BARBICAN CONSTRUCTION CO., LTD

Contract No. HY/2001/18
Sai Sha Road Widening between Kam Ying Road and Future Trunk Road T7 Junction

ANNUAL ENVIRONMENTAL

MONITORING & AUDIT REPORT

REPORT NO. 01

(OCT 2002 – SEP 2003)

Document No. R/2563/018 Issue 1

October 2003

Babtie Asia

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R/2563/018
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Contract No. HY/2001/18
Sai Sha Road Widening between Kam Ying Road and Proposed Road T7 Junction

Annual Environmental Monitoring & Audit Report (October 2002 – September 2003) Report No. 01

Approved for Issue by:

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Position: Environmental Team Leader

Date: 3 October 2003

Verified by:

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CONTRACT NO. HY/2001/18
SAI SHA ROAD WIDENING BETWEEN KAM YING ROAD AND FUTURE TRUNK ROAD T7 JUNCTION

ANNUAL ENVIRONMENTAL MONITORING & AUDIT REPORT (October 2002 – September 2003)

REPORT NO. 01

CONTENTS

EXECUTIVE SUMMARY

This is the first Annual EM & A Report for the project of Sai Sha Road Widening between Kam Ying Road and Future Trunk Road T7 Junction.

This report mainly presents the EM & A works undertaken for the above project from 1 October 2002 to 30 September 2003 in accordance with the EM & A Manual under Appendix H.3 of the Particular Specification.

Noise Level

During the year, $L_{eq\ (30min)}$ noise level measurement was performed at CNM 1, CNM 2 and CNM 3. CNM 1 is for noise sensitive receivers (NSRs 1 & 2) Wu Kwai Sha New Village. CNM 2 is for (NSRs 3 & 4) Kam Lung Court/ Lee On Estate. CNM 3 is for (NSR7) Residential Development at Wu Kai Sha DD 206. The noise limit level for all the noise sensitive receivers is 75 dB(A).

Owing to the absence of any noise sensitive receiver at the moment, the noise monitoring work at station CNM 3, Wu Kwai Sha DD 206, had been suspended since 1 August 2003. In case there is any new noise sensitive receiver(s) established at Wu Kwai Sha DD 206 during the remaining construction period, the monitoring work will be immediately resumed and conducted in accordance with the requirements set out in the Environmental Monitoring and Audit Manual.

Five noise limit level exceedance were recorded during the year, only two of which affected an actual sensitive receiver CNM 2 while the other three affected CNM 3 where no sensitive receiver exists. In general, based on observations recorded during weekly site environmental audits, the construction noise is not very noisy.

Complaint log

Only one complaint was received during the year. Follow-up actions were taken to ensure the construction works complied with the environmental standard as stipulated in the EM & A Manual.

No notifications of summons, no successful prosecutions were received during the year.

Review & Comments

Noise Impact Mitigation Measures

The mitigation measures mentioned in the EIA Report generally help the Contractor reduce the noise level.

Landscape Impact Mitigation Measures

The mitigation measures mentioned in the EIA Report generally help the Contractor protect the environment especially for the trees mentioned in the EIA Report to be retained.

1.0 PROJECT INFORMATION

1.1 Background

Babtie Asia Ltd was employed by the Contractor to act as the Environmental Team for this project. The Independent Environmental Checker has been changed from Cinotech Consultants Ltd to BMT Asia Pacific Ltd since April 2003.

The purpose of this report is to document the Environmental Monitoring & Audit (EM & A) works undertaken for the period between 1 October 2002 and 30 September 2003.

1.2 Contact Details of Key Personnel

Titles, names and contact telephone numbers of the key personnel of the captioned project are shown in Appendix H.

1.3 Construction Programme

The construction programme has been recently revised and is subject to continuous refinement. The latest construction programme is attached in Appendix A.

1.4 Site Management Structure

The site organization chart is shown in Appendix B.

1.5 Synopsis of Works undertaken during the Year

The works for this project are divided into three sections: Section 1, Section 2 and Section 3.

Section 1 comprises all the works for the completion of the subway system connecting the existing vacant subway barrel across Sai Sha Road adjacent to Kam Ying Road and the local widening of northern Kam Ying Road and all associated landscaping works.

Section 2 comprises all construction works including the new carriageways, two footbridges and all footpath, cycle tracks, subways, village access road, noise barriers, roundabout and associated works comprising drainage works, E&M works, traffic signs and aids, slope works, embankments, retaining walls, subway wing walls, cycle parks, fencing, street lighting and all associated landscaping works, except Section 1 and Section 3.

Section 3 comprises all the works for the new access road to Whitehead and all the works except Section 1 and 2.

The works undertaken during the year were as follows:

- Site Clearance;
- Utilities Detection and Diversion;

- Subway P8F Extension Construction;
- Tree Felling and Transplanting;
- Earthwork for Temporary Access Road;
- Drainage Works;
- Ground Investigation;
- Mini-pile Construction for Footbridge (FB1);
- Construction of Subways (S1 and S2);
- Retaining Wall Construction; and
- Road Works

1.6 Project Area, Sensitive Receivers & Monitoring Locations

The drawings showing the project area, noise sensitive receivers (NSRs) and the locations of the monitoring stations are shown in Appendix D.

The construction noise monitoring stations are CNM 1, CNM 2 and CNM 3.

CNM 1 is for noise sensitive receivers (NSRs 1 & 2) Wu Kwai Sha New Village. CNM 2 is for (NSRs 3 & 4) Kam Lung Court/ Lee On Estate. CNM 3 is for (NSR7) Residential Development at Wu Kai Sha DD 206.

Noise monitoring work at CNM3, Wu Kwai Sha DD 206, was temporarily suspended since 1 August 2003 owing to the absence of any noise sensitive receiver. In case there is new noise sensitive receiver established at the site of Wu Kwai Sha DD 206 during the remaining construction period, the monitoring work will be immediately resumed and conducted in accordance with the requirements set out in the Environmental Monitoring and Audit Manual.

It is noted that the locations of the monitoring stations are the same as those adopted in the Noise Baseline Monitoring.

1.7 Summary of EM & A Requirements

The summary of the EM & A Requirements is shown in Appendix C.

2.0 IMPLEMENTATION STATUS

According to the EIA report, the following schedule should be implemented during the construction phase for this year.

Location	Reference Section	Environmental Protection Measures	Agent	Timing
Construction Noise Mitigation				
Wu Kwai Sha New Village (1)	EIA 3.5.25	Mitigation Option 2	Contractor	Quarter 1-4
Wu Kwai Sha New Village (2)	EIA 3.5.23	Mitigation Option 1 Mitigation Option 2	Contractor	Quarter 1-2 Quarter 3-4
Lok Wo Sha (1)	EIA 3.5.23	Mitigation Option 1	Contractor	Quarter 1-4
Lok Wo Sha (2)	EIA 3.5.23	Mitigation Option 1 Mitigation Option 2	Contractor	Quarter 1-2 Quarter 3-4
Kam Lung Court (1)	EIA 3.5.25	Mitigation Option 2	Contractor	Quarter 1-4
Kam Lung Court (2)	EIA 3.5.25	Mitigation Option 2	Contractor	Quarter 1-4
Lee On Estate (1)	EIA 3.5.25	Mitigation Option 2	Contractor	Quarter 1-4
Lee On Estate (2)	EIA 3.5.25	Mitigation Option 2	Contractor	Quarter 1-4
Residential Development STTL446	EIA 3.5.23	Mitigation Option 1	Contractor	Quarter 1-4
Residential Development at Wu Kai Sha DD206	EIA 3.5.23	Mitigation Option 1	Contractor	Quarter 1-4

- Note: The locations of the noise assessment points are shown in the Figure 7 of the EIA Report.

Location	Reference Section	Environmental Protection Measures	Agent & Timing
Construction Phase Landscape and Visual Mitigation Measures			
All Scheme Roads	EIA 4.5.1	• Conservation of topsoil; • Screening of site construction works by use of hoardings; • Surface treatment of site hoardings to enhance visual interest and harmony with surrounding landscape / townscape; • Locating site offices and other temporary buildings in least visually prominent locations; • Efficient programming of construction works to reduce duration of construction works; • Staging of construction works to minimise areas requiring site hoardings which creates visual intrusion; • Re-routing of pedestrian routes away from the work site where possible; • Retaining existing trees and minimising damage to vegetation where possible. Care shall be taken not to damage those trees identified in the Tree Survey Report to be retained during the construction phase; and • Careful and efficient transplanting of existing vegetation carried out under the supervision of a professional landscape architect	Contractor

2.1 Summary of the Implementation Status of Environmental Protection & Pollution Control / Mitigation Measures

2.1.1 Construction Noise Mitigation Measures

The construction noise mitigation measures were mainly achieved by carrying out good site practice by the Contractor during the construction works and the operation of powered mechanical equipment and machines.

The following is the summary of the mitigation measures employed during the year.

Mitigation Option 1

- Well maintained plant operated on site;
- Machines and plant that were in intermittent use shut down or throttled down to a minimum between work periods;
- Simultaneous noisy activities near sensitive receivers were avoided;
- Plant known to emit noise strongly in one direction was orientated to direct noise away from nearby sensitive receivers;
- The Contractor devised and arranged methods of working in such a manner so as to minimize noise impacts on the surrounding environments; and
- Certain types of powered mechanical equipment, such as generators and compressors, were completely enclosed.

Mitigation Option 2

- The number of bulldozers, compressors and lorries was reduced to one during site clearance stage;
- The excavator, bulldozer, scraper and motor grader were not being operated simultaneously;
- The individual tasks (i.e. ground, reinforcement, concreting and backfilling activities) were separated for pile capping;
- The backhoe and excavator were not being operated simultaneously;
- The asphalt paver and road roller were not being operated simultaneously during paving the new access road;
- All sub-tasks (i.e. levelling of new road, laying base and sub-base, kerbing and laying new surface) were separated for road construction.
- The simultaneous operation of the following items of plant was avoided: grader and bulldozer; dumper truck and roller; asphalt paver and road roller.
- All sub-tasks (i.e. excavation of trench and placement of pipes) were separated for drainage works;
- Since the commencement of this project was on October 2002, the mitigation measure that the construction of road furniture should be rescheduled to avoid the period of fourth quarter of 2002 could be easily satisfied;
- Likewise, the construction schedule could fulfill the mitigation that the road alignment construction in the vicinity (within 40m of Lee Wing house (Lee on Estate) did not coincide with the construction of the foorbridge and the elevated section of Ma On Shan Railway (within 40m of Lee Wing House).

2.1.2 Landscape and Visual Mitigation Measures

The following is the summary of the mitigation measures employed during the year.

- Conservation of topsoil was implemented;
- The site offices were located in least visually prominent locations;
- The pedestrian routes were re-routed away from the work site;
- The existing trees were retained and the damage to vegetation minimized especially for those trees identified in the Tree Survey Report to be retained during the construction phase; and
- Careful and efficient transplanting of existing vegetation was carried out under the supervision of a professional landscape architect.

2.1.3 Others

The following is the summary of the mitigation measures employed during the year.

- Discharge of accumulated stagnant rain water;
- Sprinkle Larvicidal Oil as the short term measure to avoid breeding of insects especially for mosquitoes;
- Cover stockpile with tarpaulin to avoid excessive construction dust due to wind or nearby speeding vehicles;
- Regularly spraying water on unpaved haul road, and stockpile of dusty materials for dust suppression;
- Provide vehicle washing facilities at all site exits to wash away any dusty materials from vehicle body and wheels before they leave the site;
- Cover any dusty load on vehicles before they leave the site;
- Enclose the minipile drilling machines during drilling process to protect pedestrians from being splashed on with muddy water or grout;
- Regularly remove rubbish;
- Clean the sediments inside the U-channel;
- Direct site runoff to desilting facilities such as sedimentation tank before discharging to the stormwater drainage system; and
- Regularly clean the sediments inside the sedimentation tank.

3.0 MONITORING RESULTS

3.1 Graphical Plots & Statistical Analysis of the monitored parameters

The graphical plots of the trends of the monitored parameters over the past 12 months for representative monitoring stations are shown in Appendix F.

The statistical analysis is also enclosed in the Appendix F.

3.2 Major Activities during the Year

Major activities during the year include the followings:

- Site Clearance;
- Utilities Detection and Diversion;
- Subway P8F Extension Construction;
- Tree Felling and Transplanting;
- Earthwork for Temporary Access Road;
- Drainage Works;
- Ground Investigation;
- Mini-pile Construction for Footbridge (FB1);
- Construction of Subways (S1 and S2);
- Retaining Wall Construction; and
- Road Works

3.3 Weather Conditions

The weather conditions were mainly sunny and cloudy and did not affect the environmental monitoring works during the reporting period. The weather conditions during the period are shown in the Appendix E.

3.4 Influencing Factors

The construction works of the ASD site area near Lee On Estate slightly affected the noise monitoring results especially for CNM 2. The traffic noise from Sai Sha Road significantly contributed to the noise pollution.

4. SUMMARY OF NON-COMPLIANCE OF THE ACTION AND LIMIT LEVELS, COMPLAINTS, NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

4.1 Non-compliance of the Action and Limit Levels

4.1.1 Noise

During the year, there were in total five noise limit level exceedance, two of which were at CNM 2 while the remaining three were at CNM 3.

4.1.2 Review of the reasons for and the implications of non-compliance

The following table summarizes the reasons leading to the non-compliance during the year.

DATE	STATION (NOISE LEVEL)	REASONS FOR NON-COMPLIANCE & FOLLOW-UP ACTIONS
31 Oct 2002	CNM 2 79.4 dB(A)	Other contractors for Ma On Shan Railway were carrying out their works in the concerned vicinity. The combined noise effect due to their works and the Contractor of this project resulted in the noise limit exceedance.
31 Oct 2002	CNM 3 90.1 dB(A)	An additional monitoring was conducted on 5 Nov 2002 for CNM 1, CNM 2 and CNM 3 to confirm the noise level. It was found that the noise levels dropped and were below the noise limit level. As such, the noise limit exceedance was not totally attributed to the Contractor. Hence, the ET Leader did not regard it as a non-compliance of the noise limit level.
20 Mar 2003	CNM 3 77.4 dB(A)	The simultaneous operation of plant due to the works of the Contractor at the monitoring station CNM 3 and the works of the nearby Contractors for the associated development of Wu Kai Sha Railway Station resulted in the exceedance of the noise limit level. The Contractor was informed to minimise their noise production by adopting the well-maintained construction plant and shutting the plant down or throttling them down to a minimum when they are intermittent use.

DATE	STATION (NOISE LEVEL)	REASONS FOR NON-COMPLIANCE & FOLLOW-UP ACTIONS
17 Apr 2003	CNM 2 75.4 dB(A)	Three reasons were found for this non-compliance. They includes: (a) Site activities included compaction of soil at Pier 144 and grouting of mini-pile at footbridge FB1, which involved one vibration roller and one grouting pimp. (b) Plants employed by nearby contractors were working near the monitoring point at the time of noise data collection. One mobile crane located in about 50 m from the CNM 2 was working under the KCRC's viaduct and one backhoe located in about 30m from the CNM 2 for the Architectural Services Department's project adjacent to Lee Wing House was operating. (c) At the day before the Easter Holiday, Sai Kung attracted much more traffic than normal working day. These reasons were considered to be acceptable. With the review of the trend of the noise data from 17 April to the end of May 2003, the measured noise level was below the noise limit level. As such, this event was considered to be occasional.
2 May 2003	CNM 3 76.5 dB(A)	The construction plant and equipment employed for the site activities during the concerned period included one backhoe and lorry truck for the disposal of unsuitable materials from the subway. It was found that the noise exceedance could be attributed to several factors. They include the operation of construction plant and equipment within the site area, the noise produced by the heavy machines for piling works at another nearby construction site (for KCRC development projects near Wu Kai Sha Railway Station) and the traffic noise by heavy goods vehicles along the Sai Sha Road. The Contractor has been reminded to carry out good site practice to minimise the nuisance to the nearby residents. The Contractor was also instructed to avoid the simultaneous operation of construction plant, adopt quiet working methods and quieter construction plant and provide proper maintenance.

4.2 Written Complaints and Verbal Complaints

4.2.1 Summary Record of All Complaints Received

During the year, there was in total one complaint made by a resident of Wu Kwai Sha New Village. The details of this complaint are shown below.

Case No. **Received Date**	***EC 2002/01*** **5 December 2002**
Complaint Mode	Telephone Complaint to EPD directly
Description of Complaint	Noise Pollution due to the Percussive Piling Works near Wu Kwai Sha New Village
Investigation & Follow-up Actions	It is found that on the date of complaint, i.e. 5 December 2002, the Contractor was carrying out the sheet-pile installation works adjacent to the Villa Athena (near Wu Kwai Sha New Village) by a vibrator instead of by a percussive hammer. No percussive piling works was undertaken. The noise affecting the sensitive receiver, Wu Kwai Sha New Village, was due to the vibration of sheet pile throughout the installation process. Once the Contractor received the complaint, they stopped their works immediately. They then adopted an alternative sheet-pile installation approach, which could avoid the process of the vibration of sheet pile and minimize the annoyance to the residents nearby. Based on our construction noise monitoring data, the continuous sound level pressure L_{eq} (30 mins) was found to be 67.1 dB(A), 59.5 dB(A) and 60.6 dB(A) on 5 Dec 2002, 12 Dec 2002 and 19 Dec 2002 respectively at the Wu Kwai Sha New Village. No noise non-compliance exists. We further monitored the concerned vicinity throughout our site environmental audit on 12 Dec 2002 and 19 Dec 2002. It was believed that the noise contributed by the site activities was acceptable and within the noise limit based on our site observation.
Recommended Mitigation Measures	The plant that is known to emit noise strongly in one direction should be orientated to direct noise away from nearby noise sensitive receivers. For the sensitive receivers that mitigation option 2 should be implemented, particular attention should be paid to ensure the mentioned mitigation measures of option 2 are properly implemented.
Status/ Remarks	Closed.

In addition, the complaint log is documented by the ET and is shown in Appendix F for reference.

The following table shows the summary for all the complaints received since the commencement of the Contract.

TOTAL NO. OF COMPLAINT	NO. OF COMPLAINT RECEIVED WITHIN REPORTING PERIOD	NO. OF COMPLAINT THAT IS STILL UNDER INVESTIGATION	NO. OF CLOSED COMPLAINT
1	0	0	1

4.3 Notifications of summons and successful prosecutions for breaches

4.3.1 Summary Record

During the year, there were no notifications of summons and successful prosecutions for breaches of any environmental laws.

5.0 REVIEW & COMMENTS

5.1 Validity of EIA Report Predictions & Its Shortcomings in Recommendations

General

The EIA study and report was conducted in July 1999 and the envisaged construction programme started in January 2001. Most predictions and recommendations were made based on this construction programme. However, the actual construction commencement date was on 15 August 2003 and some predictions and recommendations were not up to date.

Noise Sensitive Receiver

During the EIA study, because of the imminent population growth and rapid residential development at Wu Kai Sha area, some potential noise sensitive receivers were depicted and included in the noise impact analysis. One predicted sensitive receiver was Residential Development at Wu Kai Sha DD206. It was found that this would be adversely affected by the construction noise during the construction phase and the subsequent noise monitoring was required as stipulated in the EM & A Manual.

However, the area delineated for Residential Development at Wu Kai Sha DD206 is now still an open car park. This is not considered to be a noise sensitive receiver by the ET Leader. With the agreement among the IEC, EPD, ER and the Contractor, the noise monitoring works was temporarily suspended since 1 August 2003. In case there are any new noise sensitive receiver(s) established at Wu Kwai Sha DD 206 during the remaining construction period, the monitoring work will be immediately resumed and conducted in accordance with the requirements set out in the Environmental Monitoring and Audit Manual.

Noise Impact Mitigation Measures

The prediction that the nearby residents are very sensitive to construction noise is still valid. It is also anticipated that cumulative effects may occur where noisy construction processes take place during the construction phase of the Ma On Shan Rail alignment. Such anticipation is valid during the first quarter of the construction phase. In fact, the combined noise resulted in noise limit level exceedance.

Generally speaking, the noise impact mitigation measures recommended by the EIA Report were implemented through good site practice.

Landscape & Visual Impact Mitigation Measures

According to the EIA Report, during the construction phase, the proposed works would have a significant adverse impact to the landscape and visual environment due to the construction activities, loss of open area and removal of trees within the project area, including all the temporary works area which would be located within the project site. This prediction is valid in this year.

There were some mitigation measures recommended by the EIA Report in this aspect and most of them were implemented during the year. For example, during tree transplanting, the ET requested the Contractor to carry out the works under the supervision of a professional landscape architect.

Shortcomings in Recommendations

It is stated in the EIA Report and the EM & A Manual that temporary movable noise barriers in the form of site hoardings will be employed for reducing the construction noise. However, since the criteria for providing the temporary movable noise barrier is not clearly specified in the report and the manual, the Contractor has not provided it. It is then recommended that the future EM & A Manual of other projects should clearly specify under which circumstances the temporary movable noise barrier should be adopted.

5.2 Effectiveness & Efficiency

Noise Impact Mitigation Measures

The mitigation measures mentioned in the EIA Report generally help the Contractor reduce the noise level. It is satisfactory to see that the noisy air compressors were completely enclosed, which significantly reduces the equipment noise. Through weekly site environmental audit, it was observed that the construction activities were not very noisy.

During the year, five noise limit level exceedances were recorded, only two of which affected an actual sensitive receiver (CNM 2) while the other three affected CNM 3 where no sensitive receiver exists. The mitigation measures in the form of good site practice implementation have been in general effective in minimising the noise impact. The Contractor was constantly reminded to frequently review the construction works and prevent simultaneous operation of noisy plant and equipment to prevent intolerable disturbance to the sensitive receivers.

Landscape Impact Mitigation Measures

The mitigation measures mentioned in the EIA Report generally help the Contractor protect the environment especially the trees mentioned in the EIA Report to be retained. The trees transplanted during the year are generally in good condition. This complies with the recommendations of the EIA Report.

5.3 EM & A Programme

The EM & A programme follows the recommended schedule shown in Annex A of the EIA Report

The timing is specified by construction phase quarter. Different construction noise mitigation options will be applied to different sensitive receivers for different construction phase quarter.

Since the mitigation measures for construction phase are implemented through good site practice whenever site activities are carried out, the EM & A programme is in general considered to be successful.

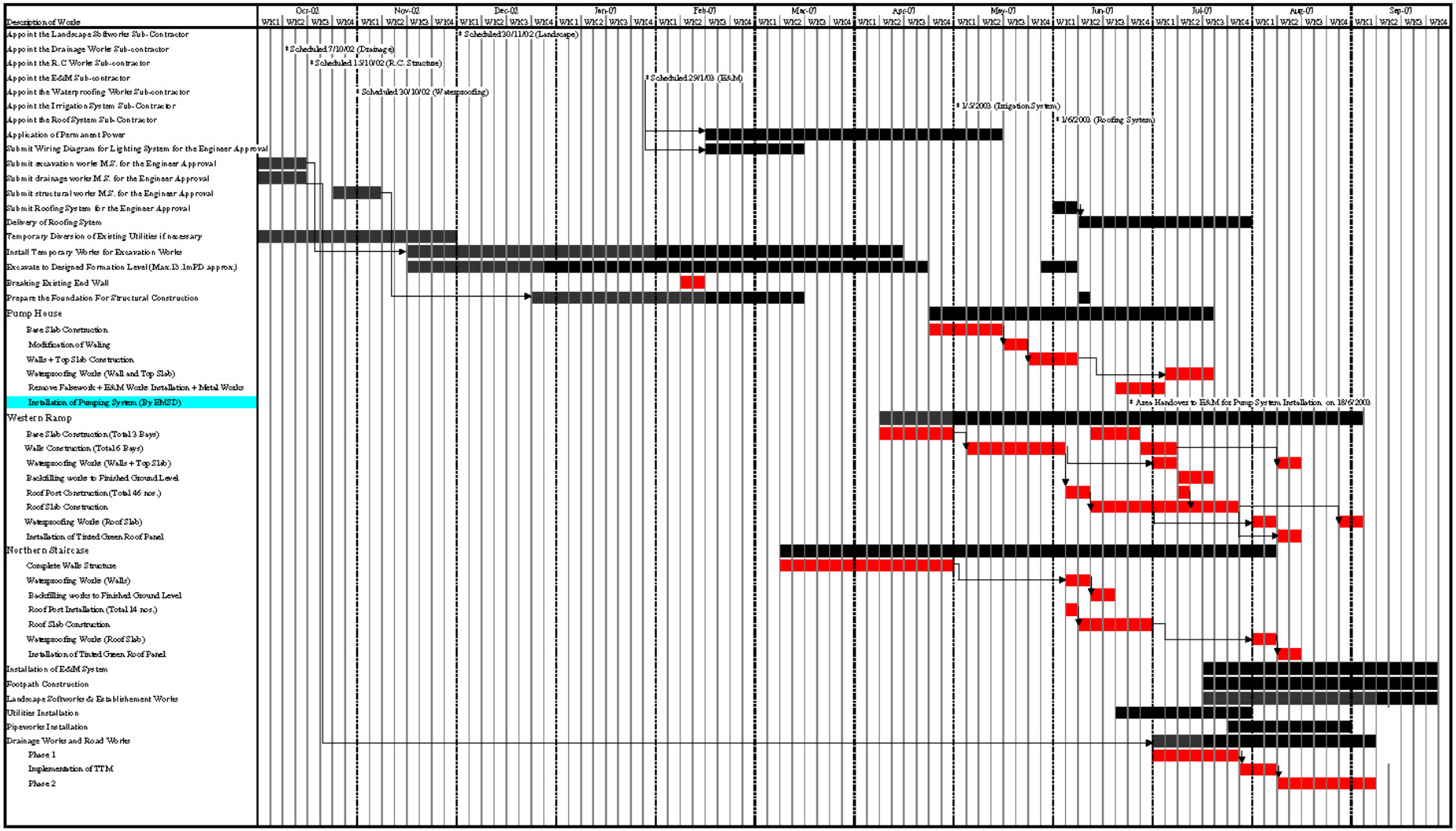
APPENDIX A

CONSTRUCTION PROGRAMME

Barbican Construction Limited
Contract No. HY/2001/18
Sai Sha Road Widening Between Kam Ying Road and Future Trunk Road T7 Junction

Detailed Working Programme for Completion of 'Section 1' Works

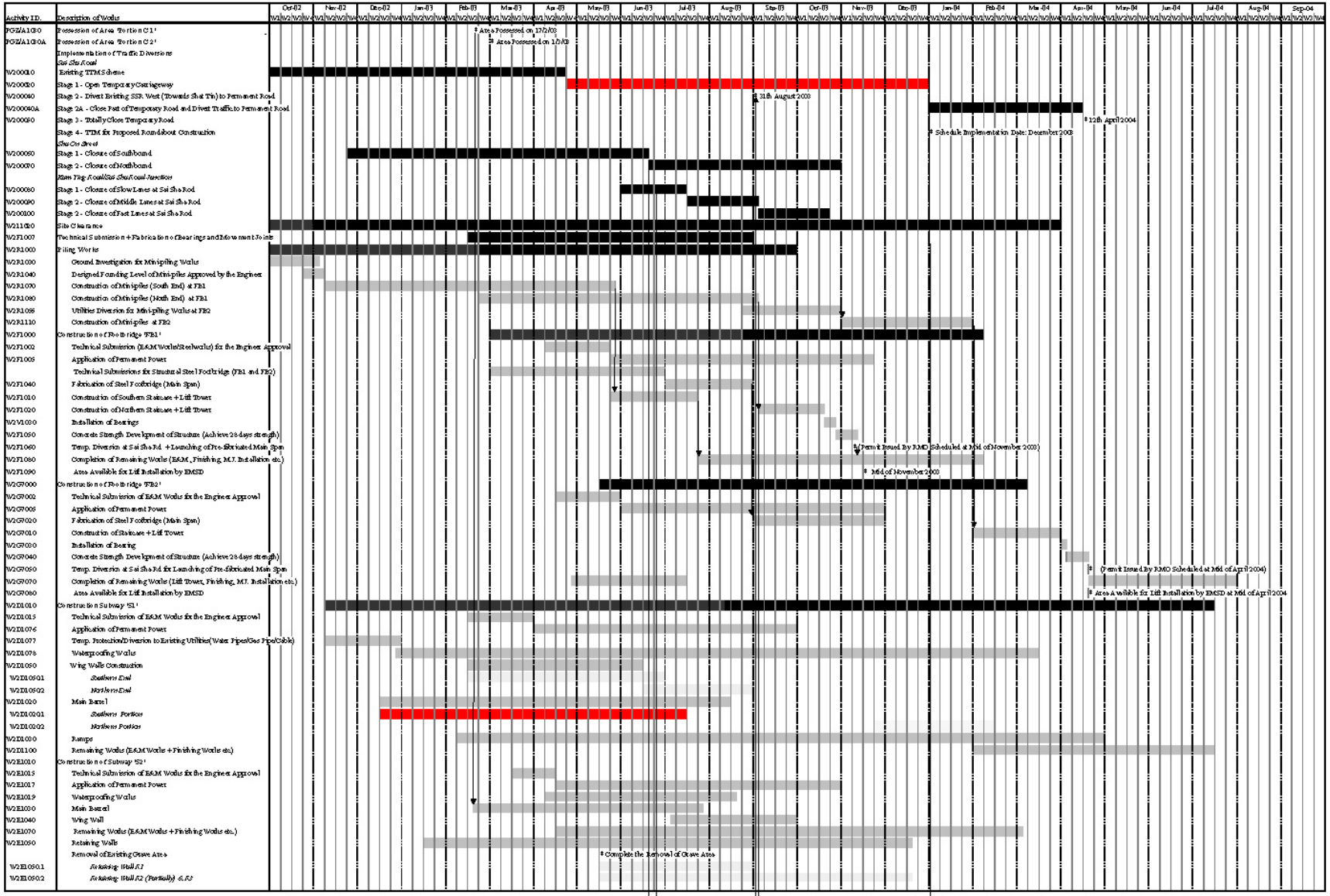
Date: 20 May 2003 Rev: 3



Barbican Construction Limited
Contract No. HY/2001/18
Sai Sha Road Widening Between Kam Ying Road and Future Trunk Road T7 Junction

Detailed Working Programme for Completion of 'Section 2' Works

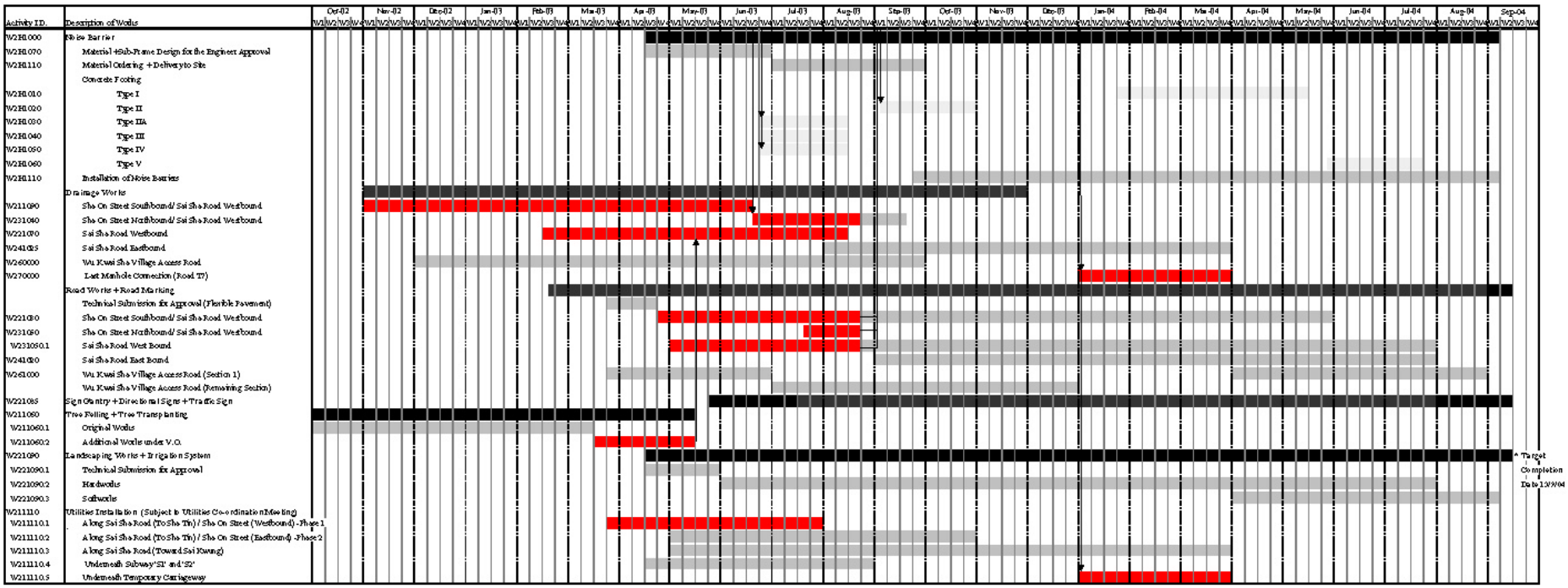
Date: 21 May 2002 Rev: 2



Barbican Construction Limited
Contract No. HY/2001/18
Sai Sha Road Widening Between Kam Ying Road and Future Trunk Road T7 Junction

Detailed Working Programme for Completion of 'Section 2' Works

Date: 21 May 2002 Rev: 2



APPENDIX B

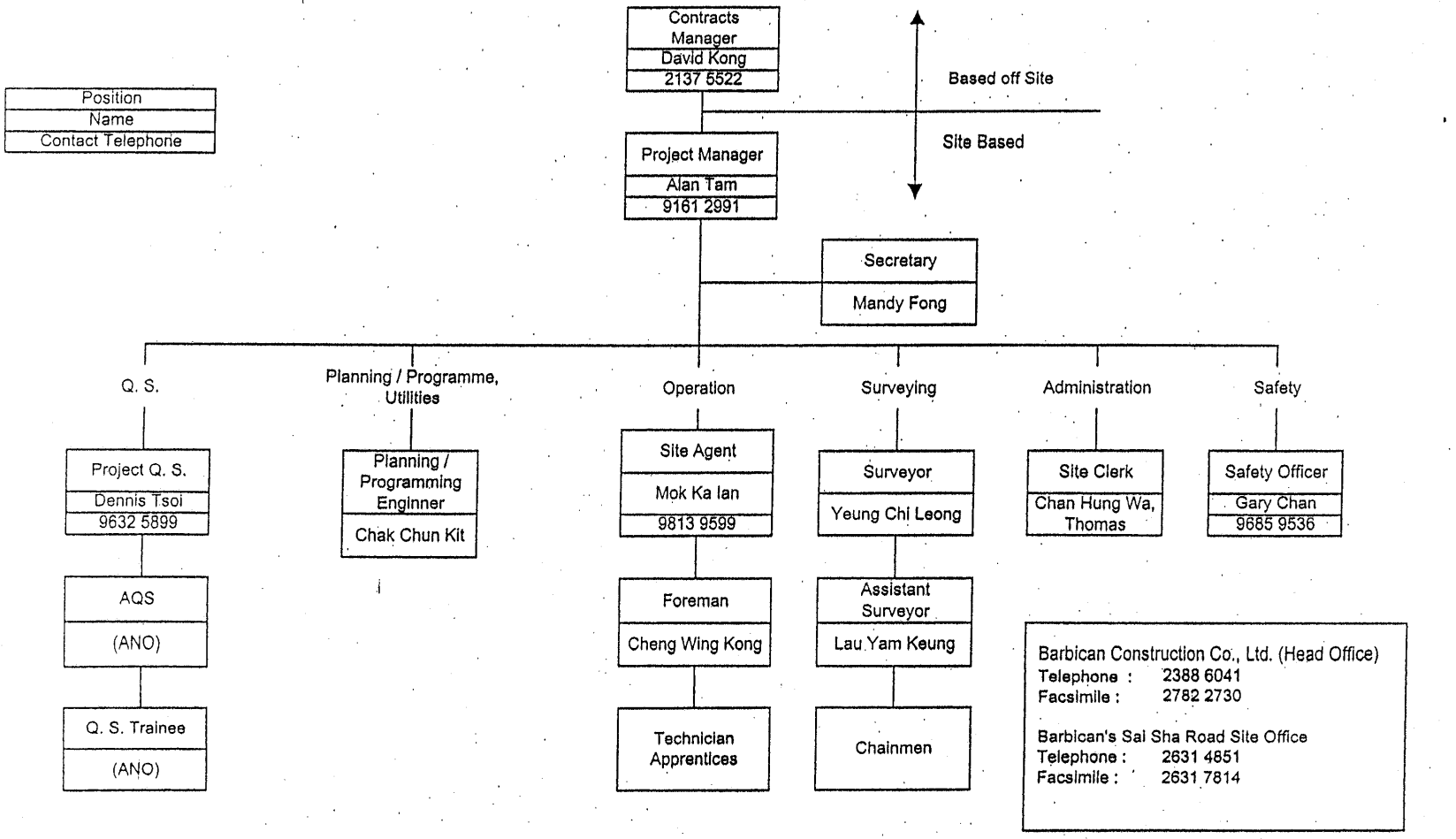
SITE ORGANIZATION CHART

Barbican Construction Co., Ltd.

Contract No. : HY/2001/18
Sai Sha Road Widening between
Kam Ying Road and Future Trunk Road T7 Junction

Date : 23 September 2002
Rev : C

Site Organization Chart



APPENDIX C

SUMMARY OF EM & A REQUIREMENT

SUMMARY OF EM & A REQUIREMENTS

Noise Monitoring Parameters

According to Section 2.2.1 of the *EM & A Manual*, the noise monitoring parameters are:

1) A-weighted equivalent continuous sound pressure level $L_{Aeq\ (30min)}$ for the time period between 0700 and 1900 hours on normal weekdays. For all other time periods, $L_{Aeq\ (5min)}$ shall be employed for comparison with the Noise Control Ordinance (NCO) criteria

2) L_{A10} and L_{A90}, defined as the levels that have been exceeded the 10% and 90% of the measurement time in decibels respectively

Action and Limit Noise Levels

According to Section 2.7 of the *EM & A Manual*, the Action and Limit Noise Levels are summarised in the following table:

Time Period	Action	Limit Level
0700-1900 hours on normal weekdays	When one documented complaint is received	75 dB(A)
0700-2300 hours on holidays; and 1900-2300 hours on all other days		70 dB(A)
2300-0700 hours of next day		55 dB(A)

Event and Action Plan for Construction Noise

Should any non-compliance of the action and limit noise level criteria stipulated in Section 2.7 of the *EM & A Manual* occurs, the ET Leader, the IC(E), the ER (Engineer's Representative) and the Contractor shall undertake relevant actions in accordance with the Event and Action Plan for noise tabulated below:

EVENT	ACTION	
	ET Leader	IC(E)
Action Level	1. Notify IC(E) and Contractor 2. Carry out investigation 3. Report the results of investigation to the IC(E) and Contractor 4. Discuss with the Contractor and formulate remedial measures 5. Increase monitoring frequency to check mitigation effectiveness	1. Review the analysed results submitted by the ET 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly 3. Supervise the implementation of remedial measures

EVENT	ACTION	
	ET Leader	IC(E)
Limit Level	1. Notify IC(E), ER, EPD and Contractor; 2. Identify 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 IC(E), ER and EPD the causes & actions taken for the exceedances 7. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results 8. If exceedance stops, cease additional monitoring	1. Discuss amongst ER, ET and Contractor on the potential remedial actions 2. Review Contractor' remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly 3. Supervise the implementation of remedial measures.

EVENT	ACTION	
	ER	Contractor
Action Level	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require 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. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analysed noise problem 4. Ensure remedial measures are properly implemented 5. If exceedance continues, consider what portion of work is responsible and instruct the Contractor to stop that portion 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 portion of works as determined by the ER until the exceedance is abated

Environmental Mitigation Measures for Noise Impact

Noise emissions from construction sites can be minimised through good site practice, selecting quiet plant and quiet working methods and through the use of temporary barriers. These methods are discussed in the following paragraphs.

Good Site Practice

Good site practice and noise management can considerably reduce the impact of construction site activities on nearby NSRs. The following package of measures should be followed during each phase of construction:

- Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction works;
- Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;
- Plant known to emit noise strongly in one direction, should, where possible, be orientated to direct noise away from nearby NSRs;
- Silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction works;
- Mobile plane should be sited as far away from NSRs as possible; and
- Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.

Selecting Quieter Plant and Working Methods

The Contractor may be able to obtain particular models of plant that are quieter than standard types given in the GW-TM. The benefits achievable in this way will depend on the details of the Contractors' chosen methods of working, and it is considered too restrictive to specify that a Contractor has to use specific items of plant for the construction operations, It is therefore both preferable and practical to specify an overall plant noise performance specification to apply to the total SWL of all plant on the site so that the Contractor is allowed some flexibility to select plant to suit his needs.

It should be noted that various types of silenced equipment can be found in Hong Kong. However, the EPD, when processing a CNP application, will apply the noise levels contained in the relevant statutory TM unless the noise emission of a particular piece of equipment can be validated by certificate or demonstration.

Temporary Noise Barriers

In general, noise barriers located between noisy construction activities and NSRs could give up to 5 dB(A) reduction from screening (estimated in accordance with TM). It would be possible for the Contractor to provide barriers, in the form of site hoardings, to achieve this level of reduction. Certain types of PME, such as generators and compressors, can be completely enclosed giving a total noise reduction of 10 dB(A) or more. Movable vertical

barriers that can be located close to noisy plant can also be very effective at screening NSRs from particular plant.

By considering the above methods of mitigation it is possible to develop a mitigation package, which can be adopted to minimise potential noise impacts. Two mitigation options are considered in this assessment.

Mitigation Option 1

Mitigation Option 1 utilises quiet plant, where appropriate, and movable noise barriers.

Mitigation Option 2

In areas where mitigation option 1 is not sufficient to protect NSRs from noise impacts further mitigation will be required. This will necessitate restricting the construction activities which can operate simultaneously as well as the number of plant used to carry out the specific activities. The necessary measures are:

- Site Clearance – reduce the number of bulldozers/rippers, compressors and lorries to one and ensure that the excavator, bulldozer, scraper and motor grader do not operate simultaneously.

- Pile Capping – separate the individual tasks (i.e. ground, reinforcement, concreting and backfilling activities) and ensure that the backhoe and excavator do not operate simultaneously.

- In-situ Superstructure – formwork and reinforcement to be carried out separately from concreting.

- Paving – ensure the asphalt paver and road roller do not operate simultaneously.

- Drainage – separate all sub-tasks (i.e. excavation of trench and placement of pipes).

- Road Construction – separate all sub-tasks (i.e. levelling of new road, laying base and sub-base, kerbing and laying new surface). In addition, it will be necessary to avoid simultaneously operation of the following items of plant: grader and bulldozer; dumper truck and roller; asphalt paver and road roller.

- Fourth quarter of 2001 – reschedule construction of utilities services and road furniture to avoid this period.

- Fourth quarter of 2002 – reschedule construction of road furniture to avoid this period.

The residual noise impacts at Lee On Estate are, in general, dominated by construction of the main alignment, footbridge and MOS Rail. It is recommended that the construction of the alignment in the vicinity (within 40 m) of Lee Wing House (Lee On Estate) is scheduled so it will not coincide with

the construction of the footbridge and the elevated

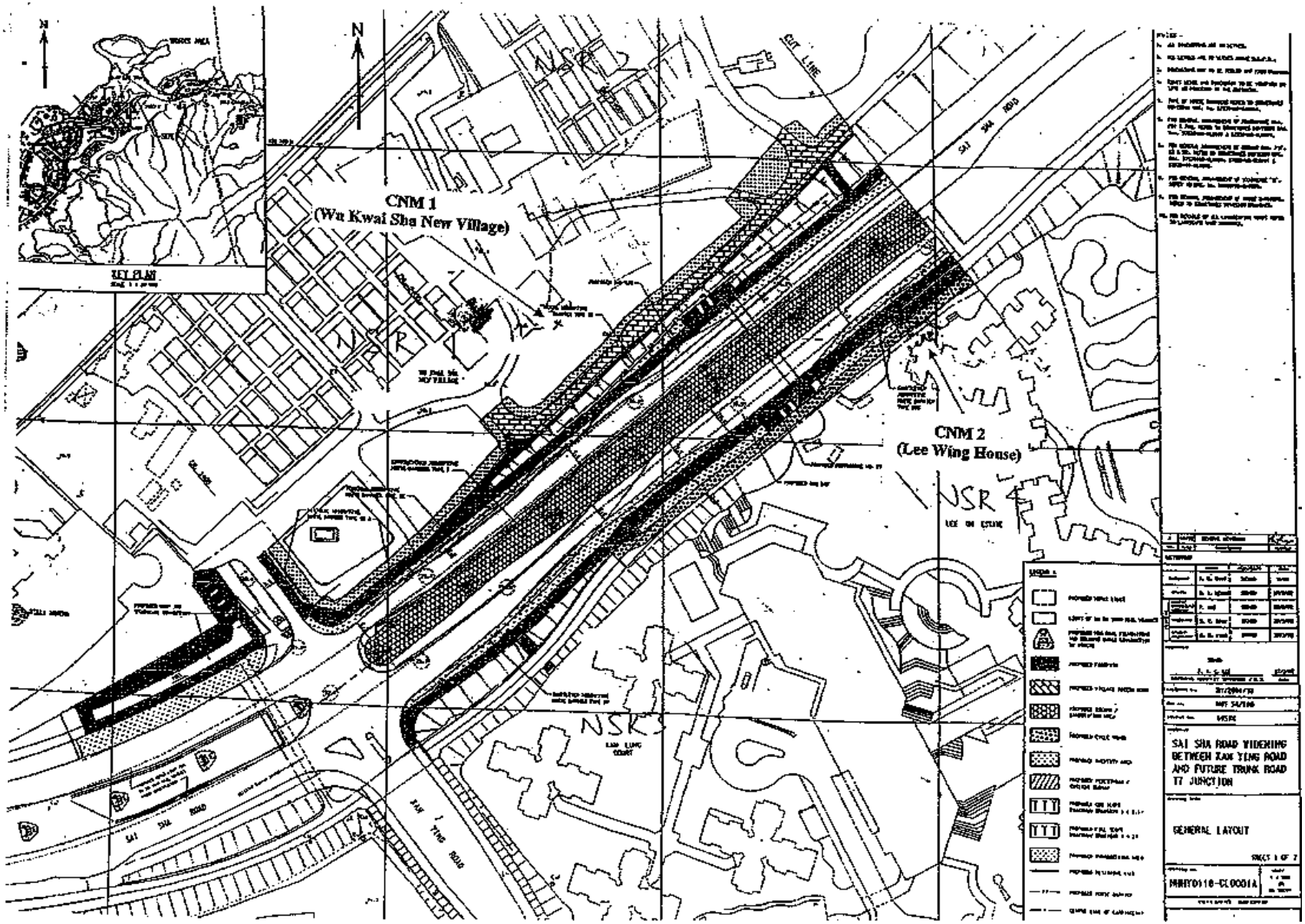
Environmental Mitigation Measures for Landscape & Visual Impact

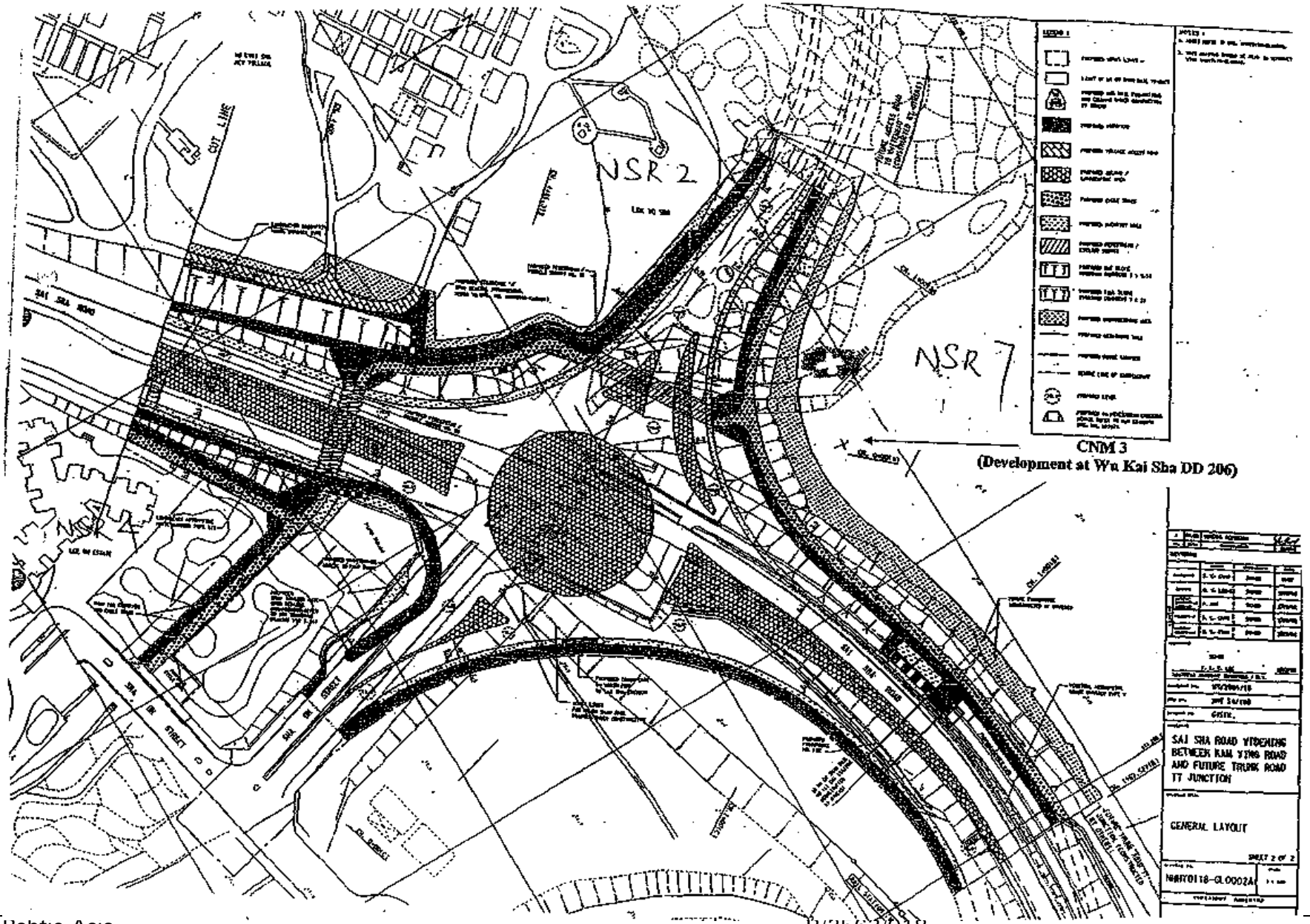
Mitigation of temporary visual and landscape impacts during the construction stage can be achieved through the implementation of the following recommended measures within the project site:

- Conservation of topsoil;
- Screening of site construction works by use of hoardings;
- Surface treatment of site hoardings to enhance visual interest and harmony with surrounding landscape / townscape;
- Locating site offices and other temporary building in least visually prominent locations;
- Efficient programming of construction works to reduce duration of construction works;
- Staging of construction works to minimise areas requiring site hoardings which create visual intrusion;
- Re-routing of pedestrian routes away from the work site where possible;
- Retaining existing trees and minimising damage to vegetation where possible. Care shall be taken not to damage those trees identified in the Tree Survey Report to be retained during the construction phase; and
- Careful and efficient transplanting of existing vegetation carried out under the supervision of a professional landscape architect.

APPENDIX D

THE PROJECT AREA, ENVIRONMENTAL SENSITIVE RECEIVERS AND THE LOCATIONS OF THE MONITORING STATIONS


CNM 1
(Wu Kwai Sha New Village)
CNM 2
(Lee Wing House)
SAI SHA ROAD WIDENING BETWEEN TAK YING ROAD AND FUTURE TRUNK ROAD T1 JUNCTION
GENERAL LAYOUT


NSR 2
NSR 7
CNM 3
(Development at Wu Kai Sha DD 206)
SAI SHA ROAD WIDENING BETWEEN KAM TIN ROAD AND FUTURE TRUNK ROAD TT JUNCTION
GENERAL LAYOUT

Monitoring Point CNM 1 – Wu Kwai Sha New Village

Monitoring Point CNM 2 – Lee Wing House of Lee On Estate

Monitoring Point CNM 3 – Residential Development at Wu Kai Shs DD 206

APPENDIX E

WEATHER CONDITIONS DURING THE MONITORING PERIOD

Contract No. HY/2001/18
Sai Sha Road Widening between Kam Ying Road
and Future Trunk Road T7 Junction
Major Activity and Weather Condition During Baseline Monitoring
Monitoring Location: Wu Kwai Sha New Village (CNM 1)

Date	Start Time	Weather Condition	Major Activities	Other Activities
17/10/02	09:24	Fine	MOS Rail Construction by other Contractor	Traffic and Resident
24/10/02	10:47	Sunny	MOS Rail Construction by other Contractor	Traffic and Resident
31/10/02	10:59	Drizzle	MOS Rail Construction by other Contractor	Traffic and Resident
**05-11-02	09:17	Sunny	MOS Rail Construction by other Contractor	Traffic and Resident
07/11/02	09:33	Sunny	Excavtion and MOS Rail Construction	Traffic and Resident
14/11/02	10:00	Sunny	MOS Rail Construction by other Contractor	Traffic and Truck
21/11/02	10:45	Sunny	MOS Rail Construction by other Contractor	Traffic and Resident
28/11/02	09:30	Drizzle	MOS Rail Construction by other Contractor	Traffic and Resident
05/12/02	09:24	Cloudy	Excavation & Sheet Pile Installation	Traffic and Resident
12/12/02	10:55	Sunny	Temporary Works & Excavation	Traffic and Dog barking
19/12/02	09:03	Sunny	Temporary Works & Excavation	Traffic and Resident
23/12/02	09:55	Sunny	Temporary Works & Excavation	Traffic
02/01/03	10:00	Cloudy	Excavation & Sheet Pile Installation	Traffic and Resident
09/01/03	10:00	Sunny	Temporary Works & Excavation	Traffic and Dog barking
16/01/03	10:00	Sunny	Temporary Works & Excavation	Traffic and Resident
23/01/03	10:45	Sunny	Temporary Works & Excavation	Traffic
29/01/03	13:48	Fine	Backhoe	Traffic
06/02/03	10:12	Sunny	Backhoe	Traffic
13/02/03	10:20	Sunny	Backhoe	Traffic and Dog barking
20/02/03	10:00	Cloudy	Backhoe	Traffic
27/02/03	10:45	Sunny	Nil	Traffic
06/03/03	10:00	Cloudy	Backhoe	Traffic and Pedestrian
13/03/03	10:02	Cloudy	Nil	Traffic and Pedestrian
20/03/03	10:01	Drizzle	Backhoe	Traffic and Pedestrian
27/03/03	10:05	Sunny	Backhoe	Traffic and Pedestrian
03/04/03	10:00	Cloudy	Nil	Traffic and Pedestrian
10/04/03	10:01	Cloudy	Nil	Traffic and Pedestrian
17/04/03	10:07	Sunny	Backhoe	Traffic
24/04/03	10:06	Sunny	Backhoe	Traffic
02/05/03	10:25	Sunny	Backhoe	Traffic and Pedestrian
09/05/03	10:07	Cloudy	Backhoe	Traffic and Pedestrian
15/05/03	10:12	Sunny	Backhoe	Traffic
22/05/03	10:20	Sunny	Backhoe	Traffic
29/05/03	10:00	Sunny	Backhoe	Traffic
05/06/03	10:07	Sunny	Nil	Traffic , Pedestrian
12/06/03	10:06	Cloudy	Nil	Traffic
19/06/03	10:01	Sunny	Backhoe	Traffic
26/06/03	10:06	Cloudy	Backhoe , Breaker	Traffic , Pedestrian
03/07/03	10:00	Sunny	Backhoe	Traffic
10/07/03	10:05	Sunny	Backhoe	Traffic
17/07/03	10:01	Sunny	Backhoe	Traffic
25/07/03	10:07	Drizzle	Backhoe	Traffic
01/08/03	10:02	Drizzle	Backhoe	Traffic
07/08/03	10:30	Cloudy	Concreting , Truck	Traffic
15/08/03	09:55	Sunny	Piling Works	Traffic , Pedestrian
21/08/03	09:55	Cloudy	Truck , Pneumatic Breaker	Traffic
29/08/03	10:05	Sunny	Nil	Traffic , Dog barking
04/09/03	09:40	Cloudy	Backhoe	Traffic
11/09/03	10:00	Sunny	Backhoe	Dog Barking , Traffic , Residents , Pedestrian
18/09/03	09:55	Sunny	Pneumatic Breaker , Backhoe	Traffic , Finishing , Dog Barking , Pedestrian
25/09/03	09:50	Sunny	Concreting	Pedestrian , Traffic

Note: **Additional Nose Monitoring

Contract No. HY/2001/18
Sai Sha Road Widening between Kam Ying Road and Future Trunk Road T7 Junction
Major Activity and Weather Condition During Baseline Monitoring
Monitoring Location: Kam Lung Court (CNM 2)

Date	Start Time	Weather Condition	Major Activities	Other Activities
17/10/02	10:07	Fine	MOS Rail Construction by other Contractor	Traffic and Resident
24/10/02	11:23	Sunny	MOS Rail Construction by other Contractor	Traffic and Resident
31/10/02	11:37	Dizzle	MOS Rail Construction by other Contractor	Traffic and Resident
**05-11-02	09:53	Sunny	MOS Rail Construction by other Contractor	Traffic and Resident
07/11/02	10:10	Sunny	MOS Rail Construction by other Contractor	Traffic and Resident
14/11/02	10:45	Sunny	MOS Rail Construction by other Contractor	Traffic and Resident
21/11/02	11:28	Sunny	MOS Rail Construction by other Contractor	Traffic and Resident
28/11/02	10:00	Drizzle	MOS Rail Construction and Soil Excavation	Traffic and Resident
05/12/02	10:35	Cloudy	Soil Excavation	Traffic and Resident
12/12/02	11:51	Sunny	Mini Pile Works for footbridge (FB 1)	Traffic and Resident
19/12/02	09:40	Sunny	Mini Pile Works for footbridge (FB 1)	Traffic
23/12/02	10:33	Sunny	Mini Pile Works for footbridge (FB 1)	Traffic and Resident
02/01/03	10:40	Cloudy	Backhoe	Traffic and Pedestrian
09/01/03	10:35	Sunny	Backhoe	Traffic and Pedestrian
16/01/03	10:40	Sunny	Backhoe	Traffic
23/01/03	11:20	Sunny	Backhoe	Traffic
29/01/03	10:40	Fine	Backhoe	Traffic
06/02/03	10:50	Sunny	Backhoe	Traffic
13/02/03	10:57	Sunny	Backhoe	Traffic and Pedestrian
20/02/03	10:35	Cloudy	Backhoe	Traffic and Pedestrian
27/02/03	11:20	Sunny	Pneumatic Breaker	Traffic
06/03/03	10:36	Cloudy	Backhoe	Traffic and Pedestrian
13/03/03	10:39	Cloudy	Nil	Traffic,Pedestrian,MOS railway construction
20/03/03	10:39	Drizzle	Backhoe	Traffic,Pedestrian
27/03/03	10:40	Sunny	Backhoe	Traffic,Pedestrian
03/04/03	10:36	Cloudy	Backhoe	Traffic and Pedestrian
10/04/03	10:39	Cloudy	Backhoe	Traffic and Pedestrian
17/04/03	10:43	Sunny	Backhoe and Machinary	Traffic and Pedestrian
24/04/03	10:43	Sunny	Backhoe	Traffic and Pedestrian
02/05/03	11:00	Sunny	Backhoe	Traffic and Pedestrian
09/05/03	10:42	Cloudy	Backhoe	Traffic and Pedestrian
15/05/03	10:47	Sunny	Backhoe	Traffic and Pedestrian
22/05/03	10:56	Sunny	Backhoe	Traffic and Pedestrian
29/05/03	10:33	Sunny	Backhoe	Traffic and Pedestrian
05/06/03	10:42	Sunny	Backhoe	Traffic , Pedestrian
12/06/03	10:44	Cloudy	Machinary	Traffic , Pedestrian
19/06/03	10:37	Sunny	Backhoe	Traffic
26/06/03	10:43	Cloudy	Breaker	Traffic , Pedestrian
03/07/03	10:34	Sunny	Backhoe	Traffic , Pedestrian
10/07/03	10:41	Sunny	Backhoe	Traffic
17/07/03	10:37	Sunny	Backhoe	Traffic , Pedestrian
25/07/03	10:44	Drizzle	Backhoe	Traffic , Pedestrian
01/08/03	10:37	Drizzle	Backhoe	Traffic , Pedestrian
07/08/03	11:10	Cloudy	Truck , Concreting	Traffic , Pedestrian
15/08/03	10:30	Sunny	Backhoe , Pneumatic Breaker	Traffic , Pedestrian
21/08/03	10:30	Cloudy	Backhoe , Pneumatic Breaker	Traffic , Pedestrian
29/08/03	10:45	Sunny	Nil	Traffic , Pedestrian , Truck
04/09/03	10:15	Cloudy	Concreting , Backhoe	Traffic , Pedestrian
11/09/03	10:48	Sunny	Backhoe	Traffic , Pedestrian
18/09/03	10:35	Sunny	Truck , Backhoe	Traffic , Pedestrian
25/09/03	10:25	Sunny	Backhoe	Traffic , Pedestrian

Note: **Additional Nose Monitoring

Contract No. HY/2001/18
Sai Sha Road Widening between Kam Ying Road
and Future Trunk Road T7 Junction
Major Activity and Weather Condition During Baseline Monitoring
Monitoring Location: Residential Development at Wu Kai Sha DD206 (CNM 3)

Date	Start Time	Weather Condition	Major Activities	Other Activities
17/10/02	10:46	Fine	MOS Rail Construction by other Contractor	Traffic
24/10/02	12:02	Sunny	MOS Rail Construction by other Contractor	Traffic
31/10/02	12:16	Dizzle	MOS Rail Construction by other Contractor	Traffic
**05-11-02	10:30	Sunny	MOS Rail Construction by other Contractor	Backhoe, Heavy Truck
07/11/02	10:50	Sunny	MOS Rail Construciton and Soil Excavation	Traffic
14/11/02	11:38	Sunny	MOS Rail Construction by other Contractor	Traffic, Heavy Truck
21/11/02	12:15	Sunny	MOS Rail Construction by other Contractor	Traffic, Heavy Truck
28/11/02	10:45	Drizzle	MOS Rail Construction and Soil Excavation	Traffic
05/12/02	11:18	Cloudy	Drainage Works & Temporary Access Road	Traffic
12/12/02	12:42	Sunny	Drainage Works & Temporary Access Road	Traffic and Resident
19/12/02	10:19	Sunny	Drainage Works	Traffic, Heavy Truck
23/12/02	11:11	Sunny	Drainage Works	Traffic
02/01/03	11:30	Cloudy	Backhoe	Traffic
09/01/03	11:10	Sunny	Backhoe and MOS Railway Construction	Traffic
16/01/03	11:15	Sunny	Backhoe	Traffic
23/01/03	11:55	Sunny	Nil	Traffic
29/01/03	13:03	Fine	Backhoe	Traffic
06/02/03	11:29	Sunny	Nil	Traffic
13/02/03	11:35	Sunny	Backhoe	Traffic and MOS Railway Construction
20/02/03	11:13	Cloudy	Backhoe	Traffic
27/02/03	11:30	Sunny	Backhoe	Traffic
06/03/03	11:15	Cloudy	Nil	Traffic,MOS railway construction
13/03/03	11:17	Cloudy	Nil	Traffic, MOS Railway Construction
20/03/03	11:16	Cloudy	Backhoe,Machinary	Traffic, MOS Railway Construction
27/03/03	11:16	Sunny	Nil	Traffic, MOS Railway Construction
03/04/03	11:15	Cloudy	Backhoe	Traffic and Pedestrian
10/04/03	11:16	Cloudy	Backhoe	Traffic and Pedestrian
17/04/03	11:20	Sunny	Backhoe	MOS Railway Construction,Traffic and Pedestrian
24/04/03	11:18	Sunny	Backhoe	Traffic and Pedestrian
02/05/03	11:35	Sunny	Backhoe, Machinary	Traffic and Pedestrian
09/05/03	11:17	Cloudy	Backhoe	Traffic and Pedestrian
15/05/03	11:22	Sunny	Nil	Traffic and Pedestrian
22/05/03	11:32	Sunny	Backhoe	Traffic and Pedestrian
29/05/03	11:09	Sunny	Backhoe	Traffic and Pedestrian
05/06/03	11:19	Sunny	Backhoe	Pedestrian , Traffic
12/06/03	11:21	Cloudy	Backhoe	Pedestrian , Traffic
19/06/03	11:13	Sunny	Backhoe	Traffic
26/06/03	11:19	Cloudy	Backhoe	Traffic , MOS Railway Construction
03/07/03	11:10	Sunny	Backhoe	Traffic
10/07/03	11:17	Sunny	Backhoe	Traffic
17/07/03	11:13	Sunny	Backhoe	Traffic , Pedestrian
25/07/03	11:19	Drizzle	Nil	Traffic

Note: **Additional Nose Monitoring

APPENDIX F

GRAPHICAL PLOTS OF TRENDS OF MONITORED PARAMETERS

Contract No. HY/2001/18
Sai Sha Road Widening between Kam Ying Road
and Future Trunk Road T7 Junction
Monitoring Location: Wu Kwai Sha New Village (CNM 1)
Time Period 7:00-19:00

Date	Start Time	Duration (min)	Measurement Results								
			L_{90} (dB(A))	L_{10} (dB(A))	L_{eq} (dB(A)) (5 mins)						L_{eq} (dB(A)) (30 mins)
17/10/02	09:24	30	54.9	67.0	67.3	63.0	65.4	67.0	63.4	59.0	64.2
24/10/02	10:47	30	54.6	61.9	58.5	58.8	58.4	59.6	62.3	59.8	59.6
31/10/02	10:59	30	54.9	63.2	59.8	61.2	59.3	61.1	62.2	59.8	60.6
05/11/02	09:17	30	56.1	74.3	65.7	69.5	77.2	65.4	66.8	58.8	67.2
07/11/02	09:33	30	57.5	64.5	61.8	61.9	61.8	63.8	63.9	63.9	62.9
14/11/02	10:00	30	52.0	61.6	59.2	60.3	58.6	57.6	57.2	57.6	58.4
21/11/02	10:45	30	54.3	61.8	60.6	58.9	59.7	59.3	58.9	60.0	59.6
28/11/02	09:30	30	57.0	69.2	70.5	68.7	64.1	63.1	63.5	61.2	65.2
05/12/02	09:24	30	59.1	72.3	66.2	64.9	65.6	64.6	69.0	72.0	67.1
12/12/02	10:55	30	53.7	66.3	56.9	59.9	57.9	61.1	57.9	64.0	59.6
19/12/02	09:03	30	55.0	63.8	59.8	58.9	60.3	64.3	59.8	60.7	60.6
23/12/02	09:55	30	57.3	63.4	62.3	61.2	63.1	60.7	60.8	58.8	61.2
02/01/03	10:00	30	61.4	66.1	64.7	63.8	63.0	63.9	65.4	65.3	64.4
09/01/03	10:00	30	57.2	63.9	61.1	61.2	62.1	61.5	60.7	62.4	61.5
16/01/03	10:00	30	53.9	61.2	59.7	57.2	58.5	59.3	57.2	59.4	58.6
23/01/03	10:45	30	56.1	62.9	60.2	62.9	60.5	60.4	59.9	59.6	60.6
29/01/03	13:48	30	55.7	61.8	59.4	58.4	58.8	60.5	59.1	61.5	59.6
06/02/03	10:12	30	53.5	60.9	59.0	57.7	57.7	59.4	59.0	56.6	58.2
13/02/03	10:20	30	54.8	62.4	60.0	57.7	60.3	60.3	59.4	59.7	59.6
20/02/03	10:00	30	57.2	63.7	67.2	61.2	60.2	60.0	61.7	60.7	61.8
27/02/03	10:56	30	56.4	62.6	59.9	59.2	61.1	61.7	59.4	60.7	60.3
06/03/03	10:00	30	57.4	63.2	61.3	60.8	61.2	60.3	60.2	61.0	60.8
13/03/03	10:02	30	57.0	62.5	61.4	60.6	60.2	61.0	59.0	59.8	60.3
20/03/03	10:01	30	55.9	64.6	60.0	60.0	60.4	59.5	64.4	62.8	61.2
27/03/03	10:05	30	56.3	63.0	60.8	60.8	62.0	59.6	59.2	59.8	60.0
03/04/03	10:00	30	56.4	65.0	60.3	60.1	60.5	63.5	64.1	69.8	63.1
10/04/03	10:01	30	55.0	62.6	60.8	60.1	60.9	59.9	59.5	59.0	60.0
17/04/03	10:07	30	55.4	62.3	59.4	59.3	58.2	61.7	60.3	60.6	59.9
24/04/03	10:06	30	55.6	64.8	59.1	59.3	59.0	58.1	64.2	64.9	61.1
02/05/03	10:25	30	55.0	62.1	59.3	59.7	58.4	60.4	58.8	59.8	59.4
09/05/03	10:07	30	57.4	63.5	62.1	61.5	60.1	60.8	60.5	61.4	61.1
15/05/03	10:12	30	57.4	72.8	73.1	69.1	68.4	66.8	66.1	62.9	67.7
22/05/03	10:20	30	58.8	63.9	62.6	62.1	61.8	61.0	61.1	61.9	61.7
29/05/03	10:00	30	57.6	64.1	61.6	60.4	62.3	61.1	62.9	61.5	61.6
05/06/03	10:07	30	56.0	63.6	61.3	62.6	60.7	58.7	62.2	59.8	60.9
12/06/03	10:06	30	56.9	65.0	60.1	59.8	60.9	60.8	62.9	65.7	61.7
19/06/03	10:01	30	57.7	63.5	60.8	59.9	61.2	61.1	62.7	61.6	61.2
26/06/03	10:06	30	59.5	70.9	69.5	68.5	68.6	68.3	67.2	67.3	68.2
03/07/03	10:00	30	60.5	66.0	65.2	65.1	67.5	63.8	63.8	61.5	64.5
10/07/03	10:05	30	61.7	66.5	62.8	63.3	64.7	64.6	64.8	66.3	64.4
17/07/03	10:01	30	62.7	68.1	66.8	67.0	66.4	64.8	64.2	65.3	65.8
25/07/03	10:07	30	60.0	66.2	62.4	61.1	61.5	62.7	66.3	65.0	63.5
01/08/03	10:02	30	57.6	65.0	78.2	66.8	61.8	62.4	61.3	61.3	65.3
07/08/03	10:30	30	61.1	66.3	68.0	63.1	63.9	64.2	71.6	65.1	66.0
15/08/03	09:55	30	59.0	64.2	62.5	61.9	63.6	62.1	62.2	62.8	62.5
21/08/03	09:55	30	59.7	64.9	62.0	61.5	62.8	62.6	61.8	64.0	62.5
29/08/03	10:05	30	58.4	63.9	63.5	62.4	62.0	61.9	61.8	60.6	62.0
04/09/03	09:40	30	60.5	65.7	62.9	63.0	62.3	63.8	65.2	65.6	63.8
11/09/03	09:58	30	55.2	61.7	59.0	58.1	58.4	59.7	60.8	58.3	59.1
18/09/03	09:55	30	62.4	69.9	64.8	69.6	63.6	67.6	66.2	66.6	66.4
25/09/03	09:50	30	60.3	65.3	63.5	64.6	64.2	62.0	62.9	61.9	63.2

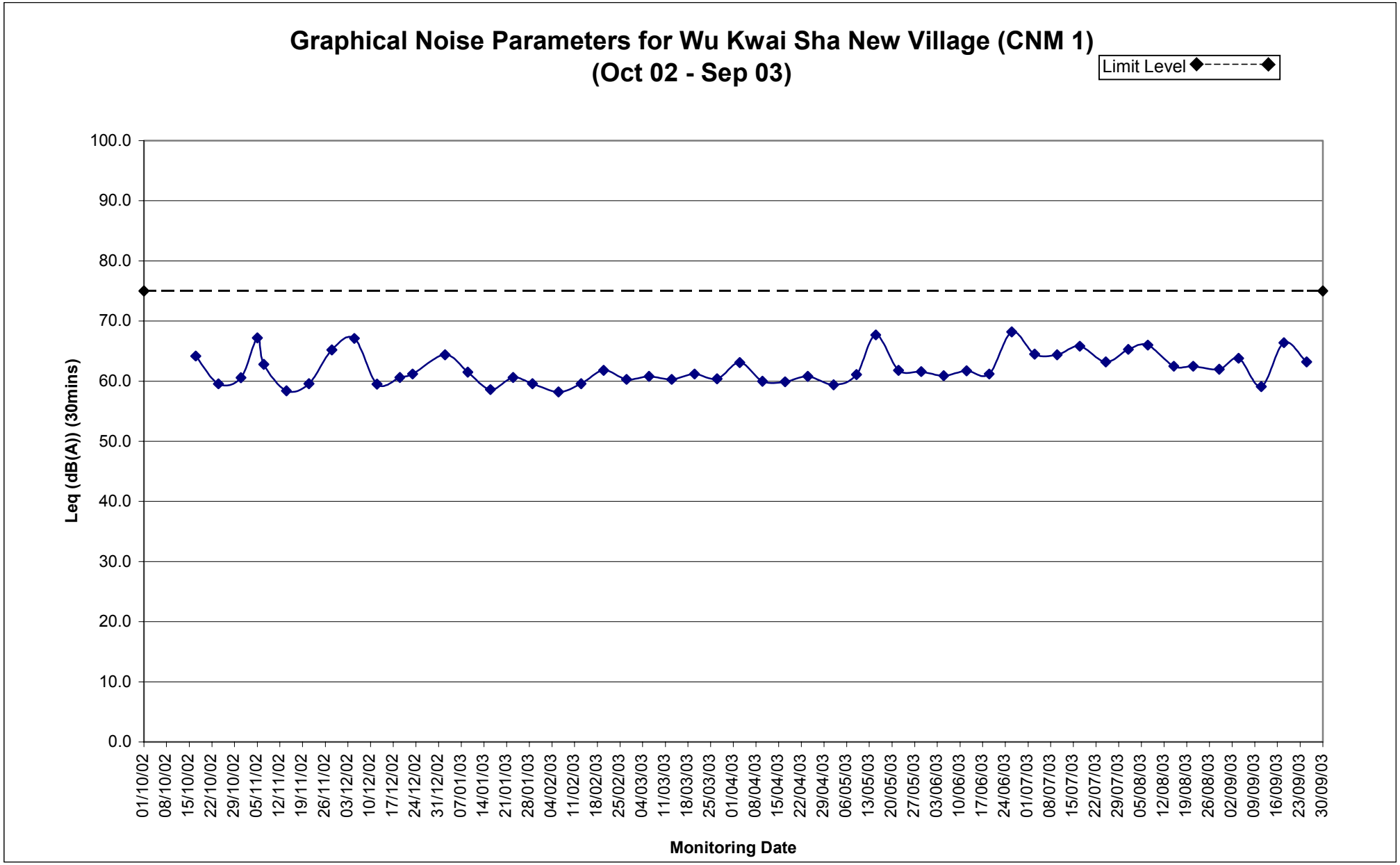
Contract No. HY/2001/18
Sai Sha Road Widening between Kam Ying Road
and Future Trunk Road T7 Junction
Monitoring Location: Kam Lung Court (CNM 2)
Time Period 7:00-19:00

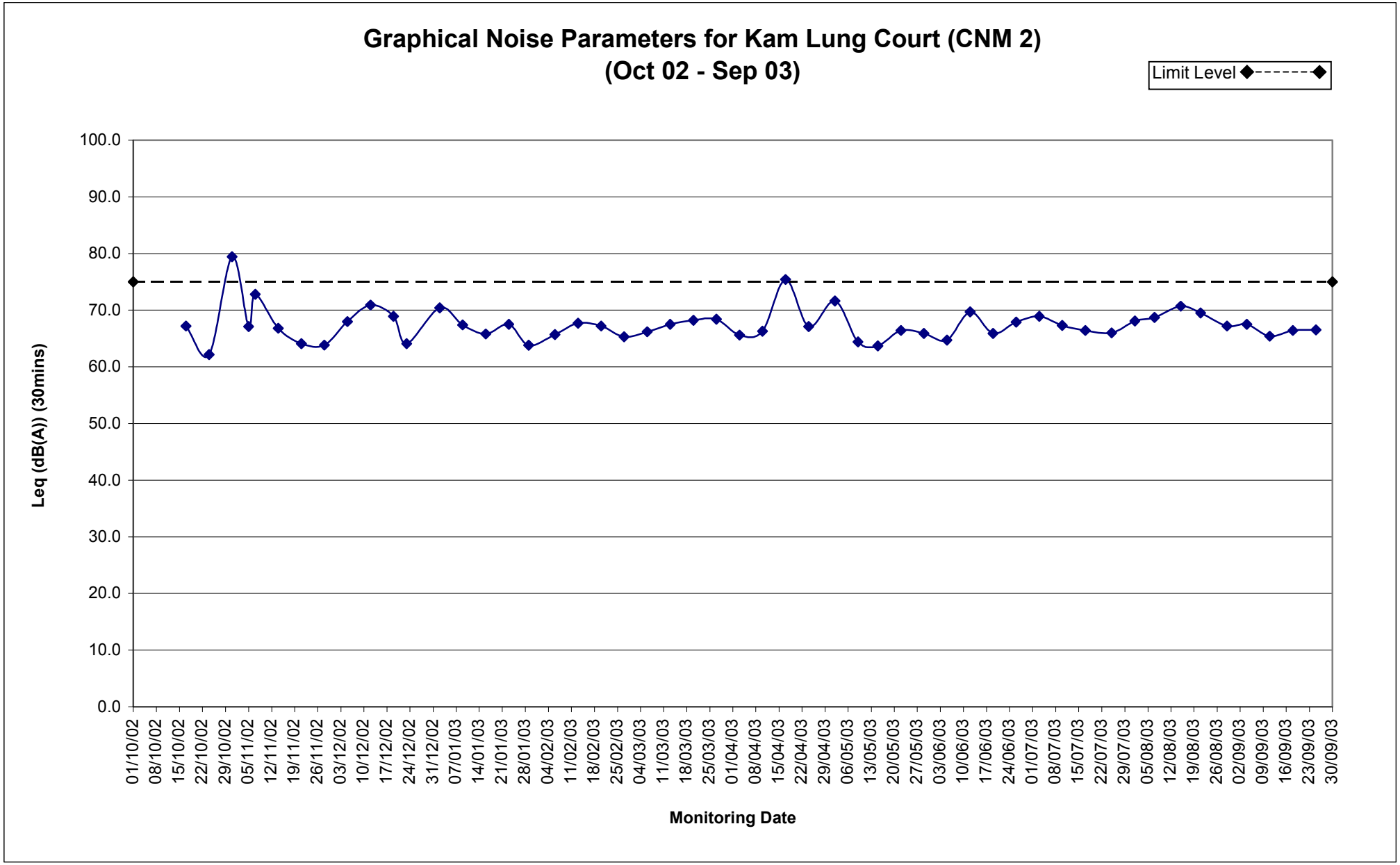
Date	Start Time	Duration (min)	Measurement Results								
			L_{90} (dB(A))	L_{10} (dB(A))	L_{eq} (dB(A)) (5 mins)						L_{eq} (dB(A)) (30 mins)
17/10/02	10:07	30	62.3	69.5	66.2	67.2	67.6	68.9	67.3	66.1	67.2
24/10/02	11:23	30	57.0	65.0	63.2	62.7	63.1	61.9	61.6	60.5	62.2
31/10/02	11:37	30	64.4	90.2	69.5	71.9	69.1	88.9	88.1	89.1	79.4
05/11/02	09:53	30	63.2	68.9	68.7	66.5	67.8	66.5	67.0	66.2	67.1
07/11/02	10:10	30	64.1	75.4	71.7	72.9	72.7	73.9	73.1	72.9	72.9
14/11/02	10:50	30	59.9	70.2	64.4	62.7	63.1	73.2	69.6	67.8	66.8
21/11/02	11:28	30	58.7	66.4	65.1	64.7	64.9	63.8	66.2	60.0	64.1
28/11/02	10:00	30	60.1	66.3	65.8	64.6	62.3	63.7	63.2	63.4	63.8
05/12/02	10:35	30	62.7	70.0	66.4	73.9	66.7	67.7	66.4	66.9	68.0
12/12/02	11:51	30	61.5	76.0	70.8	65.7	74.8	73.5	72.3	68.3	70.9
19/12/02	09:40	30	62.5	69.0	66.5	73.8	76.6	64.9	65.7	66.0	68.9
23/12/02	10:33	30	60.5	66.4	63.5	65.5	64.3	64.0	63.9	63.4	64.1
02/01/03	10:40	30	67.1	72.7	69.6	71.1	70.0	71.9	70.6	70.8	70.7
09/01/03	10:35	30	62.6	70.1	67.3	66.5	68.5	67.4	67.2	67.3	67.4
16/01/03	10:40	30	61.8	68.2	67.0	66.1	65.8	65.3	64.9	65.5	65.8
23/01/03	11:20	30	63.6	70.0	67.2	68.0	69.2	69.6	66.9	64.3	67.5
29/01/03	11:22	30	58.6	66.6	65.0	65.4	64.8	64.0	62.0	61.3	63.8
06/02/03	10:50	30	60.2	68.5	65.2	66.2	65.1	65.3	65.7	66.8	65.7
13/02/03	10:57	30	63.8	70.2	66.5	68.1	69.1	67.9	66.7	68.0	67.7
20/02/03	10:35	30	65.0	68.8	67.1	66.8	67.2	67.0	67.6	67.4	67.2
27/02/03	10:21	30	62.3	67.6	64.3	65.7	65.0	65.1	66.3	65.6	65.3
06/03/03	10:36	30	62.9	68.4	67.5	67.4	66.0	65.0	65.8	65.2	66.2
13/03/03	10:39	30	65.6	69.1	68.3	67.8	68.1	67.2	66.6	66.7	67.5
20/03/03	10:39	30	63.8	69.5	67.1	71.9	65.9	66.2	71.4	66.6	68.2
27/03/03	10:40	30	65.3	70.6	67.1	68.1	69.7	68.6	68.6	68.3	68.4
03/04/03	10:36	30	61.7	67.5	67.5	63.8	64.0	66.8	65.4	65.9	65.6
10/04/03	10:39	30	61.4	69.7	63.0	65.4	67.3	69.4	65.7	67.1	66.3
17/04/03	10:43	30	71.5	78.0	75.6	73.4	71.9	76.5	77.0	77.8	75.4
24/04/03	10:43	30	63.8	68.9	70.6	67.0	66.9	66.2	65.5	66.6	67.1
02/05/03	11:00	30	65.2	76.5	69.5	69.3	68.6	68.9	77.6	75.4	71.6
09/05/03	10:42	30	61..7	66.3	64.4	64.4	63.9	65.0	63.5	65.3	64.4
15/05/03	10:47	30	60.6	65.7	64.1	64.0	63.3	63.6	63.1	64.1	63.7
22/05/03	10:56	30	63.5	68.5	65.6	65.4	65.9	66.0	68.1	67.2	66.4
29/05/03	10:33	30	61.3	66.9	73.5	64.1	64.2	65.1	64.5	63.8	65.9
05/06/03	10:42	30	61.3	67.1	64.7	64.5	64.4	64.5	65.4	64.9	64.7
12/06/03	10:44	30	64.3	72.2	70.7	70.7	72.8	67.1	70.3	66.6	69.7
19/06/03	10:37	30	60.2	71.1	64.1	64.5	65.4	72.1	65.6	63.6	65.9
26/06/03	10:43	30	62.7	70.8	69.0	66.2	67.6	68.2	67.9	68.3	67.9
03/07/03	10:34	30	62.8	73.3	72.9	67.5	66.1	66.0	70.0	70.9	68.9
10/07/03	10:41	30	63.4	69.9	67.0	67.6	66.5	67.2	67.5	68.0	67.3
17/07/03	10:37	30	63.6	68.5	66.8	66.5	66.8	65.7	66.9	65.8	66.4
25/07/03	10:44	30	62.0	68.3	64.8	65.4	67.2	67.3	65.4	65.9	66.0
01/08/03	10:37	30	63.1	70.5	68.6	68.8	66.8	66.5	71.5	66.1	68.1
07/08/03	11:10	30	65.8	70.7	68.3	68.7	68.4	68.4	68.3	69.8	68.7
15/08/03	10:30	30	66.1	74.2	70.9	69.4	72.7	69.1	71.2	70.6	70.7
21/08/03	10:30	30	64.8	71.9	68.1	69.7	70.2	72.5	68.1	68.6	69.5
29/08/03	10:45	30	63.6	70.4	66.6	69.2	65.8	69.2	66.8	65.8	67.2
04/09/03	10:15	30	62.9	70.6	69.7	69.4	66.0	67.6	66.2	66.1	67.5
11/09/03	10:52	30	61.4	67.9	65.3	65.4	64.3	65.3	65.9	65.9	65.4
18/09/03	10:35	30	63.2	68.8	66.2	68.0	67.6	66.4	64.9	65.4	66.4
25/09/03	10:25	30	63.5	68.7	68.2	67.8	65.8	65.4	65.1	66.8	66.5

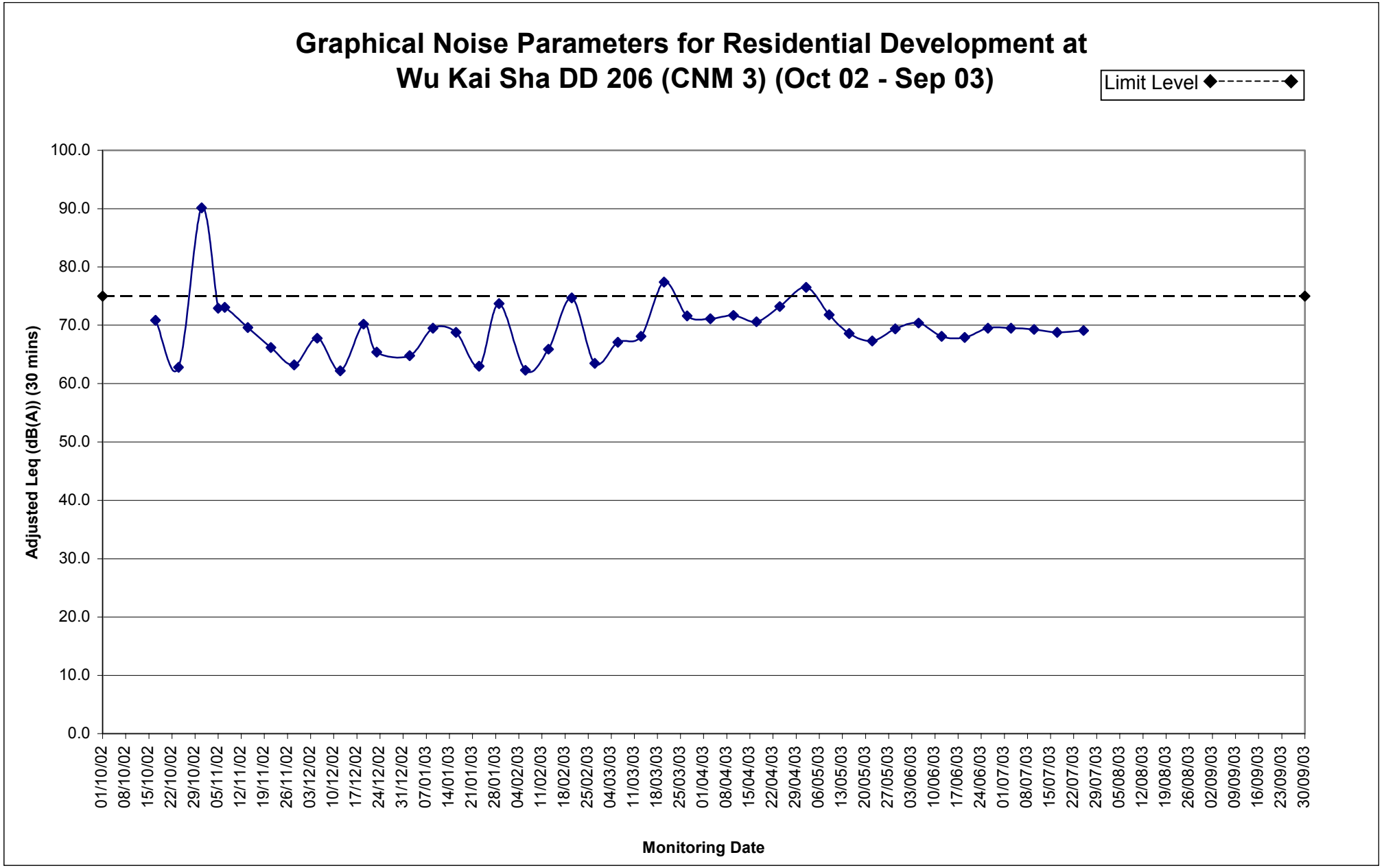
Contract No. HY/2001/18
Sai Sha Road Widening between Kam Ying Road
and Future Trunk Road T7 Junction
Monitoring Location: Residential Development at Wu Kai Sha DD206 (CNM 3)
Time Period 7:00-19:00

Date	Start Time	Duration (min)	Measurement Results									Adjustment*
			L_{90} (dB(A))	L_{10} (dB(A))	L_{eq} (dB(A)) (5 mins)						L_{eq} (dB(A)) (30 mins)	
17/10/02	10:45	30	62.7	72.6	67.0	65.3	65.1	65.8	72.2	71.7	67.9	70.9
24/10/02	12:02	30	52.9	63.1	61.2	59.9	59.3	58.4	60.8	59.2	59.8	62.8
31/10/02	12:16	30	76.0	91.3	86.5	90.0	90.4	92.7	86.1	77.0	87.1	90.1
05/11/02	10:30	30	60.7	71.2	73.3	73.9	66.8	66.4	71.7	67.4	69.9	72.9
07/11/02	10:50	30	59.9	70.2	64.4	62.7	63.1	73.2	69.6	67.8	66.8	69.8
14/11/02	11:38	30	53.9	67.0	68.0	67.0	66.6	63.3	67.2	62.8	65.8	68.8
21/11/02	12:15	30	54.2	68.3	62.8	67.2	64.4	69.6	67.8	63.5	65.9	68.9
28/11/02	10:45	30	62.3	77.3	69.2	72.5	67.8	69.3	63.9	67.8	68.4	71.4
05/12/02	11:18	30	58.3	68.1	66.5	66.5	64.8	63.9	62.8	64.3	64.8	67.8
12/12/02	12:42	30	54.1	62.5	59.0	59.9	58.4	59.4	59.7	59.0	59.2	62.2
19/12/02	10:19	30	62.8	69.9	67.6	68.2	65.7	68.0	67.5	66.4	67.2	70.2
23/12/02	11:11	30	58.1	65.4	63.4	62.4	62.4	62.8	62.3	61.3	62.4	65.4
02/01/03	11:30	30	56.6	64.8	63.9	64.0	60.4	60.7	60.6	61.1	61.8	64.8
09/01/03	11:10	30	58.2	65.7	69.9	63.1	73.3	61.1	68.9	62.4	66.5	69.5
16/01/03	11:15	30	59.6	68.9	66.1	68.8	67.5	65.7	65.1	61.6	65.8	68.8
23/01/03	11:55	30	52.4	61.5	58.8	57.9	61.7	62.4	61.4	57.9	60.0	63.0
29/01/03	13:03	30	64.2	73.9	67.2	71.3	73.2	72.9	69.5	69.9	70.7	73.7
06/02/03	11:29	30	51.2	62.6	59.7	57.6	59.6	60.0	58.8	60.1	59.3	62.3
13/02/03	11:35	30	56.0	66.1	68.3	64.7	61.9	61.8	61.2	59.7	62.9	65.9
20/02/03	11:13	30	62.1	75.2	76.5	73.9	70.7	67.2	75.9	66.2	71.7	74.7
27/02/03	11:30	30	55.8	63.1	59.9	62.2	61.2	60.9	59.1	59.6	60.5	63.5
06/03/03	11:15	30	61.3	65.9	62.7	65.8	63.0	64.2	64.2	64.9	64.1	67.1
13/03/03	11:17	30	62.1	66.9	66.6	64.8	63.7	64.8	64.9	65.5	65.1	68.1
20/03/03	11:16	30	66.3	79.0	73.0	69.8	69.5	79.3	78.4	76.6	74.4	77.4
27/03/03	11:16	30	64.4	71.3	69.3	69.9	69.2	67.1	68.3	67.6	68.6	71.6
03/04/03	11:15	30	61.7	70.3	70.5	69.5	68.2	65.0	68.0	67.4	68.1	71.1
10/04/03	11:16	30	64.1	71.1	68.5	68.7	68.7	68.6	68.6	69.1	68.7	71.7
17/04/03	11:20	30	61.0	71.3	70.1	71.4	65.4	64.2	67.0	67.4	67.6	70.6
24/04/03	11:18	30	63.0	74.4	73.3	73.0	73.4	67.6	67.5	66.4	70.2	73.2
02/05/03	11:35	30	66.4	75.0	73.6	73.5	74.3	74.6	72.6	72.5	73.5	76.5
09/05/03	11:17	30	65.5	70.9	69.6	68.6	69.8	68.2	68.1	68.2	68.8	71.8
15/05/03	11:22	30	61.2	68.3	66.4	66.5	66.7	65.9	64.9	63.3	65.6	68.6
22/05/03	11:32	30	57.5	67.6	66.5	66.5	64.3	61.9	62.6	64.0	64.3	67.3
29/05/03	11:09	30	61.6	69.4	65.1	65.4	67.6	65.7	68.3	66.5	66.4	69.4
05/06/03	11:19	30	61.6	70.8	70.0	67.0	68.7	67.7	66.7	64.1	67.4	70.4
12/06/03	11:21	30	59.8	68.1	66.7	65.8	65.9	63.7	65.3	62.9	65.1	68.1
19/06/03	11:13	30	59.2	68.1	66.0	65.2	65.6	65.2	63.1	64.4	64.9	67.9
26/06/03	11:19	30	60.5	69.5	67.6	67.0	65.7	66.5	66.2	65.8	66.5	69.5
03/07/03	11:10	30	61.8	68.9	66.3	66.1	65.5	66.3	68.8	65.8	66.5	69.5
10/07/03	11:17	30	62.1	68.7	66.2	67.2	66.1	66.3	67.8	64.4	66.3	69.3
17/07/03	11:13	30	60.8	68.8	66.5	65.1	66.0	66.3	66.1	64.9	65.8	68.8
25/07/03	11:19	30	60.7	69.3	65.9	66.2	66.7	66.7	67.0	64.2	66.1	69.1

* Note: A correction of +3dB (A) is made to the free field measurements


Graphical Noise Parameters for Wu Kwai Sha New Village (CNM 1)
(Oct 02 - Sep 03)
Limit Level
Leq (dB(A)) (30mins)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
01/10/02
08/10/02
15/10/02
22/10/02
29/10/02
05/11/02
12/11/02
19/11/02
26/11/02
03/12/02
10/12/02
17/12/02
24/12/02
31/12/02
07/01/03
14/01/03
21/01/03
28/01/03
04/02/03
11/02/03
18/02/03
25/02/03
04/03/03
11/03/03
18/03/03
25/03/03
01/04/03
08/04/03
15/04/03
22/04/03
29/04/03
06/05/03
13/05/03
20/05/03
27/05/03
03/06/03
10/06/03
17/06/03
24/06/03
01/07/03
08/07/03
15/07/03
22/07/03
29/07/03
05/08/03
12/08/03
19/08/03
26/08/03
02/09/03
09/09/03
16/09/03
23/09/03
30/09/03
Monitoring Date


Graphical Noise Parameters for Kam Lung Court (CNM 2)
(Oct 02 - Sep 03)
Limit Level
Leq (dB(A)) (30mins)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
01/10/02
08/10/02
15/10/02
22/10/02
29/10/02
05/11/02
12/11/02
19/11/02
26/11/02
03/12/02
10/12/02
17/12/02
24/12/02
31/12/02
07/01/03
14/01/03
21/01/03
28/01/03
04/02/03
11/02/03
18/02/03
25/02/03
04/03/03
11/03/03
18/03/03
25/03/03
01/04/03
08/04/03
15/04/03
22/04/03
29/04/03
06/05/03
13/05/03
20/05/03
27/05/03
03/06/03
10/06/03
17/06/03
24/06/03
01/07/03
08/07/03
15/07/03
22/07/03
29/07/03
05/08/03
12/08/03
19/08/03
26/08/03
02/09/03
09/09/03
16/09/03
23/09/03
30/09/03
Monitoring Date


Graphical Noise Parameters for Residential Development at
Wu Kai Sha DD 206 (CNM 3) (Oct 02 - Sep 03)
Limit Level
Adjusted Leq (dB(A)) (30 mins)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
01/10/02
08/10/02
15/10/02
22/10/02
29/10/02
05/11/02
12/11/02
19/11/02
26/11/02
03/12/02
10/12/02
17/12/02
24/12/02
31/12/02
07/01/03
14/01/03
21/01/03
28/01/03
04/02/03
11/02/03
18/02/03
25/02/03
04/03/03
11/03/03
18/03/03
25/03/03
01/04/03
08/04/03
15/04/03
22/04/03
29/04/03
06/05/03
13/05/03
20/05/03
27/05/03
03/06/03
10/06/03
17/06/03
24/06/03
01/07/03
08/07/03
15/07/03
22/07/03
29/07/03
05/08/03
12/08/03
19/08/03
26/08/03
02/09/03
09/09/03
16/09/03
23/09/03
30/09/03
Monitoring Date

Statistical Analysis of Noise Data (October 2002 - September 2003)

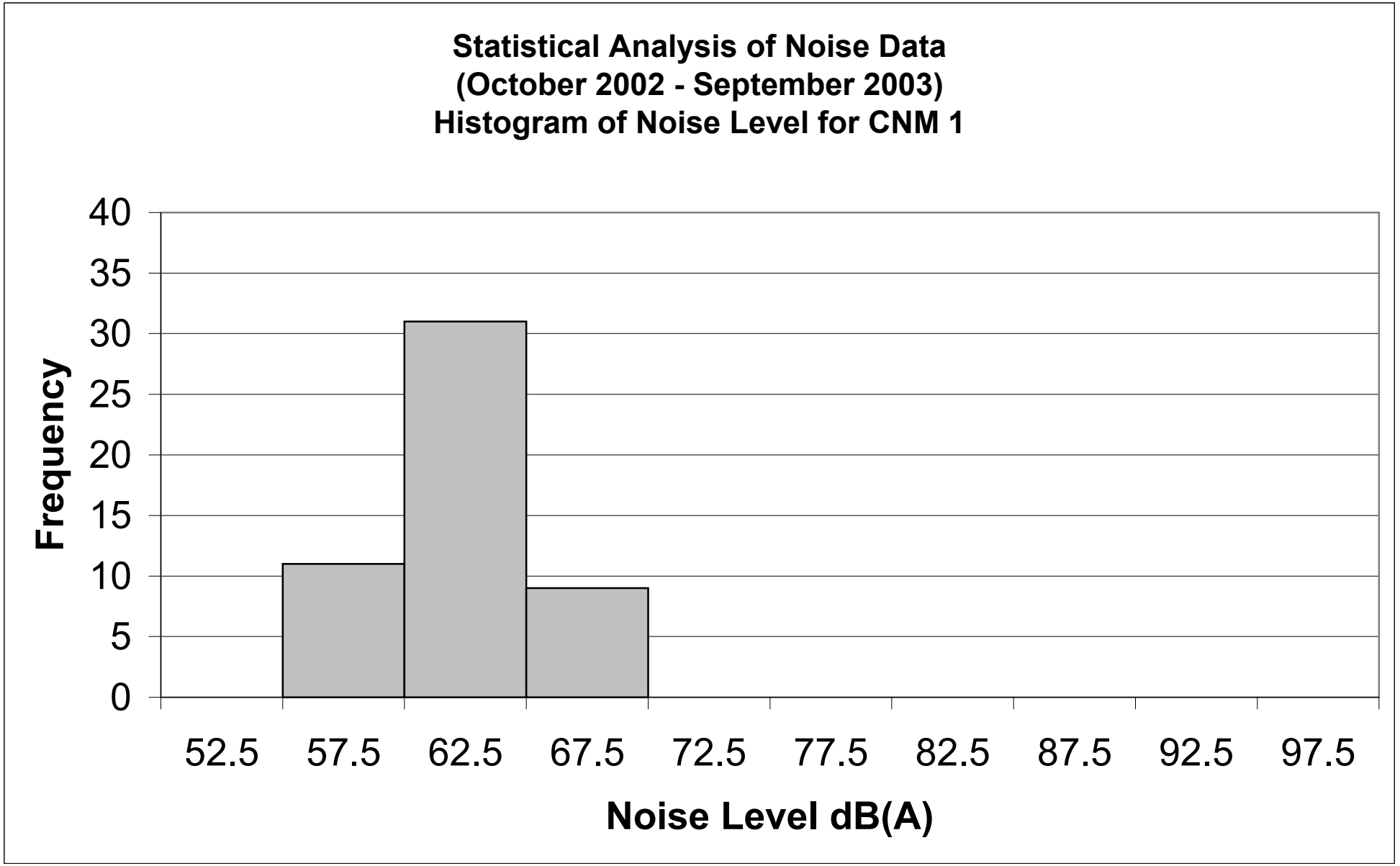
Frequency Distribution Table of Noise Data for CNM 1

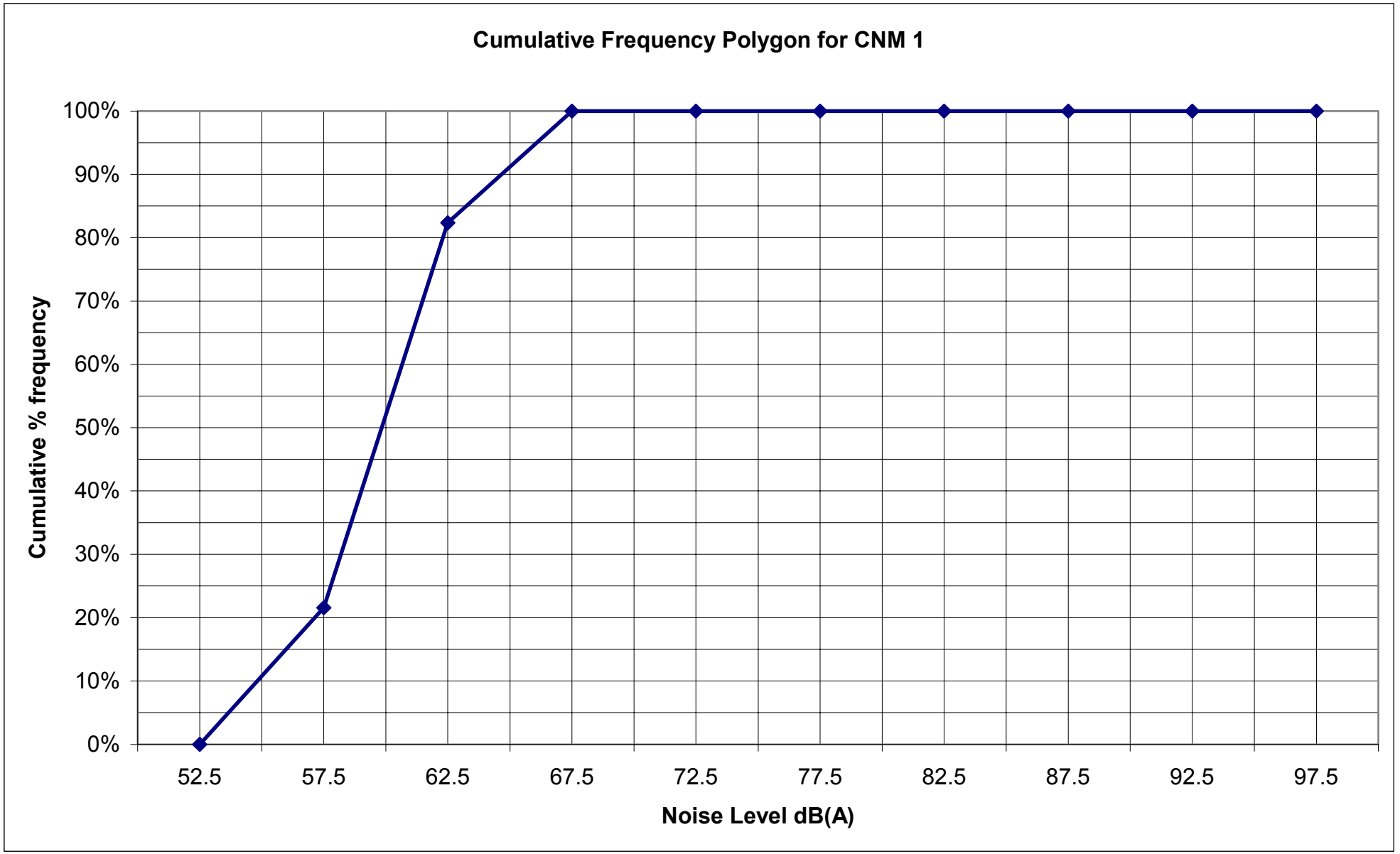
Noise Level dB(A)	Class mark (x) dB(A)	Frequency (f)	% frequency	Cumulative % frequency	fx	fx^2
50 - 55	52.5	0	0%	0%	0.0	0.0
55 - 60	57.5	11	22%	22%	632.5	36368.8
60 - 65	62.5	31	61%	82%	1937.5	121093.8
65 - 70	67.5	9	18%	100%	607.5	41006.3
70 - 75	72.5	0	0%	100%	0.0	0.0
75 - 80	77.5	0	0%	100%	0.0	0.0
80 - 85	82.5	0	0%	100%	0.0	0.0
85 - 90	87.5	0	0%	100%	0.0	0.0
90 - 95	92.5	0	0%	100%	0.0	0.0
95 - 100	97.5	0	0%	100%	0.0	0.0
Total	--	51	100%	--	3177.5	198468.8

Sample Mean = $\bar{x} = \frac{1}{n}\sum_{i=1}^{k} f_i x_i$ = 62.3 dB(A)

Sample Variance = $\frac{1}{n-1}\left(\sum_{i=1}^{k} f_i x_i^2 - n\bar{x}^2\right)$ = 10.0 dB(A)

Sample Standard Deviation = $\sqrt{\text{Variance}}$ = 3.2 dB(A)


Statistical Analysis of Noise Data
(October 2002 - September 2003)
Histogram of Noise Level for CNM 1
Frequency
40
35
30
25
20
15
10
5
0
52.5
57.5
62.5
67.5
72.5
77.5
82.5
87.5
92.5
97.5
Noise Level dB(A)


Cumulative Frequency Polygon for CNM 1
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Cumulative % frequency
52.5
57.5
62.5
67.5
72.5
77.5
82.5
87.5
92.5
97.5
Noise Level dB(A)

Statistical Analysis of Noise Data (October 2002 - September 2003)

Frequency Distribution Table of Noise Data for CNM 2

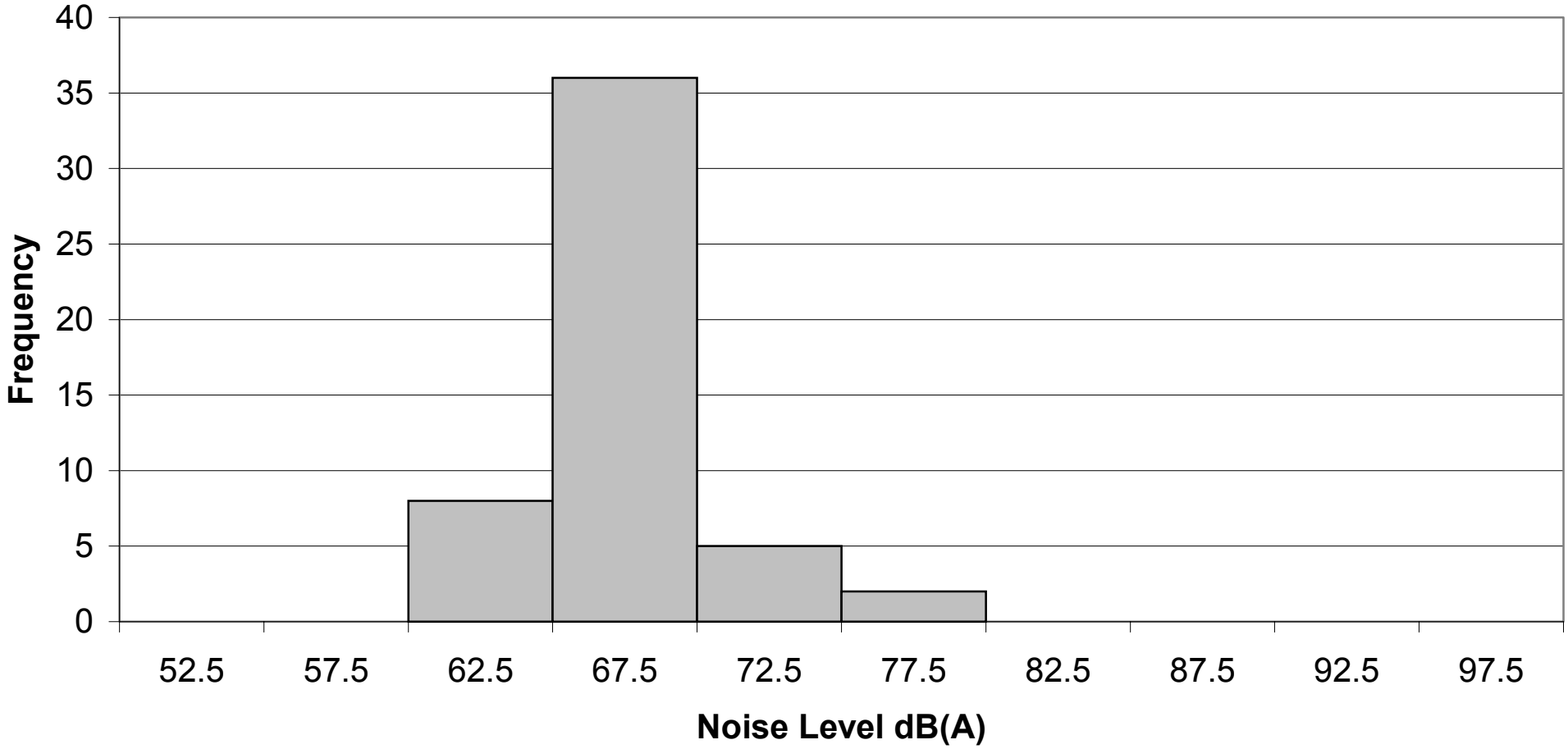
Noise Level dB(A)	Class mark (x) dB(A)	Frequency (f)	% frequency	Cumulative % frequency	fx	fx^2
50 - 55	52.5	0	0%	0%	0.0	0.0
55 - 60	57.5	0	0%	0%	0.0	0.0
60 - 65	62.5	8	16%	16%	500.0	31250.0
65 - 70	67.5	36	71%	86%	2430.0	164025.0
70 - 75	72.5	5	10%	96%	362.5	26281.3
75 - 80	77.5	2	4%	100%	155.0	12012.5
80 - 85	82.5	0	0%	100%	0.0	0.0
85 - 90	87.5	0	0%	100%	0.0	0.0
90 - 95	92.5	0	0%	100%	0.0	0.0
95 - 100	97.5	0	0%	100%	0.0	0.0
Total	--	51	100%	--	3447.5	233568.8

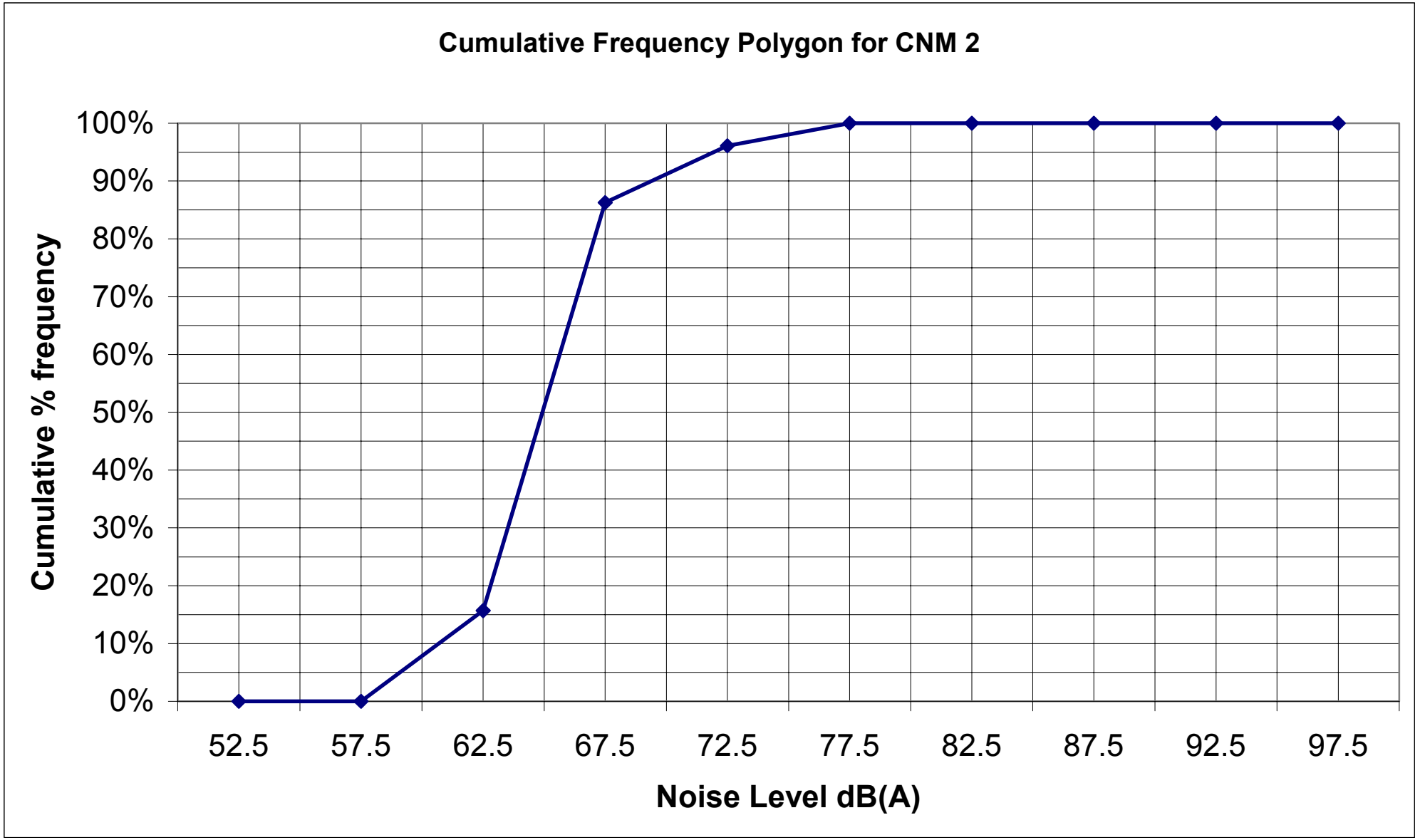
Sample Mean = $\bar{x} = \frac{1}{n}\sum_{i=1}^{k} f_i x_i$ = 67.6 dB(A)

Sample Variance = $\frac{1}{n-1}\left(\sum_{i=1}^{k} f_i x_i^2 - n\bar{x}^2\right)$ = 10.5 dB(A)

Sample Standard Deviation = $\sqrt{\text{Variance}}$ = 3.2 dB(A)

Statistical Analysis of Noise Data
(October 2002 - September 2003)
Histogram of Noise Level for CNM 2




Cumulative Frequency Polygon for CNM 2
Cumulative % frequency
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
52.5
57.5
62.5
67.5
72.5
77.5
82.5
87.5
92.5
97.5
Noise Level dB(A)

Statistical Analysis of Noise Data (October 2002 - September 2003)

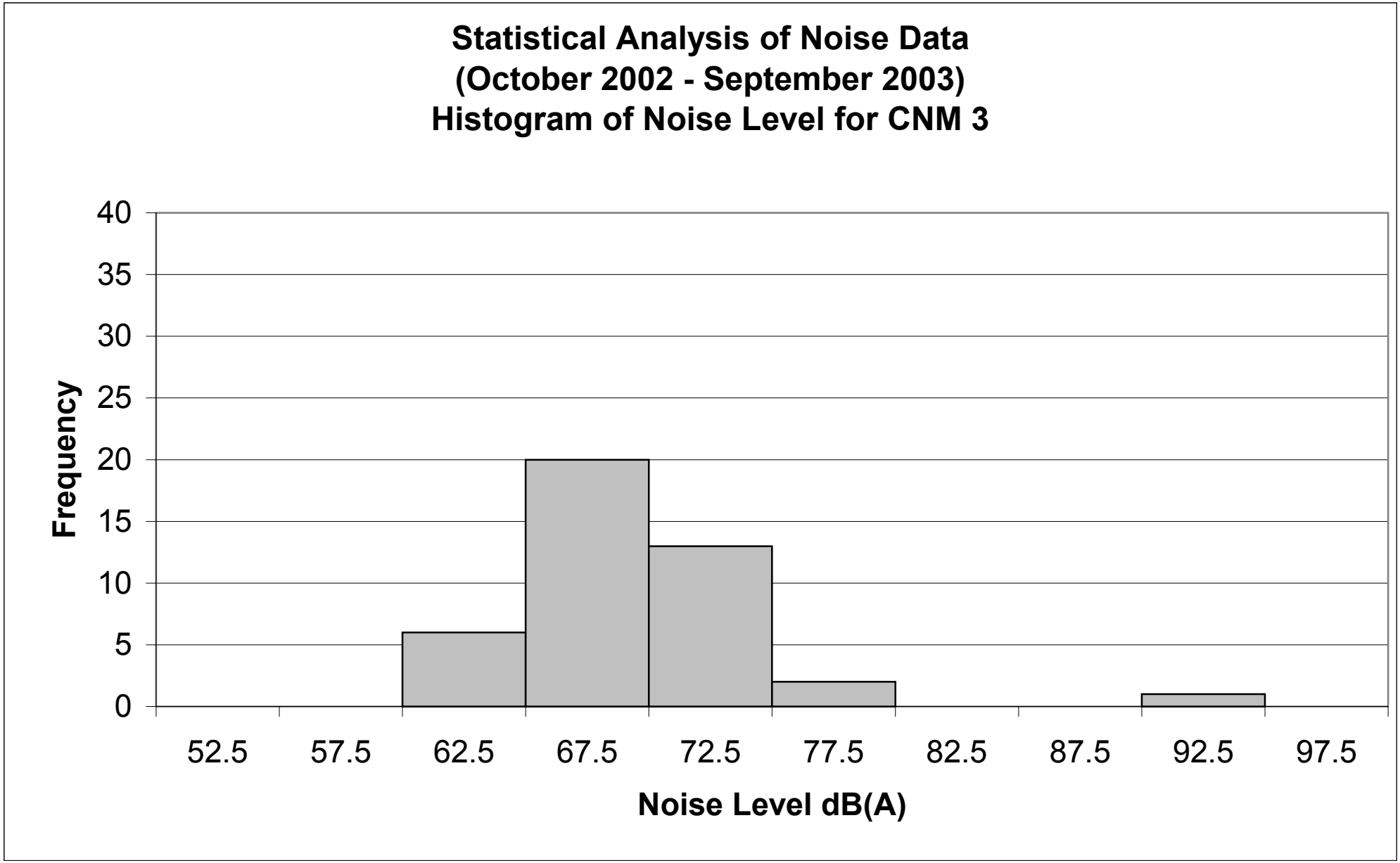
Frequency Distribution Table of Noise Data for CNM 3

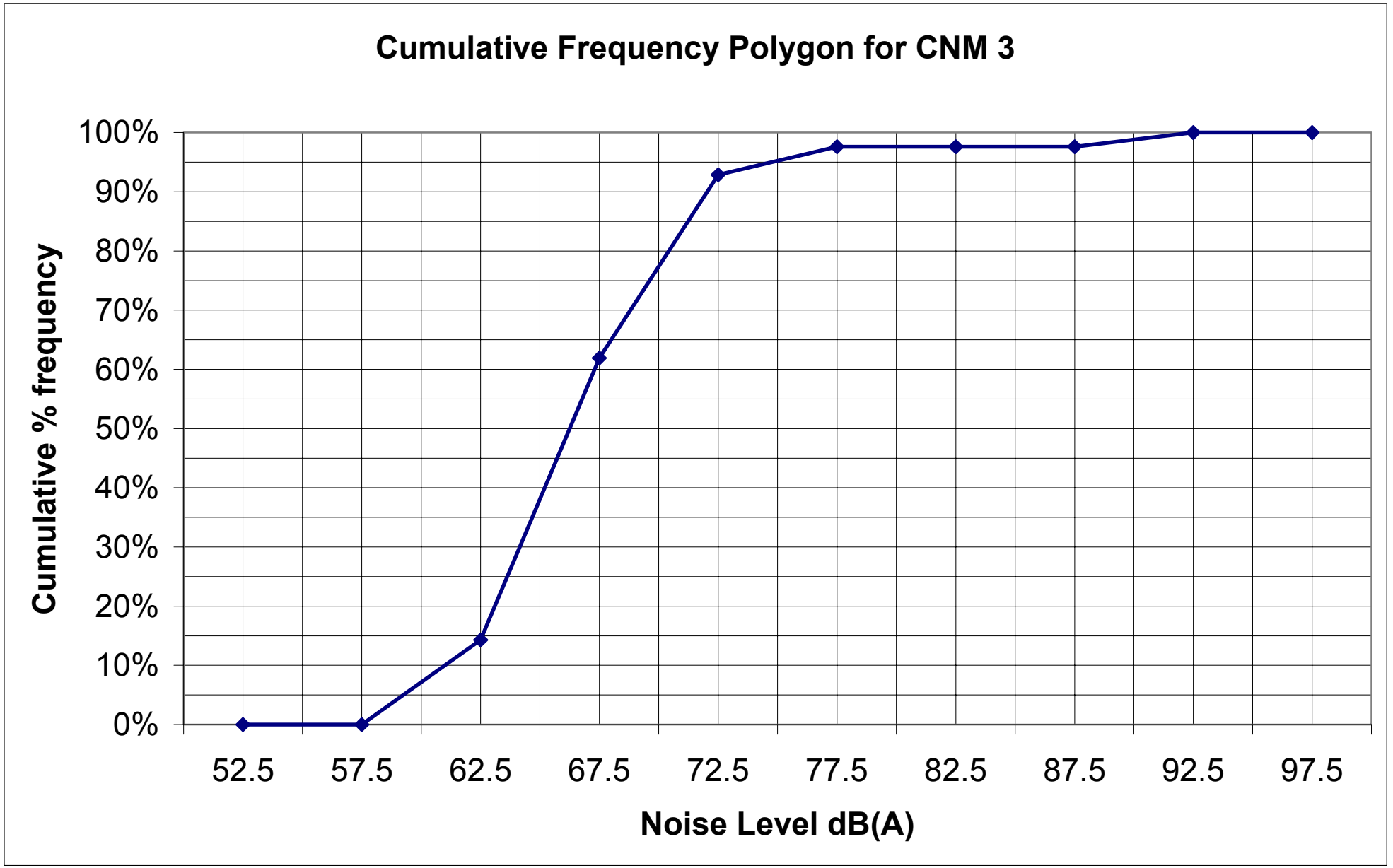
Noise Level dB(A)	Class mark (x) dB(A)	Frequency (f)	% frequency	Cumulative % frequency	fx	fx^2
50 - 55	52.5	0	0%	0%	0.0	0.0
55 - 60	57.5	0	0%	0%	0.0	0.0
60 - 65	62.5	6	14%	14%	375.0	23437.5
65 - 70	67.5	20	48%	62%	1350.0	91125.0
70 - 75	72.5	13	31%	93%	942.5	68331.3
75 - 80	77.5	2	5%	98%	155.0	12012.5
80 - 85	82.5	0	0%	98%	0.0	0.0
85 - 90	87.5	0	0%	98%	0.0	0.0
90 - 95	92.5	1	2%	100%	92.5	8556.3
95 - 100	97.5	0	0%	100%	0.0	0.0
Total	--	42	100%	--	2915.0	203462.5

Sample Mean = $\bar{x} = \frac{1}{n}\sum_{i=1}^{k} f_i x_i$ = 69.4 dB(A)

Sample Variance = $\frac{1}{n-1}\left(\sum_{i=1}^{k} f_i x_i^2 - n\bar{x}^2\right)$ = 28.0 dB(A)

Sample Standard Deviation = $\sqrt{\text{Variance}}$ = 5.3 dB(A)


Statistical Analysis of Noise Data
(October 2002 - September 2003)
Histogram of Noise Level for CNM 3
Frequency
40
35
30
25
20
15
10
5
0
52.5
57.5
62.5
67.5
72.5
77.5
82.5
87.5
92.5
97.5
Noise Level dB(A)

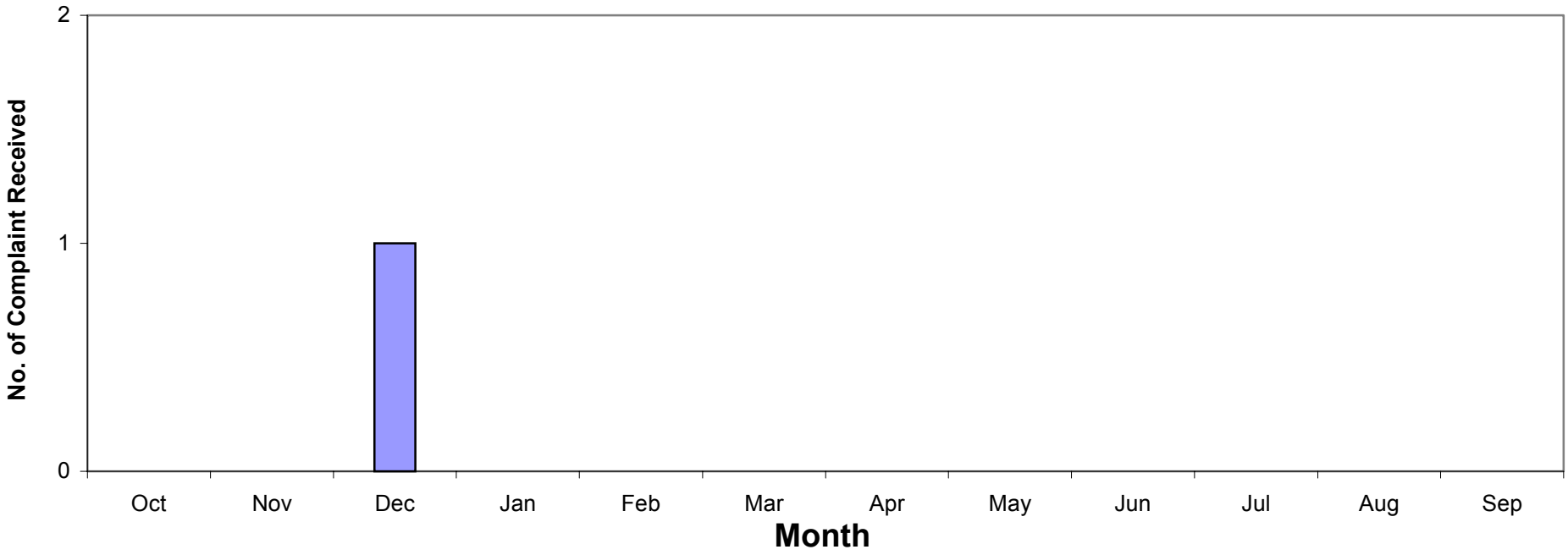

Cumulative Frequency Polygon for CNM 3
Cumulative % frequency
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
52.5
57.5
62.5
67.5
72.5
77.5
82.5
87.5
92.5
97.5
Noise Level dB(A)

APPENDIX G

STATISTICS FOR ENVIRONMENTAL COMPLAINTS

Contract No. HY/2001/18
Sai Sha Road Widening between Kam Ying Road and Future Trunk Road T7 Junction

Statistics for Environmental Complaint During the Year October 2002 - September 2003



COMPLAINT LOG

Ref: CL/2002/December

Log Ref	Date/Location	Complaint/ Date of Contact	Details of Complaint	Investigate / Mitigation Action	File Closed
EC/2002/01	Wu Kwai Sha New Village	Noise Pollution 5 Dec 2002	Noise due to Percussive Piling Works	• No percussive piling works was undertaken. • The noise was due to the sheet pile installation works. An alternatvie instatllation approach was adopted to minimise the noise annoyance. • The noise data shows no non-compliance exists.	Reply EPD on 19/12/02 Case Closed

APPENDIX H

CONTACT DETAILS & HOTLINE

Contact Details of Key Personnel

Title	Name	Contact Number
Engineer's Representative (Highways Department)	Mr. Greg Leung	2716 1043
EPD	Mr. Simon Hui	2835 1105
Project Director (Contractor)	Mr. David Kong	2137 5522
Project Manager (Contractor)	Mr. Alan Tam	9161 2991
Site Agent (Contractor)	Mr. K I Mok	9813 9599
Environmental Team Leader (Babtie Asia Limited)	Mr. Mark Cheung	2738 3803
Independent Environmental Checker (BMT Asia Pacific Ltd)	Ms. Lyn Ip	2241 9812