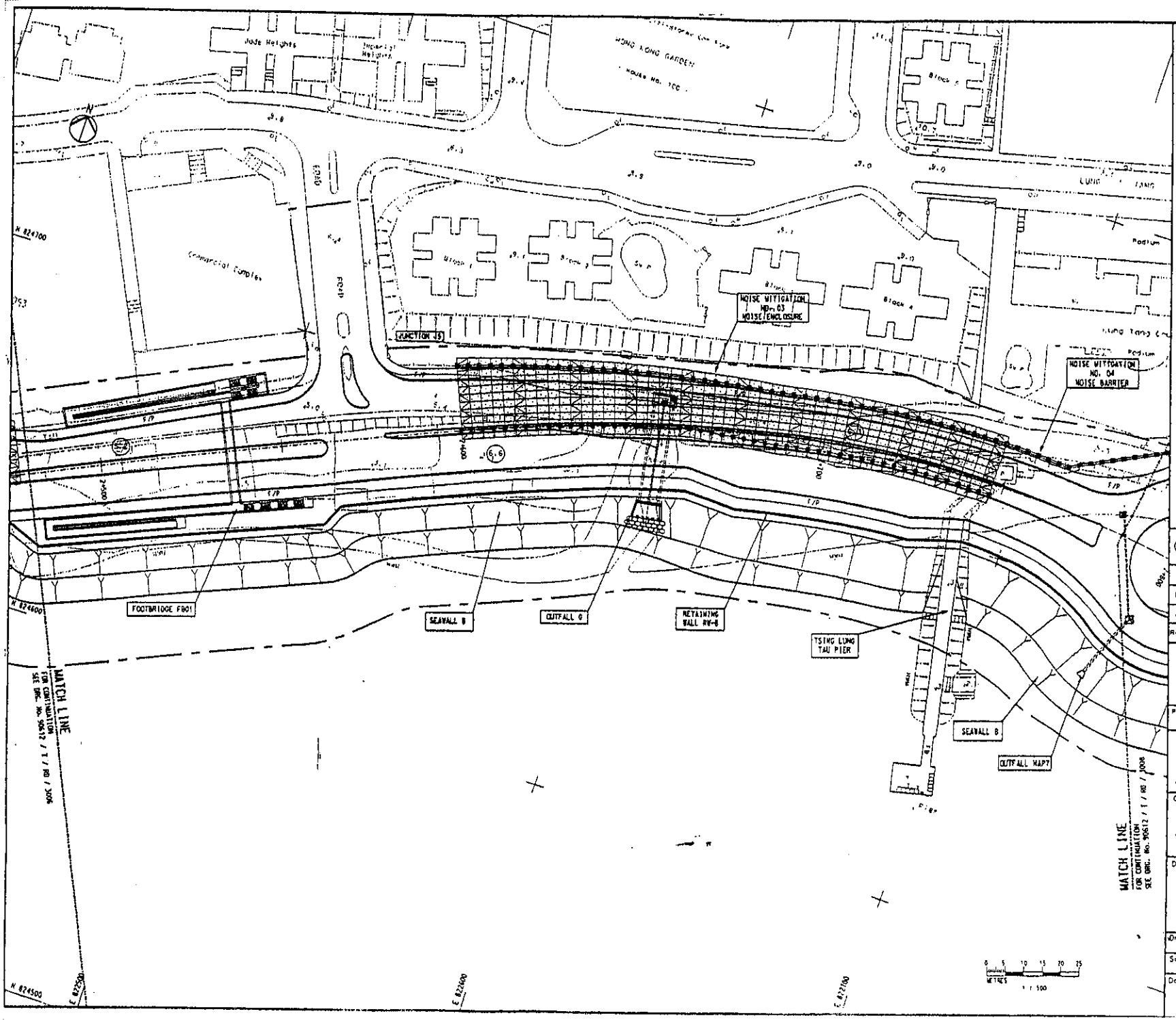

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CONTRACT DRAWING

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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

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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 2480 TO 2785

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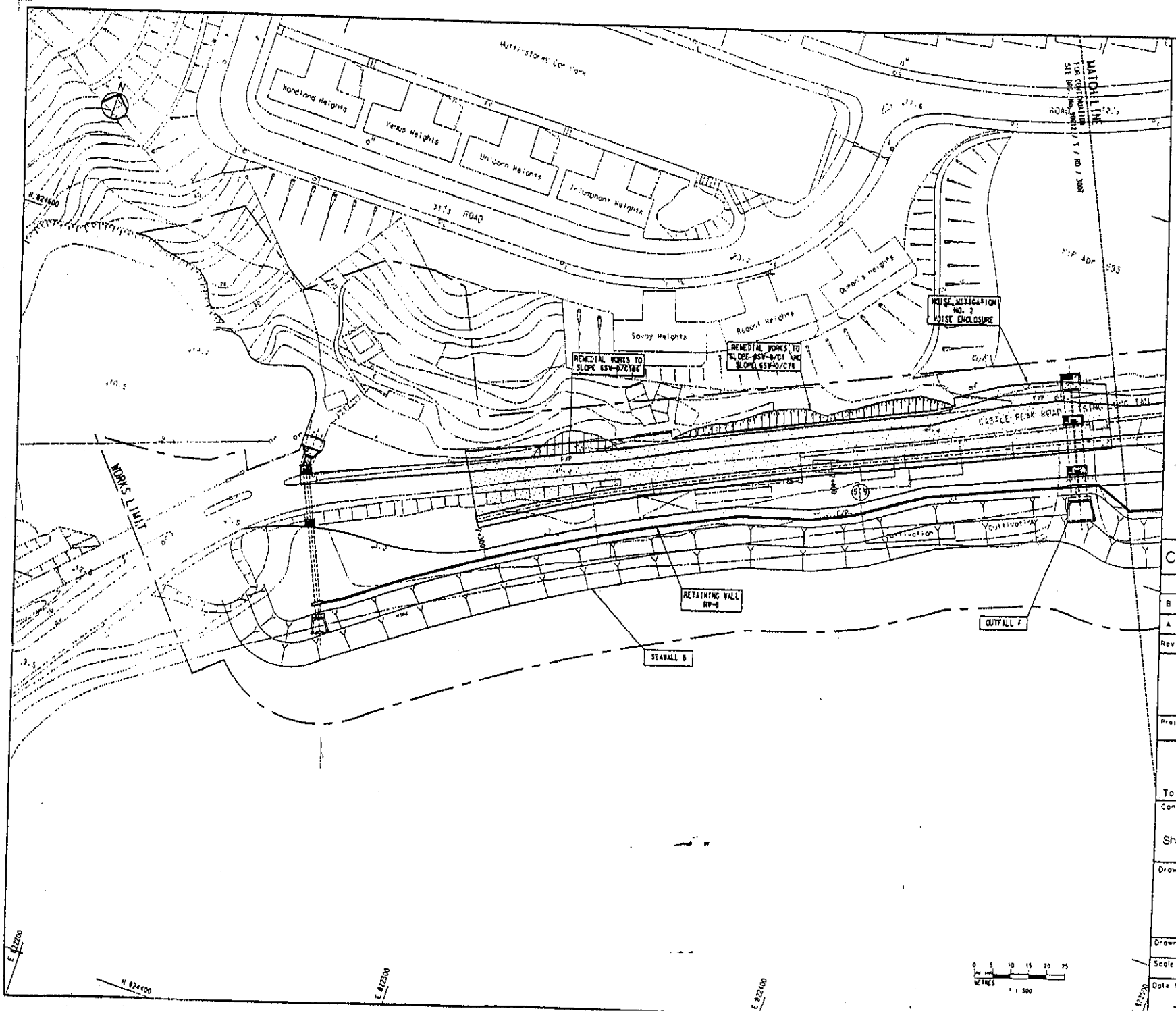

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CONTRACT DRAWING

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B	2nd Issue	Contract Issue	SP	OC	PS	JUN
A	First Issue	Tender Issue	SP	OC	PS	JUN

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Project No. 6553TH

Contract No. HY / 99 / 18

Mouchel Halcrow JV
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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 2300 TO 2480

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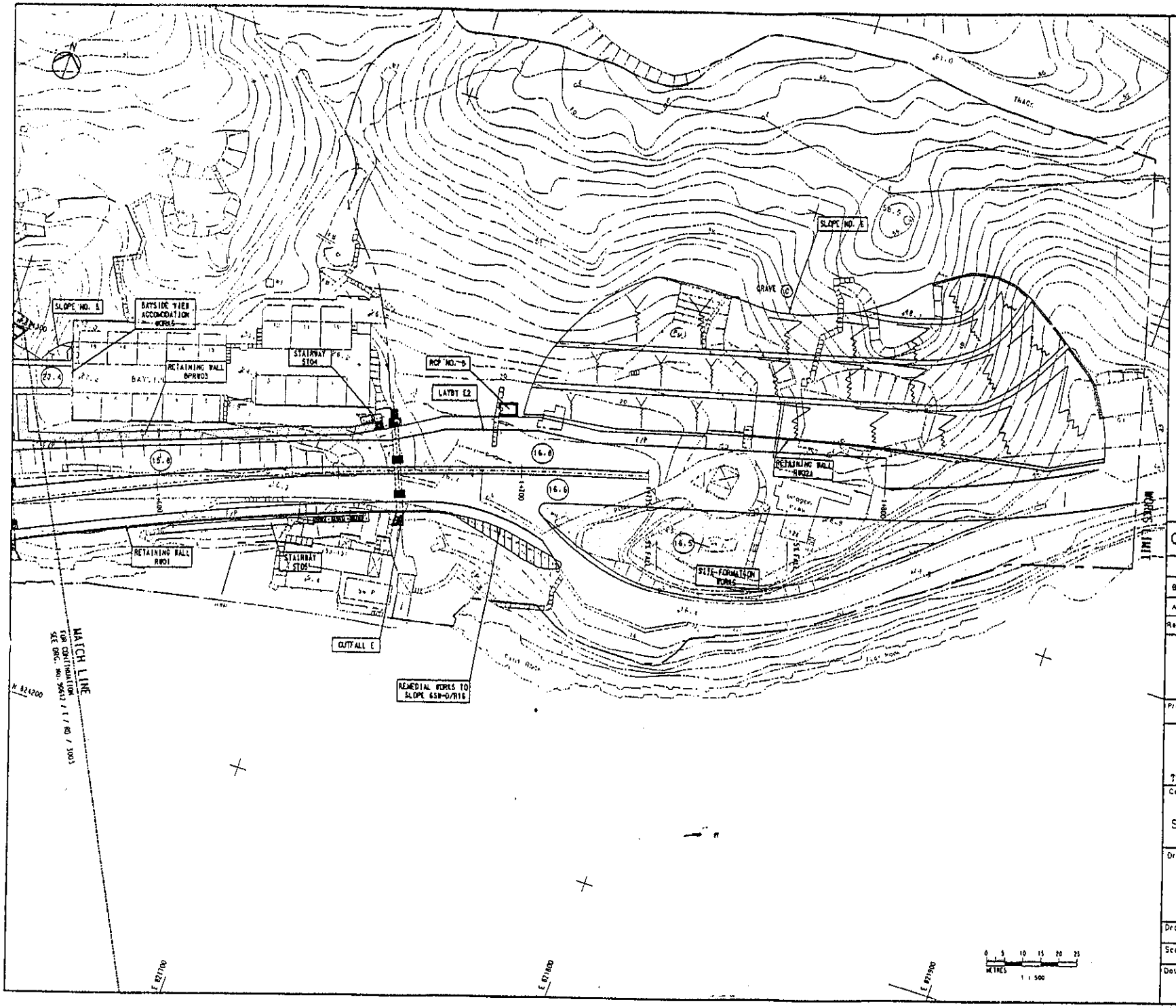

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CONTRACT DRAWING

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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

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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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Date Issued JUNE 2001	Drawing No. 90612/T/RD/3004	Rev. B

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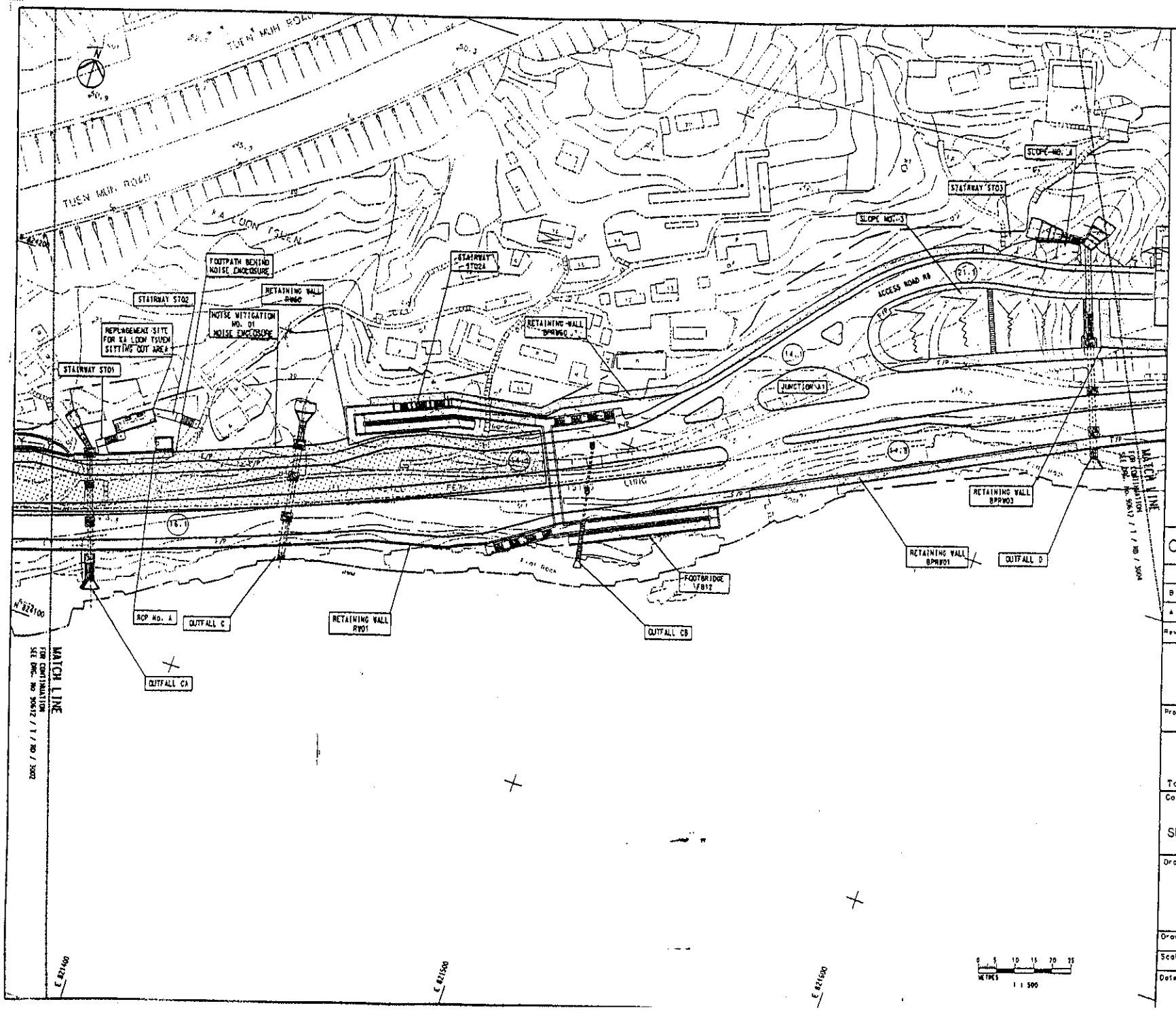

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CONTRACT DRAWING

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A	First Issue	Tender Issue	SP	DC	PS	JUN

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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 1270 TO 1570

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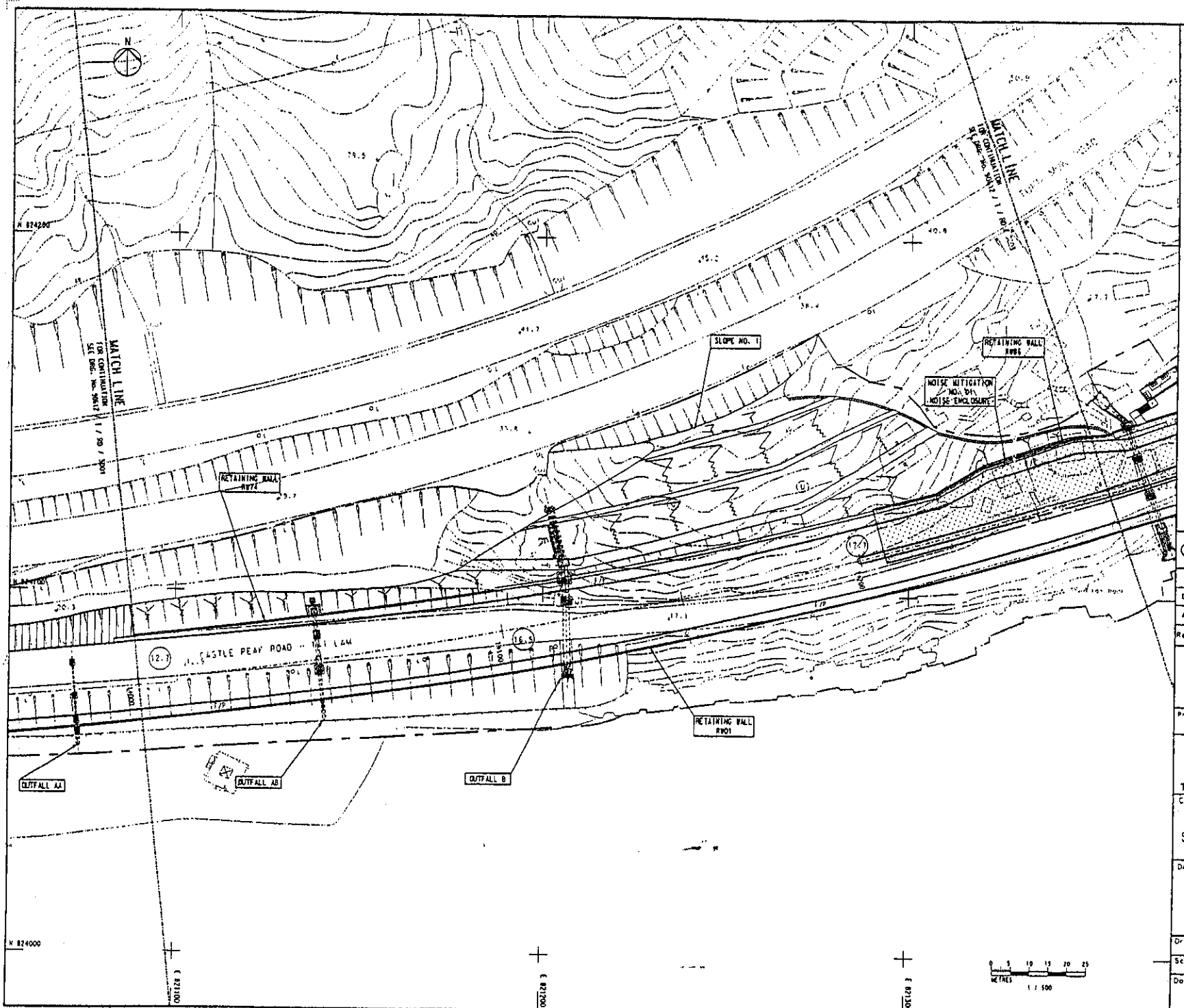

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B	2nd Issue	Contract Issue	SP	DC	PS	JUN
A	First Issue	Tender Issue	SP	DC	PS	JUN

Major Works Project Management Office,
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Hong Kong

Project No. 6553TH

Contract No. HY / 99 / 18

Mouchel Halcrow . JV
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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 1000 TO 1270

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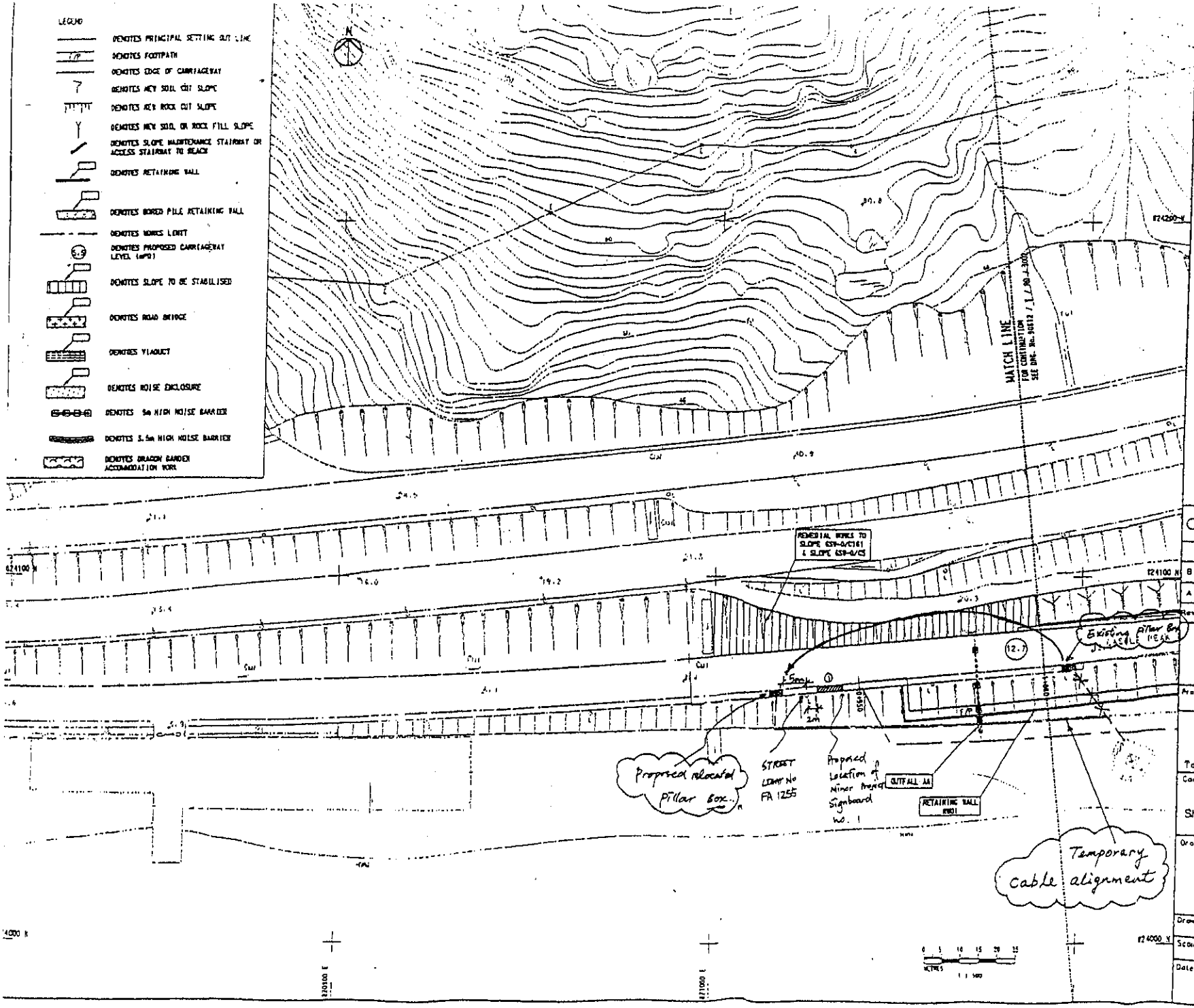
Date Issued JUNE 2001	Drawing No. 90612/T/RD/3002		Rev. B



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

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

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
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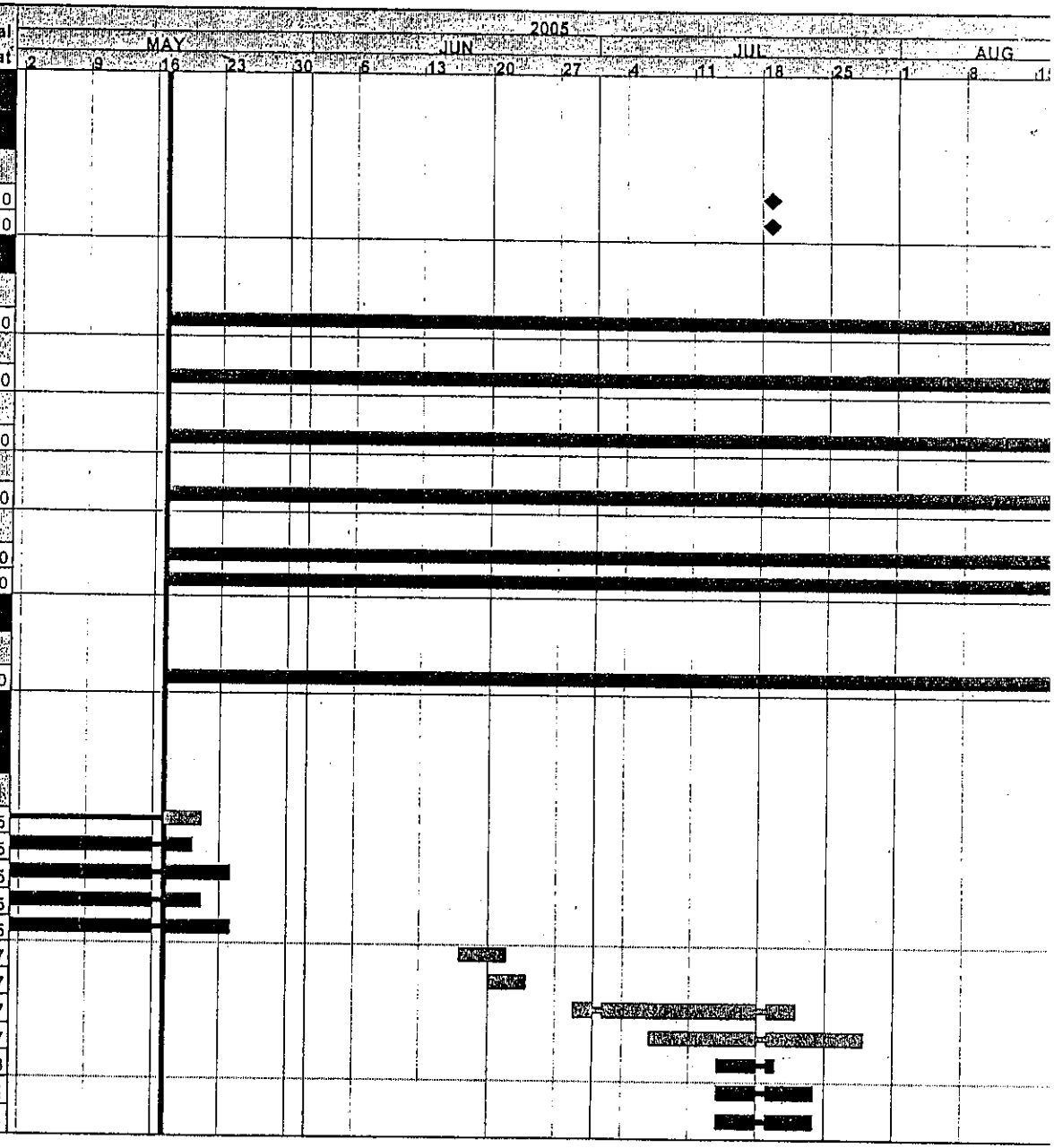
Date Issued JUNE 2001	Drawing No. 90612/T/RD/3001		Rev B

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 Handover Dates					
00-VD6	Handover Portion No. 6 to Employer	0		18JUL05*	0
00-VD7	Handover Portion No. 7 to Employer	0		18JUL05*	0
1. Preliminaries					
Planning & Programming					
01-0108	Maintain Programming & Submit Progress Reports	1,236	24NOV01A	31OCT05	0
Waste Management					
01-1166	Implement & Monitor WMP	1,171	21DEC01A	31AUG05	0
Maintenance of Traffic Flow					
01-1153	Maintain Traffic Flow	1,171	24NOV01A	31AUG05	0
Environmental Monitoring & Audit					
01-11702	Implement & Maintin Impact Monitor & Audit	1,601	08MAR02A	31OCT06	0
Interfacing and Coordination					
01-1173	Coordination/Integration with Interfacing Works	1,171	01DEC01A	31AUG05	0
01-1174	Provide Reasonable Access to Other Contractors	1,171	01DEC01A	31AUG05	0
16. Site Safety					
Safety Management System					
16-1612	Implement & Maintain Safety Management System	1,151	14DEC01A	31AUG05	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	20MAY05	85
01-12071	Proposed HKT on W/B C.way CH1205-1464	13	09APR05A	19MAY05	-15
01-12072	Proposed CLP on W/B C.way CH1205-1464	13	14APR05A	23MAY05	-15
01-12083	Proposed HKBN on W/B C.way CH1205-1464	13	14APR05A	20MAY05	-15
01-1207	Proposed CATV on W/B C.way CH1205-1464	13	15APR05A	23MAY05	-15
01-120714	HKT Cross Rd. Ducts at E/B CH1285	4	17JUN05	21JUN05	17
01-120724	CLP Cross Rd. Ducts at E/B CH1345	4	20JUN05	23JUN05	17
01-12054	Proposed HT on E/B C.way CH1205-1470	18	29JUN05	21JUL05	7
01-12056	Proposed CLP on E/B C.way CH1205-1470	18	07JUL05	28JUL05	7
01-121922	CLP Cross Rd. Ducts at W/B CH1555	4	14JUL05	19JUL05	-13
01-12193	Proposed HKT on W/B C.way CH1550-1700	8	14JUL05	23JUL05	-11
01-12195	Proposed HKBN on W/B C.way CH1550-1700	8	14JUL05	23JUL05	-11



Start Date 23NOV01
Finish Date 19DEC06
Data Date 17MAY05
Run Date 27MAY05 10:40

Early Bar
Progress Bar
Critical Activity

W41C

Sheet 1 of 13

Maeda Corporation

HY/99/18 - Castle Peak Road Improvement

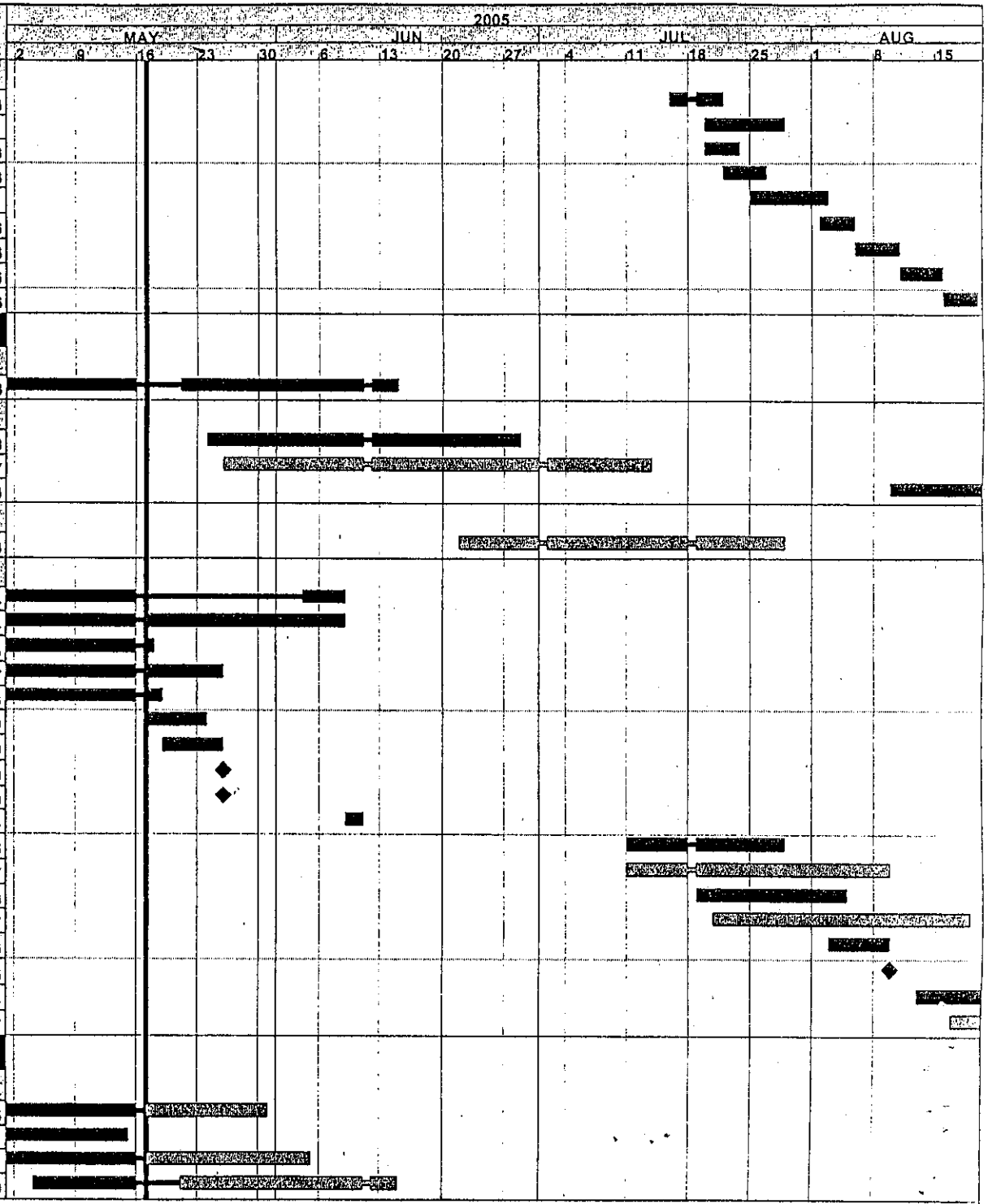
3 - Month Rolling Progamme

MAEDA

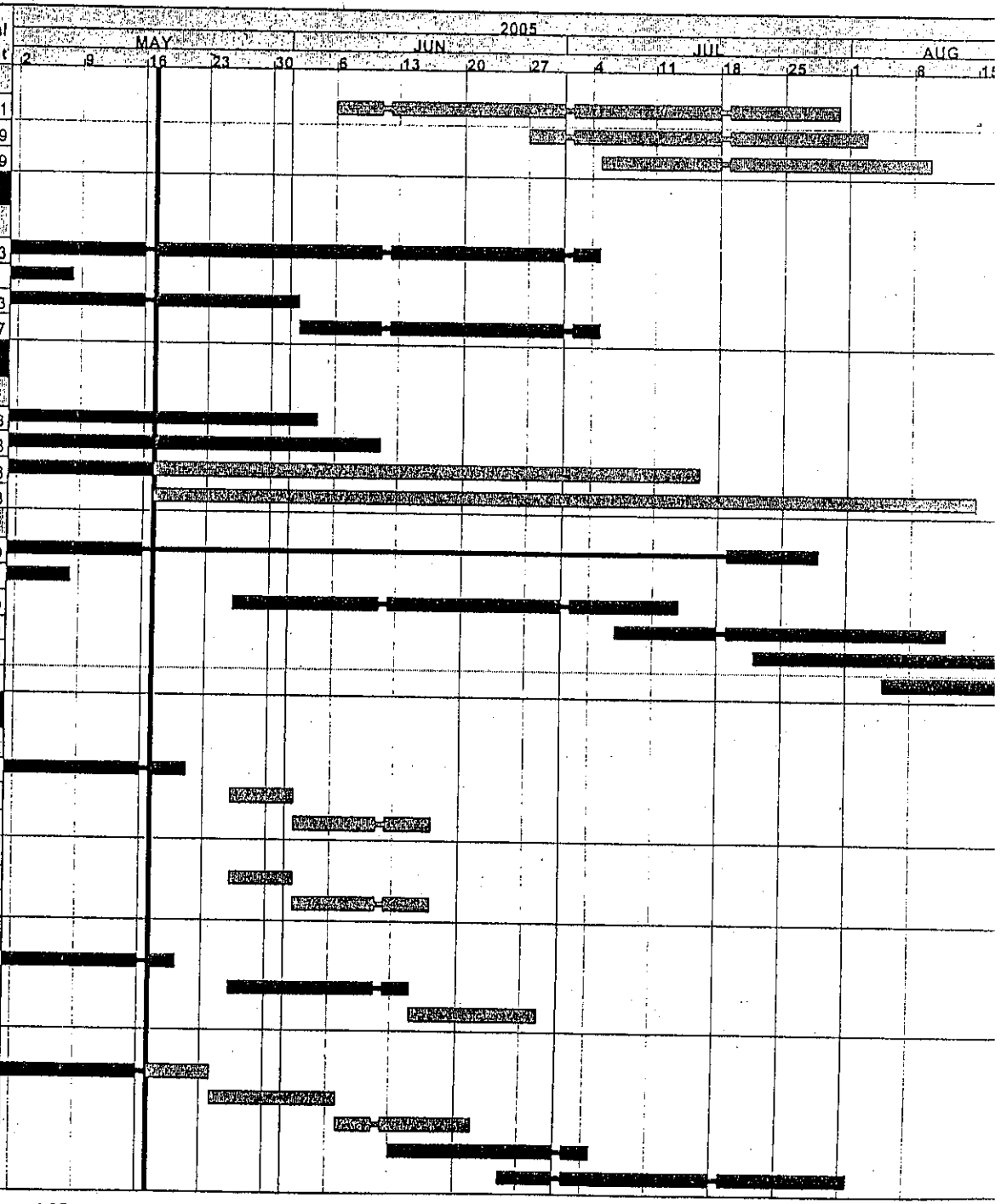
May 2005

Date	Revision	Checked	Approved
30JUL03	revision 01		
17SEP03	revision 02		
22MAR04	revision 03		
28SEP04	revision 03A		
05JAN05	revision 03B		
26APR05	revision 03C		

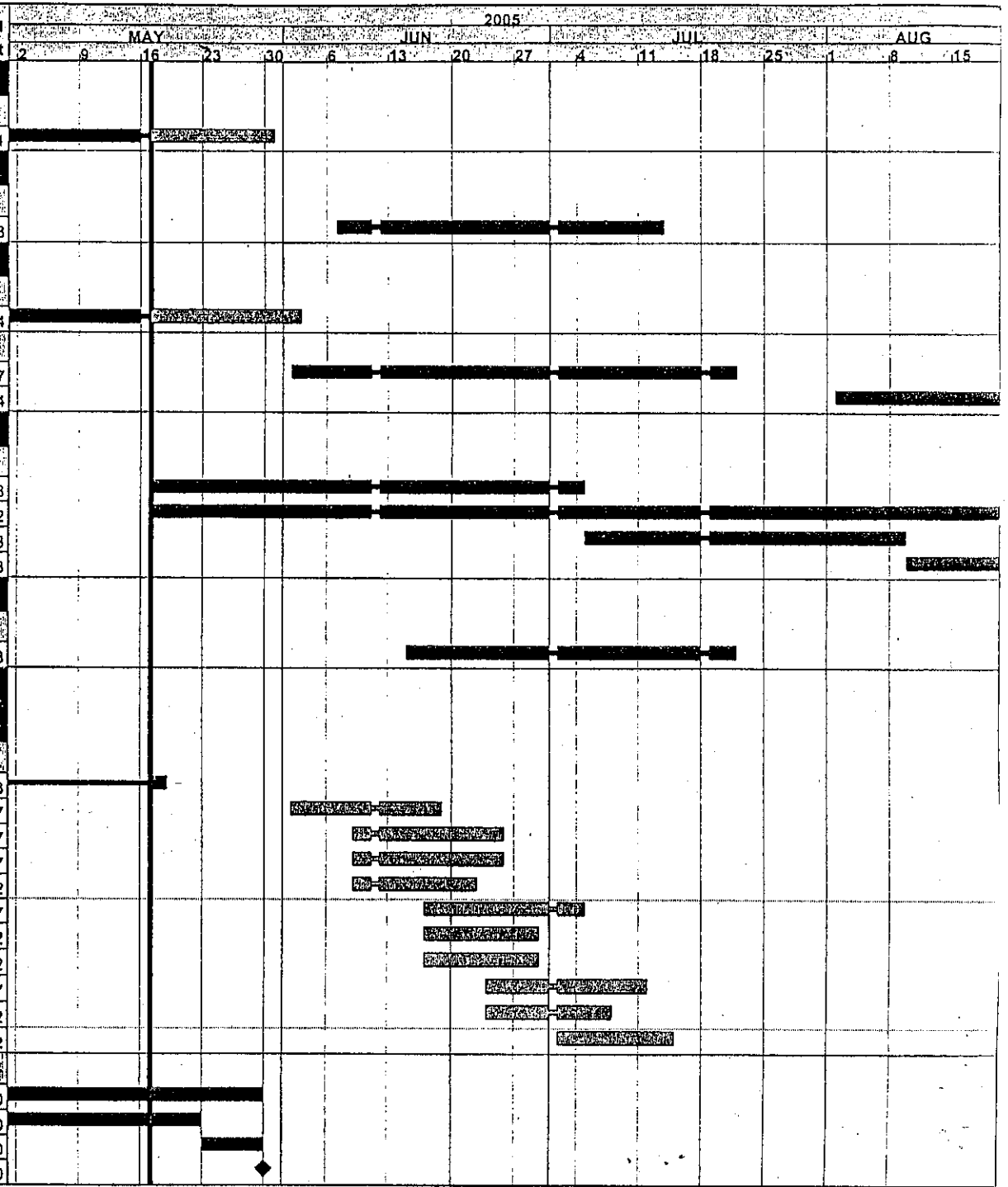
Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
Proposed Utility Works					
01-121932	HKT Cross Rd. Ducts at W/B CH1670	4	16JUL05	21JUL05	-13
01-12192	Proposed CLP on W/B C.way CH1550-1700	8	20JUL05	28JUL05	-11
01-121933	HKBN Cross Rd. Ducts at W/B CH1680	4	20JUL05	23JUL05	-13
01-12197	CATV Cross Rd. Ducts at W/B CH1680	4	22JUL05	26JUL05	-13
01-12194	Proposed CATV on W/B C.way CH1550-1680	8	25JUL05	02AUG05	-11
01-12196	Proposed CATV on E/B C.way CH1680-1700	4	02AUG05	05AUG05	-6
01-12025	Proposed HKT on E/B C.way CH1680-1700	4	06AUG05	10AUG05	-6
01-120257	Proposed HKBN on E/B C.way CH1680-1700	4	11AUG05	15AUG05	-6
01-120242	Proposed HT on E/B C.way CH1660-1700	4	16AUG05	19AUG05	-6
3. Roadworks					
Earthworks					
03-3013	Backfill behind RW01; CH1554-1700	30	02APR05A	14JUN05	-13
Drainage Works					
03-3126	Drainage along W/B C'way bet CH1550-1700	30	24MAY05	28JUN05	-13
03-3131	Drainage along E/B C'way bet CH1280-1464	40	26MAY05	13JUL05	7
03-31332	Remaining Drainage E/B CH1500-1575	12	10AUG05	23AUG05	-13
Pipe Works (Local Supply Watermains)					
03-3151	Pipe Works on E/B C'way bet CH1280-1500	30	22JUN05	28JUL05	13
Road Works					
03-32182	Construct rd pave & f/p; Access Rd R8	12	22NOV04A	08JUN05	-14
03-32180	Demolish eixst. RW2a & Install Gate,Bay Side Vil	39	10JAN05A	08JUN05	-14
03-3111	Formation/sub-base, kerbs; W/B CH1205-1464	20	04APR05A	17MAY05	-18
03-31112	Construct rd pave & f/p; W/B CH1205-1464	20	16APR05A	25MAY05	-17
03-3113	Lay sub-base, kerbs & edgings; W/B CH1464-1500	9	22APR05A	18MAY05	-18
03-31132	Construct rd pave & f/p; W/B CH1464-1500	6	17MAY05	23MAY05	-19
03-32144	Rd finishes, marking & lighting; W/B CH1205-1500	6	19MAY05	25MAY05	-19
03-31113	Divert Traffic to W/B C'Way CH1205-1464	0		25MAY05	-19
03-31133	Divert Traffic to W/B C'Way CH1464-1500	0		25MAY05	-19
03-32184	Rd finishes, marking & lighting; Access Rd R8	2	09JUN05	10JUN05	-14
03-3115	Formation, sub-base & edgings; W/B CH1500-1700	15	11JUL05	28JUL05	-13
03-3216	Formation/sub-base, kerbs; E/B CH1205-1550	25	11JUL05	09AUG05	7
03-31152	Construct rd pave & f/p; W/B CH1500-1700	15	19JUL05	04AUG05	-13
03-32162	Construct rd pave & f/p; E/B CH1205-1500	25	21JUL05	18AUG05	7
03-31154	Rd finishes, marking & lighting; W/B CH1500-1700	6	03AUG05	09AUG05	-13
03-3116	Divert Traffic to W/B Perma C'way CH1500 -1700	0		09AUG05	-13
03-3105	Kerb/central bearer/footpath; E/B CH1500-1700	20	13AUG05	05SEP05	-14
03-31114	Rd finishes, marking & lighting; E/B CH1205-1500	6	17AUG05	23AUG05	7
5. Footbridges					
Footbridge FB12					
05-53606	Erect Steelwork & Roofing for FB12 (North)	30	06JAN05A	30MAY05	26
05-5350	Construct Ramp & Pier Head for FB12 (South)	40	14MAR05A	14MAY05A	
05-5340	Const./Erect Deck of Main Span for FB12	45	14APR05A	04JUN05	21
05-53504	Construct Stairway for FB12 (South)	30	04MAY05A	14JUN05	19



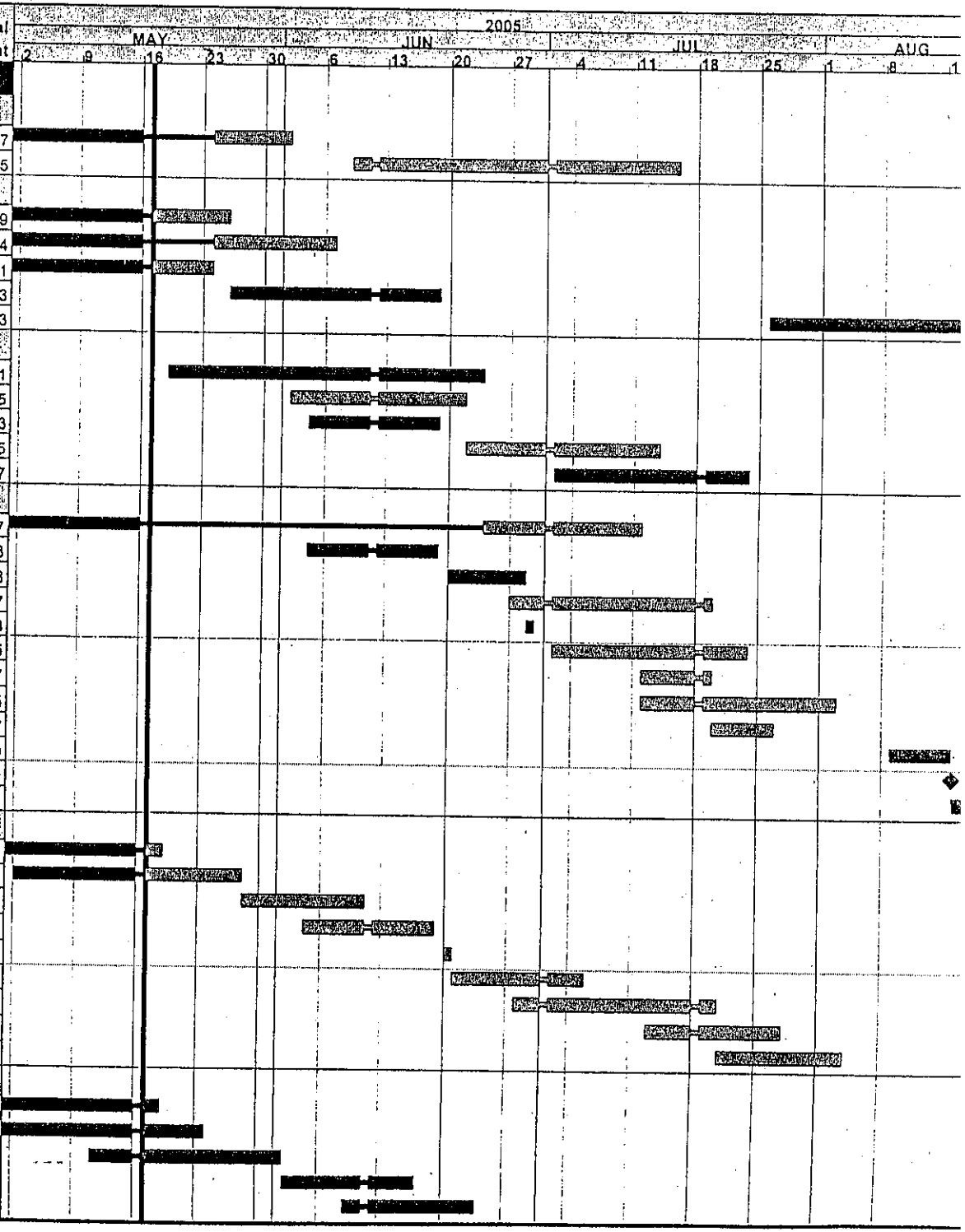
Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
Footbridge FB12					
05-53402	Erect Steelwork & Roofing of Main Span for FB12	45	06JUN05	30JUL05	21
05-53506	Erect Steelwork & Roofing for FB12 (South)	30	27JUN05	02AUG05	19
05-5370	E&M and Finishing Works for Footbridge FB12	30	05JUL05	09AUG05	19
6. Retaining Walls					
L-Shaped Walls					
06-6105	Retaining Wall RW01 (CH1554-1680); 13 bays	184*	17NOV04A	04JUL05	-13
06-61051	Excavate/temp soil nailing for bays 53-65	100	17NOV04A	07MAY05A	
06-61052	Construct base/wall for bays 53-65	80	01FEB05A	01JUN05	-13
06-61054	Construct plinth for bays 53-65	26	02JUN05	04JUL05	-7
7. Noise Structures					
Procurement of Noise Barrier					
07-7060	Fabrication of Steel Members for Noise Barrier	120	17MAY04A	03JUN05	-28
07-7080	Delivery of Steel Members for Noise Barrier	90	19JUL04A	10JUN05	-28
07-7070	Fabrication of Panels for Noise Barrier	100	16MAR05A	15JUL05	18
07-7090	Delivery of Panels for Noise Barrier	90	17MAY05	14AUG05	18
Noise Mitigation No. 01					
07-7114	Erect Steel Members at North Supports for NM01	30	14OCT04A	28JUL05	-19
07-7123	Erect Steel Members at South Supports for NM01	30	16FEB05A	07MAY05A	
07-7111	Foundation of NM01 (N); CH1300-1350 (bays 8-10)	40	26MAY05	13JUL05	-19
07-7115	Erect Wall Panels at North Supports for NM01	30	07JUL05	11AUG05	-19
07-7130	Erect Roof Steel Members for NM01	30	22JUL05	25AUG05	-19
07-7150	Erect Roof Panels for NM01	30	05AUG05	08SEP05	-19
8. Culverts and Outfalls					
Culvert-Outfall C					
08-84029	1.5m DI pipe/Step Channel; Outside RW01	10	15APR05A	20MAY05	-15
08-8403	Excavate Culvert-Outfall C (within Exist CPR)	6	26MAY05	01JUN05	17
08-84032	Const. Culvert-Outfall C (within Exist CPR)	12	02JUN05	16JUN05	17
Culvert-Outfall CB					
08-81601	Exc. Culvert-Outfall CB (North of Exist CPR)	6	26MAY05	01JUN05	17
08-816012	Const. Culvert-Outfall CB (North of Exist CPR)	12	02JUN05	16JUN05	17
Culvert-Outfall D					
08-8503	Exc. Culvert-Outfall D (South)	6	04APR05A	19MAY05	-2
08-85032	Const. 2 Manholes & 1.5m Conc. Pipe (South)	16	26MAY05	14JUN05	-7
08-85033	Const. 1.5m Stepped Channel & Outlet (South)	12	15JUN05	28JUN05	11
Culvert-Outfall E					
08-8602	Outfall E (S) section behind RW01	12	23MAR05A	23MAY05	2
08-86022	Outfall E (S) Outlet	12	24MAY05	06JUN05	2
08-86023	Const. 1.5m Stepped Channel (South)	12	07JUN05	21JUN05	2
08-8603	Exc. Culvert-Outfall E (SMHE1-Inlet)	18	13JUN05	04JUL05	-14
08-86032	Const. Culvert-Outfall E (SMHE1-Inlet)	30	25JUN05	01AUG05	-14



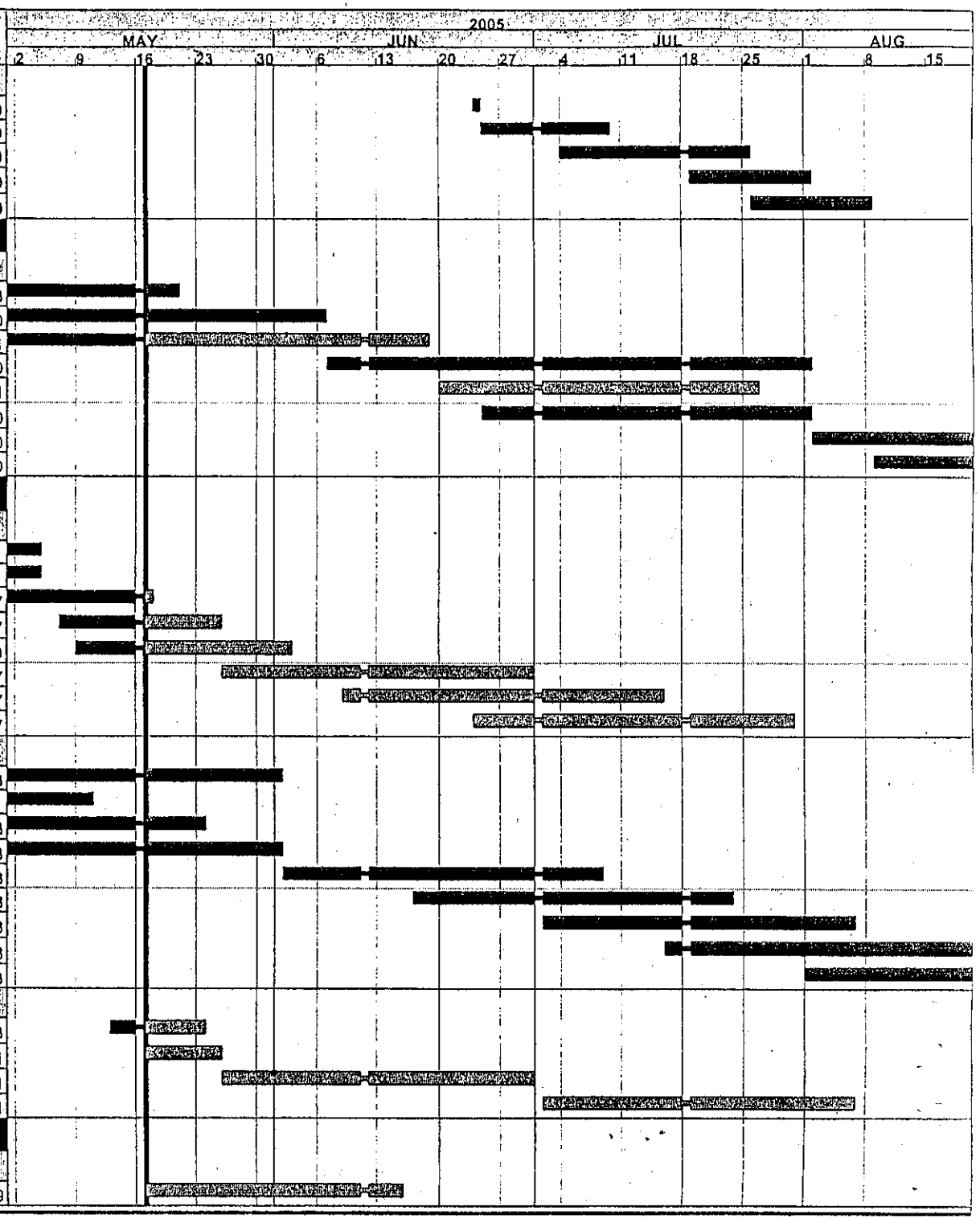
Activity ID	Activity Description	Orig Dur.	Early Start	Early Finish	Total Float
10. Geotechnical & Slope Works					
Existing Slope Works					
10-102112	Remedial Works to Slope No. D/R16 (skin wall)	30	04APR05A	30MAY05	21
12. Entrusted Watermains					
Entrusted Water Mains					
12-1205	DN1000FW/Associated Wks (W/B C'way	30	07JUN05	13JUL05	-13
13. Reprovisioning of LCSD & FEHD Facilities					
FEHD Facilities					
13-1340	Reprovision of Sitting Out Area at Ka Loon Tsuen	75	13SEP03A	02JUN05	74
Stairways					
13-1315	Construct Stairway ST05 & Ramp ST05A	40	02JUN05	21JUL05	-7
13-1314	Construct Stairway ST04	30	02AUG05	05SEP05	-14
14. Landscape Works					
Landscape Softworks					
14-14115	L'scape Works in Slope No. 6	40	17MAY05	04JUL05	-28
14-14119	L'scape Works bet CPR CH1205-1705	150	17MAY05	14NOV05	-12
14-14114	L'scape Works in Slope No. 1	30	05JUL05	09AUG05	-28
14-14116	L'scape Works in Slopes C161 & D/C5	36	10AUG05	21SEP05	-28
18. Variation Works					
Vehicular Parapets					
VO-24940	Additional Vehicular Parapets at CH 1555-1685	30	15JUN05	21JUL05	-13
CPR from Chainage 2+210 to Chainage 3+010					
1. Preliminaries					
Proposed Utility Works					
01-12124	Proposed CATV at E/B CH2830-2950	6	17MAY04A	18MAY05	-23
01-12143	Proposed CATV on E/B C.way CH2300-2580	14	02JUN05	18JUN05	17
01-12145	Proposed HKT on E/B C.way CH2300-2580	14	09JUN05	25JUN05	17
01-12147	Proposed HKBN on E/B C.way CH2300-2580	14	09JUN05	25JUN05	17
01-12153	Proposed CATV on E/B C.way CH2580-2800	11	09JUN05	22JUN05	12
01-12144	Proposed HT on E/B C.way CH2300-2580	14	17JUN05	04JUL05	17
01-12155	Proposed HKT on E/B C.way CH2580-2800	11	17JUN05	29JUN05	12
01-12157	Proposed HKBN on E/B C.way CH2580-2800	11	17JUN05	29JUN05	12
01-12146	Proposed CLP on E/B C.way CH2300-2580	14	24JUN05	11JUL05	17
01-12154	Proposed HT on E/B C.way CH2580-2800	11	24JUN05	07JUL05	12
01-12156	Proposed CLP on E/B C.way CH2580-2800	11	02JUL05	14JUL05	12
Programme for SA No. 3					
01-0110	Programme for SA No. 3	609*	29SEP03A	29MAY05	-10
01-0118	Prepare final SA	12	25NOV03A	22MAY05	0
01-0119	Prepare formal copies of SA for execution SA	7	23MAY05	29MAY05	0
01-01110	Execute SA	0		29MAY05	0



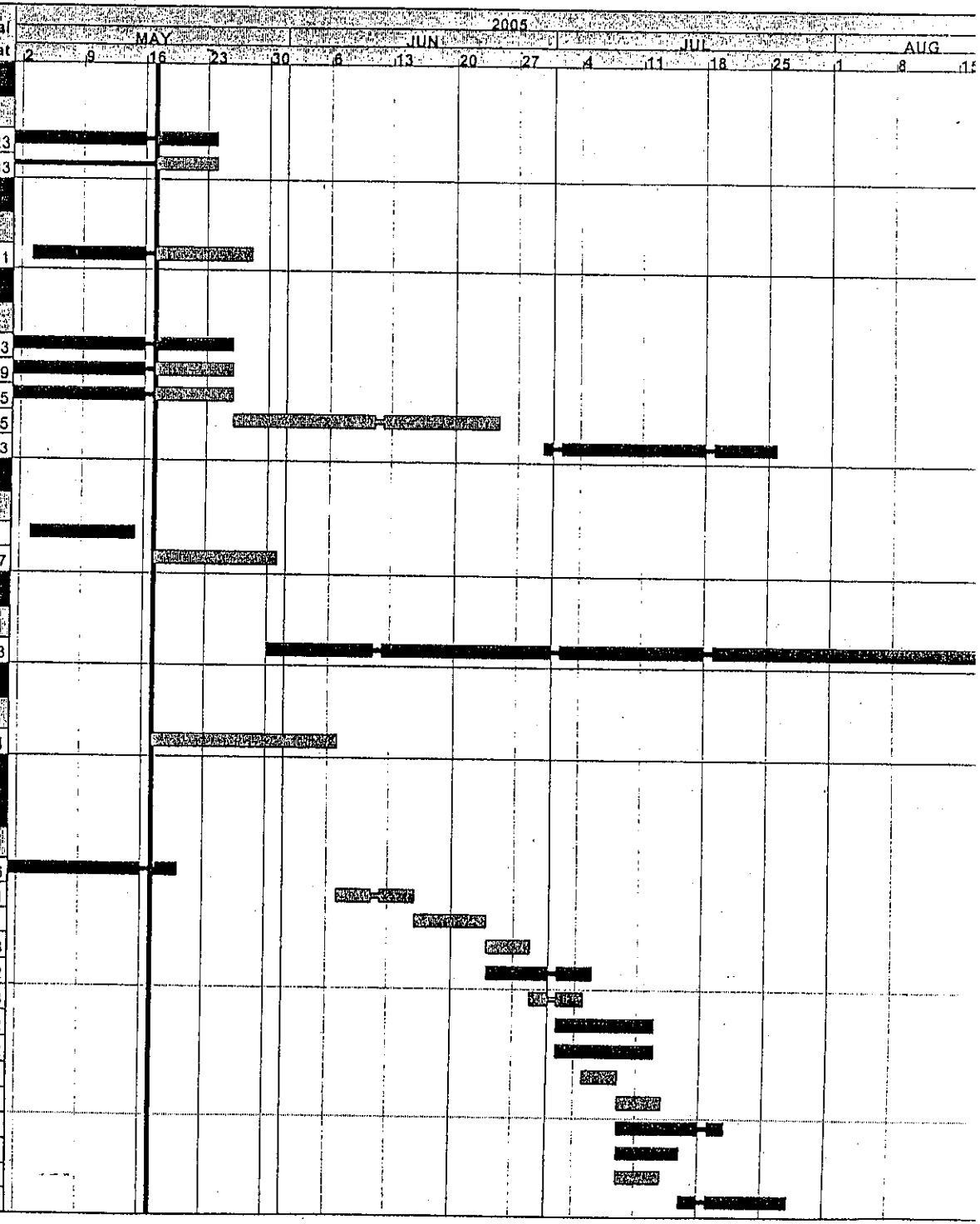
Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
3. Roadworks					
Earthworks					
03-3204	Backfill/Road formation at E/B CH2300-2580	30	06APR05A	01JUN05	17
03-3205	Road formation at E/B C'way CH2580-2800	30	09JUN05	15JUL05	5
Drainage Works					
03-32262	Drainage Works at Access Road R9 at East	20	01APR05A	25MAY05	9
03-32252	Drainage Works at E/B CH2580-2610/CH2695-2750	30	08APR05A	06JUN05	14
03-32243	Drainage(F4.1-4.3) at E/B CH2480-2580	25	11APR05A	23MAY05	21
03-3226	Drainage Works at Access Road R9 at West	20	26MAY05	18JUN05	-23
03-32263	Drainage Works at Access Road R9 at Middle	20	26JUL05	17AUG05	-23
Pipe Works (Local Supply Watermains)					
03-32365	Additional DN600 Watermain along Access Road R9	30	19MAY05	23JUN05	-11
03-3235	Pipe Works on E/B C'way bet CH2610-2720	16	02JUN05	21JUN05	5
03-3236	Pipe Works on at Access Road R9 at West	12	04JUN05	18JUN05	-23
03-32352	Testing & Connection of Pipeworks at CH2610-2720	18	22JUN05	13JUL05	5
03-32366	Testing & Connection for add. DN600 at R9/J6	18	02JUL05	23JUL05	-17
Road Works					
03-3148	Lay sub-base, kerbs & edgings; E/B CH2300-2580	18	25APR05A	11JUL05	17
03-3160	Formation/ sub-base, kerbs; Access Rd R9 at West	12	04JUN05	18JUN05	-23
03-31602	Construct rd pave & f/p; Access Rd R9 at West	8	20JUN05	28JUN05	-23
03-31482	Construct rd pave & f/p; E/B CH2300-2580	18	27JUN05	19JUL05	17
03-316022	Divert Access to Villagers from West of R9	1	29JUN05	29JUN05	-23
03-3149	Lay sub-base, kerbs & edgings; E/B CH2580-2800	18	02JUL05	23JUL05	5
03-31448	Reinstate E/B carriageway at CH2210-2300	6	12JUL05	19JUL05	17
03-31492	Construct rd pave & f/p; E/B CH2580-2800	18	12JUL05	02AUG05	5
03-31484	Rd finishes, marking & lighting; E/B CH2300-2580	6	20JUL05	26JUL05	17
03-31494	Rd finishes, marking & lighting; E/B CH2580-3010	6	09AUG05	15AUG05	0
03-3143	Divert Traffic to E/B Perm. C'way CH2210 - 3010	0		15AUG05	0
03-31454	Rd finishes, marking & lighting; W/B CH2300-3010	14	16AUG05	31AUG05	0
Junction J5 (at Hong Kong Garden)					
J5-04	Expose existing UUs at eastern lane of slip rd	12	12APR05A	18MAY05	4
J5-06	Const. drainage within eastern lane of slip rd	18	02MAY05A	27MAY05	4
J5-08	Lay UU cross rd	12	28MAY05	10JUN05	4
J5-10	Const. eastern lane of slip rd	12	04JUN05	18JUN05	4
J5-12	Close western lane of slip road to HK Garden	1	20JUN05	20JUN05	4
J5-14	Expose existing UUs at western lane of slip rd	12	21JUN05	05JUL05	4
J5-16	Const. drainage both storm & sewer at west lane	18	28JUN05	20JUL05	4
J5-18	Lay UU cross rd	12	13JUL05	27JUL05	4
J5-20	Const. western lane of slip rd	12	21JUL05	03AUG05	4
Junction J6 (at Lung Yu Road)					
J6-04	Expose existing UUs at eastern lane	12	17FEB05A	18MAY05	-23
J6-06	Const. drainage both storm & sewer at east lane	18	21FEB05A	23MAY05	-23
J6-07	Additional Watermain works at Lung Yuen Rd	18	11MAY05A	01JUN05	-11
J6-08	Lay UU cross rd	12	02JUN05	16JUN05	0
J6-10	Const. eastern lane of Lung Yuen Rd	12	09JUN05	23JUN05	0



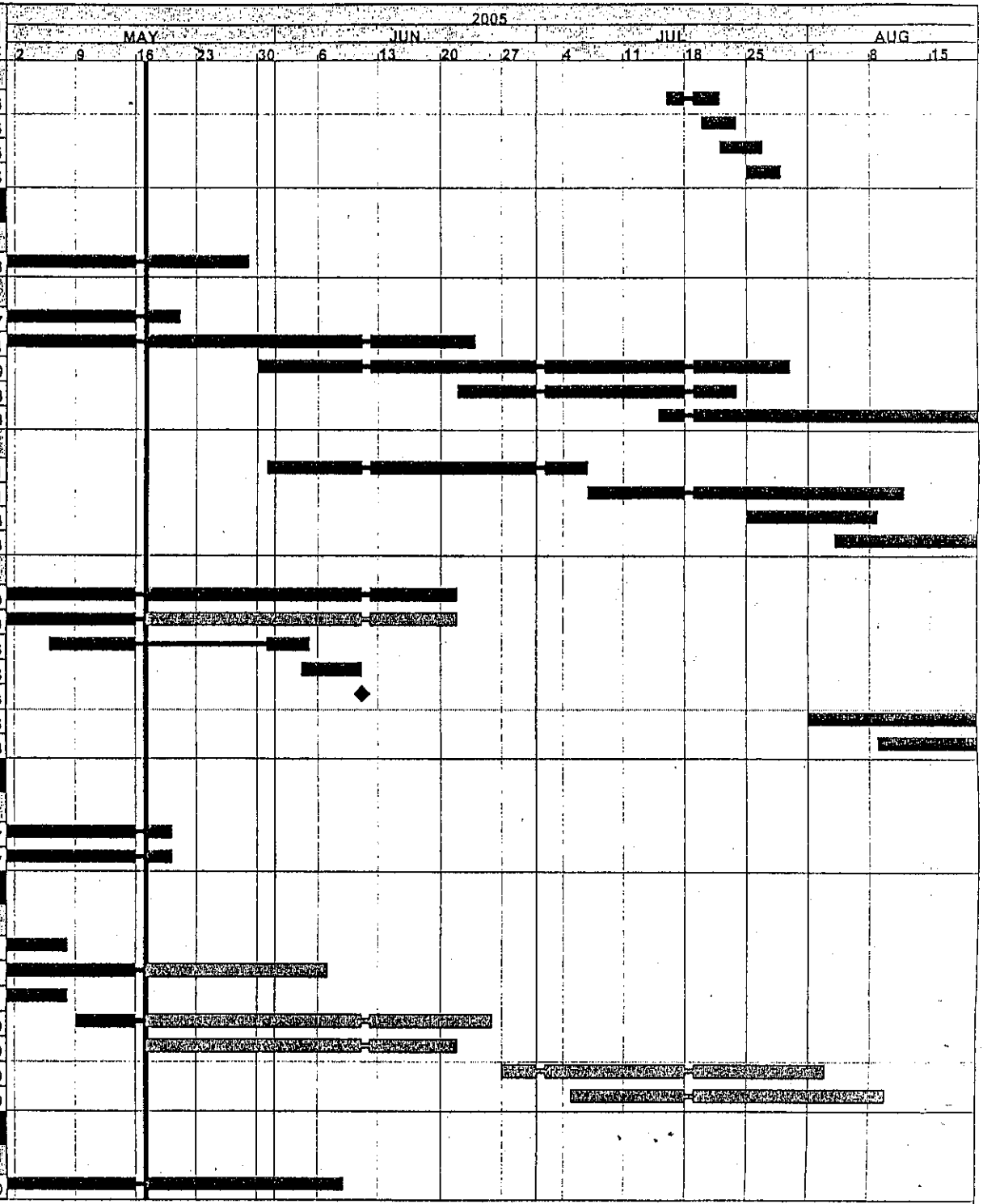
Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
Junction J6 (at Lung Yu Road)					
J6-12	Close western lane of Lung Yuen Rd	1	24JUN05	24JUN05	0
J6-14	Expose existing UUs at western lane	12	25JUN05	09JUL05	0
J6-16	Const. drainage both storm & sewer at west lane	18	04JUL05	25JUL05	0
J6-18	Lay UU cross rd	12	19JUL05	01AUG05	0
J6-20	Const. wester lane of Lung Yuen Rd	12	26JUL05	08AUG05	0
5. Footbridges					
Footbridge FB01					
05-5130	North Pile caps for FB01; 5 Nos.	25	04APR05A	20MAY05	-8
05-51302	North Columns & Column head for FB01; 9 Nos.	35	20APR05A	06JUN05	-10
05-5140	Const./Erect Deck of Main Span for FB01	45	29APR05A	18JUN05	1
05-5160	Construct Ramp for FB01 (North)	45	07JUN05	01AUG05	-10
05-51402	Erect Steelwork & Roofing of Main Span for FB01	30	20JUN05	26JUL05	1
05-51604	Construct Stairway for FB01 (North)	30	25JUN05	01AUG05	-10
05-51606	Erect Steelwork & Roofing for FB01 (North)	30	02AUG05	05SEP05	-10
05-5170	E&M and Finishing Works for Footbridge FB01	30	09AUG05	12SEP05	-10
7. Noise Structures					
Noise Mitigation No. 02					
07-7221	Foundation of NM02 (North)	84*	19JAN05A	04MAY05A	
07-72218	Const. R.C. barriers/columns; NM02 (Bays 14-23)	24	04APR05A	04MAY05A	
07-72217	Const. R.C. barriers/columns; NM02 (Bays 24-26)	18	11APR05A	17MAY05	27
07-7212	Erect Steel Members at North Supports for NM02	30	07MAY05A	25MAY05	27
07-7230	Erect Roof Steel Members for NM02	30	09MAY05A	02JUN05	29
07-7213	Erect Wall Panels at North Supports for NM02	30	26MAY05	30JUN05	27
07-7240	Erect Roof Panels for NM02	30	09JUN05	15JUL05	27
07-7250	E&M Works for NM02	30	24JUN05	30JUL05	27
Noise Mitigation No. 03					
07-7321	Foundation of NM03 (North)	82*	21FEB05A	01JUN05	-3
07-73214	Construct base for NM03 (North)	30	28FEB05A	10MAY05A	
07-73216	Construct wall stem for NM03 (North)	30	14MAR05A	23MAY05	-3
07-73218	Const. R.C. barriers/columns; NM03 (North)	24	30APR05A	01JUN05	-3
07-7312	Erect Steel Members at North Supports for NM03	30	02JUN05	08JUL05	-3
07-7330	Erect Roof Steel Members for NM03	30	17JUN05	23JUL05	-3
07-7313	Erect Wall Panels at North Supports for NM03	30	02JUL05	06AUG05	-3
07-7340	Erect Roof Panels for NM03	30	16JUL05	20AUG05	-3
07-7350	E&M Works for NM03	30	01AUG05	03SEP05	-3
Noise Mitigation No. 04					
07-740413	Stub Column of NM04 (bays 12-13)	8	13MAY05A	23MAY05	23
07-74042	Stub Columns of NM04 (bays 1-4)	8	17MAY05	25MAY05	21
07-7408	Erect Frame for NM04 (bays 1-4 & 12-13)	30	26MAY05	30JUN05	21
07-74072	Erect Panels for NM04	30	02JUL05	06AUG05	21
8. Culverts and Outfalls					
Culvert-Outfall GB					
08-89202	Culvert-Outfall GB (remaining); VO165	25	17MAY05	15JUN05	9



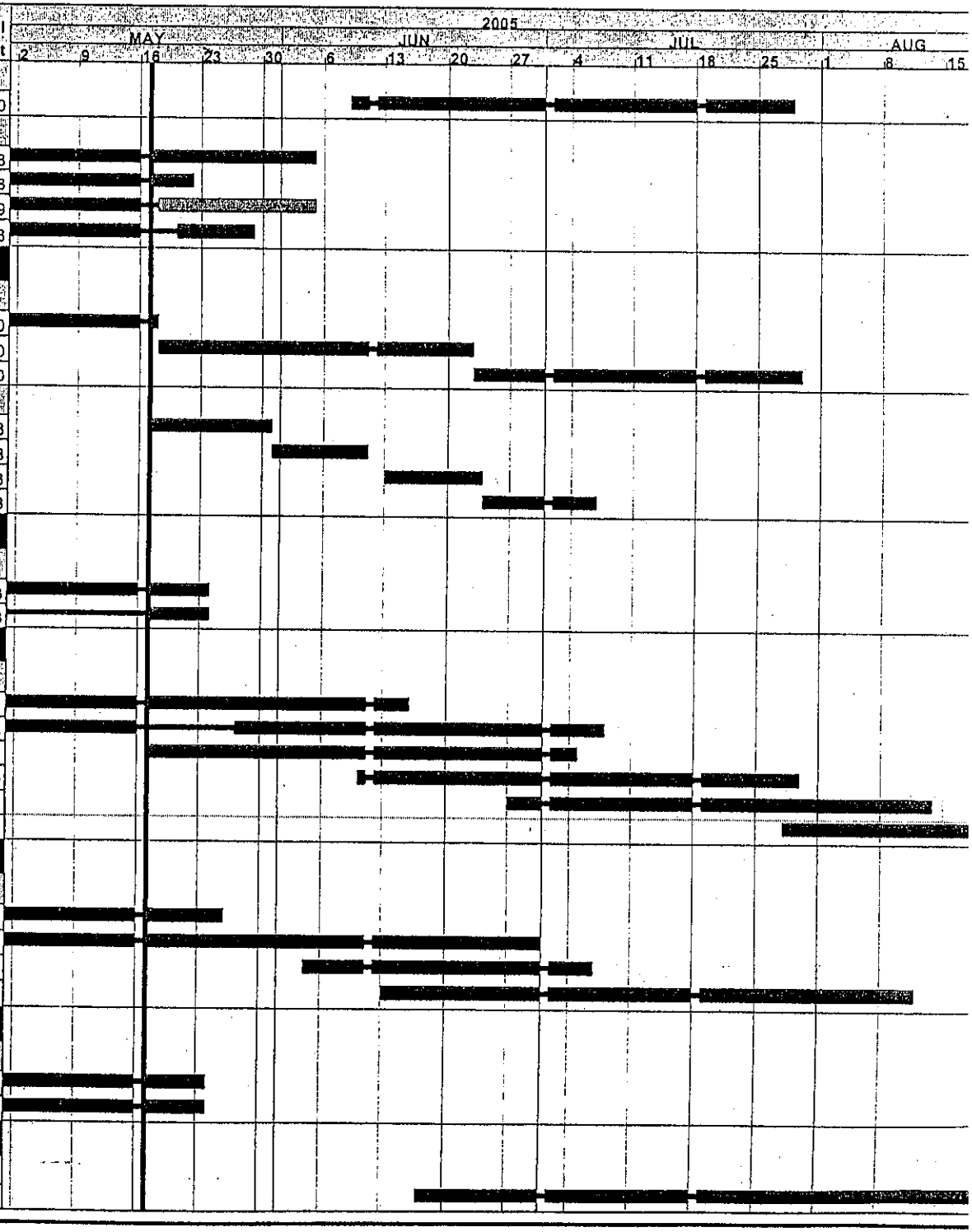
Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
9. Seawalls and Marine Works					
L-Shaped Walls					
09-91331	Reprovision of Pavillion at Sea Wall B	570*	19JUN03A	23MAY05	-23
09-91333	Roofing/staircase/flooring & finishings	40	07JUN04A	23MAY05	83
10. Geotechnical & Slope Works					
Existing Slope Works					
09-921246	Drainage, Toe of Slope 6SW-D/C1&78/VO386G	18	03MAY05A	27MAY05	41
11. Entrusted Sewerage Works					
Entrusted Sewers/Drains					
11-1132	Sewer Works at Access Road R9 at West	40	24MAR05A	25MAY05	-23
11-11322	Sewer Works at Access Road R9 at East	40	01APR05A	25MAY05	9
11-11312	Sewer Works at CPR CH2580-2650	20	25APR05A	25MAY05	5
11-1131	Sewer Works at CPR CH2650-2750	25	26MAY05	24JUN05	5
11-11323	Sewer Works at Access Road R9 at Middle	20	30JUN05	25JUL05	-23
12. Entrusted Watermains					
Entrusted Water Mains					
12-1232	DN150 cross rd & fire hydrant at CH L600	12	03MAY05A	14MAY05A	
12-12322	DN150 & Thrust Blocks of S.V. Chamber at CH L605	12	17MAY05	30MAY05	17
14. Landscape Works					
Landscape Softworks					
14-14111	Landscape Works CH2300-3010	150	30MAY05	26NOV05	-23
18. Variation Works					
Add. Fishermen's Access Staircase at Sewall B					
VO-35600	Construct Fishermen's Access Staircase; VO356	18	17MAY05	06JUN05	71
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	30MAR05A	19MAY05	-26
01-1241	Proposed CLP on W/B C.way CH3400-3530	7	07JUN05	15JUN05	31
01-12412	Proposed HKT on W/B C.way CH3400-3530	7	16JUN05	23JUN05	31
01-121264	HKT Cross Rd. Ducts at E/B CH2995	4	24JUN05	28JUN05	3
01-12433	Proposed CATV on E/B C.way CH2950-3130	9	24JUN05	05JUL05	-2
01-124022	CATV Cross Rd. Ducts at E/B CH3030	4	29JUN05	04JUL05	3
01-12435	Proposed HKT on E/B C.way CH2950-3130	9	02JUL05	12JUL05	-2
01-12437	Proposed HKBN on E/B C.way CH2950-3130	9	02JUL05	12JUL05	-2
01-124023	HT Cross Rd. Ducts at E/B CH3035	4	05JUL05	08JUL05	3
01-124002	CLP Cross Rd. Ducts at E/B CH3080	4	09JUL05	13JUL05	3
01-12434	Proposed HT on E/B C.way CH2950-3130	9	09JUL05	20JUL05	-2
01-12438	NWT Cross Rd. Ducts at E/B CH3290-3310	6	09JUL05	15JUL05	-2
01-125562	CLP Cross Rd. Ducts at E/B CH3415	4	09JUL05	13JUL05	3
01-12436	Proposed CLP on E/B C.way CH2950-3130	9	16JUL05	27JUL05	-2



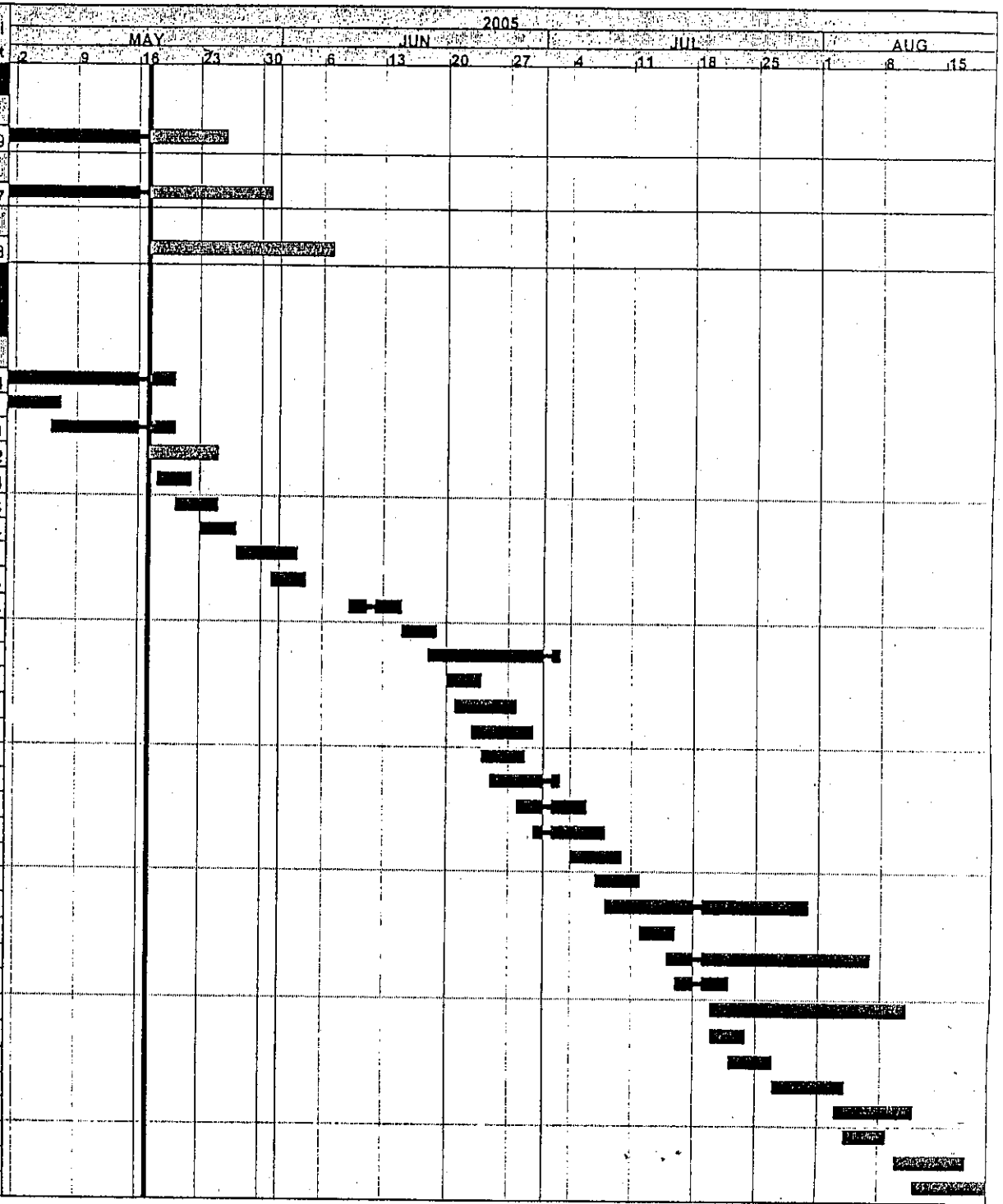
Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
Proposed Utility Works					
01-125522	CATV Cross Rd. Ducts at W/B CH3525	4	16JUL05	21JUL05	-14
01-125544	HKT Cross Rd. Ducts at W/B CH3470	4	20JUL05	23JUL05	-14
01-125561	CLP Cross Rd. Ducts at W/B CH3415	4	22JUL05	26JUL05	-14
01-125563	CLP Cross Rd. Ducts at W/B CH3480	4	25JUL05	28JUL05	-14
3. Roadworks					
Earthworks					
03-3242	Earthworks at W/B C'way CH3400-3530	238*	09AUG04A	28MAY05	-38
Drainage Works					
03-33202	Drainage Works on W/B C'way bet CH3300-3400	20	12MAR05A	20MAY05	-27
03-3323	Drainage Works on E/B C'way bet CH2980-3130	50	11APR05A	23JUN05	-21
03-33231	Drainage Works on E/B C'way bet CH3130-3250	50	30MAY05	29JUL05	-20
03-3321	Drainage Works on W/B C'way bet CH3400-3530	26	22JUN05	23JUL05	-23
03-33232	Drainage Works on E/B C'way bet CH3250-3460	50	15JUL05	12SEP05	-38
Pipe Works (Local Supply Watermains)					
03-3330	Pipe Works on E/B C'way bet CH3010-3130	30	31MAY05	06JUL05	-21
03-33301	Pipe Works on E/B C'way bet CH3130-3250	30	07JUL05	11AUG05	-21
03-3332	Pipe Works on W/B C'way bet CH3440-3530	13	25JUL05	08AUG05	-23
03-33302	Pipe Works on E/B C'way bet CH3250-3460	30	04AUG05	07SEP05	-38
Road Works					
03-3340	Dragon Garden Accommodation	944*	12APR02A	21JUN05	-40
03-334008	Remove Temporary Hoarding & Reinstatement	35	28APR04A	21JUN05	59
03-33145	Lay sub-base, kerbs & edgings; W/B CH3300-3400	7	06MAY05A	04JUN05	-38
03-33146	Construct rd pave & f/p; W/B CH3300-3400	6	04JUN05	10JUN05	-38
03-33161	Divert Traffic on W/B Perma C'way CH3300-3400	0		10JUN05	-38
03-3317	Formation/sub-base, kerbs; E/B CH3010-3460	39	01AUG05	14SEP05	-38
03-3315	Formation, sub-base, kerbs; W/B CH3400-3530	13	09AUG05	23AUG05	-23
R.E. Wall REV05					
Reinforced Earth Wall REV05					
REV014	L-shaped wall & Plinth	40	03JAN05A	19MAY05	-27
REV016	P1 Parapets	30	03JAN05A	19MAY05	-27
5. Footbridges					
Footbridge FB11					
05-5550	Construct Ramp for FB11 (South)	60	01FEB05A	07MAY05A	
05-55606	Erect Steelwork & Roofing for FB11 (North)	30	28FEB05A	06JUN05	41
05-55504	Construct Stairway for FB11 (South)	30	29MAR05A	07MAY05A	
05-5540	Const./Erect Deck of Main Span for FB11	40	09MAY05A	25JUN05	19
05-55506	Erect Steelwork & Roofing for FB11 (South)	30	17MAY05	21JUN05	29
05-55402	Erect Steelwork & Roofing of Main Span for FB11	30	27JUN05	02AUG05	19
05-5570	E&M Works for Footbridge FB11	30	05JUL05	09AUG05	19
6. Retaining Walls					
Reinforced Earth Wall 14					
RE1412	Mass conc./Install panel & mesh/Backfill/coping	60	21MAR05A	08JUN05	-20



Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
Reinforced Earth Wall 14					
RE1414	Filling/Trim slope/Drainage & Maint. stair	40	09JUN05	28JUL05	-20
L-Shaped Walls					
06-6580	Construct Retaining Wall RW15	244*	09AUG04A	04JUN05	-38
06-65806	Base/wall for RW15; bays 4-6	40	21FEB05A	21MAY05	-38
06-65808	Plinth for RW15; bays 4-6	16	11APR05A	04JUN05	29
06-65807	Backfill for RW15; bays 4-6	10	18APR05A	28MAY05	-38
8. Culverts and Outfalls					
Culvert - Outfall HB					
08-81020	Temp. Works & Exc. Culvert-Outfall HB (Middle)	21	10JAN05A	17MAY05	-20
08-810202	Const. Culvert-Outfall HB (Middle)	30	18MAY05	22JUN05	-20
08-810203	Const. Culvert-Outfall HB (North)	30	23JUN05	29JUL05	-20
Culvert-Outfall H					
08-81130	Exc. Culvert-Outfall H (Remaining Portion)	12	17MAY05	30MAY05	-23
08-811302	Const. SMHH2; Outfall H	10	31MAY05	10JUN05	-23
08-811303	Const. 1.65m pipe with conc. suround; Outfall H	10	13JUN05	23JUN05	-23
08-811304	Const. 1.65m cascade; Outfall H	10	24JUN05	06JUL05	-23
10. Geotechnical & Slope Works					
Existing Slope Works					
10-1092	Remedial Works to Slope No. FR41	540*	26JUL03A	23MAY05	-13
10-10928	Fill behind RW104 & Finishing Work	16	07JAN04A	23MAY05	-13
11. Entrusted Sewerage Works					
Entrusted Sewers/Drains					
11-114001	350mm Twin Rising Mains at CH 3000-3130	40	01APR05A	15JUN05	-21
11-114002	350mm Twin Rising Mains at CH 3130-3250	40	18APR05A	07JUL05	-18
11-1140	Sewer at E/B CH3000-3130	40	17MAY05	04JUL05	-21
11-11401	Sewer at E/B bet CH3130-3250	40	10JUN05	29JUL05	-20
11-114003	350mm Twin Rising Mains at CH 3250-3460	40	27JUN05	13AUG05	-38
11-11402	Sewer at E/B bet CH3250-3460	40	28JUL05	12SEP05	-38
12. Entrusted Watermains					
Entrusted Water Mains					
12-1230	DN1000FW/Associated Wks E/B CH2970-3100	50	03MAR05A	25MAY05	-21
12-12301	DN1000FW/Associated Wks E/B CH3130-3250	50	01APR05A	30JUN05	-18
12-1221	DN1000FW/Associated Wks(W/B C'way CH3400-3470	26	04JUN05	06JUL05	-23
12-12302	DN1000FW/Associated Wks E/B CH3250-3400	50	13JUN05	11AUG05	-38
13. Reprovisioning of LCSD & FEHD Facilities					
Stairways					
13-1332	Construct Stairway ST07	170*	25OCT04A	23MAY05	-13
13-13328	Finishing & railing; ST07	12	17JAN05A	23MAY05	-13
14. Landscape Works					
Landscape Softworks					
14-14101	Landscape Works bet CH3010-3730	150	17JUN05	14DEC05	-38

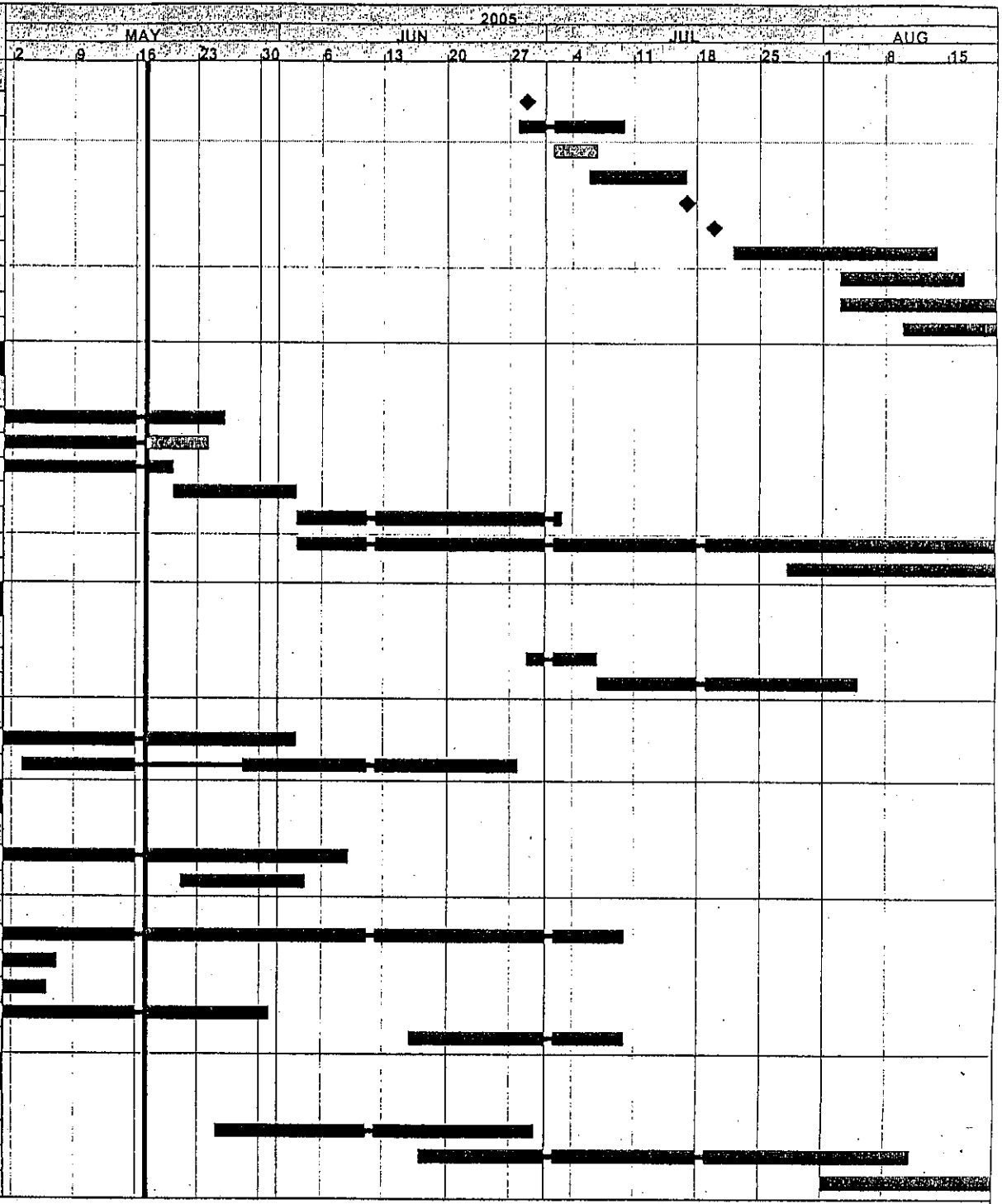


Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
18. Variation Works					
New Slope No. 9					
10-10536	Drainage at Crest & West End of Slope (VO 412)	12	16MAR05A	25MAY05	69
New Slope No. 11					
10-10757	Reprovsion of B. Fence: V.O. No. 133	45	07FEB04A	30MAY05	77
Vehicular Parapets					
VO-24960	Additional Vehicular Parapets at CH 3400-3425	18	17MAY05	06JUN05	28
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	19MAY05	-34
01-12444	Proposed CLP on W/B C,way CH3630-3850	11	18APR05A	06MAY05A	
01-12443	Proposed HKT on W/B C,way CH3630-3850	11	06MAY05A	19MAY05	-1
01-124735	Proposed HT on E/B C,way CH4330-4470	7	17MAY05	24MAY05	82
01-124842	HKT Cross Rd. Ducts at E/B Slow Lane CH4363	4	18MAY05	21MAY05	-34
01-1247352	HT Cross Rd. Ducts at E/B Slow Lane CH4361	4	20MAY05	24MAY05	-34
01-1247381	CATV Cross Rd. Ducts at Slow Lane E/B CH4374	4	23MAY05	26MAY05	-34
01-12442	Proposed Gasmain on W/B C,way CH3670-3730	6	27MAY05	02JUN05	-31
01-124554	HKT Cross Rd. Ducts at W/B CH3670	4	31MAY05	03JUN05	-28
01-124631	CLP Cross Rd. Ducts at W/B CH3970	4	09JUN05	14JUN05	-33
01-124633	CLP Cross Rd. Ducts at W/B CH4100	4	15JUN05	18JUN05	-33
01-1257	Proposed Gasmain on E/B C,way CH3850-3900	12	18JUN05	02JUL05	-40
01-124621	HKT Cross Rd. Ducts at W/B CH4133	4	20JUN05	23JUN05	-33
01-12472	Proposed NWT on E/B C,way CH3900	6	21JUN05	27JUN05	-40
01-12481	Proposed CATV on E/B C,way CH3850-3900	6	23JUN05	29JUN05	-40
01-124964	HKT Cross Rd. Ducts at W/B CH3970	4	24JUN05	28JUN05	-33
01-124812	Proposed HKBN on E/B C,way CH3850-3900	6	25JUN05	02JUL05	-40
01-12494	Proposed HKT on E/B C,way CH3850-3900	6	28JUN05	05JUL05	-40
01-12482	Proposed HT on E/B C,way CH3850-3900	6	30JUN05	07JUL05	-40
01-12495	Proposed CLP on E/B C,way CH3850-3900	6	04JUL05	09JUL05	-40
01-124844	HKT Cross Rd. Ducts at W/B CH4363	4	07JUL05	11JUL05	-22
01-12463	Proposed CLP on W/B C,way CH3910-4330	19	08JUL05	30JUL05	-26
01-1247334	CATV Cross Rd. Ducts at W/B CH4375	4	12JUL05	15JUL05	-22
01-12462	Proposed HKT on W/B C, say CH3910-4330	19	15JUL05	06AUG05	-26
01-1247354	HT Cross Rd. Ducts at W/B CH4361	4	16JUL05	21JUL05	-22
01-124622	Proposed HKBN on W/B C,way CH3910-4330	19	20JUL05	10AUG05	-26
01-124635	CLP Cross Rd. Ducts at W/B CH4180	4	20JUL05	23JUL05	-20
01-1247382	CLP Cross Rd. Ducts at W/B CH4330	4	22JUL05	26JUL05	-22
01-1247385	CLP Cross Rd. Ducts at W/B CH4470	7	27JUL05	03AUG05	-22
01-124762	Proposed CLP on E/B C,way CH4180-4330	8	03AUG05	11AUG05	-23
01-1247343	NWT Cross Rd. ducts at W/B CH4450	4	04AUG05	08AUG05	-22
01-12464	Proposed CATV on W/B C,way CH4340-4470	7	10AUG05	17AUG05	-23
01-124732	Proposed CATV on E/B C,way CH3980-4330	18	12AUG05	01SEP05	-23

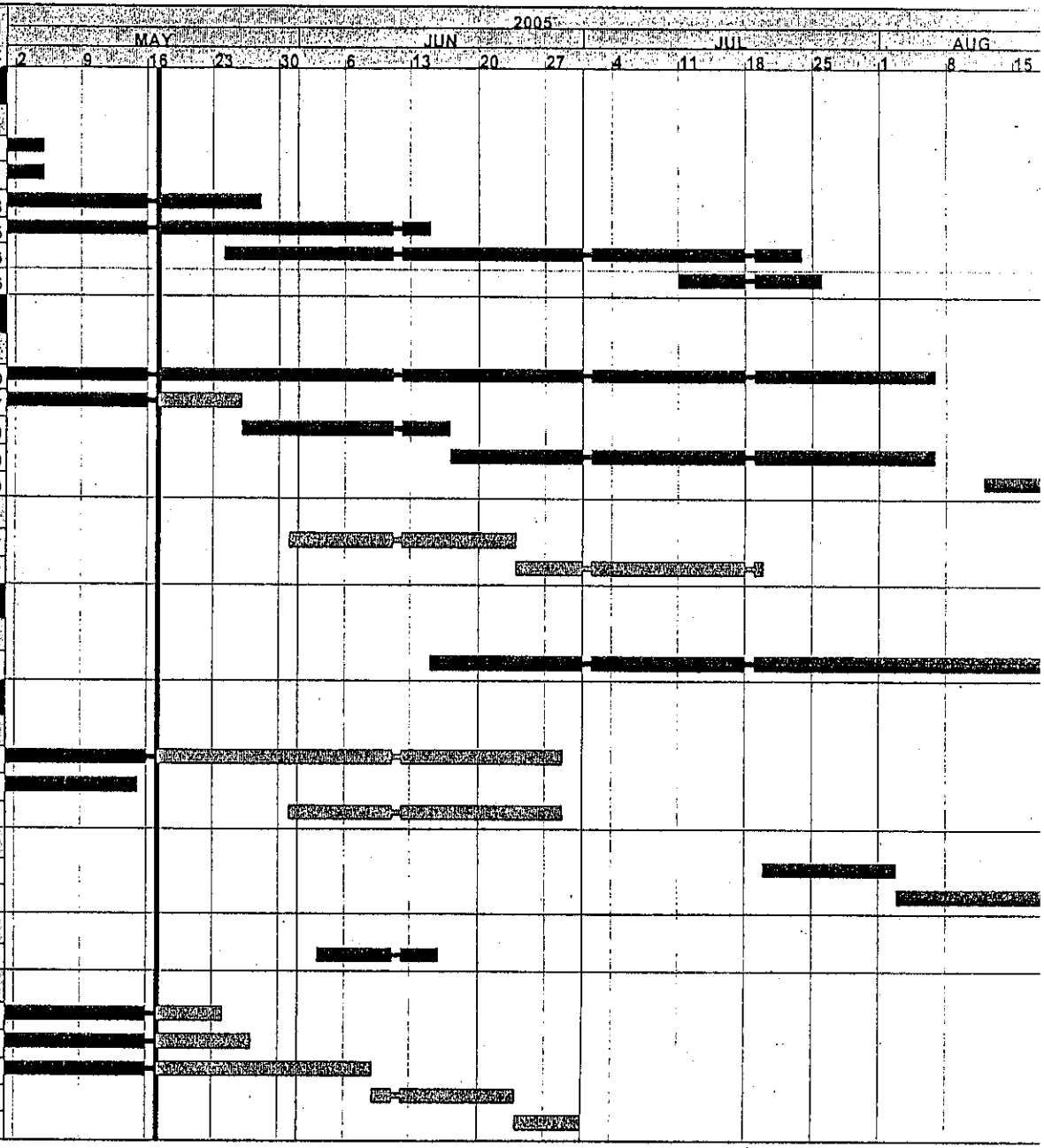


Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
3. Roadworks					
Utility Diversion					
03-34506	Expose/protect UUs at E/B CH 3850-3900	30	01FEB05A	24MAY05	-40
03-34505	Expose/protect UUs at E/B CH 3630-3850	30	02JUN05	08JUL05	-34
Earthworks					
03-3401	Road formation at W/B C'way CH3730-3850	12	18APR05A	04MAY05A	
03-34012	Road formation at W/B C'way CH3630-3730	10	02JUN05	14JUN05	-34
03-3402	Road Formation at W/B CH3950-4200	20	09JUN05	04JUL05	-35
03-34022	Road Formation at W/B CH4200-4330	20	14JUL05	06AUG05	-26
Drainage Works					
03-3465	Construct drainage/backfill at E/B CH4300-4470	148	25AUG04A	20MAY05	-34
03-34201	Drainage Works at W/B C'way CH3610-3730	30	24JAN05A	02JUN05	-31
03-3421	Drainage Works at W/B C'way CH3950-4200	50	30MAR05A	25JUN05	-35
03-34212	Drainage Works at W/B C'way CH4200-4330	50	09MAY05A	08JUL05	-26
03-3423	Drainage Works at E/B C'way CH3850-3900	30	31MAY05	06JUL05	-40
03-3425	Drainage Works at W/B C'way CH4330-4470	48*	02JUN05	30JUL05	-34
03-34252	Trial pits/Shet piling/excavate for drainage	40	02JUN05	21JUL05	-34
03-34254	Construct dralnage/backfill at W/B CH4330-4470	40	13JUN05	30JUL05	-34
03-3422	Drainage Works at E/B C'way CH3670-3850	45	05JUL05	26AUG05	-34
03-34204	Drainage Works at W/B C'way CH3900-3950	10	19JUL05	29JUL05	-40
03-3444	Drainage Works at E/B C'way CH4050-4160	40	20JUL05	03SEP05	-35
Pipe Works (Local Supply Watermains)					
03-3434	Pipe Works at W/B C'way bet CH3950-4200	30	17MAR05A	18JUN05	-35
03-34310	Pipe Works at W/B C'way bet CH3600-3700	20	18APR05A	06JUN05	-34
03-3440	Pipe Works at E/B C'way bet CH3850-3900	36	18APR05A	15JUN05	-33
03-34341	Pipe Testing & Connection at CH3950-4200	18	20JUN05	11JUL05	-29
03-34342	Pipe Works at W/B C'way bet CH4200-4330	30	24JUN05	30JUL05	-26
03-3441	Pipe Works at W/B C'way bet CH4330-4370	30	05JUL05	09AUG05	-34
03-34314	Pipe Works at W/B CH3910-3950	10	30JUL05	10AUG05	-40
03-3430	Pipe Works at E/B C'way bet CH3670-3850	30	04AUG05	07SEP05	-34
03-34315	Testing/Connection of Pipe Works	18	11AUG05	31AUG05	-40
Road Works					
03-34534	Stage 3 TTA (works at E/B slow lane)	254*	23JUL04A	01JUN05	-34
03-34561	lay sub-base, kerbs & edgings; E/B CH4330-4470	12	15DEC04A	26MAY05	-34
03-34556	Construct rd pave; R10	8	20DEC04A	20MAY05	-2
03-3450	Lay sub-base; W/B CH3730-3850	4	05MAY05A	17MAY05	-27
03-34502	Construct rd pave & f/p; W/B CH3730-3850	8	17MAY05	25MAY05	-28
03-345423	Construct rd pave & f/p; E/B CH4330-4470	8	24MAY05	01JUN05	-34
03-3452	Divert Traffic to W/B Perma C'way CH3730-3850	0		25MAY05	-28
03-3412	Divert Traffic to E/B C'way CH4330-4470	0		01JUN05	-34
03-34535	Stage 4 TTA (works at W/B carriage way)	68*	02JUN05	23AUG05	-34
03-34501	Lay sub-base, kerbs & edgings; W/B CH3630-3730	8	09JUN05	18JUN05	-34
03-3451	Lay sub-base, kerbs & edgings; W/B CH3950-44150	20	17JUN05	11JUL05	-35
03-34503	Construct rd pave & f/p; W/B CH3630-3730	8	20JUN05	28JUN05	-34
03-34512	Construct rd pave & f/p; W/B CH3950-4150	20	24JUN05	19JUL05	-35

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
Road Works					
03-34520	Divert Traffic to W/B Perma C'way CH3630-3730	0		28JUN05	-34
03-3464	Rd. formation/sub-base,kers; E/B CH3850-3900	10	28JUN05	09JUL05	-40
03-34558	Rd finishes, marking & lighting; R10	4	02JUL05	06JUL05	47
03-34642	Construct rd pave & f/p; E/B CH3850-3900	10	06JUL05	16JUL05	-40
03-34672	Divert Traffic to E/B C'way CH3850-3950	0		16JUL05	-40
03-34522	Divert Traffic to W/B Perma C'way CH3950-4150	0		19JUL05	-35
03-345122	Lay sub-base, kerbs & edgings; W/B CH4200-4330	20	22JUL05	13AUG05	-26
03-34511	Lay sub-base, kerbs & edgings; W/B CH4330-4470	12	03AUG05	16AUG05	-34
03-345124	Construct rd pave & f/p; W/B CH4200-4330	20	03AUG05	25AUG05	-26
03-34513	Construct rd pave & f/p; W/B CH4330-4470	12	10AUG05	23AUG05	-34
5. Footbridges					
Footbridge FB03					
05-54606	Erect Steelwork & Roofing for FB03 (North)	30	08NOV04A	25MAY05	-10
05-54508	Erect Steelwork & Roofing for FB03 (South)	30	08JAN05A	23MAY05	27
05-54122	Piling and Pile Testing (2 Nos.); FB03 (Middle)	30	04APR05A	19MAY05	-38
05-54123	Middle Pile cap for FB01; 1 Nos.	12	20MAY05	02JUN05	-34
05-54124	Middle Column & Column head for FB01	24	03JUN05	02JUL05	-34
05-5440	Const./Erect 2 Nos. Main Deck Beams for FB03	70	03JUN05	26AUG05	-30
05-54402	Erect Steelwork & Roofing of Main Span for FB03	50	28JUL05	24SEP05	-26
8. Culverts and Outfalls					
Culvert-Outfall IB					
08-81510	Exc. Culvert-Outfall IB (within E/B of CPR)	6	29JUN05	06JUL05	-34
08-815102	Const. Culvert-Outfall IB (within E/B of CPR)	24	07JUL05	04AUG05	-34
Culvert-Outfall I					
08-81330	Excavate Culvert bays 5-7; Outfall I	24	07MAR05A	02JUN05	-40
08-813302	Const. Culvert bays 5-7; Outfall I	30	03MAY05A	27JUN05	-40
9. Seawalls and Marine Works					
Seawall C (460 m Length)					
09-9264	Granular Fill behind RW-C; Bays 25-33	24	28FEB05A	08JUN05	-26
09-9262	Granular Fill behind RW-C; Bays 3-6/17-24	12	21MAY05	03JUN05	-33
L-Shaped Walls					
09-9250	Construct Retaining Wall RW-C	428*	29JAN04A	09JUL05	-36
09-92509	Construct Retaining Wall RW-C; bay 25-33	50	08JAN05A	06MAY05A	
09-925073	Protect slope/excavate for RW-C;Bays 5-6/17-21	40	10JAN05A	05MAY05A	
09-925092	Construct Retaining Wall RW-C; bay 4-6/17-21	48	04MAR05A	30MAY05	-33
09-925062	Construct Retaining Wall RW-C; bays 1-2	20	16JUN05	09JUL05	-36
11. Entrusted Sewerage Works					
Entrusted Sewers/Drains					
11-1123	Sewer Works at E/B C'way bet CH3850-3900	30	25MAY05	29JUN05	-40
11-1122	Sewer Works at E/B C'way bet CH3670-3850	45	17JUN05	10AUG05	-34
11-1127	Sewer Works at E/B CH4050-4180	40	01AUG05	15SEP05	-35



Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	Total Float
12. Entrusted Watermains					
Entrusted Water Mains					
12-1225	DN1000FW/Associated Wks E/B bet CH4320-4470	231*	23JUL04A	04MAY05A	
12-12254	DN1000FW/Associated E/B Wks bet CH 4320-4470	152	13AUG04A	04MAY05A	
12-12221	DN1000FW/Associated Wks W/B bet CH3610-3730	30	22FEB05A	27MAY05	-28
12-1223	DN1000FW/Associated Wks W/B bet CH3950-4200	48	23FEB05A	14JUN05	-35
12-12232	DN1000FW/Associated Wks W/B bet CH4200-4310	50	24MAY05	23JUL05	-26
12-12223	DN1000FW/Associated Wks W/B bet CH3910-3950	12	11JUL05	25JUL05	-36
13. Reprovisioning of LCSD & FEHD Facilities					
FEHD Facilities					
13-1350	Reprovision Pavillion & Pai Lau	478*	22DEC03A	06AUG05	-10
13-13521	Finishing Works of Pai Lau	30	12APR05A	25MAY05	77
13-1353	Substructure of Pavilion	18	26MAY05	16JUN05	-10
13-1354	Superstructure of Pavilion	42	17JUN05	06AUG05	-10
13-1322	Construct RCP F	30	12AUG05	15SEP05	-19
Stairways					
13-1334	Construct Stairway ST09	20	31MAY05	23JUN05	37
13-1335	Construct Stairway ST09A	20	24JUN05	19JUL05	37
14. Landscape Works					
Landscape Softworks					
14-14102	Landscape Works bet CH3730-4470	150	15JUN05	12DEC05	-36
18. Variation Works					
Stairways					
13-1336	Const. New Pavilion/ret. wall/stair; VO 211	182*	15NOV04A	28JUN05	6
13-1337	Const. cantilever walkway, RWC bay 29-33; VO 211	40	11APR05A	14MAY05A	
13-13368	Const. New Pavilion/stair; VO 211	24	31MAY05	28JUN05	6
Additional Outfall MI; VO 244					
08-8124	Excavation for SMMI1/MICP1/675mm twin pipes	12	20JUL05	02AUG05	-30
08-81825	Construct SMMI2/MICP1/675mm twin pipes	18	03AUG05	23AUG05	-30
Additional Works at RW-C; Bays 2-4					
VO-39509	Temp. works/Excavation/Mass concrete; Bay 2	10	03JUN05	15JUN05	-36
Remedial Works to Existing Feature No. 6SE-C/C22					
VO-30904	Remove existing shortcrete	12	28FEB05A	23MAY05	47
VO-30906	Construct 12 nos. test nails	18	05MAR05A	26MAY05	47
VO-30908	Construct 202 nos. soil nails	40	11MAR05A	08JUN05	47
VO-30910	Construct drainage & maint. stairway	12	09JUN05	23JUN05	47
VO-30912	Lay erosoin mat and hydroseeding	6	24JUN05	30JUN05	47



APPENDIX C

Monitoring schedule for June and July 2005

Tentative Environmental Monitoring and Audit Schedule - June 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

Jun-2005

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

Tentative Environmental Monitoring and Audit Schedule - July 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

Jul-2005

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

APPENDIX D

Calibration certificates of 24-hour TSP monitoring equipment

TISCH ENVIROMENTAL, INC.
145 SOUTH MIAMI AVE.
VILLAGE OF CLEVES, OH 45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX
WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Feb 10, 2005 Rootsmeter S/N 9833620 Ta (K) - 292
Operator Tisch Orifice I.D. - 1378 Pa (mm) - 754.38

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4010	3.2	2.00
2	NA	NA	1.00	0.9870	6.3	4.00
3	NA	NA	1.00	0.8840	7.8	5.00
4	NA	NA	1.00	0.8420	8.7	5.50
5	NA	NA	1.00	0.6960	12.5	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)
1.0087	0.7200	1.4234
1.0045	1.0178	2.0130
1.0024	1.1340	2.2506
1.0013	1.1892	2.3604
0.9961	1.4313	2.8468

Qstd slope (m) = 2.00216
intercept (b) = -0.02053
coefficient (r) = 0.99997

y axis = SQRT[H2O(Pa/760)(298/Ta)]

Va	(x axis) Qa	(y axis)
0.9957	0.7107	0.8799
0.9917	1.0047	1.2443
0.9896	1.1194	1.3912
0.9884	1.1739	1.4591
0.9834	1.4129	1.7597

Qa slope (m) = 1.25372
intercept (b) = -0.01269
coefficient (r) = 0.99997

y axis = SQRT[H2O(Ta/Pa)]

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

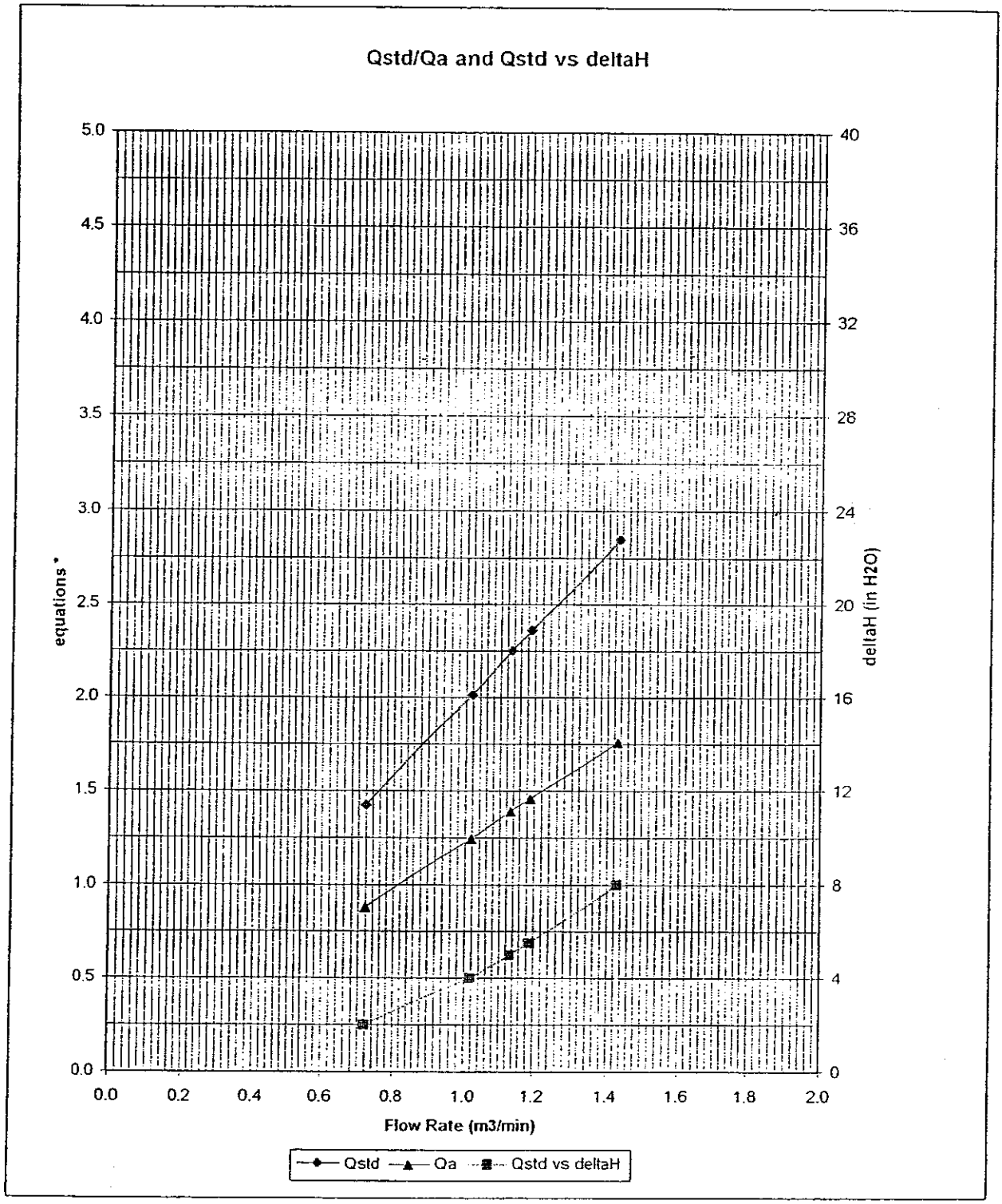
Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

TISCH ENVIROMENTAL, INC.
145 SOUTH MIAMI AVE.
VILLAGE OF CLEVES, OH 45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX
WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT



* y-axis equations:

Qstd series: $\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$

Qa series: $\sqrt{(\Delta H\ (Ta\ /\ Pa))}$

1378

Ove Arup Partners (Hong Kong) Limited

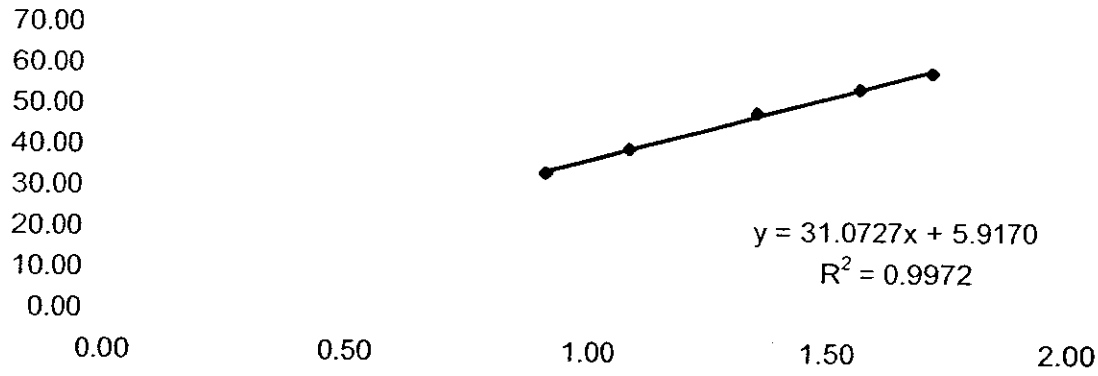
High Volume Air Sampler Calibration Worksheet

Calibration date	1-Jun-05	**Barometric pressure**	760 mm Hg
Calibration due date	31-Jul-05	**Tempature (°C)**	28 °C
Sampler location	WA3 - Hong Kong Garden (Regent Heights)	**Tempature (K)**	301 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	1378
Slope of the standard curve, m_s	2.00216
Intercept of the standard curve, b_s	-0.02053

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	3.30	34.00	0.91	33.83
7	4.70	40.00	1.09	39.80
10	7.30	49.00	1.35	48.76
13	9.80	55.00	1.57	54.73
18	11.80	59.00	1.72	58.71

Calibration Curve



Linear Regression

Sampler slope (m) :	**31.0727**
Sampler intercept (b) :	**5.9170**
Correlation coefficient (R^2) :	**0.9972**

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

Performed by: _____ Date: 1-6-05

Checked by: _____ Date: 1-6-05

G:\env\project\23437\env_data\dust\WCP03-0505\0505-Worksheet

Ove Arup Partners (Hong Kong) Limited

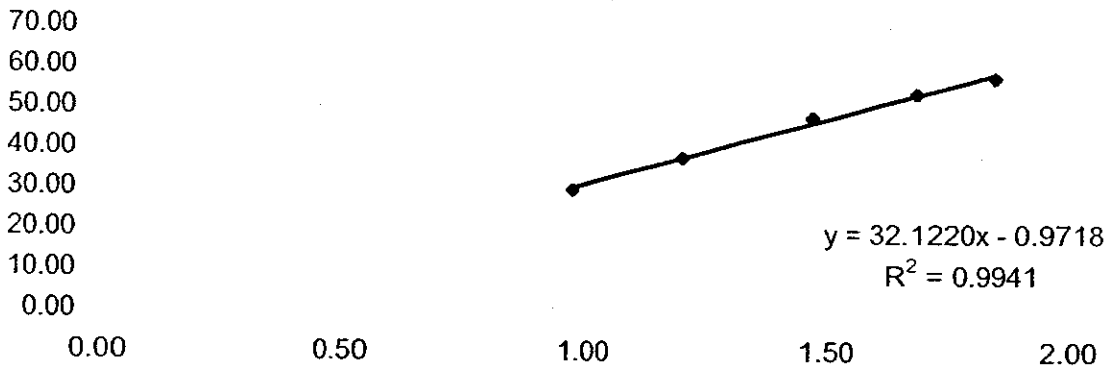
High Volume Air Sampler Calibration Worksheet

Calibration date	20-Jun-05	**Barometric pressure**	754 mm Hg
Calibration due date	19-Aug-05	**Tempature (°C)**	28 °C
Sampler location	WA4 - Hong Kong Garden (Between Blk1 & Blk2)	**Tempature (K)**	301 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	1378
Slope of the standard curve, m_s	2.00216
Intercept of the standard curve, b_s	-0.02053

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	3.80	30.00	0.98	29.73
7	5.80	38.00	1.20	37.66
10	8.70	48.00	1.47	47.57
13	11.50	54.00	1.69	53.52
18	13.80	58.00	1.85	57.48

Calibration Curve



Linear Regression

Sampler slope (m) :	**32.1220**
Sampler intercept (b) :	**-0.9718**
Correlation coefficient (R^2) :	**0.9941**

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

Performed by: _____ Date: 20-6-05

Checked by: _____ Date: 21-6-05

Ove Arup Partners (Hong Kong) Limited

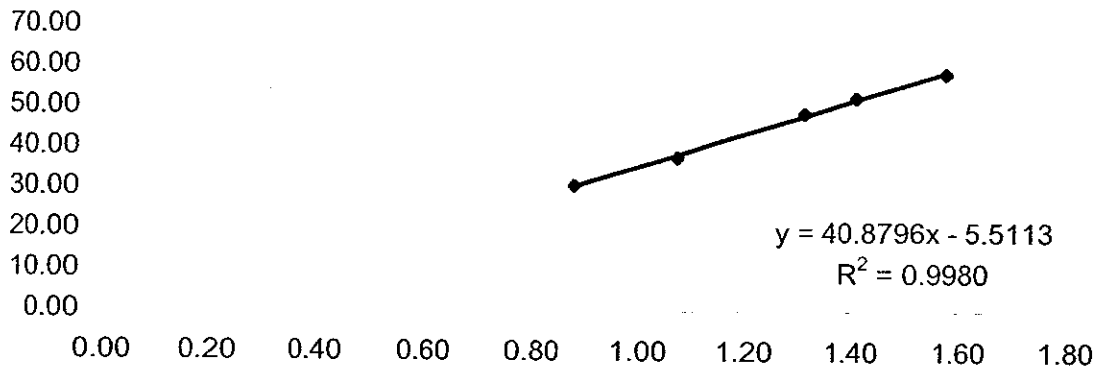
High Volume Air Sampler Calibration Worksheet

Calibration date	20-Jun-05	**Barometric pressure**	754 mm Hg
Calibration due date	19-Aug-05	**Tempature (°C)**	28 °C
Sampler location	WA5 - Hong Kong Garden (Blk4)	**Tempature (K)**	301 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	1378
Slope of the standard curve, m_s	2.00216
Intercept of the standard curve, b_s	-0.02053

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	3.10	31.00	0.88	30.72
7	4.60	38.00	1.07	37.66
10	6.90	49.00	1.31	48.56
13	8.00	53.00	1.41	52.53
18	10.00	59.00	1.58	58.47

Calibration Curve



Linear Regression

Sampler slope (m) :	**40.8796**
Sampler intercept (b) :	**-5.5113**
Correlation coefficient (R^2) :	**0.9980**

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

Performed by: _____ Date: 20-6-05

Checked by: _____ Date: 21-6-05

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Ove Arup Partners (Hong Kong) Limited

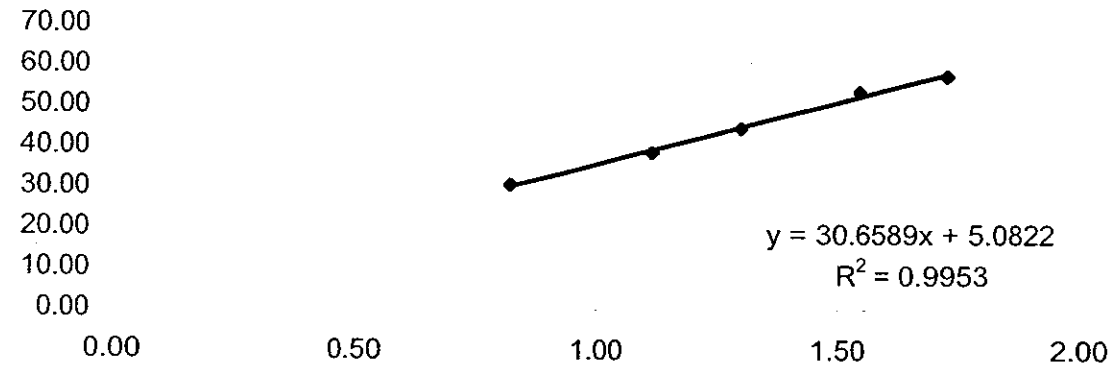
High Volume Air Sampler Calibration Worksheet

Calibration date	1-Jun-05	**Barometric pressure**	756.8 mm Hg
Calibration due date	31-Jul-05	**Tempature (°C)**	28 °C
Sampler location	WA6 - Tsing Lung Tau Temple	**Tempature (K)**	301 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	1378
Slope of the standard curve, m_s	2.00216
Intercept of the standard curve, b_s	-0.02053

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	2.70	31.00	0.83	30.78
7	5.00	39.00	1.12	38.72
10	6.80	45.00	1.30	44.68
13	9.60	54.00	1.55	53.62
18	12.00	58.00	1.73	57.59

Calibration Curve



Linear Regression

Sampler slope (m) :	**30.6589**
Sampler intercept (b) :	**5.0822**
Correlation coefficient (R^2) :	**0.9953**

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

Performed by: _____ Date: 1.6.05

Checked by: _____ Date: 1.6.05

Ove Arup Partners (Hong Kong) Limited

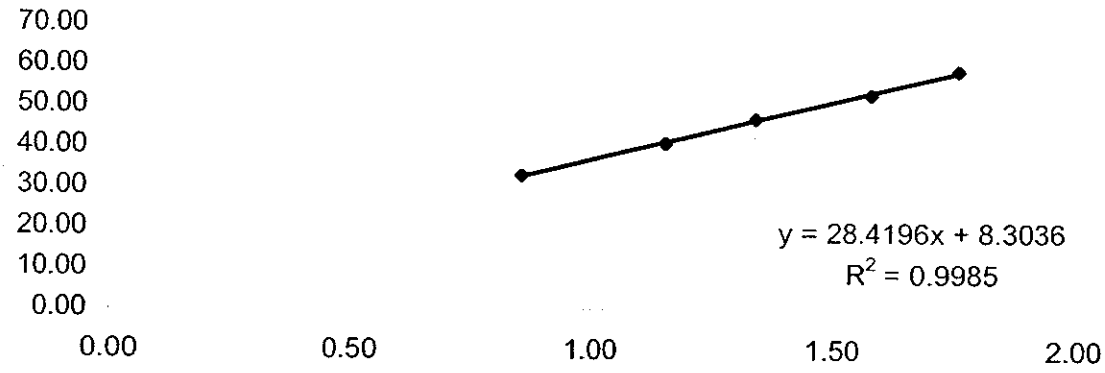
High Volume Air Sampler Calibration Worksheet

Calibration date	1-Jun-05	**Barometric pressure**	760 mm Hg
Calibration due date	31-Jul-05	**Tempature (°C)**	28 °C
Sampler location	WA7 - Sea Crest Villa (Phase 4 Blk 12)	**Tempature (K)**	301 K
Sampler model	TE-5170	**P_{std}**	760 mm Hg
Sampler serial number	0517	**T_{std}**	298 K

Calibrator model	GMW-2543
Calibrator serial number	1378
Slope of the standard curve, m_s	2.00216
Intercept of the standard curve, b_s	-0.02053

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	33.00	0.86	32.84
7	5.30	41.00	1.15	40.80
10	7.20	47.00	1.34	46.77
13	10.00	53.00	1.58	52.74
18	12.40	59.00	1.76	58.71

Calibration Curve



Linear Regression

Sampler slope (m) :	**28.4196**
Sampler intercept (b) :	**8.3036**
Correlation coefficient (R^2) :	**0.9985**

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

Performed by: _____ Date: 1-6-05

Checked by: _____ Date: 1-6-05

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Ove Arup Partners (Hong Kong) Limited

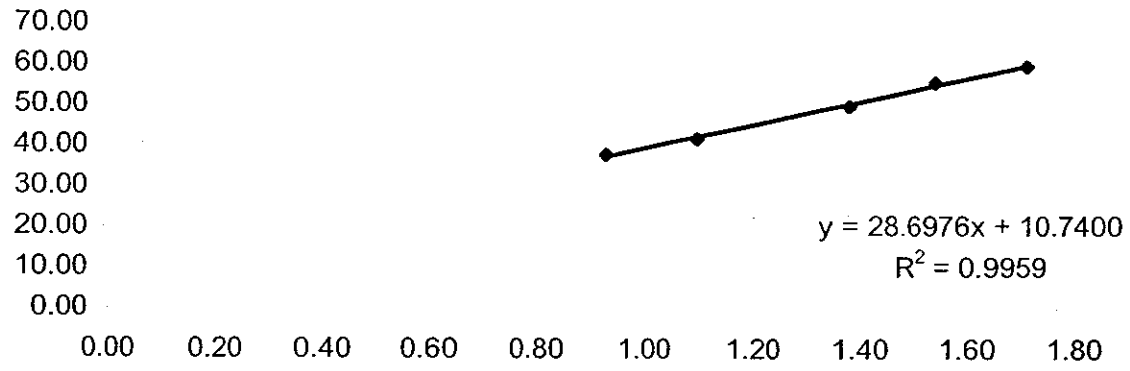
High Volume Air Sampler Calibration Worksheet

Calibration date	1-Jun-05	**Barometric pressure**	760 mm Hg
Calibration due date	31-Jul-05	**Tempature (°C)**	28 °C
Sampler location	WA8 - Sea Crest Villa (Phase 3 Block 8)	**Tempature (K)**	301 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	1378
Slope of the standard curve, m_s	2.00216
Intercept of the standard curve, b_s	-0.02053

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	3.40	38.00	0.93	37.81
7	4.80	42.00	1.10	41.79
10	7.60	50.00	1.38	49.75
13	9.50	56.00	1.54	55.72
18	11.70	60.00	1.71	59.70

Calibration Curve



Linear Regression

Sampler slope (m) :	**28.6976**
Sampler intercept (b) :	**10.7400**
Correlation coefficient (R^2) :	**0.9959**

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

Performed by: _____ Date: 1-6-05

Checked by: _____ Date: 1-6-05

Ove Arup Partners (Hong Kong) Limited

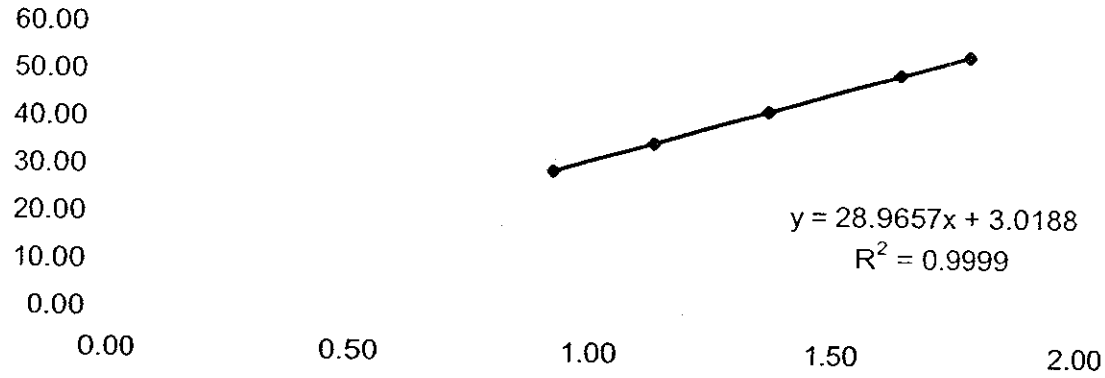
High Volume Air Sampler Calibration Worksheet

Calibration date	20-Jun-05	**Barometric pressure**	754 mm Hg
Calibration due date	19-Aug-05	**Tempature (°C)**	28 °C
Sampler location	WA9 - Sea Crest Villa (Phase 2 Blk 6)	**Tempature (K)**	301 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	1378
Slope of the standard curve, m_s	2.00216
Intercept of the standard curve, b_s	-0.02053

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	3.40	30.00	0.92	29.73
7	5.10	36.00	1.13	35.68
10	7.50	43.00	1.37	42.62
13	10.80	51.00	1.64	50.54
18	12.80	55.00	1.78	54.51

Calibration Curve



Linear Regression

Sampler slope (m) :	**28.9657**
Sampler intercept (b) :	**3.0188**
Correlation coefficient (R^2) :	**0.9999**

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

Performed by: _____ Date: 20-6-05

Checked by: _____ Date: 21-6-05

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

Ove Arup Partners (Hong Kong) Limited

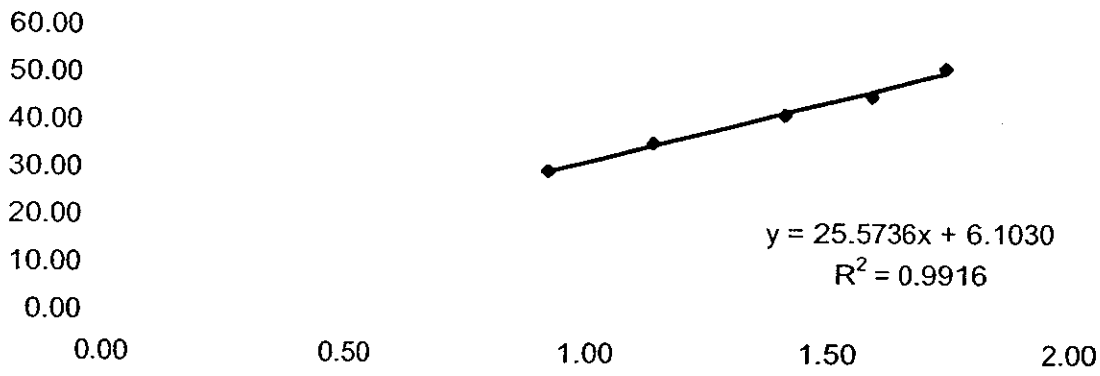
High Volume Air Sampler Calibration Worksheet

Calibration date	1-Jun-05	**Barometric pressure**	760 mm Hg
Calibration due date	31-Jul-05	**Tempature (°C)**	28 °C
Sampler location	WA10 - Sea Crest Villa (Phase 1 Blk 1)	**Tempature (K)**	301 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	1378
Slope of the standard curve, m_s	2.00216
Intercept of the standard curve, b_s	-0.02053

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	3.40	30.00	0.93	29.85
7	5.20	36.00	1.14	35.82
10	8.00	42.00	1.42	41.79
13	10.10	46.00	1.59	45.77
18	12.20	52.00	1.75	51.74

Calibration Curve



Linear Regression

Sampler slope (m) :	**25.5736**
Sampler intercept (b) :	**6.1030**
Correlation coefficient (R^2) :	**0.9916**

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

Performed by: _____ Date: 1-6-05

Checked by: _____ Date: 6-6-05

Ove Arup Partners (Hong Kong) Limited

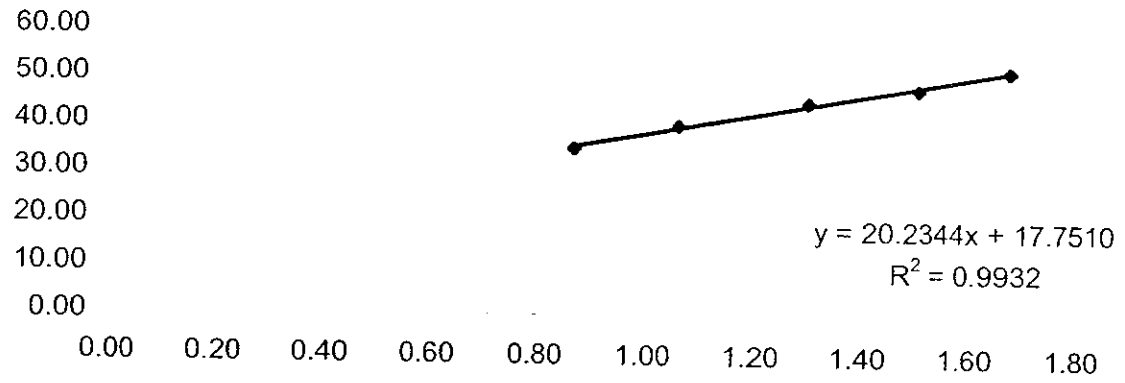
High Volume Air Sampler Calibration Worksheet

Calibration date	1-Jun-05	**Barometric pressure**	760 mm Hg
Calibration due date	31-Jul-05	**Tempature (°C)**	28 °C
Sampler location	WA11 - Lido Garden Tower 1	**Tempature (K)**	301 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	1378
Slope of the standard curve, m_s	2.00216
Intercept of the standard curve, b_s	-0.02053

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	35.00	0.87	34.83
7	4.50	40.00	1.06	39.80
10	6.80	45.00	1.31	44.78
13	9.10	48.00	1.51	47.76
18	11.30	52.00	1.68	51.74

Calibration Curve



Linear Regression

Sampler slope (m) :	**20.2344**
Sampler intercept (b) :	**17.7510**
Correlation coefficient (R^2) :	**0.9932**

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

Performed by: _____ Date: 1.6.05

Checked by: _____ Date: 1-6-05

APPENDIX E

Calibration certificates of 1-hour TSP monitoring equipment

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: K Rachepalle 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: T 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	µg/m³
Record the calibration Master average concentration:	326	µg/m³
Record the pDR background concentration:	124	µg/m³
Temperature	72	°F
Humidity	33	%
Technician: Ramon	Date: 11-21-03	

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 # D320

PDR-1000 CALIBRATION CERTIFICATE

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

SERIAL NUMBER:	4736
CALIBRATION RATIO:	1.004
AVG. PDR-1000 CONCENTRATION:	2.75 mg/m3
CALIBRATION MASTER AVG. CONCENTRATION:	2.44 mg/m3
DR BACKROUND CONCENTRATION:	.271 mg/m3
TEMPERATURE:	74F
HUMIDITY:	44%

TECHNICIAN K. Lachapelle DATE: 7/27/04

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 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: Ramon	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 # D320

PDR-1000 CALIBRATION CERTIFICATE

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

SERIAL NUMBER:	4492
CALIBRATION RATIO:	1.013
AVG. PDR-1000 CONCENTRATION:	3.04 mg/m3
CALIBRATION MASTER AVG. CONCENTRATION:	2.69 mg/m3
DR BACKROUND CONCENTRATION:	.291 mg/m3
TEMPERATURE:	75F
HUMIDITY:	52%

TECHNICIAN K. Lachapelle DATE: 7/27/04

THERMO ELECTRON
27 FORGE PARKWAY
FRANKLIN MA 02038
TOLL-FREE: 866-282-0430
TEL: 508-553-6949
FAX: 508-541-8366
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MASTER # D325 LAST CALIBRATED 12/17/04

PDR-1000 CALIBRATION

CERTIFICATE

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

SERIAL NUMBER:	4239
CALIBRATION RATIO:	0.9900
AVG. PDR-1000 CONCENTRATION:	2.53 mg/m3
CALIBRATION MASTER AVG. CONCENTRATION:	2.24 mg/m3
DR BACKROUND CONCENTRATION:	.280 mg/m3
TEMPERATURE:	71.7F
HUMIDITY:	21%

TECHNICIAN: DON MCELMAN DATE: 2/03/05

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 # D320 LAST CALIBRATED 10/1/04

PDR-1000 CALIBRATION CERTIFICATE

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

SERIAL NUMBER:	4243
CALIBRATION RATIO:	.999
AVG. PDR-1000 CONCENTRATION:	2.72 mg/m3
CALIBRATION MASTER AVG. CONCENTRATION:	2.45 mg/m3
DR BACKROUND CONCENTRATION:	.268 mg/m3
TEMPERATURE:	78F
HUMIDITY:	22%

TECHNICIAN K. Lachapelle DATE: 10/6/04

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 # D320 LAST CALIBRATED 10/1/04

PDR-1000 CALIBRATION CERTIFICATE

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

SERIAL NUMBER:	3809
CALIBRATION RATIO:	1.009
AVG. PDR-1000 CONCENTRATION:	2.91 mg/m3
CALIBRATION MASTER AVG. CONCENTRATION:	2.45 mg/m3
DR BACKROUND CONCENTRATION:	.448 mg/m3
TEMPERATURE:	78F
HUMIDITY:	22%

TECHNICIAN K. Lachapelle DATE: 10/6/04

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 # D320 LAST CALIBRATED 10/1/04

PDR-1000 CALIBRATION CERTIFICATE

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

SERIAL NUMBER:	3893
CALIBRATION RATIO:	.994
AVG. PDR-1000 CONCENTRATION:	2.74 mg/m3
CALIBRATION MASTER AVG. CONCENTRATION:	2.42 mg/m3
DR BACKROUND CONCENTRATION:	.262 mg/m3
TEMPERATURE:	78F
HUMIDITY:	22%

TECHNICIAN K. Lachapelle DATE: 10/6/04

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						
6-Jun-05	WA3	1	9:01	10:01	Fine	Normal Operation	28.0	754.0	204.6	
6-Jun-05	WA3	2	10:01	11:01	Fine	Normal Operation	28.0	754.0	192.9	
6-Jun-05	WA3	3	11:01	12:01	Fine	Normal Operation	28.0	754.0	219.1	
6-Jun-05	WA4	1	8:55	9:55	Fine	Normal Operation	28.0	754.0	222.5	
6-Jun-05	WA4	2	9:55	10:55	Fine	Normal Operation	28.0	754.0	194.1	
6-Jun-05	WA4	3	10:55	11:55	Fine	Normal Operation	28.0	754.0	240.0	
6-Jun-05	WA5	1	13:03	14:03	Fine	Normal Operation	28.0	754.0	215.2	
6-Jun-05	WA5	2	14:03	15:03	Fine	Normal Operation	28.0	754.0	218.6	
6-Jun-05	WA5	3	15:03	16:03	Fine	Normal Operation	28.0	754.0	207.3	
6-Jun-05	WA6	1	13:02	14:02	Fine	Normal Operation	28.0	754.0	236.2	
6-Jun-05	WA6	2	14:02	15:02	Fine	Normal Operation	28.0	754.0	239.0	
6-Jun-05	WA6	3	15:02	16:02	Fine	Normal Operation	28.0	754.0	227.2	
6-Jun-05	WA7	1	13:36	14:36	Fine	Normal Operation	28.0	754.0	208.7	
6-Jun-05	WA7	2	14:36	15:36	Fine	Normal Operation	28.0	754.0	235.7	
6-Jun-05	WA7	3	15:36	16:36	Fine	Normal Operation	28.0	754.0	246.2	
6-Jun-05	WA8	1	13:45	14:45	Fine	Normal Operation	28.0	754.0	162.4	
6-Jun-05	WA8	2	14:45	15:45	Fine	Normal Operation	28.0	754.0	188.0	
6-Jun-05	WA8	3	15:45	16:45	Fine	Normal Operation	28.0	754.0	184.7	
6-Jun-05	WA9	1	9:00	10:00	Fine	Normal Operation	28.0	754.0	197.4	
6-Jun-05	WA9	2	10:00	11:00	Fine	Normal Operation	28.0	754.0	198.4	
6-Jun-05	WA9	3	11:00	12:00	Fine	Normal Operation	28.0	754.0	160.5	
6-Jun-05	WA10	1	8:57	9:57	Fine	Normal Operation	28.0	754.0	249.8	
6-Jun-05	WA10	2	9:57	10:57	Fine	Normal Operation	28.0	754.0	252.4	
6-Jun-05	WA10	3	10:57	11:57	Fine	Normal Operation	28.0	754.0	215.1	
6-Jun-05	WA11	1	8:59	9:59	Fine	Normal Operation	28.0	754.0	258.6	
6-Jun-05	WA11	2	9:59	10:59	Fine	Normal Operation	28.0	754.0	260.7	
6-Jun-05	WA11	3	10:59	11:59	Fine	Normal Operation	28.0	754.0	223.7	
10-Jun-05	WA3	1	13:08	14:08	Sunny	Normal Operation	30.0	751.0	215.0	
10-Jun-05	WA3	2	14:08	15:08	Sunny	Normal Operation	30.0	751.0	219.2	
10-Jun-05	WA3	3	15:08	16:08	Sunny	Normal Operation	30.0	751.0	196.6	
10-Jun-05	WA4	1	13:02	14:02	Sunny	Normal Operation	30.0	751.0	329.0	
10-Jun-05	WA4	2	14:02	15:02	Sunny	Normal Operation	30.0	751.0	337.8	
10-Jun-05	WA4	3	15:02	16:02	Sunny	Normal Operation	30.0	751.0	282.1	
10-Jun-05	WA5	1	13:06	14:06	Sunny	Normal Operation	30.0	751.0	277.3	
10-Jun-05	WA5	2	14:06	15:06	Sunny	Normal Operation	30.0	751.0	278.1	
10-Jun-05	WA5	3	15:06	16:06	Sunny	Normal Operation	30.0	751.0	245.2	
10-Jun-05	WA6	1	13:02	14:02	Sunny	Normal Operation	30.0	751.0	236.2	
10-Jun-05	WA6	2	14:02	15:02	Sunny	Normal Operation	30.0	751.0	239.5	
10-Jun-05	WA6	3	15:02	16:02	Sunny	Normal Operation	30.0	751.0	227.2	
10-Jun-05	WA7	1	9:00	10:00	Sunny	Normal Operation	30.0	751.0	109.2	
10-Jun-05	WA7	2	10:00	11:00	Sunny	Normal Operation	30.0	751.0	100.2	
10-Jun-05	WA7	3	11:00	12:00	Sunny	Normal Operation	30.0	751.0	141.0	
10-Jun-05	WA8	1	8:49	9:49	Sunny	Normal Operation	30.0	751.0	161.4	
10-Jun-05	WA8	2	9:49	10:49	Sunny	Normal Operation	30.0	751.0	155.2	
10-Jun-05	WA8	3	10:49	11:49	Sunny	Normal Operation	30.0	751.0	165.4	
10-Jun-05	WA9	1	8:59	9:59	Sunny	Normal Operation	30.0	751.0	258.3	
10-Jun-05	WA9	2	9:59	10:59	Sunny	Normal Operation	30.0	751.0	221.6	
10-Jun-05	WA9	3	10:59	11:59	Sunny	Normal Operation	30.0	751.0	234.0	
10-Jun-05	WA10	1	8:04	9:04	Sunny	Normal Operation	30.0	751.0	241.4	
10-Jun-05	WA10	2	9:04	10:04	Sunny	Normal Operation	30.0	751.0	210.3	
10-Jun-05	WA10	3	10:04	11:04	Sunny	Normal Operation	30.0	751.0	221.0	
10-Jun-05	WA11	1	9:01	10:01	Sunny	Normal Operation	30.0	751.0	217.9	
10-Jun-05	WA11	2	10:01	11:01	Sunny	Normal Operation	30.0	751.0	191.2	
10-Jun-05	WA11	3	11:01	12:01	Sunny	Normal Operation	30.0	751.0	212.9	
16-Jun-05	WA3	1	9:23	10:23	Rainy	Normal Operation	27.0	753.0	153.2	
16-Jun-05	WA3	2	10:23	11:23	Rainy	Normal Operation	27.0	753.0	123.5	
16-Jun-05	WA3	3	13:00	14:00	Rainy	Normal Operation	27.0	753.0	92.3	
16-Jun-05	WA4	1	9:00	10:00	Rainy	Normal Operation	27.0	753.0	132.6	
16-Jun-05	WA4	2	10:00	11:00	Rainy	Normal Operation	27.0	753.0	180.0	
16-Jun-05	WA4	3	13:00	14:00	Rainy	Normal Operation	27.0	753.0	200.8	
16-Jun-05	WA5	1	13:52	14:52	Rainy	Normal Operation	27.0	753.0	122.9	
16-Jun-05	WA5	2	14:52	15:52	Rainy	Normal Operation	27.0	753.0	123.8	
16-Jun-05	WA5	3	15:52	16:52	Rainy	Normal Operation	27.0	753.0	166.5	
16-Jun-05	WA6	1	13:57	14:57	Rainy	Normal Operation	27.0	753.0	112.1	
16-Jun-05	WA6	2	14:57	15:57	Rainy	Normal Operation	27.0	753.0	173.5	
16-Jun-05	WA6	3	15:57	16:57	Rainy	Normal Operation	27.0	753.0	188.4	
16-Jun-05	WA7	1	9:03	10:03	Rainy	Normal Operation	27.0	753.0	130.6	
16-Jun-05	WA7	2	10:03	11:03	Rainy	Normal Operation	27.0	753.0	139.0	
16-Jun-05	WA7	3	11:03	12:03	Rainy	Normal Operation	27.0	753.0	153.7	
16-Jun-05	WA8	1	9:09	10:09	Rainy	Normal Operation	27.0	753.0	207.6	
16-Jun-05	WA8	2	10:09	11:09	Rainy	Normal Operation	27.0	753.0	214.1	
16-Jun-05	WA8	3	11:09	12:09	Rainy	Normal Operation	27.0	753.0	218.2	
16-Jun-05	WA9	1	13:20	14:20	Rainy	Normal Operation	27.0	753.0	163.0	
16-Jun-05	WA9	2	14:20	15:20	Rainy	Normal Operation	27.0	753.0	93.9	
16-Jun-05	WA9	3	15:20	16:20	Rainy	Normal Operation	27.0	753.0	67.3	
16-Jun-05	WA10	1	9:11	10:11	Rainy	Normal Operation	27.0	753.0	158.5	
16-Jun-05	WA10	2	10:11	11:11	Rainy	Normal Operation	27.0	753.0	162.8	
16-Jun-05	WA10	3	11:11	12:11	Rainy	Normal Operation	27.0	753.0	164.8	
16-Jun-05	WA11	1	9:04	10:04	Rainy	Normal Operation	27.0	753.0	146.4	
16-Jun-05	WA11	2	10:04	11:04	Rainy	Normal Operation	27.0	753.0	170.9	
16-Jun-05	WA11	3	11:04	12:04	Rainy	Normal Operation	27.0	753.0	186.7	
22-Jun-05	WA3	1	9:18	10:18	Rainy	Normal Operation	25.0	755.0	181.7	
22-Jun-05	WA3	2	10:18	11:18	Rainy	Normal Operation	25.0	755.0	130.9	

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						
22-Jun-05	WA3	3	11:18	12:18	Rainy	Normal Operation	25.0	755.0	107.6	
22-Jun-05	WA4	1	9:15	10:15	Rainy	Normal Operation	25.0	755.0	206.1	
22-Jun-05	WA4	2	10:15	11:15	Rainy	Normal Operation	25.0	755.0	183.2	
22-Jun-05	WA4	3	11:15	12:15	Rainy	Normal Operation	25.0	755.0	179.6	
22-Jun-05	WA5	1	13:04	14:04	Rainy	Normal Operation	25.0	755.0	97.6	
22-Jun-05	WA5	2	14:04	15:04	Rainy	Normal Operation	25.0	755.0	127.3	
22-Jun-05	WA5	3	15:04	16:04	Rainy	Normal Operation	25.0	755.0	137.0	
22-Jun-05	WA6	1	13:02	14:02	Rainy	Normal Operation	25.0	755.0	172.7	
22-Jun-05	WA6	2	14:02	15:02	Rainy	Normal Operation	25.0	755.0	176.9	
22-Jun-05	WA6	3	15:02	16:02	Rainy	Normal Operation	25.0	755.0	177.8	
22-Jun-05	WA7	1	13:07	14:07	Rainy	Normal Operation	25.0	755.0	200.9	
22-Jun-05	WA7	2	14:07	15:07	Rainy	Normal Operation	25.0	755.0	198.3	
22-Jun-05	WA7	3	15:07	16:07	Rainy	Normal Operation	25.0	755.0	196.6	
22-Jun-05	WA8	1	13:03	14:03	Rainy	Normal Operation	25.0	755.0	178.6	
22-Jun-05	WA8	2	14:03	15:03	Rainy	Normal Operation	25.0	755.0	169.7	
22-Jun-05	WA8	3	15:03	16:03	Rainy	Normal Operation	25.0	755.0	169.0	
22-Jun-05	WA9	1	9:17	10:17	Rainy	Normal Operation	25.0	755.0	170.3	
22-Jun-05	WA9	2	10:17	11:17	Rainy	Normal Operation	25.0	755.0	171.7	
22-Jun-05	WA9	3	11:17	12:17	Rainy	Normal Operation	25.0	755.0	176.3	
22-Jun-05	WA10	1	9:16	10:16	Rainy	Normal Operation	25.0	755.0	142.4	
22-Jun-05	WA10	2	10:16	11:16	Rainy	Normal Operation	25.0	755.0	142.3	
22-Jun-05	WA10	3	11:16	12:16	Rainy	Normal Operation	25.0	755.0	152.9	
22-Jun-05	WA11	1	9:00	10:00	Rainy	Normal Operation	25.0	755.0	198.7	
22-Jun-05	WA11	2	10:00	11:00	Rainy	Normal Operation	25.0	755.0	198.3	
22-Jun-05	WA11	3	11:00	12:00	Rainy	Normal Operation	25.0	755.0	200.9	
28-Jun-05	WA3	1	14:08	15:08	Fine	Normal Operation	32.0	753.0	146.1	
28-Jun-05	WA3	2	15:08	16:08	Fine	Normal Operation	32.0	753.0	112.8	
28-Jun-05	WA3	3	16:08	17:08	Fine	Normal Operation	32.0	753.0	140.2	
28-Jun-05	WA4	1	14:00	15:00	Fine	Normal Operation	32.0	753.0	203.1	
28-Jun-05	WA4	2	15:00	16:00	Fine	Normal Operation	32.0	753.0	189.6	
28-Jun-05	WA4	3	16:00	17:00	Fine	Normal Operation	32.0	753.0	193.5	
28-Jun-05	WA5	1	13:50	14:50	Fine	Normal Operation	32.0	753.0	154.8	
28-Jun-05	WA5	2	14:50	15:50	Fine	Normal Operation	32.0	753.0	132.1	
28-Jun-05	WA5	3	15:50	16:50	Fine	Normal Operation	32.0	753.0	137.8	
28-Jun-05	WA6	1	13:37	14:37	Fine	Normal Operation	32.0	753.0	194.3	
28-Jun-05	WA6	2	14:37	15:37	Fine	Normal Operation	32.0	753.0	181.3	
28-Jun-05	WA6	3	15:37	16:37	Fine	Normal Operation	32.0	753.0	179.0	
28-Jun-05	WA7	1	8:58	9:58	Fine	Normal Operation	32.0	753.0	218.5	
28-Jun-05	WA7	2	9:58	10:58	Fine	Normal Operation	32.0	753.0	223.6	
28-Jun-05	WA7	3	10:58	11:58	Fine	Normal Operation	32.0	753.0	194.9	
28-Jun-05	WA8	1	9:11	10:11	Fine	Normal Operation	32.0	753.0	226.4	
28-Jun-05	WA8	2	10:11	11:11	Fine	Normal Operation	32.0	753.0	214.0	
28-Jun-05	WA8	3	11:11	12:11	Fine	Normal Operation	32.0	753.0	222.5	
28-Jun-05	WA9	1	13:19	14:19	Fine	Normal Operation	32.0	753.0	196.6	
28-Jun-05	WA9	2	14:19	15:19	Fine	Normal Operation	32.0	753.0	191.9	
28-Jun-05	WA9	3	15:19	16:19	Fine	Normal Operation	32.0	753.0	190.9	
28-Jun-05	WA10	1	13:19	14:19	Fine	Normal Operation	32.0	753.0	153.7	
28-Jun-05	WA10	2	14:19	15:19	Fine	Normal Operation	32.0	753.0	136.9	
28-Jun-05	WA10	3	15:19	16:19	Fine	Normal Operation	32.0	753.0	132.6	
28-Jun-05	WA11	1	13:17	14:17	Fine	Normal Operation	32.0	753.0	127.6	
28-Jun-05	WA11	2	14:17	15:17	Fine	Normal Operation	32.0	753.0	109.7	
28-Jun-05	WA11	3	15:17	16:17	Fine	Normal Operation	32.0	753.0	99.3	

APPENDIX G

Detailed air quality (24-hour TSP) monitoring results

Details of 24-Hour TSP Monitoring

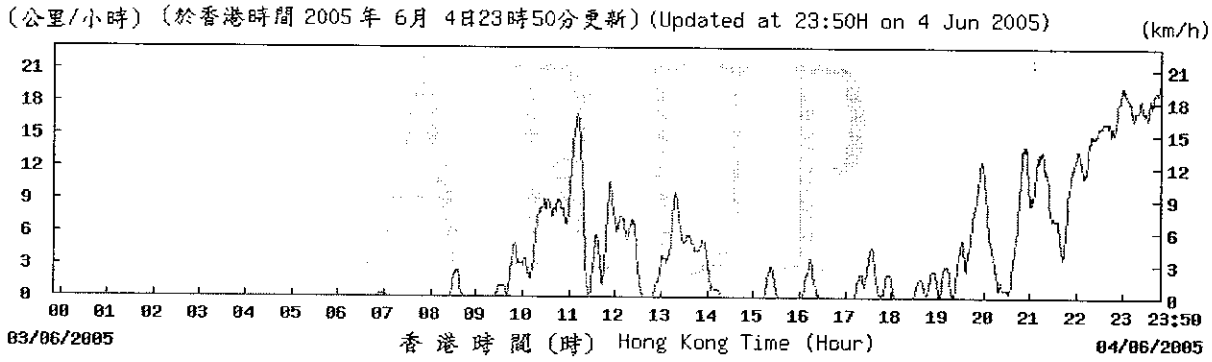
Date	Receptor No.	Weather condition	Site condition	Filter Weight (g)		TSP weight (g)	Flow Rate (m^3/min)		Average Flow m^3	Elapse Time		Sampling Time (mins.)	Total m^3	24-hour TSP $\mu g/m^3$	Remarks
				Initial	Final		Initial	Final		Start	Finish				
3-Jun-05	WA3	Fine	Normal Operation	2.9087	2.9999	0.0912	1.4989	1.6688	1.5839	5251.89	5275.90	1440.60	2281.69	40.0	
3-Jun-05	WA4	Fine	Normal Operation	2.9075	3.0407	0.1332	0.9069	0.9146	0.9108	5317.98	5341.98	1440.00	1311.48	101.6	
3-Jun-05	WA5	Fine	Normal Operation	2.8879	2.9939	0.1060	1.1406	1.1475	1.1441	5284.27	5308.27	1440.00	1647.43	64.3	
3-Jun-05	WA6	Fine	Normal Operation	2.9025	3.1513	0.2488	1.1910	1.1987	1.1949	4639.05	4663.05	1440.00	1720.58	144.6	
3-Jun-05	WA7	Fine	Normal Operation	2.8898	2.9468	0.0570	1.0669	1.0747	1.0708	5299.24	5323.24	1440.00	1541.95	37.0	
3-Jun-05	WA8	Fine	Normal Operation	2.8760	2.9342	0.0582	1.3513	1.3612	1.3563	5352.89	5376.89	1440.00	1953.00	29.8	
3-Jun-05	WA9	Fine	Normal Operation	2.9054	2.9439	0.0385	0.7070	0.7133	0.7102	5390.12	5414.12	1440.00	1022.62	37.6	
3-Jun-05	WA10	Fine	Normal Operation	2.8875	3.0076	0.1201	2.0850	2.0982	2.0916	5244.85	5268.85	1440.00	3011.90	39.9	
3-Jun-05	WA11	Fine	Normal Operation	2.8943	2.9821	0.0878	1.0806	1.0917	1.0862	5453.10	5477.10	1440.00	1564.06	56.1	
9-Jun-05	WA3	Cloudy	Normal Operation	2.9029	2.9886	0.0857	1.4113	1.3127	1.3620	5275.90	5299.90	1440.00	1961.28	43.7	
9-Jun-05	WA4	Cloudy	Normal Operation	2.8876	3.0019	0.1143	0.9137	0.9115	0.9126	5341.98	5365.98	1440.00	1314.14	87.0	
9-Jun-05	WA5	Cloudy	Normal Operation	2.8991	3.0242	0.1251	1.1467	1.1447	1.1457	5308.27	5332.27	1440.00	1649.81	75.8	
9-Jun-05	WA6	Cloudy	Normal Operation	2.8986	3.0338	0.1352	1.3926	1.1956	1.2941	4663.05	4687.05	1440.00	1863.50	72.6	
9-Jun-05	WA7	Cloudy	Normal Operation	2.9020	2.9605	0.0585	1.1789	1.1764	1.1777	5323.24	5347.24	1440.00	1695.82	34.5	
9-Jun-05	WA8	Cloudy	Normal Operation	2.9027	2.9845	0.0818	1.9150	1.8420	1.8785	5376.89	5400.89	1440.00	2705.04	30.2	
9-Jun-05	WA9	Cloudy	Normal Operation	2.9032	2.9731	0.0699	1.2995	1.2967	1.2981	5414.12	5438.12	1440.00	1869.26	37.4	
9-Jun-05	WA10	Cloudy	Normal Operation	2.9079	2.9815	0.0736	1.8632	1.8597	1.8615	5268.85	5292.85	1440.00	2680.49	27.5	
9-Jun-05	WA11	Cloudy	Normal Operation	2.9080	3.0541	0.1461	1.0904	1.0872	1.0888	5477.10	5501.10	1440.00	1567.87	93.2	
15-Jun-05	WA3	Rainy	Normal Operation	2.8968	2.9064	0.0096	1.1496	1.5691	1.3594	5299.90	5323.90	1440.00	1957.46	4.9	
15-Jun-05	WA4	Rainy	Normal Operation	2.8994	2.9679	0.0685	0.9083	0.9119	0.9101	5365.98	5389.98	1440.00	1310.54	52.3	
15-Jun-05	WA5	Rainy	Normal Operation	2.9128	3.0016	0.0888	1.1418	1.1451	1.1435	4326.20	4350.20	1440.00	1646.57	53.9	
15-Jun-05	WA6	Rainy	Normal Operation	2.9045	2.9938	0.0893	1.1924	1.1960	1.1942	4687.05	4711.05	1440.00	1719.65	51.9	
15-Jun-05	WA7	Rainy	Normal Operation	2.9060	2.9588	0.0528	0.8241	0.7572	0.7907	5347.24	5371.24	1440.00	1138.54	46.4	
15-Jun-05	WA8	Rainy	Normal Operation	2.9239	2.9795	0.0556	1.4222	1.4270	1.4246	5390.89	5414.89	1440.00	2051.42	27.1	
15-Jun-05	WA9	Rainy	Normal Operation	2.9181	2.9554	0.0373	1.0735	1.0775	1.0755	5438.12	5462.12	1440.00	1548.72	24.1	
15-Jun-05	WA10	Rainy	Normal Operation	2.8175	2.8706	0.0531	1.9323	1.9382	1.9353	5370.75	5394.75	1440.00	2786.76	19.1	
15-Jun-05	WA11	Rainy	Normal Operation	2.9062	3.0213	0.1151	1.0826	1.0879	1.0853	5501.10	5525.10	1440.00	1562.76	73.7	
21-Jun-05	WA3	Rainy	Normal Operation	2.7987	2.9098	0.1111	1.6565	1.7329	1.6947	5323.90	5347.90	1440.00	2440.37	45.5	
21-Jun-05	WA4	Rainy	Normal Operation	2.7847	2.8998	0.1151	1.2624	1.2706	1.2665	5389.98	5413.98	1440.00	1823.76	63.1	
21-Jun-05	WA5	Rainy	Normal Operation	2.7997	2.9093	0.1096	1.1030	1.1094	1.1062	4350.20	4374.20	1440.00	1592.93	68.8	
21-Jun-05	WA6	Rainy	Normal Operation	2.8019	2.8746	0.0727	1.1251	1.1337	1.1294	4711.05	4735.05	1440.00	1626.34	44.7	
21-Jun-05	WA7	Rainy	Normal Operation	2.8066	2.8736	0.0670	0.9612	0.9695	0.9654	5371.24	5395.24	1440.00	1390.10	48.2	
21-Jun-05	WA8	Rainy	Normal Operation	2.8103	2.9032	0.0929	1.4186	1.4306	1.4246	5414.89	5438.89	1440.00	2051.42	45.3	
21-Jun-05	WA9	Rainy	Normal Operation	2.8075	2.8855	0.0780	1.3305	1.3400	1.3353	5462.12	5486.12	1440.00	1922.76	40.6	
21-Jun-05	WA10	Rainy	Normal Operation	2.8470	2.8929	0.0459	1.5411	1.5530	1.5471	5394.75	5418.75	1440.00	2227.75	20.6	
21-Jun-05	WA11	Rainy	Normal Operation	2.8125	2.9142	0.1017	1.0787	1.0917	1.0852	5525.10	5549.10	1440.00	1562.69	65.1	
27-Jun-05	WA3	Fine	Normal Operation	2.8005	2.8693	0.0688	1.4007	1.3052	1.3530	5347.90	5371.90	1440.00	1948.25	35.3	
27-Jun-05	WA4	Fine	Normal Operation	2.8082	2.9919	0.1837	1.2616	1.2616	1.2616	5415.30	5439.30	1440.00	1816.70	101.1	
27-Jun-05	WA5	Fine	Normal Operation	2.8017	2.9085	0.1068	1.1023	1.1023	1.1023	4374.20	4398.20	1440.00	1587.31	67.3	
27-Jun-05	WA6	Fine	Normal Operation	2.8085	2.9210	0.1125	1.4146	1.2533	1.3340	4775.45	4799.45	1440.00	1920.89	58.6	
27-Jun-05	WA7	Fine	Normal Operation	2.7935	2.8485	0.0550	1.2387	1.2387	1.2387	5395.24	5419.24	1440.00	1783.73	30.8	
27-Jun-05	WA8	Fine	Normal Operation	2.7680	2.8523	0.0843	1.7965	1.7620	1.7793	5438.89	5462.89	1440.00	2562.12	32.9	
27-Jun-05	WA9	Fine	Normal Operation	2.7660	2.8134	0.0474	0.7492	0.7492	0.7492	5486.12	5510.12	1440.00	1078.85	43.9	
27-Jun-05	WA10	Fine	Normal Operation	2.8271	2.9159	0.0888	1.9266	1.8493	1.8880	5418.75	5442.75	1440.00	2718.65	32.7	
27-Jun-05	WA11	Fine	Normal Operation	2.7784	2.8674	0.0890	1.2729	1.2729	1.2729	5549.10	5573.10	1440.00	1832.98	48.6	

APPENDIX H

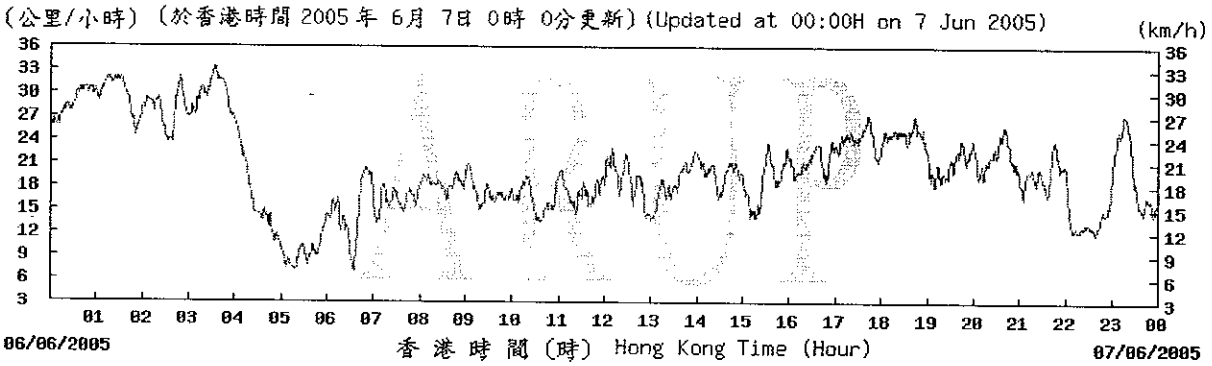
Detailed wind monitoring data for the air quality monitoring period

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

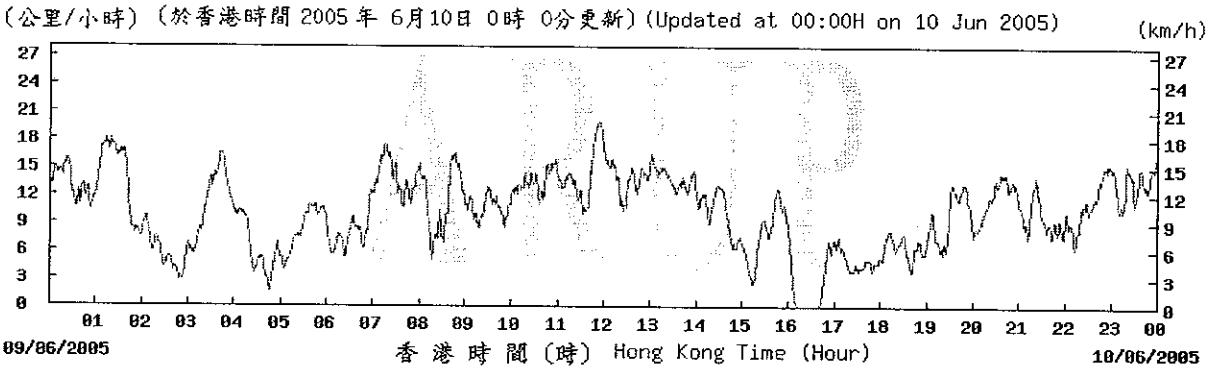
(公里/小時) (於香港時間 2005 年 6月 4日23時50分更新) (Updated at 23:50H on 4 Jun 2005)



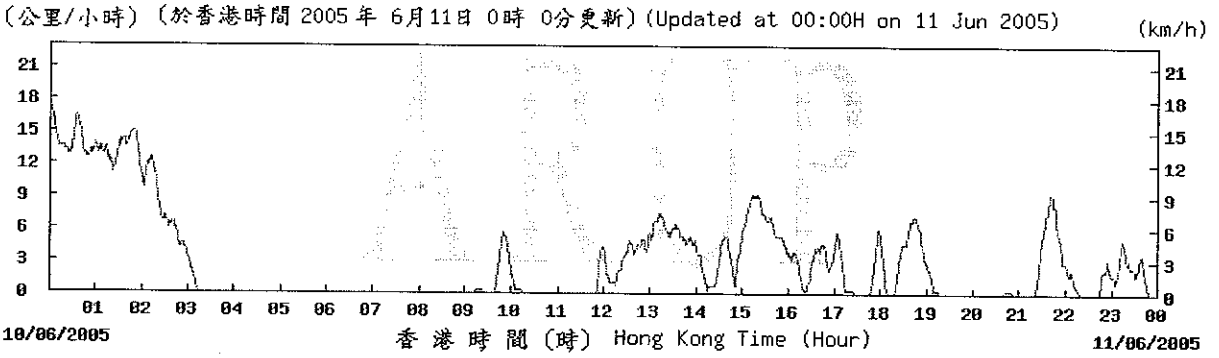
(公里/小時) (於香港時間 2005 年 6月 7日 0時 0分更新) (Updated at 00:00H on 7 Jun 2005)



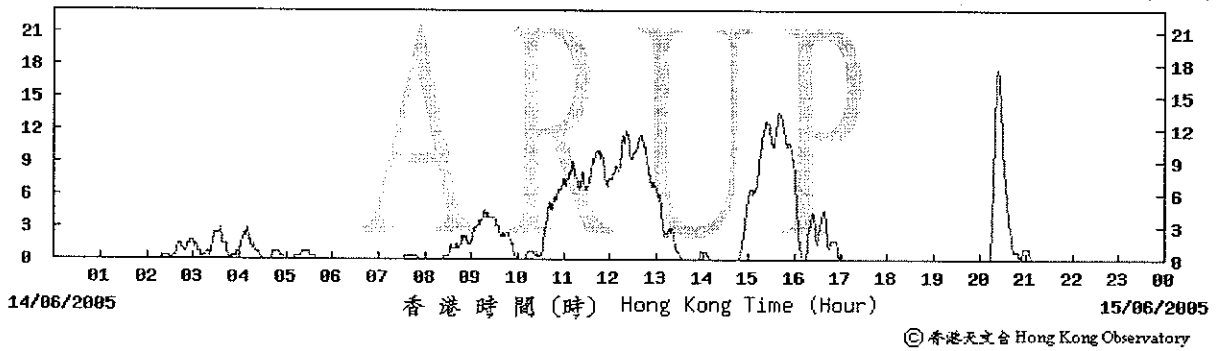
(公里/小時) (於香港時間 2005 年 6月10日 0時 0分更新) (Updated at 00:00H on 10 Jun 2005)



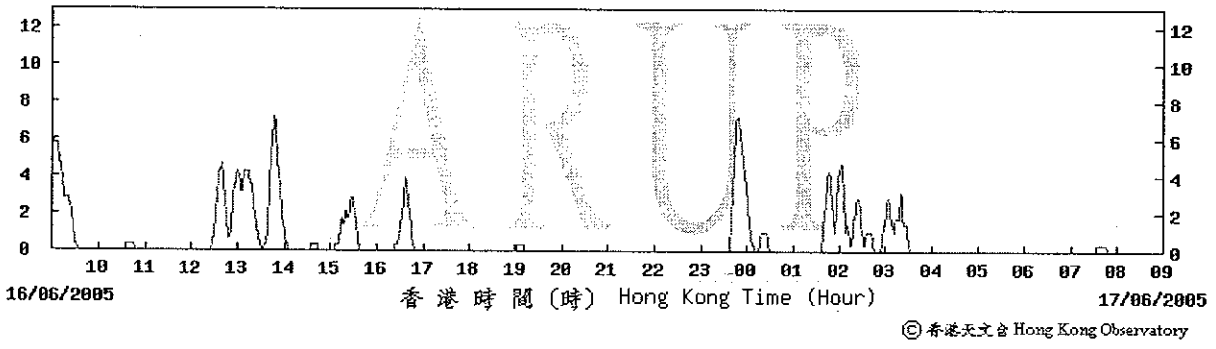
(公里/小時) (於香港時間 2005 年 6月11日 0時 0分更新) (Updated at 00:00H on 11 Jun 2005)



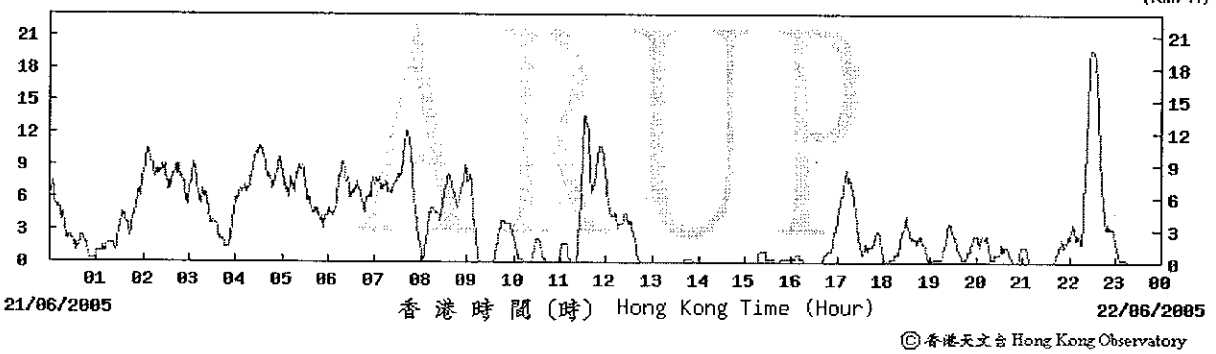
(公里/小時) (於香港時間 2005 年 6月15日 0時 0分更新) (Updated at 00:00H on 15 Jun 2005) (km/h)



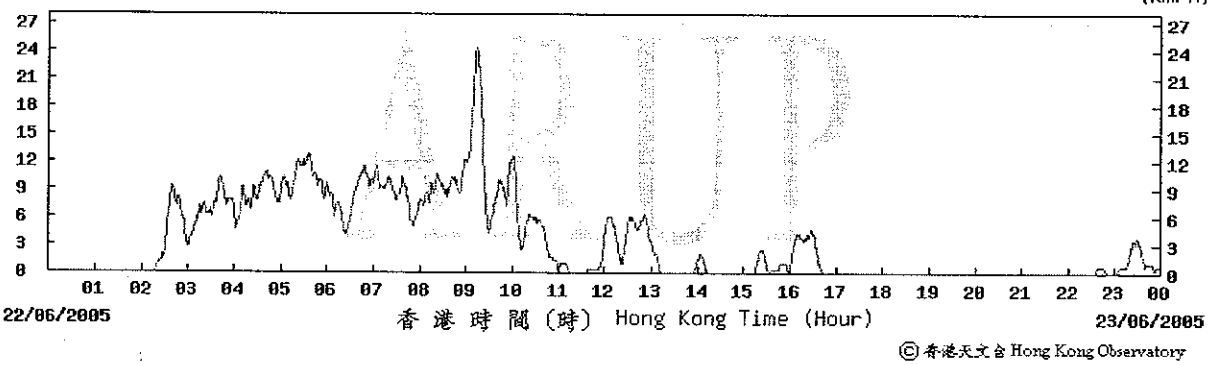
(公里/小時) (於香港時間 2005 年 6月17日 9時 0分更新) (Updated at 09:00H on 17 Jun 2005) (km/h)



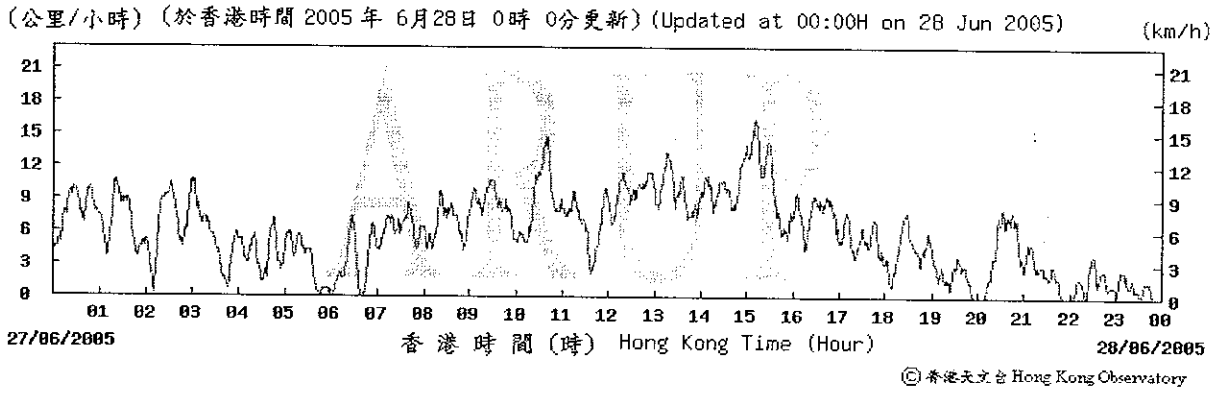
(公里/小時) (於香港時間 2005 年 6月22日 0時 0分更新) (Updated at 00:00H on 22 Jun 2005) (km/h)



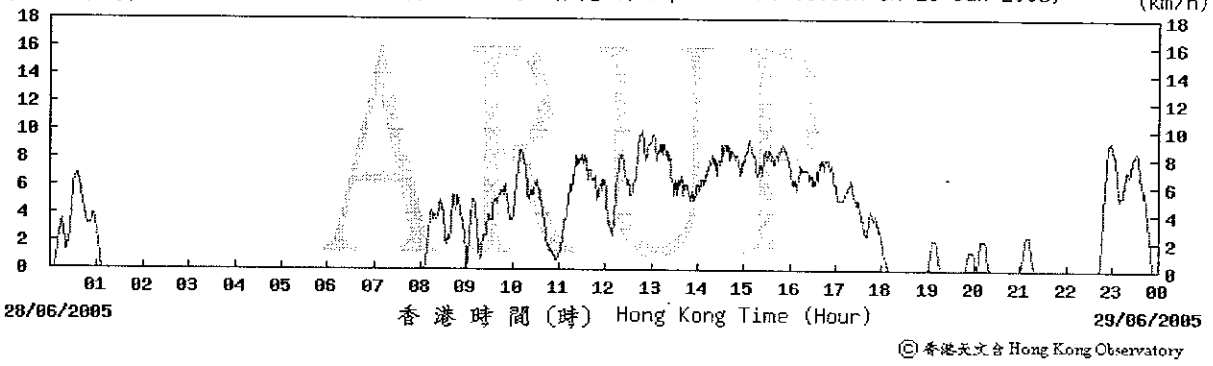
(公里/小時) (於香港時間 2005 年 6月23日 0時 0分更新) (Updated at 00:00H on 23 Jun 2005) (km/h)



(公里/小時) (於香港時間 2005 年 6月28日 0時 0分更新) (Updated at 00:00H on 28 Jun 2005)



(公里/小時) (於香港時間 2005 年 6月29日 0時 0分更新) (Updated at 00:00H on 29 Jun 2005)



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. 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:

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. 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.

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

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 : Rex Ng
Date : 09 September, 2004

Checked By : Terry
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. : 2KS040905-3 **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
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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. : 2KS040905-1 **Page** 1 **of** 2

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
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 : Jacky
Date : 10 September, 2004

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

spectris

CERTIFICATE OF CALIBRATION

Certificate No. : 2KS040905-2

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
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}	
6-Jun-05	WN1	14:40	15:10	Fine	1.1	68.7	71.0	66.5	Normal Operation
6-Jun-05	WN2	15:20	15:50	Fine	1.4	69.2	72.0	67.0	Normal Operation
6-Jun-05	WN6	9:15	9:45	Fine	2.2	69.4	73.0	67.5	Normal Operation
6-Jun-05	WN7	10:00	10:30	Fine	1.8	68.5	72.0	66.5	Normal Operation
6-Jun-05	WN8	10:35	11:05	Fine	1.8	69.4	72.5	66.0	Normal Operation
6-Jun-05	WN9	11:20	11:50	Fine	0.9	70.7	73.0	68.0	Normal Operation
6-Jun-05	WN10	13:00	13:30	Fine	1.5	69.5	72.0	67.0	Normal Operation
6-Jun-05	WN11	13:40	14:10	Fine	1.3	69.3	73.0	66.5	Normal Operation
6-Jun-05	WN12	13:25	13:55	Fine	1.3	69.7	73.5	63.0	Normal Operation
6-Jun-05	WN13	15:00	15:30	Fine	1.4	70.4	73.5	64.0	Normal Operation
6-Jun-05	WN14	9:15	9:45	Fine	1.4	70.3	73.5	62.5	Normal Operation
6-Jun-05	WN15	10:10	10:40	Fine	1.5	72.0	78.0	62.5	Normal Operation
6-Jun-05	WN16	11:05	11:35	Fine	1.2	74.5	77.5	73.0	Normal Operation
16-Jun-05	WN1	13:30	14:00	Cloudy	1.6	70.6	72.5	68.5	Normal Operation
16-Jun-05	WN2	14:15	14:45	Cloudy	1.6	70.0	71.5	68.0	Normal Operation
16-Jun-05	WN6	9:45	10:15	Cloudy	2.6	71.8	73.0	70.0	Normal Operation
16-Jun-05	WN7	10:30	11:00	Cloudy	2.3	69.4	71.5	66.5	Normal Operation
16-Jun-05	WN8	11:10	11:40	Cloudy	1.8	70.1	72.0	67.5	Normal Operation
16-Jun-05	WN9	15:15	15:45	Cloudy	1.4	72.3	74.0	70.0	Normal Operation
16-Jun-05	WN10	10:10	10:40	Cloudy	1.6	69.8	72.5	67.0	Normal Operation
16-Jun-05	WN11	15:55	16:25	Cloudy	1.8	69.2	71.5	67.5	Normal Operation
16-Jun-05	WN12	11:20	11:50	Cloudy	1.9	69.6	72.5	66.0	Normal Operation
16-Jun-05	WN13	10:40	11:10	Cloudy	2.1	70.1	72.5	66.0	Normal Operation
16-Jun-05	WN14	15:30	16:00	Cloudy	1.7	68.9	72.0	65.5	Normal Operation
16-Jun-05	WN15	13:30	14:00	Cloudy	1.6	70.6	74.0	68.5	Normal Operation
16-Jun-05	WN16	9:20	9:50	Cloudy	1.5	73.8	77.3	71.5	Normal Operation
22-Jun-05	WN1	14:15	14:45	Cloudy	1.9	69.0	71.5	67.5	Normal Operation
22-Jun-05	WN2	15:00	15:30	Cloudy	1.8	68.4	71.0	66.5	Normal Operation
22-Jun-05	WN6	10:00	10:30	Cloudy	2.6	70.3	72.0	68.5	Normal Operation
22-Jun-05	WN7	10:40	11:10	Cloudy	2.0	69.6	72.0	68.0	Normal Operation
22-Jun-05	WN8	11:30	12:00	Cloudy	2.1	69.4	71.5	68.5	Normal Operation
22-Jun-05	WN9	13:15	13:45	Cloudy	1.5	70.8	72.5	69.0	Normal Operation
22-Jun-05	WN10	9:00	9:30	Cloudy	1.9	69.2	71.5	68.0	Normal Operation
22-Jun-05	WN11	9:40	10:10	Cloudy	1.7	68.9	70.5	67.0	Normal Operation
22-Jun-05	WN12	15:30	16:00	Cloudy	1.7	69.9	73.0	67.5	Normal Operation
22-Jun-05	WN13	13:50	14:20	Cloudy	1.6	71.1	73.5	66.5	Normal Operation
22-Jun-05	WN14	9:30	10:00	Cloudy	1.4	68.1	70.5	65.0	Normal Operation
22-Jun-05	WN15	10:20	10:50	Cloudy	2.0	68.8	71.5	67.5	Normal Operation
22-Jun-05	WN16	11:00	11:30	Cloudy	2.3	70.4	72.5	68.0	Normal Operation
28-Jun-05	WN1	14:30	15:00	Fine	1.8	64.6	66.1	62.1	Normal Operation
28-Jun-05	WN2	15:05	15:35	Fine	1.6	65.0	67.1	63.6	Normal Operation
28-Jun-05	WN6	15:55	16:25	Fine	2.3	68.4	70.1	67.1	Normal Operation
28-Jun-05	WN7	16:35	17:05	Fine	2.0	64.2	66.6	62.1	Normal Operation
28-Jun-05	WN8	13:00	13:30	Fine	1.5	67.8	70.1	66.1	Normal Operation
28-Jun-05	WN9	11:15	11:45	Fine	1.0	71.4	73.6	70.1	Normal Operation
28-Jun-05	WN10	10:00	10:30	Fine	1.4	68.0	70.1	66.6	Normal Operation
28-Jun-05	WN11	10:15	10:45	Fine	1.8	67.8	69.6	66.1	Normal Operation
28-Jun-05	WN12	9:35	10:05	Fine	1.3	68.3	70.6	66.1	Normal Operation
28-Jun-05	WN13	9:00	9:30	Fine	1.7	68.5	71.1	67.1	Normal Operation
28-Jun-05	WN14	15:00	15:30	Fine	1.9	69.8	62.1	67.6	Normal Operation
28-Jun-05	WN15	14:00	14:30	Fine	2.6	72.4	73.6	70.1	Normal Operation
28-Jun-05	WN16	13:00	13:30	Fine	2.8	73.4	75.1	70.6	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. 40

(June 2005)

Prepared by

URBIS LIMITED

Prepared by : *Tran Tuan Huy* 4th July 2005

Approved by : *Alexander Diggie* 4th July 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.

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

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- 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 – 9th June 2005

3.1.1 Matters Arising from Previous Inspections

- The Contractor had cleared away the scattered litter previously found at the area of footbridge FB-02.
- The Contractor had cleared away the construction waste piles previously found at NM-02, FB-02, and Slope 8 areas.
- Dry surface condition was observed at retaining wall RW-01 and Noise Mitigation NM-02 areas during the inspection. The Contractor was reminded to carry out more frequent watering of the site to prevent dust nuisance.

3.1.2 Site Clearance and Formation Works

- Construction waste piles were found at RW-01 area. The Contractor was requested to clear it away as soon as possible.
- Empty cement bags and scrap woodpiles were found at NM-02 area. The Contractor was requested to clear it away as soon as possible.
- Untidy site conditions were observed at the areas in front of existing slope 6SE-C/C25 and Sea Crest Villa (Phase 3). The Contractor was requested to tidy up these areas as soon as possible.
- Construction waste piles were found underneath footbridges FB-11 and FB-03. 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 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.
- A number of slopes that were completed last year are ready for planting works, the Contractor was recommend to carry out planting works as soon as possible.

3.2 Summary of Inspection – 23rd June 2005

3.2.1 Matters Arising from Previous Inspections

- The Contractor had cleared away the construction waste piles found at RW-01 area.
- The Contractor had cleared away the empty cement bags and scrap woodpiles found at NM-02 area. However, new construction waste and garbage pile was found, and the Contractor was requested to clear it away as soon as possible.
- The Contractor had tidied up the site area in front of Sea Crest Villa (Phase 3). However, tidy up of site area in front of existing slope 6SE-C/C25 was outstanding and the Contractor was requested to tidy up the area as soon as possible.
- The Contractor had cleared away the construction waste piles found underneath footbridges FB-11 and FB-03. However, new construction waste pile was found at footbridge FB-03 area, the Contractor was requested to clear it away as soon as possible.
- No dry surface condition was observed during the inspection.

3.2.2 Site Clearance and Formation Works

- A construction waste pile was found at footbridge FB-01 area. The Contractor was requested to clear it away as soon as possible.
- A construction waste pile was found at the entrance to Dragon Garden. 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 clear away all scattered litter, garbage, etc. as found on site, and keep the site in a tidy condition at all times.
- A number of slopes that were completed last year are ready for planting works, the Contractor was recommend to carry out planting works as soon as possible.

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 June is 100%.

5.0 AUDIT SCHEULE

5.1 Audit Schedule for July 2005

The next audits are schedule to be conducted on 7th and 21st July 2005.

APPENDIX L

Detail of the complaint

MAEDA CORPORATION

Enquiry / Complaint Follow Up Form

Contract: HY/99/18 - Castle Peak Road between Sham Tseng and Ka Loon Tsuen, Tsuen Wan

Call Details

Log No	204	Type	Complaint	✔ *Environmental Complaint*	
Received by	Highways Department	Date	10-Jun-2005	Time	11:07 AM

Call Details

Name	Unknown	Organisation		✔ Private	Organization
Tel	Unknown	Fax		E-mail	

Address: Unknown

Details of Enquiry / Complaint

Location: Sea Crest Villa Phase 4

Description:

Obstructions and lots of mosquitoes are found in the footway near the captioned premises.

Details of Action Taken

Report to RE	Ms. Mable Leung	Date	14-Jun-2005	Report Time	03:30 PM	Report By
Action by	C.K.Chan	Date	14-Jun-2005	Action Time	08:00 AM	Simon Li

Details:

(1) Thorough clean-up around the precast footbridge deck.
(2) Realign existing mill barriers to widen the adjacent footway as far as possible.
(3) Spray appropriate insecticide.

Follow up by	-	Follow up date	-	Follow up time	-

Follow up:

-

Remarks:

Response to HyD's ICC case: 1-58444639 received by Maeda on 13 June 2005.

APPENDIX M

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 surveillance 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.

Log Record on Environmental Complaints

No.	Date of Complaint Received	Description	Propopsed Actions	Completion Date	Remarks
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 felt 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	

Log Record on Environmental Complaints

No.	Date of Complaint Received	Description	Propopsed Actions	Completion Date	Remarks
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	

Log Record on Environmental Complaints

No.	Date of Complaint Received	Description	Propopsed Actions	Completion Date	Remarks
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	
193	4-May-05	Complaint received from Highways Department regarding the daytime noise generated from the use of power mechanical equipment during the hours between 8am to 12am near Sea Crest Villa Phase II and III.	Contractor responded to the complainant that daytime construction noise generated from activities was well within the guidelines of prevailing standards and promise to look for opportunties to disperse noisy works more evenly throughout the day and make appropriate improements to works schedudling for the concerned works wherever practicable.	4-May-05	
194	10-Jun-05	One environmental complaint was received on 10 June 2005 regarding the obstructions and mosquitoes found in the footway near Sea Crest Villa Phase 4.	Thorough cleaning up around the precast footbridge deck;Realigning the existing mill barriers to widen the adjacent footbridge deck; and Spaying appropriate insecticide.	14-Jun-05	

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 45 months from December 2001 to August 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

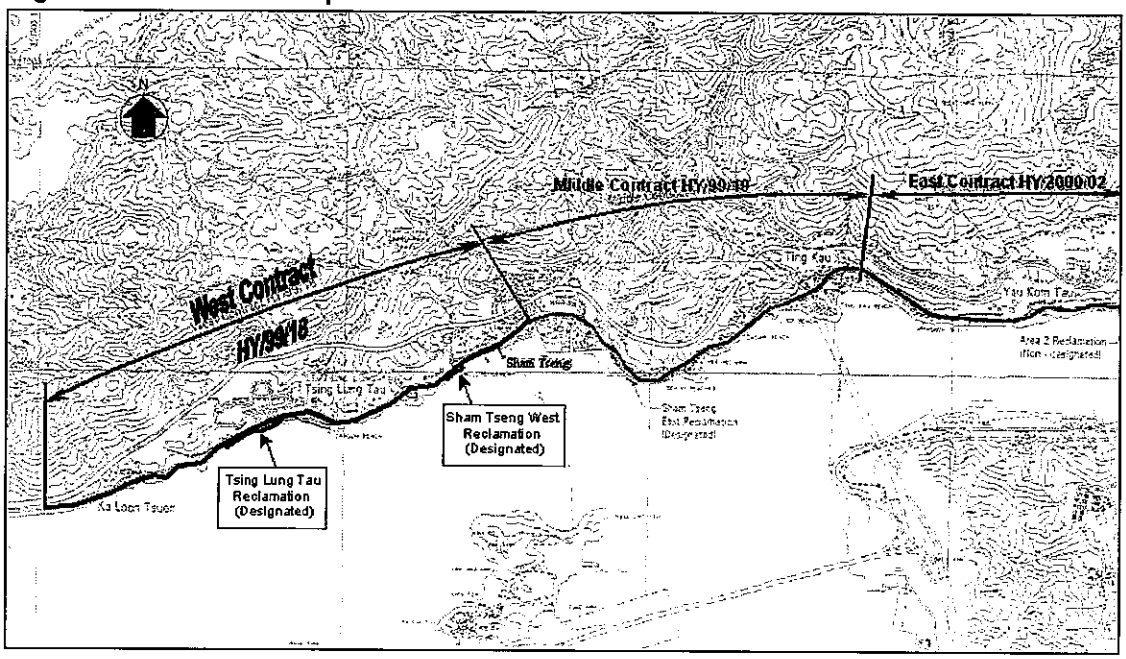


Table 3-5b Water quality monitoring locations (New)

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

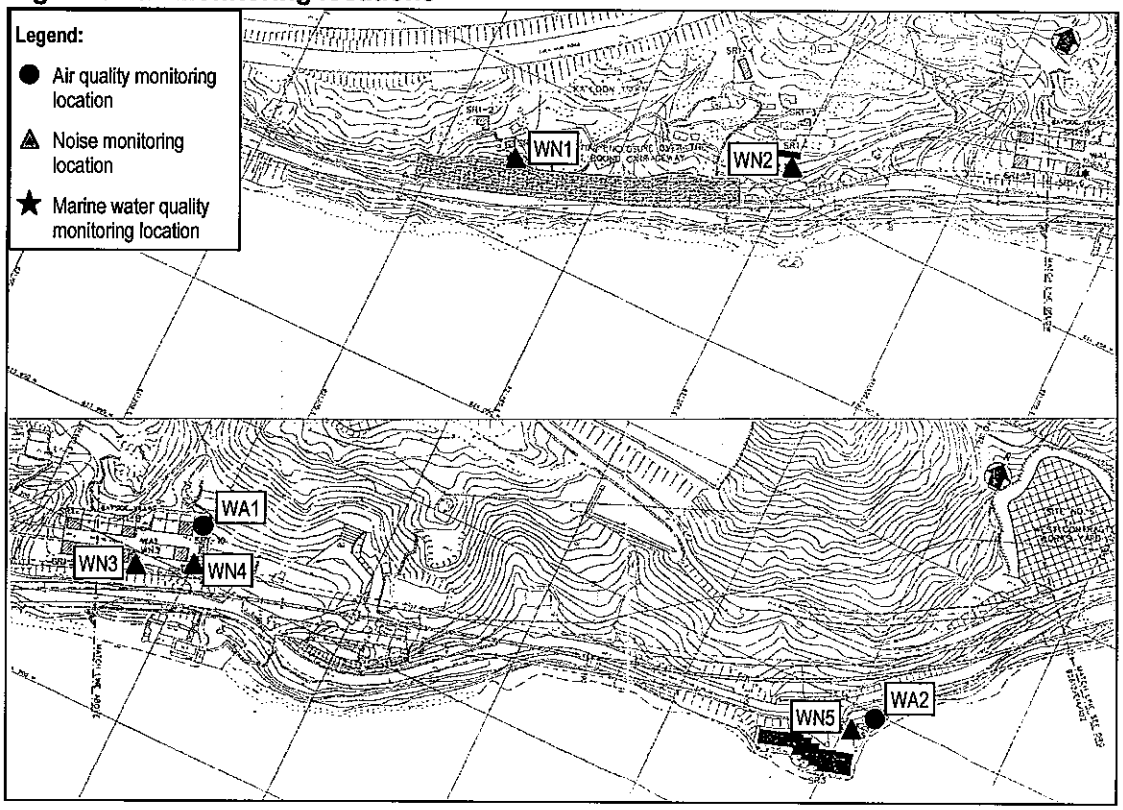


Figure 3-1b Monitoring locations

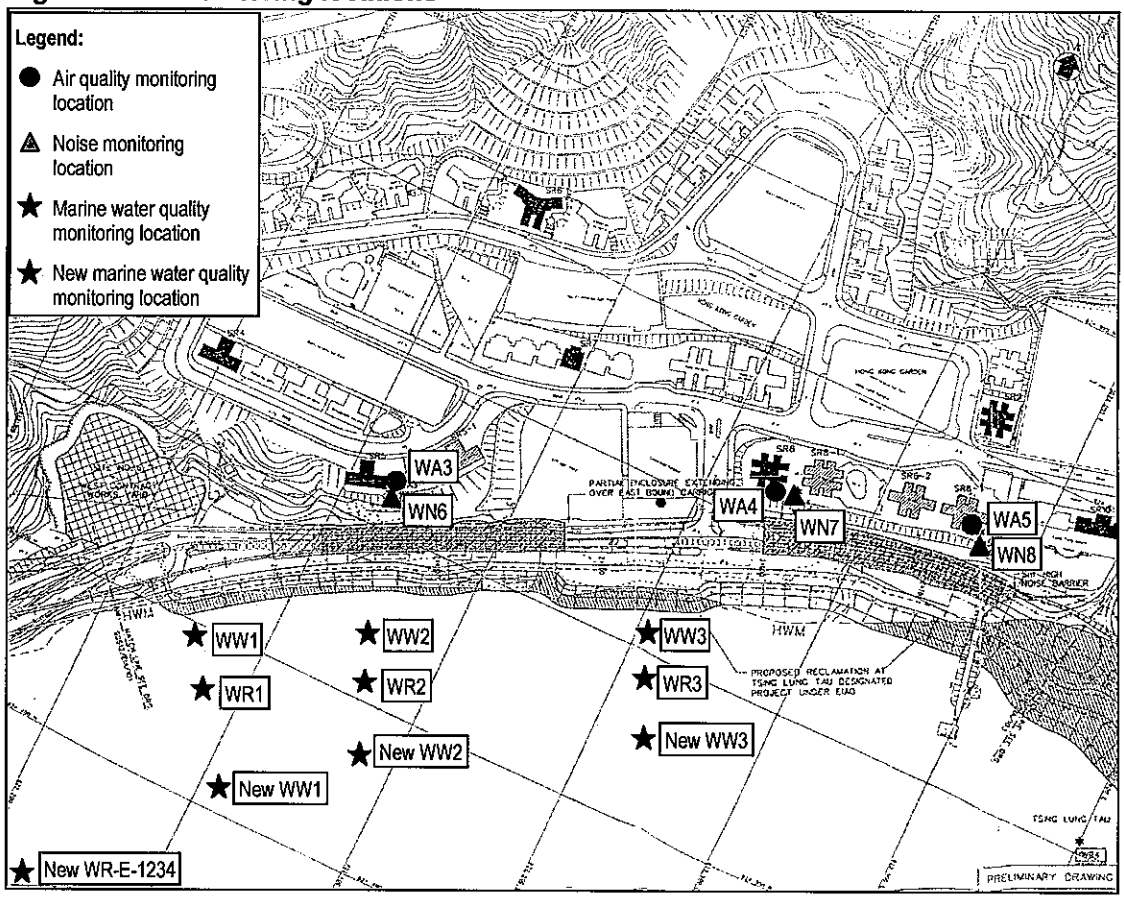


Figure 3-1c Monitoring locations

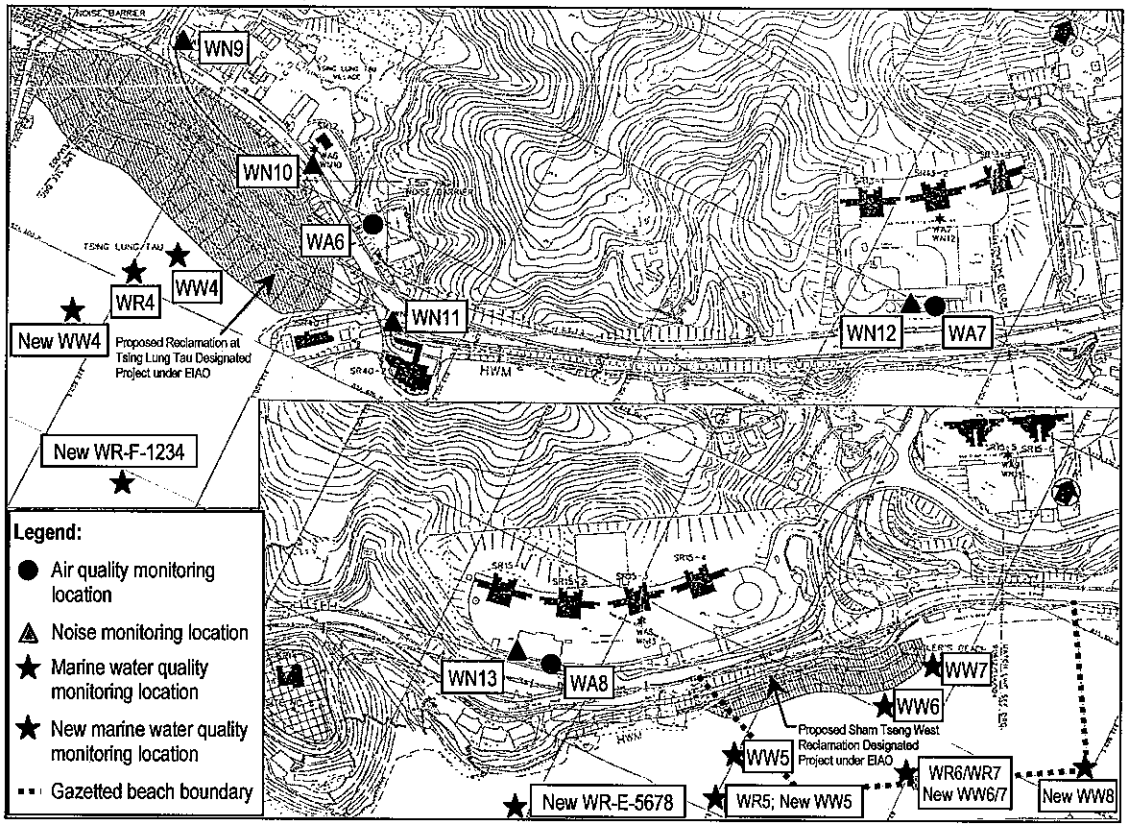


Figure 3-1d Monitoring locations

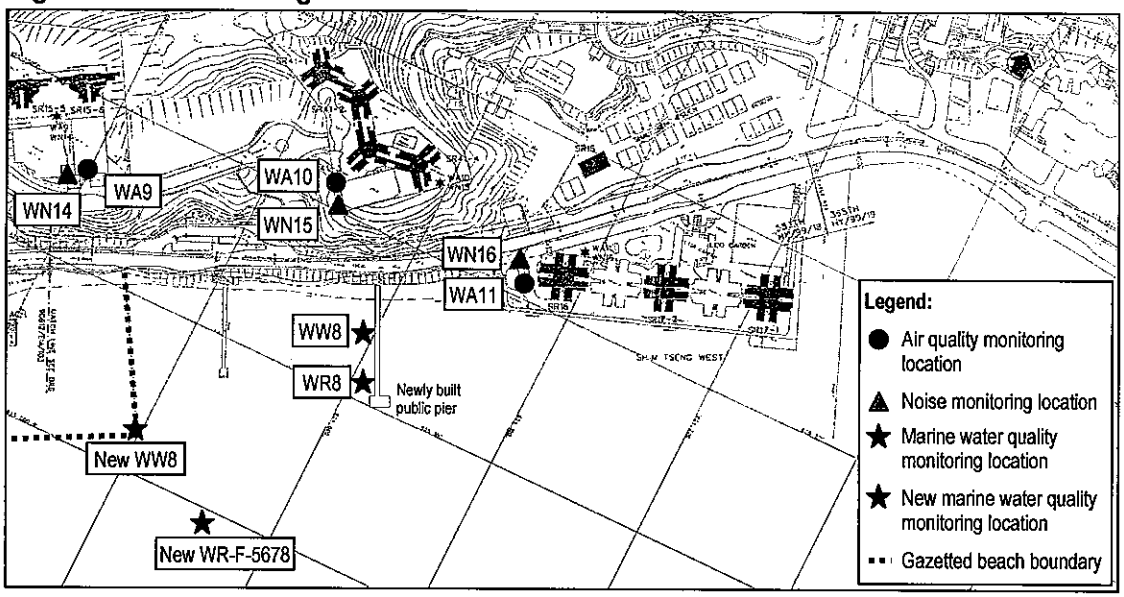
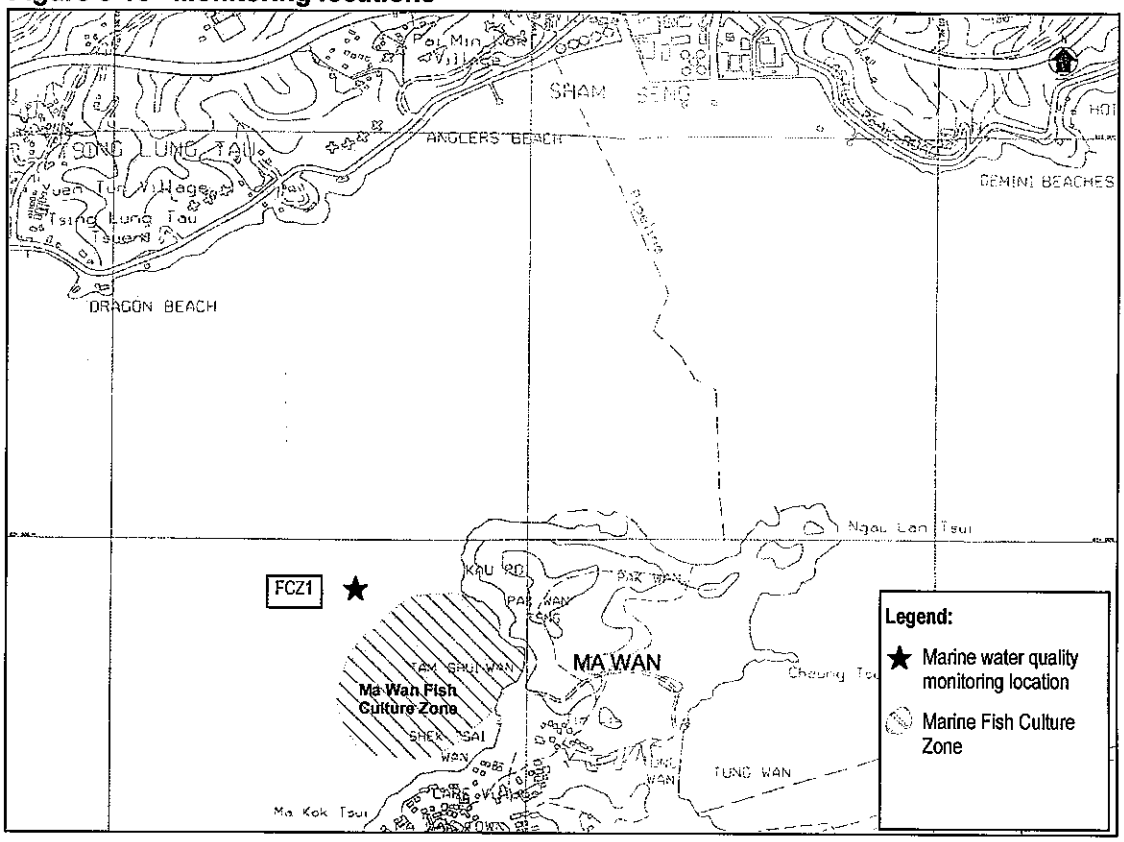


Figure 3-1e Monitoring locations



4.3 Results and Observations

4.3.1 Weather conditions and other factors

No adverse weather conditions, in particular adverse wind speed and wind direction that may significantly affect or invalidate the collected air quality monitoring data, were registered during the reporting period.

Neither unusual operation of the construction site nor abnormal TSP source was observed during the reporting period.

4.3.2 Summary of Results

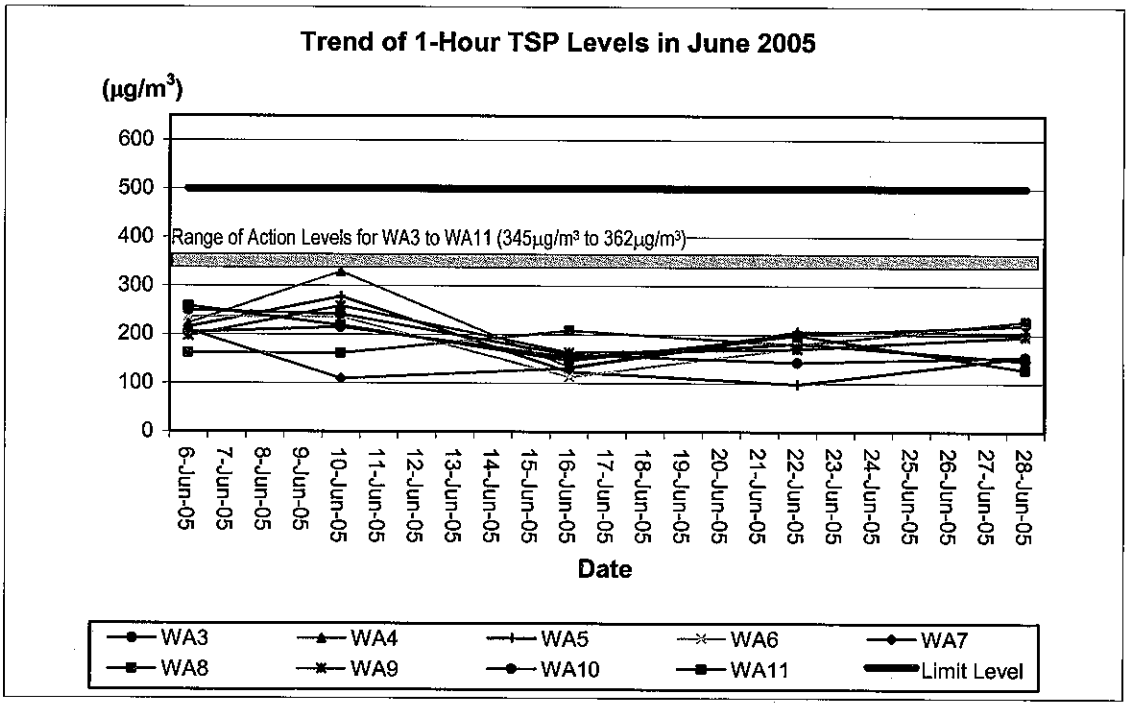
1-hour TSP

A total of 5 sets of 3 consecutive 1-hour TSP measurements were conducted on 6, 10, 16, 22 and 28 June 2005.

The highest 1-hour TSP level of 337.8 $\mu g/m^3$ was recorded at G/F, Regent Height, Hong Kong Garden (WA4) on 10 June 2005 while the lowest 1-hour TSP level of 67.3 $\mu g/m^3$ was recorded at Car Park L3, Block 6, Phase 2, Sea Crest Villa (WA9) on 16 June 2005. There was no exceedance of the A/L Levels during the monitoring period.

Detailed monitoring results of 1-hour TSP are given in Appendix F and graphical presentation of the 1-hour TSP levels at each monitoring location is illustrated in Figure 4-1.

Figure 4-1 Graphical Presentation of 1-Hour TSP Levels for June 2005



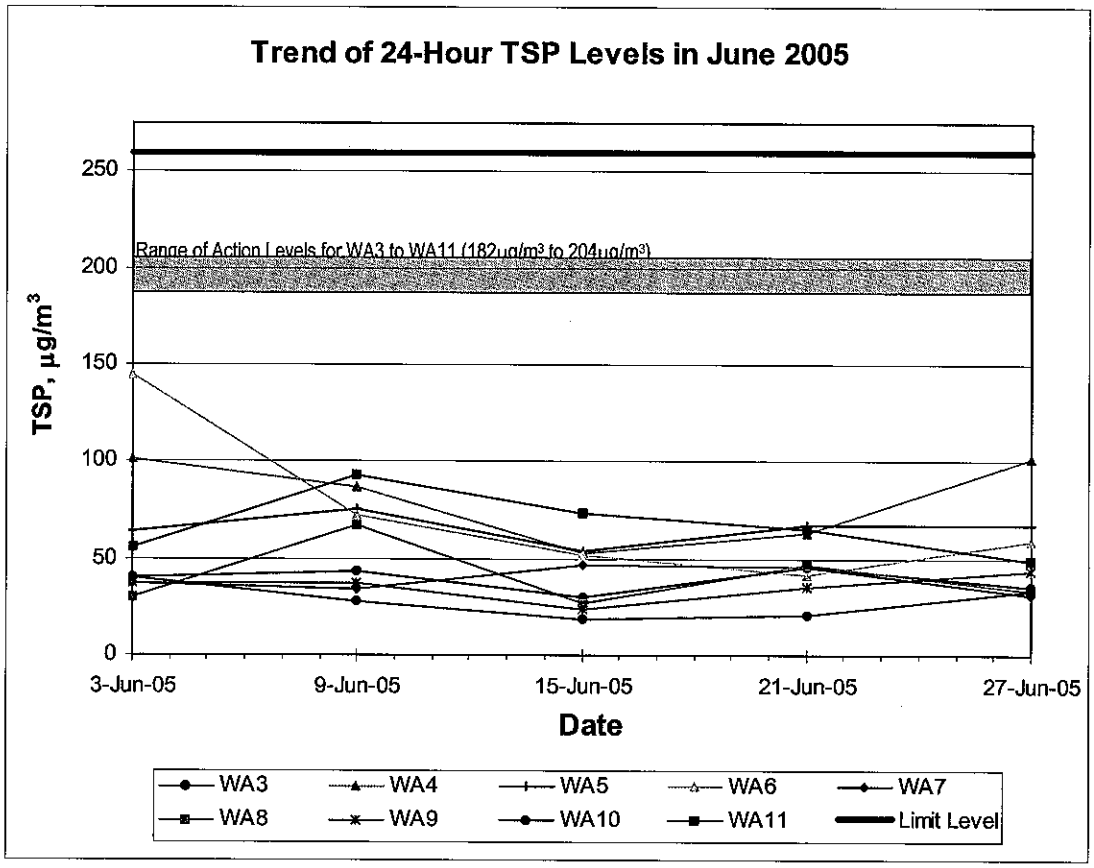
24-hourTSP

A total of 5 sets of 24-hour TSP measurement had been taken on 3, 9, 15, 21 and 27 June 2005.

The highest 24-hour TSP level of 144.6 $\mu g/m^3$ was recorded at G/F, Tsing Lung Tau Temple (WA6) on 3 June 2005 while the lowest 1-hour TSP level of 19.1 $\mu g/m^3$ was recorded at Podium, Block 1, Phase 1, Sea Crest Villa (WA10) on 15 June 2005. There was no exceedance of the A/L Levels during the monitoring period.

Detailed monitoring results of 24-hour TSP are given in Appendix F and graphical presentation of the 24-hour TSP levels at each monitoring location is illustrated in Figure 4-2.

Figure 4-2 Graphical Presentation of 24-Hour TSP Levels in June 2005



4.3.3 Wind Monitoring Data

Detailed wind monitoring data for the June 2005 are extracted from Hong Kong Observatory – Tsing Yi Wind Monitoring Station and presented in Appendix H.

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

No adverse weather conditions, in particular adverse wind speed & wind direction and fog & rain that may significantly affect or invalidate the collected noise monitoring data, were registered during the reporting period.

Neither unusual operation of the construction site nor abnormal noise source was observed during the reporting period.

5.3.2 Summary of Results

A total of 4 set of noise measurement had been conducted between 0700-1900 hours on 6, 16, 22 and 28 June 2005.

The highest noise level of 74.5 dB(A) was recorded at G/F, Carpark, Lido Garden Tower 1 (WN16) on 6 June 2005 while the lowest noise level of 64.2 dB(A) was recorded at G/F, Hong Kong Garden (Between Blk 1 & 2) (WN7) on 28 June 2005.

Detailed construction noise monitoring results are given in Appendix J and graphical presentation of the noise levels at each monitoring location is illustrated in Figure 5-1.

Figure 5-1 Graphical Presentation of Day-time Noise Levels in June 2005