

APPENDIX A

TREE SURVEY & FELLING REPORT

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1 INTRODUCTION

Background

- 1.1 Hong Kong and China Gas Co. Ltd. (HKCG) devised a development plan for Eastern Transmission Pipeline (ETP) to install a high pressure pipework of about 24 km connecting the existing Offtake & Pigging Station at Shatin North via the proposed Sai O Offtake & Pigging Station and along the Sai Sha Road via Sai Kung to Tseng Lan Shue Offtake & Pigging Station proposed at Anderson Road. ETP is a high-pressure (35 bar) pipeline and pipeline will be laid underground for safety purpose.
- 1.2 A section of the ETP project with 600 mm diameter is to be extended from the existing pipe end near Hang On Estate, Ma On Shan and runs along the verge of Road T7 at Ma On Shan and connected to the proposed Sai O Offtake & Pigging Station near Ning Ming Road.
- 1.3 A section of pipeline of 365m with a diameter of 600mm adjacent to Kam Ying Court in Ma On Shan originally aligned along the verge of Road T7 on the northwest side falls within the future expressway limit and is prohibited by the Expressway Ordinance unless otherwise exemption or waiver is granted.
- 1.4 In order to avoid encroaching into the future expressway limit, the alignment should be further offset to the southeast side to run around the existing service reservoir at an elevation from about 76mPD to 100mPD. Consequently, a section of 120m long of pipeline will inevitably encroach into the boundary of the Ma On Shan Country Park. The affected area is shown in Figure 1.
- 1.5 Cinotech Consultants Limited was commissioned by Hong Kong Towngas Limited via CH2M HILL (China) Limited to conduct a tree survey for the project.
- 1.6 Tree survey was conducted between 13th and 23rd December 2002. A total of 161 trees with 10 different species were recorded in this survey.
- 1.7 This tree survey was carried out in accordance with Works Branch Technical Circular (WBTC) No. 14/2002 to assess the trees affected by the Project.

Objectives of the Tree Survey

- 1.8 The objectives of this Tree Survey Report are as follows:
 - To provide an inventory of existing trees in the study area;
 - To prepare a topographical survey plan showing the locations of the trees;
 - To assess the current status of the trees within the study area;
 - To provide recommendations on relocation or felling of affected trees.

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2 SURVEY METHODOLOGY

- 2.1 All trees within and about 5 m outside the work site boundary (if necessary) were surveyed in accordance with WBTC No.14/2002. Individual tree's location, height, spread and girth were recorded. All trees were also clearly marked with label for future field reference.
- 2.2 The current health status of the individual trees was noted. Its condition was evaluated according to the following criteria (Webb 1991¹):
- trees of attractive form, large size and in good health are classified as excellent;
 - trees of good form, moderate to large size and in good health are classified as good;
 - trees of reasonable form, with few or no visible defects or health problems are classified as being fair;
 - trees which are of poor form, badly damaged or clearly suffering from decay, die back or the effects of very heavy vine growth are classified as poor.
- 2.3 The selection of trees to be transplanted is on the basis of the following factors:
- the location of the tree;
 - the species, form, health and amenity value of the tree;
 - the ease and practicability of transplanting; and
 - the survival rate following transplanting.
- 2.4 If the trees are identified to be felled and not transplanted, they are either of a species not suitable for transplanting, access to them is difficult, or the individual tree's form, health and amenity value are considered below acceptable standard.

3 TREE RETENTION, TRANSPLANTING AND FELLING PROPOSALS

Tree Survey Findings

- 3.1 The tree survey was conducted in December 2002. A total of 161 tree individuals with 10 different species were identified.
- 3.2 The 10 species are *Acacia auriculiformis*; *Acacia confusa*; *Acacia mangium*; *Acronychia pedunculata*; *Albizia lebbek*; *Eucalyptus torelliana*; *Pinus elliottii*; *Schefflera octophylla*; *Tristania conferta* and *Zanthoxylum avicennae*.
- 3.3 Detailed survey results are shown in Appendix A. The photographic records of the trees are included in Appendix B.
- 3.4 The location of marked trees was showed in Figure 2.
- 3.5 In this survey, most of the trees (138 out of 161, or 85%) were found good condition. Only one of these trees was found dead and its species could not be identified.

¹ Webb, R. 1991. Tree Planting & Maintenance in Hong Kong, Government Printer.

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Recommendations

- 3.6 The current proposed pipeline is located at Ma On Shan Country Park due to the future expressway limit of Road T7. In order to minimize the number of trees to be affected by the proposed work, the design for the pipeline alignment has been critical reviewed after the tree surveys have been conducted.
- 3.7 In this survey, a total of 161 maybe affected by the proposed works. After the critical consideration for the alignment of the pipeline, a total of 64 tree individuals are recommended to be retained and 97 tree individuals are recommended to be felled.
- 3.8 No transplantation of trees is recommended in this survey study due to the site constraints and limitations of works sequences required for this project. However, compensatory planting in a ratio not less than 1:1 are proposed to compensate for the tree loss. In general, native species could be replanted. Details of the compensatory trees proposal will be subject to the discussion and liaison with AFCD during construction stages.
- 3.9 Table 4.1 summarizes the tree retention, transplanting and felling proposals.

Table 4.1 Summary of the Tree Survey

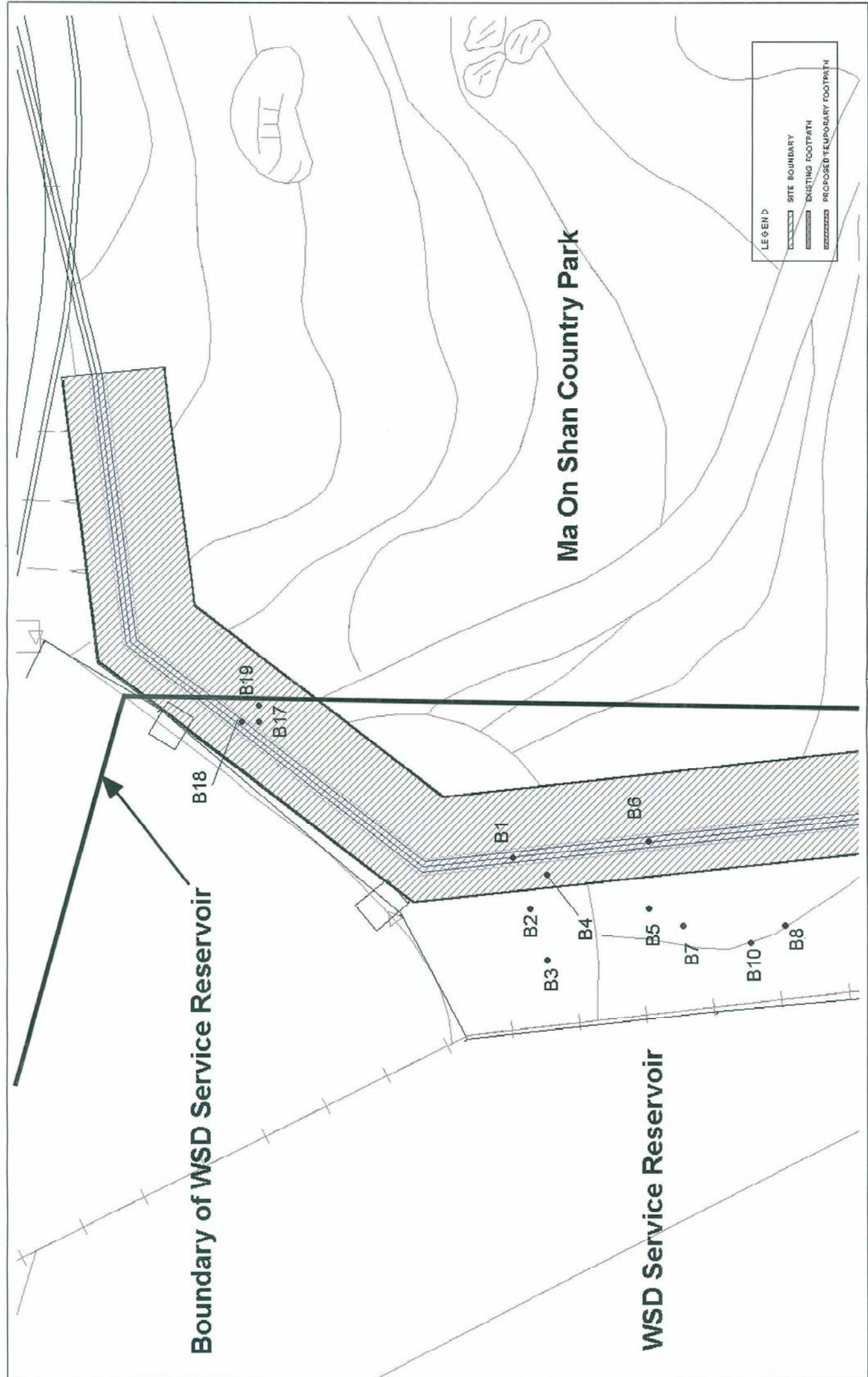
Location	No. of trees surveyed for the works	No. of trees proposed to be retained	No. of trees proposed to be felled	No. of trees proposed to be compensated
As shown in Figures 2	161	64	97	Not less than 1:1 ratio

4 CONCLUSION

- 4.1 In this surveyed, a total of 161 tree individuals were surveyed with 10 tree species were identified.
- 4.2 A total of 64 trees are recommended to be retained and no transplanting is recommended for the project.
- 4.3 A total of 97 trees are recommended to be felled, as one of them was dead and the others are either in poor conditions or they are not suitable for transplant. Therefore, a compensatory planting in a ratio not less than 1:1 are recommended to compensate for the tree loss.



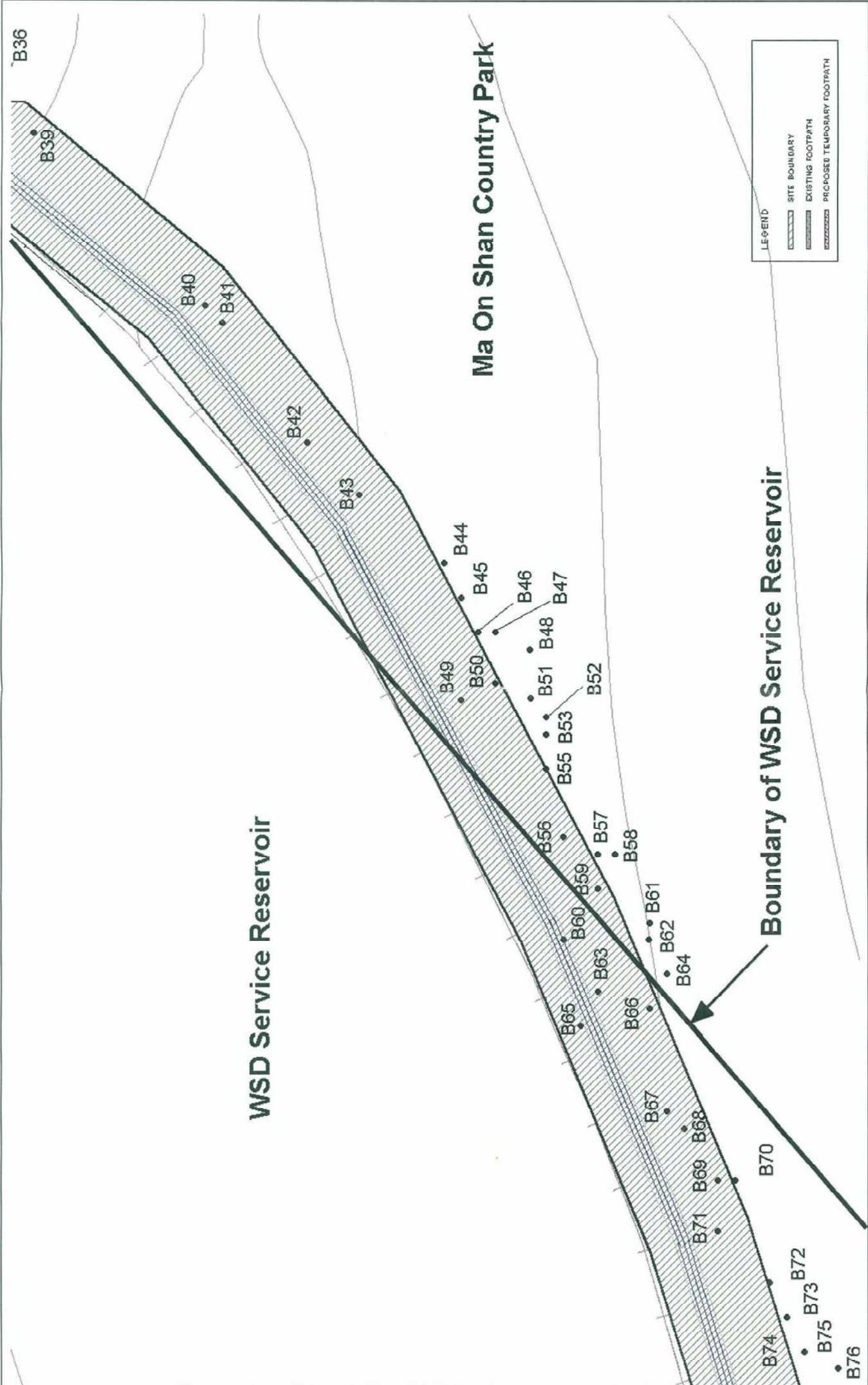
Title: Proposed Realigned Section of ETP-T7 Pipeline overlay onto Aerial Photo		CH2M-IDC Hong Kong Limited	
Project: Proposed Installation of High Pressure Gas Pipeline (Chainage 3650 to Chainage 3750 of Road T7 Section) in Ma On Shan Country Park		Scale: NTS	Figure: 1b



Title	EIA FOR HIGH PRESSURE GAS PIPELINE INSIDE MA ON SHAN COUNTRY PARK TOPOGRAPHIC & TREE FELLING SURVEY			Scale	1 : 200	Date	FEB 2003							
	TREE SURVEY PLAN										Figure No.	2a	Project No.	TS2047



Title	EIA FOR HIGH PRESSURE GAS PIPELINE INSIDE MA ON SHAN COUNTRY PARK TOPOGRAPHIC & TREE FELLING SURVEY			Date		FEB 2003		CH2M HILL		CINOTECH	
	TREE SURVEY PLAN			Scale	1 : 200	Figure No.	2b	Project No.	TS2047	Towngas	

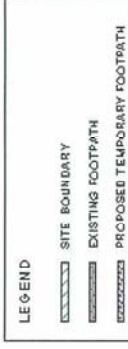


Title	EIA FOR HIGH PRESSURE GAS PIPELINE INSIDE MA ON SHAN COUNTRY PARK TOPOGRAPHIC & TREE FELLING SURVEY		Scale	1 : 200	Date	FEB 2003	CH2M HILL CINOTECH	
	TREE SURVEY PLAN		Figure No.	2c	Project No.	TS2047	Towngas	

WSD Service Reservoir

Fence Wall of WSD Service Reservoir

G/IC Zone



Scale	Date
1 : 200	JAN 2002
Figure No.	Project No.
2d	TS2047

EIA FOR HIGH PRESSURE GAS PIPELINE INSIDE
MA ON SHAN COUNTRY PARK TOPOGRAPHIC & TREE FELLING SURVEY

TREE SURVEY PLAN



WSD Service Reservoir

Fence Wall of WSD Service Reservoir

G/LC Zone

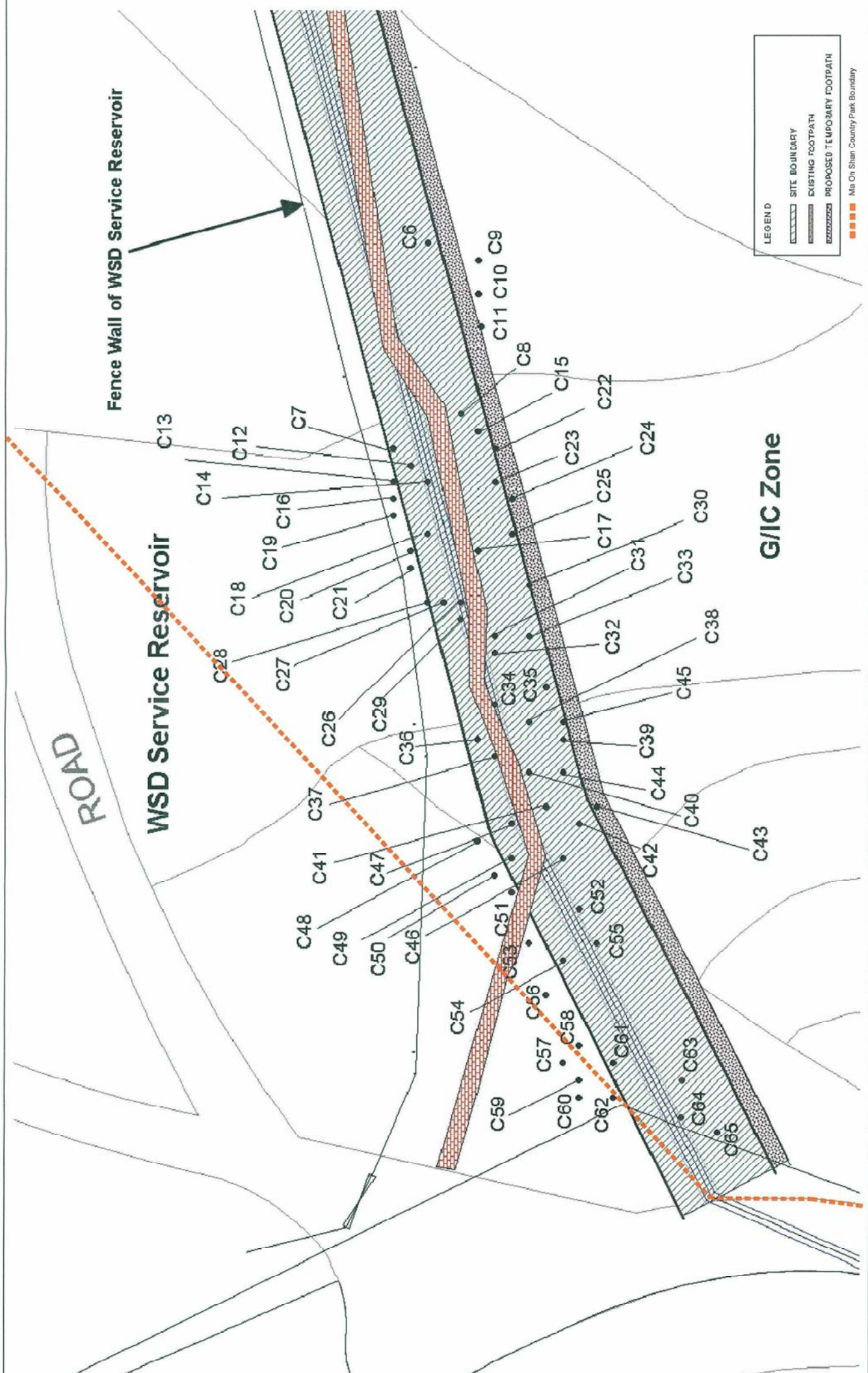





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EIA FOR HIGH PRESSURE GAS PIPELINE INSIDE
MA ON SHAN COUNTRY PARK TOPOGRAPHIC & TREE FELLING SURVEY

TREE SURVEY PLAN

Scale	1 : 200	Date	JAN 2002
Figure No.	2e	Project No.	TS2047



Title	EIA FOR HIGH PRESSURE GAS PIPELINE INSIDE MA ON SHAN COUNTRY PARK TOPOGRAPHIC & TREE FELLING SURVEY		Scale 1 : 200	Date JAN 2002	  
	Figure No.	2f	Project No. TS2047		
TREE SURVEY PLAN					

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