Intermodal Logistics Centre at Enfield

APPENDIX L

Utilities, Energy and Services Assessment

Site Sewer and Water Investigations

PREFACE

The technical working papers for the proposed ILC at Enfield were prepared during the first half of 2005. These were prepared in response to the requirements for the preparation of an Environmental Impact Statement (EIS) under Part 4 of the Environmental Planning & Assessment Act, 1979 (EP&A Act). Specific requirements for the EIS were issued on 1 March 2005 by the (then) Director- General of Infrastructure, Planning and Natural Resources.

The EP& A Act was amended on 1 August 2005 by the creation of Part 3A of the Act, and the Department of Infrastructure, Planning and Natural Resources was dissolved on 26 August 2005 and replaced by the Department of Planning and the Department of Natural Resources.

The proposed ILC at Enfield has since been declared a major project, pursuant to SEPP (Major Projects) 2005 and Sydney Ports has subsequently lodged an application under Part 3A of the Act.

Editorial changes to the technical working papers to reflect the changes in legislation or changes in Government departments have not been made.

The following should be considered when reading the technical papers:

- The Director-General's requirements issued under Part 4 are now deemed to have been issued under Part 3A, and any reference to the Director-General's requirements should be read as a reference to Director-General's requirements issued under Part 3A;

- Any reference to an EIS under Part 4 of the Act should be read as a reference to an Environmental Assessment under Part 3A of the Act;

- Any reference to the Department of Infrastructure, Planning and Natural Resources should be read as a reference to either the Department of Planning or the Department of Natural Resources, as appropriate.

Sinclair Knight Merz

Intermodal Logistic Centre - Enfield

Utilities, Energy and Services Assessment

Sinclair Knight Merz

Intermodal Logistic Centre - Enfield

Utilities, Energy and Services Assessment

June 2005

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Job number 84493/00

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Document Verification

Job title	Intermodal Logistic Centre - Enfield		Job number 84493/00
Document title	Utilities, Energy and Services Assessment		File reference
Document ref			

Revision	Date				
Draft	15/04/05	Filename	0002 draft report draft DJL.doc		
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		Name	DJL	ISK	RAH
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Issue	09/05/05	Filename	0005Final Report DJL.doc		
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		Name	DJL	ISK	RAH
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			

Issue Document Verification with Document ✓

CONTENTS

1. SUMMARY OF RECOMMENDATIONS

There are a number of existing utilities within the proposed Intermodal Logistics Centre (ILC) development area. Some of these utilities will be made redundant with the new development; others will remain active and therefore require further investigation and incorporation in the detailed design of the proposed development.

Utilities that require further investigation and incorporation in the detailed design of the proposed ILC include (but not limited to):

- Qenos Ethylene Pipeline: This pipeline is located within an easement that runs along and within the northeastern boundary of the development. The restrictions of this easement may directly affect the design of the Light Commercial Area, Main Site Access Road, Southern Noise Walls and the Community and Ecological Area. A summary of the restrictions of this easement is provided in Appendix C.

  As this pipeline could greatly impact on key components of the ILC design it is recommended that early investigation be undertaken. This investigation should include:

  - Detection and engineering survey of the pipeline to confirmation the location shown on the Arup sketches SK001 to SK004 inclusive,
  - Potholing to determine the depth of the pipe at critical points (eg Main Site Access),
  - Legal opinion on the restrictions on development applicable under this easement,
  - Review and incorporation of this information into future detailed design of the Light Commercial Area, Main Site Access Road, Southern Noise Walls and the Community and Ecological Area.

- Telstra Cables: There are two Telstra cables that enter the development. One cable crosses the southwestern boundary near the southern end of Wenthworth Street, the other near crosses the eastern boundary opposite Pilcher Street.

  The Pilcher Street cable provides services to the Toll Lease. These services will need to be maintained therefore the cable should be located, surveyed, and provisions made for the cable's protection or relocation during the detailed design of the structures and earthworks between the Toll Lease and the eastern site boundary.

  The Wenthworth Street cable may be utilised to provide an alternate connection for the site to the Telstra network. Until the cables future use is confirmed, the cable should be located, surveyed, and provisions made for the cable's protection or relocation during the detailed design of the Empty Container Area.

- Agility Natural Gas Pipelines: There are a number of gas pipelines that run along Wentworth Street and Cosgrove Road. These lines include low-pressure (7kPa, 210kPa) and high-pressure (secondary) mains. These lines should be located, surveyed and provisions made for the pipeline's protection, relocation and or avoidance during detailed design of either of the site accesses.

- Railway Infrastructure: Much of the infrastructure of the former Enfield Marshalling Yard site will be made redundant with the ILC development. A check should be made prior to decommissioning and removal of this infrastructure, that the infrastructure is not needed for the operation of the rail yard to the west of the ILC site.

In addition, the signalling cable running east-west near Punchbowl Road should be located, surveyed and, if required, provisions made for the cable's protection, relocation or avoidance during the detailed design of the Community and Ecological Area.

Also, the signalling cable that runs along the western boundary of the site may be located within the ILC site. This cable should be located, surveyed and, if required, provisions made for the cable's protection, relocation or avoidance during the detailed design of the ILC rail sidings.

- Energy Australia Power Lines: There is an underground power cable that enters the site near Pilcher Street within an existing Energy Australia Easement. This line services the existing Toll Lease and should be located, surveyed and provisions made for the line's protection, relocation or avoidance during detailed design of the structures and earthworks between the Toll Lease and the eastern site boundary.

  In additional, a high-tension overhead transmission line and its support structure is located in the northern end of the site. This line and its support structure should be surveyed and considered during detailed design of the northern corner of the site.

- Railway Infrastructure for Wheel Lathe operation: On review of the Concept Design Layout drawing (SEDP003K) and the Plan of Existing Services drawing (SENP052A) it is apparent that much of the railway infrastructure needed for the Wheel Lathe operation will be replaced as part of the construction of the new Wheel Lathe access. During detailed design a check should be undertaken to ensure that none of the existing infrastructure is required for the future operation of the Wheel Lathe area.

As a component of the future detailed design of the ILC development, a detailed utilities search should be undertaken to identify all the utilities within the site. This detailed information should then be review against the current ILC proposal to ensure that utilities are not affected.

Also during detailed design, further investigation is required to confirm that utility companies, such as electricity, telecommunications and gas, are able to service the estimated demands of the site.

2. INTRODUCTION

In late 2001 Sydney Ports Corporation (SPC) put forward a proposal for a development on the former Enfield Marshalling Yard site, South Strathfield. Based on this proposal, planning and investigation continued until March 2002 when the development was suspended pending an independent review by the Hon Milton Morris AO.

Following this review, SPC revised its previous proposal to a 300,000 TEU Intermodal Logistics Centre (ILC) with associated container handling facilities. SPC recommenced planning and commissioned Sinclair Knight Merz (SKM) to undertake preparation for an EIS for the revised proposal.

As a component of the EIS, Sinclair Knight Merz (SKM) engaged the services of Arup to undertake a Utilities, Energy and Services Assessment of the proposed ILC focusing on electricity, gas, communications and railway infrastructure.

3. EXISTING INFORMATION

As part of the original investigation, existing infrastructure information was collected and included within the SKM Report "Site Development and Access Report", April 2002. This document, forwarded to Arup, outline the location of existing services within the site and the effect of these services on the previous proposal.

In addition to this document, existing site infrastructure was presented on various drawings provided by SKM (as received via email on 3 March 2005) and in the 1999 report "Major Land Sale Programme, RAC Metropolitan South Region, Enfield Marshalling Yard", prepared by Rail Services Australia for Rail Estate. The drawing SENP052A.dwg (with associated reference files) was used as the base drawing for representing all the existing services for the site.

"Chapter 4 – Project Description" of the EIS (as received via email on 31 May 2005), Concept Design drawing SEDP003K and "Operational and Construction Assumption – TREC" document (as received via email on 7 April 2005) were used to estimate the service demands of the proposed ILC.

4. UTILITIES SEARCH

In March 2005 a "Dial Before You Dig" utility search enquiry was lodged for the proposed ILC site including the surrounding Norfolk Road and Cosgrove Road areas (Search Job Number 1637865). All asset owners within the proposed development area were notified and utility information received. This utility information was added to the Arup drawings SK001 to SK004 inclusive, using SENP052A.dwg as its base (refer to Appendix A) and SEDP003K as its bases (refer to Appendix B).

4.1 Telecommunications

4.1.1 Telstra

Arup has received a digital file from Telstra containing its utility information for the ILC development area. This information has been incorporated in the Arup Utilities Assessment drawings.

4.1.1.1 Location and Development Impacts

Refer to Arup sketches in Appendix A and B.

Telstra utilities are located on Norfolk Road, Wentworth Street and Cosgrove Road. These could be affected if any road/intersection upgrades occur as part of the ILC proposal. If these works occur, further design development of these road upgrades is required, together with onsite service location, to determine if protection, relocation or avoidance is required.

In addition to the above, there are Telstra services that connect to the area currently occupied by Toll Holdings lease. These connections enter the ILC site off Cosgrove Road at approximately the proposed Eastern Site Access Road. These connections will require onsite location and provisions made for protection or relocation during detailed design.

The Telstra plans also show a line travelling northeast from near the end of Wentworth Street, crossing through the existing Freight Corp Marshalling Yard tracks onto the ILC site. The location of this line should be confirmed onsite and considered during detailed design.

Consultation is required with Telstra for the relocation, protection and/or avoidance of cables.

4.1.2 Optus

Optus utilities plans have been received and incorporated in the Arup Utilities Assessment drawings.

4.1.2.1 Location and Development Impacts

Refer to Arup sketches in Appendix A and B.

Optus utilities are located along Roberts Road within the vicinity of the Hume Highway intersection. These utilities are outside the proposed ILC development area and are unlikely to be affected.

4.1.3 Ue Comm

Ue Comm utilities plans have been received and incorporated in the Arup Utilities Assessment drawings.

4.1.3.1 Location and Development Impacts

Refer to Arup sketches in Appendix A and B.

Ue Comm utilities are located along Hume Highway within the vicinity of the Roberts Road intersection. These utilities are outside the proposed ILC development area and are unlikely to be affected.

4.1.4 Visionstream

Visionstream utilities plans have been received and incorporated in the Arup Utilities Assessment drawings.

4.1.4.1 Location and Development Impacts

Refer to Arup sketches in Appendix A and B.

Visionstream utilities are located along Punchbowl Road within the vicinity of the Cosgrove Road intersection. These utilities are outside the proposed ILC development area and are unlikely to be affected.

4.1.5 Roads and Traffic Authority

RTA utilities information have been received and reviewed by Arup.

4.1.5.1 Location and Development Impacts

The RTA has traffic signal utilities on Punchbowl Road/Cosgrove Road and Hume Highway/Roberts Road/Centenary Drive intersections. These utilities are outside the proposed ILC development area and are unlikely to be affected.

4.2 Gas

4.2.1 Agility

Agility utilities plans have been received and incorporated in the Arup Utilities Assessment drawings.

4.2.1.1 Location and Development Impacts

Refer to Arup sketches in Appendix A and B.

There are various sections of Agility lines, both high-pressure and low-pressure, that run along Cosgrove Road. The section of high-pressure (secondary) main between Pilcher and Punchbowl road runs along the western side of Cosgrove Road. This section of pipe could affect the proposed light commercial development fronting Cosgrove Road as well as works associated with any upgrade of the Cosgrove Road site entry. Onsite location of this main is required for further design to determine if protection, relocation or avoidance are required.

Agility high-pressure (secondary) and low-pressure (210kPa and 7kPa) lines run along sections of Wentworth Street. These lines could be affected depending on the extent of works

for the Western Site Access Road. Onsite location of these mains is required for further design of this access to determine if protection, relocation or avoidance of the mains are required.

If any road/intersection upgrades occur as part of the ILC proposal on Cosgrove Road/Hume Highway intersection or Norfolk Road/Roberts Road intersection then onsite location would be required to determine if protection, relocation or avoidance is required.

Consultation is required with Agility for the relocation, protection or avoidance of pipelines.

4.2.2 Savcor Art Ltd

Savcor Art Ltd maintains the ethylene gas pipeline for Qenos Pty Ltd (previously referred to as Orica). Savcor do not provide utility plans for the ethylene pipeline.

4.2.2.1 Location and Development Impacts

Refer to Arup sketches in Appendix A and B.

The location of the pipeline shown on these drawings originates from SENP052A.dwg. This indicative location, confirmed verbally by David Watkins of Savcor, appears to run through the light industry/commercial development area of the proposed ILC development.

Savcor has advised that there are specific restrictions on civil works on Qenos Ethylene Pipeline Licensed Easement. A brief description of these restrictions has been provided by Sacvor and included in Appendix C. Further investigation into these restrictions and their effect on the light commercial development along Cosgrove Road is needed.

If survey plans of the pipeline location were required it would normally take 2-3 days to survey the pipeline. The survey cost would normally be covered by Qenos Pty Ltd subject to their approval.

4.3 Electricity

4.3.1 Energy Australia

Energy Australia plans have been received and incorporated in the Arup Utilities Assessment drawings.

4.3.1.1 Location and Development Impacts

Refer to Arup sketches in Appendix A and B.

Energy Australia (EA) utilities are located on Norfolk Road, Wentworth Street and Cosgrove Road. If any road/intersection upgrades occur as part of the ILC proposal on Cosgrove Road/Hume Highway intersection, Norfolk Road/Roberts Road intersection or the Western Site Access Road then onsite location of these lines is required for further design to determine if protection, relocation or avoidance of the mains are required.

In addition, there is a line that enters the ILC site near Pilcher Street. The location of this line and its associated easement is shown on EA Survey Plan 5428. Provisions for this line and easement will be required during detailed design.

EA also has overhead high voltage transmission lines that run across the northern end of the site. Provisions for these lines and their supporting structures will be required during detailed design.

4.4 Railway Infrastructure

Rail Corp (RIC) Metro South was notified as part of the Dial Before You Dig utilities enquiry. RIC do not store utility plans for the ILC development area (formally Enfield Marshalling Yards/DELEC Site). Details of the railway utilities were therefore acquired from previous information held by SPC/SKM namely the drawing SENP052A.dwg and the documents "Major Land Sale Programme, RAC Metropolitan South Region, Enfield Marshalling Yard" (excluding Appendix E), and SKM Report "Site Development and Access Report", April 2002.

These sources provide only general information and indicative locations of railway infrastructure on the proposed ILC site.

The ILC development removes much of the original Marshalling Yard/DELEC railway infrastructure. As a result much of the railway utilities in the area are therefore made redundant. The exception is the utilities for the operation of the Wheel Lathe area and its access track. During detailed design, further investigation is required to ascertain if any utilities required for the Wheel Lathe's future operation have to be relocated to the rail easement associated with the railway access track.

4.4.1 Signals

There is a major buried signalling cable that runs parallel to the western boundary of the ILC site. This cable, and its associated infrastructure, could conflict with the proposed through rail and rail sidings. Further investigation should be undertaken during detailed design to determine if protection or relocation are needed.

There is a buried cable just north of Punchbowl Road. Further investigation should be undertaken so that provisions for the cable location can be made during detailed design of the Ecological/Community Area.

There is also a buried cable the runs east west across the ILC site near Hope Street. It appears that this cable will become redundant as the proposed ILC development removes the existing rail lines on the eastern boundary.

4.4.2 Communications

Communication cables are generally located in the same underground conduits or above ground trays (GST) as used by the signalling cables. Therefore a similar treatment of the communication utilities is required.

4.4.3 High Voltage

The existing information suggests that there is a redundant high voltage line that runs north to south along the ILC site then east to west just south of Hope Street. During detailed design it should be confirmed that this line is in fact redundant and therefore to be removed during the construction of the ILC.

The existing information suggests that there is an active overhead line just north of Punchbowl Road. As this line traverses the ecological/community area an investigation is needed to assess if an alternative power source can be utilised to allow for the removal of the line.

4.4.4 Low Voltage

The existing information suggests that there is LV wiring within the ILC development. It is suggested that this wiring can be removed as long as provisions are made to maintain to power to the Wheel Lathe area.

5. ILC UTILITY SERVICE REQUIREMENTS

5.1 Electricity

5.1.1 Demand Estimates

Arup has prepared preliminary demand estimates for the ILC development based on the Enfield Site – Concept Design Layout (SEDP003K, 18/05/2005) and "Operational and Construction Assumption" – TREC, SKM 3/4/05. These preliminary estimates are listed in Appendix D.

5.1.2 Infrastructure Requirements

The ILC development is likely to require some upgrades of the existing Energy Australia (EA) Network. To establish the level of upgrades required, it is necessary to submit a request to EA. This request would typically cost $3,000-$4,000 and require the submission of an estimate of electricity demands. The preliminary estimate listed Appendix D, after review, would suffice. EA response should provide information on the supply available in the area, possible connection locations and network upgrades requirements.

5.2 Telecommunications

5.2.1 Demand Estimates

It is envisaged that the ILC development will not require a high level of telecommunication infrastructure as would be required by say a high-tech business park. Standard new telecommunication infrastructure should be adequate to provide telephone, data and broadband service to the ILC development.

5.2.2 Infrastructure Requirements

Depending on the negotiated contract between SPC and the telecommunication asset provider, any upgrades of external infrastructure to service the ILC development would generally be covered by the asset provider.

Although not necessary for internal distribution, it is suggested that two separate entry points are established on the telecommunications network. These two entry points allow for continued service in the event of damage to part of the network.

5.3 Gas

5.3.1 Demand Estimates

It is envisaged that the major gas demands for the ILC development stem from the forklifts used in the warehouses. This LPG gas demand will be serviced by a 4.3kL gas storage tank at each warehouse ("Operational and Construction Assumption" – TREC, SKM).

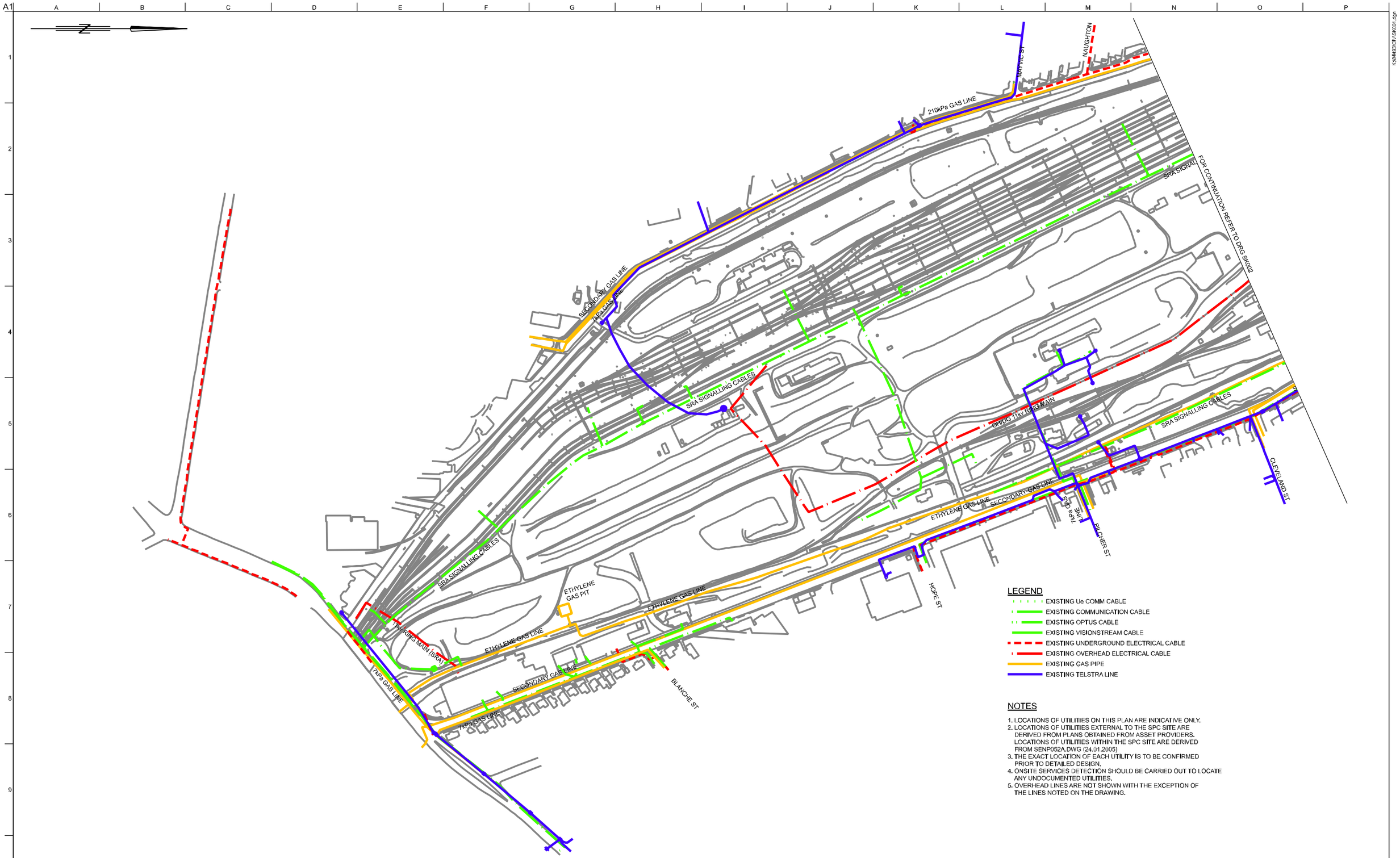
It is not envisaged that there will be a demand for natural gas on the site.

5.3.2 Infrastructure Requirements

If natural gas is required for the ILC development (for applications such as hot water heating for staff showers/lunch rooms or minor office heating), an application for gas connection is to be lodge with a natural gas asset provider. The asset provider will assess the gas demand estimates listed on the application, and then confirm the availability and other constraints for gas connection. Depending on the asset provider, this initial response is free of charge and would typically take 15 working days.

APPENDIX A

Existing Utilities Layout and Existing Site Plan SK001 and SK002



LEGEND

- EXISTING Ue COMM CABLE
- EXISTING COMMUNICATION CABLE
- EXISTING OPTUS CABLE
- EXISTING VISIONSTREAM CABLE
- EXISTING UNDERGROUND ELECTRICAL CABLE
- EXISTING OVERHEAD ELECTRICAL CABLE
- EXISTING GAS PIPE
- EXISTING TELSTRA LINE

NOTES

1. LOCATIONS OF UTILITIES ON THIS PLAN ARE INDICATIVE ONLY.
2. LOCATIONS OF UTILITIES EXTERNAL TO THE SPC SITE ARE DERIVED FROM PLANS OBTAINED FROM ASSET PROVIDERS. LOCATIONS OF UTILITIES WITHIN THE SPC SITE ARE DERIVED FROM SENP052A.DWG (24.01.2005)
3. THE EXACT LOCATION OF EACH UTILITY IS TO BE CONFIRMED PRIOR TO DETAILED DESIGN.
4. ONSITE SERVICES DETECTION SHOULD BE CARRIED OUT TO LOCATE ANY UNDOCUMENTED UTILITIES.
5. OVERHEAD LINES ARE NOT SHOWN WITH THE EXCEPTION OF THE LINES NOTED ON THE DRAWING.

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Issue	Date	By	Chkd	Appd
02	09/05/05	GD	DJL	ISK
	FINAL REPORT ISSUE			
01	15/04/05	GD	DJL	ISK
	PRELIMINARY ISSUE			

Client
SINCLAIR KNIGHT MERZ

Job Title
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Drawing Title
EXISTING UTILITIES LAYOUT AND EXISTING SITE PLAN SHEET 1 OF 2

Drawing Status
FOR INFORMATION ONLY

Job No	Drawing No	Issue
84493	SK001	02

A1

N

NORFOLK RD

FORD ST

11kv RING MAIN (SRA)

7kPa GAS LINE

4kPa GAS LINE

SECONDARY GAS LINE

OH/UG 11kv RING MAIN (SRA)

HIGH TENSION TRANSMISSION LINE

FOR CONTINUATION REFER TO DRG SK001

ETHYLENE GAS LINE

SRA SIGNALLING CABLES

2kPa GAS LINE

HIGH TENSION TRANSMISSION LINE

LEGEND

- EXISTING Ue COMM CABLE
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	FINAL REPORT ISSUE			
01	15/04/05	GD	DJL	ISK
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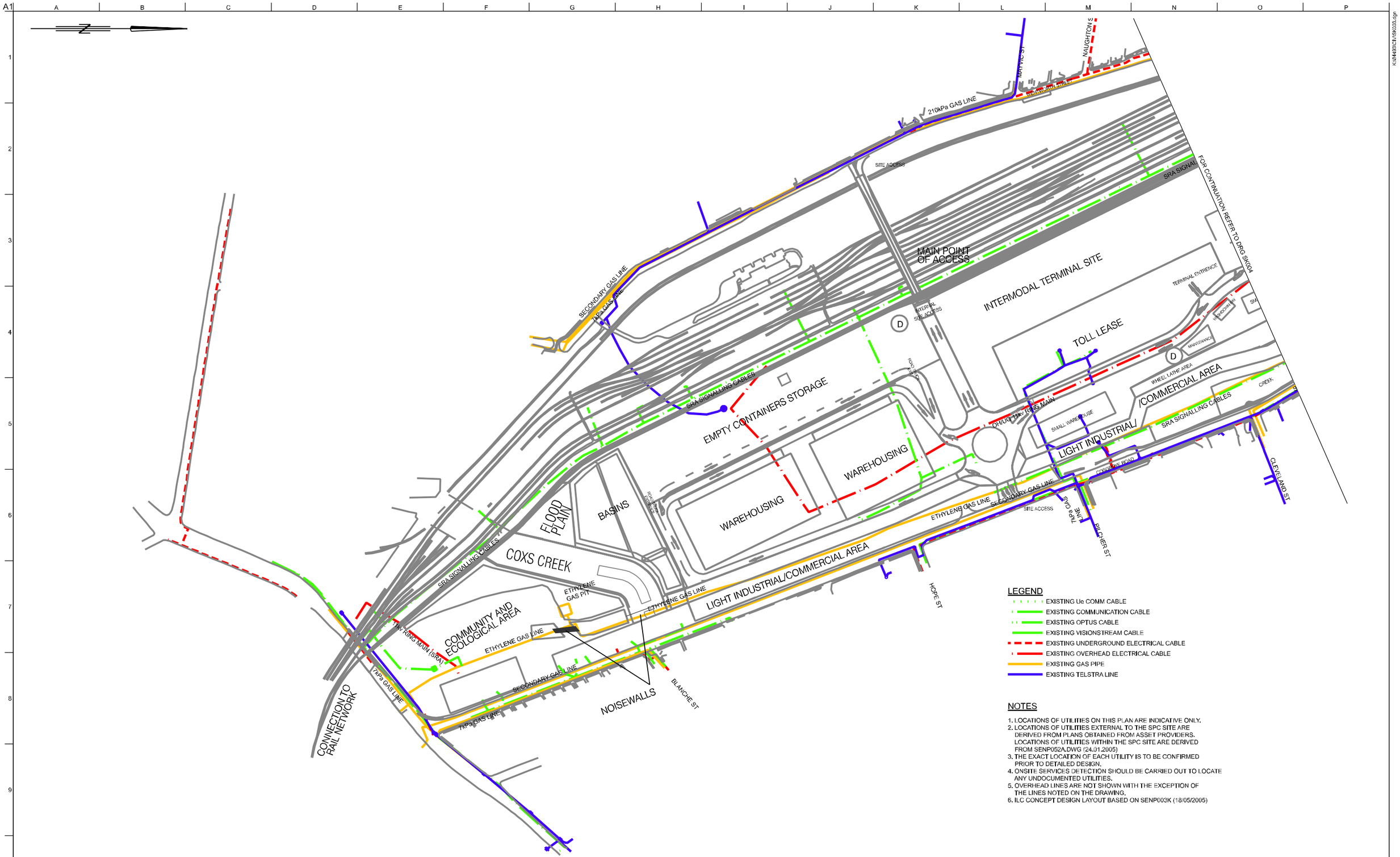
Drawing Title
EXISTING UTILITIES LAYOUT AND EXISTING SITE PLAN SHEET 2 OF 2

Drawing Status
FOR INFORMATION ONLY

Job No	Drawing No	Issue
84493	SK002	02

APPENDIX B

Existing Utilities Layout and ILC Concept Plan SK003 and SK004



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4. ONSITE SERVICES DETECTION SHOULD BE CARRIED OUT TO LOCATE ANY UNDOCUMENTED UTILITIES.
5. OVERHEAD LINES ARE NOT SHOWN WITH THE EXCEPTION OF THE LINES NOTED ON THE DRAWING.
6. ILC CONCEPT DESIGN LAYOUT BASED ON SENP003K (18/05/2005)

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Issue	Date	By	Chkd	Appd
02	31/05/05	GCD	DJL	ISK
UPDATED CONCEPT LAYOUT				
01	05/05/05	GD	DJL	ISK
ORIGINAL ISSUE				

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Drawing Title
EXISTING UTILITIES LAYOUT PLAN AND ILC CONCEPT DESIGN LAYOUT SHEET 1 OF 2

Drawing Status
FOR INFORMATION ONLY

Job No	Drawing No	Issue
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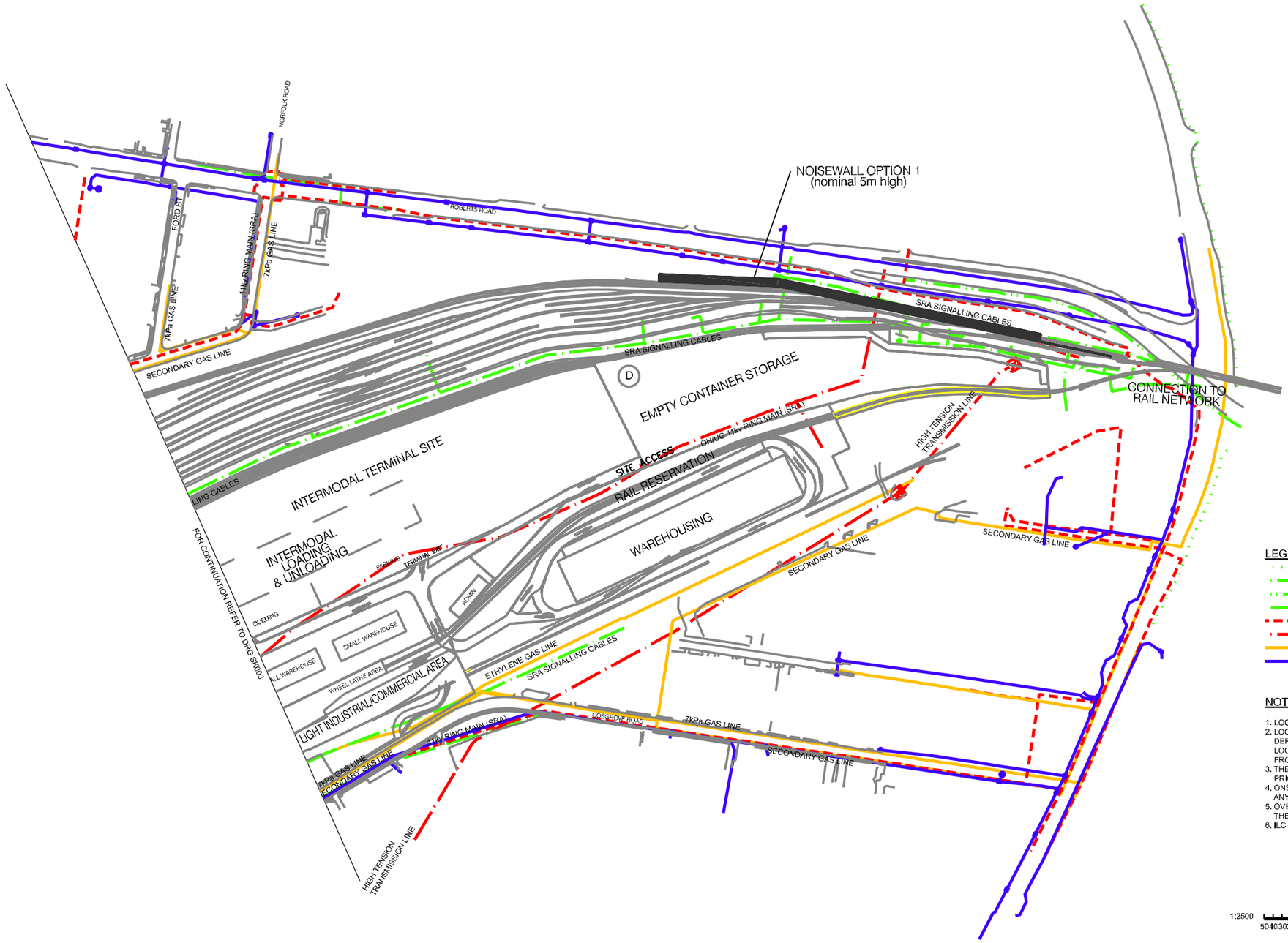

Issue	Date	By	Chkd	Appd
02	31/05/05	GCD	DJL	ISK
UPDATED CONCEPT LAYOUT				
01	05/05/05	GD	DJL	ISK
ORIGINAL ISSUE				

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Drawing Title
EXISTING UTILITIES LAYOUT PLAN AND ILC CONCEPT DESIGN LAYOUT SHEET 2 OF 2

Drawing Status
FOR INFORMATION ONLY

Job No	Drawing No	Issue
84493	SK004	02

APPENDIX C

Qenos Pty Ltd Requirements

SAVCOR

TO: THIRD PARTY CONTRACTORS

DATE:

RE: Qenos Pty Ltd requirements for Third Party Activities over the Qenos Pty Ltd Pipeline Easement.

Dear Sir,

Savcor ART Pty Ltd is contracted to Qenos Pty Ltd to patrol and maintain the Qenos Ethylene Pipeline.

Being buried underground, this pipeline is mainly invisible, except for the necessary warning signs which are placed along the route to inform any parties (such as persons excavating in the vicinity) of its presence. This pipeline is patrolled weekly from the ground to ensure that no activities (e.g. excavations, buildings etc) are being carried out over the pipeline easement, which may hinder the pipelines operations / maintenance.

Please note the following requirements of Qenos Pty Ltd when it is your intention to carry out civil work on the Qenos Ethylene Pipeline "Licensed Easement" (nominally at a width of 1 metre) as supplied here for your assistance in brief format only, and as such, must not be considered as the total requirements.

1. Final design to be approved by Qenos prior to any work over the easement commencing.

2. Detailed drawings of project design and its exact location to be supplied.

3. Minimum finished depth of cover to pipelines to be not less than 1200mm.

4. Developer MAY be required to fully expose pipeline for Qenos to inspect Pipeline coating and carry out any repairs to same in the area of the project. (A clearance of approximately 300mm is required around each pipeline to enable inspection and any repairs).

5. Developer to re-consolidate the ground after excavation; using fresh Sydney Washed River Sand to a minimum cover of 150mm around the pipelines prior to backfilling.

6. Excavations within 500mm of the pipeline to be carried out by hand (shovel) and not machine.
Note: Civil work required under para 4,5 & 6 above to be at the full cost of the Third Party Contractor.

7. All excavations over the easement to be supervised by Qenos or our Representative.

8. A minimum of one week's notice is required prior to commencement of major site works.

9. Vibrating rollers are not to be used over the pipeline easement, and the maximum static roller weight is 8 tonnes.

10. No underground services are to be run than 300mm to the pipeline.

11. Full personnel and vehicular access is required on the easement.

12. No trees to be planted on the easement.

13. Stormwater run off must not be discharged onto the easement.

For additional information please contact:-

Qenos Pty Ltd

Mr Mark Walker
Phone No. (02) 8336 1352
Fax No. (02) 8336 1385

Or

Savcor ART Pty Ltd

Mr David Watkins
Phone No. (02) 9663 2322
Fax No. (02) 9663 1377

DAVID WATKINS
PIPELINES SERVICES CO-ORDINATOR.

APPENDIX D

Preliminary Electrical Maximum Demand Calculations

Intermodal Logistics Centre Enfield

Preliminary Maximum Demand Calculations

Location	Area (Ha)	Area (msq)	Demand (W/msq)	Actual Demand (W)	Actual Demand (MW)
Toll Lease area	2.9	29000	10	290000	0.290
Wheel Lathe Area	1.1	11000	25	275000	0.275
Light Industrial/Commercial Area	3.0	30000	75	2250000	2.250
Warehousing (GFA)	5.7	57000	10	570000	0.570
Warehousing Zone	4.8	48000	1.0	48000	0.048
Administration Area	0.3	3200	1.0	3200	0.003
Road Pavement Area	2.4	24000	1.0	24000	0.024
Internal Circulation Paths	2.5	25000	1.0	25000	0.025
Rail Corridor/Siding Area	2.4	24000	0	0	0.000
Rail Reservation	1.3	13000	0	0	0.000
Empty Containers Storage	8.3	83000	4.0	332000	0.332
Intermodal Terminal Site	11.4	114000	4.0	456000	0.456
Landscaping Area	4.8	48000	0.2	9600	0.010
Creek Area	0.5	5000	0.11	550	0.001
Coxs Creek	1.7	17700	0.11	1947	0.002
Detention Basin Area	1.2	12400	0.083	1029	0.001
Community & Ecological Area	4.8	48000	0.021	1008	0.001
TOTALS	**59.2**	**592300**	**132.5**	**4287334.2**	**4.3**

Refrigeration Points

Total Refrigeration Points	Assumed Occupancy	Assumed Instantaneous Demand	Total Point Demand	Outlet Rating (A)	Actual Demand (A)	Actual Demand (MW)
85	80%	50%	34	32	1088	**0.704**

Total Electrical Demand	**4.99**
Add 20% spare capacity	**1.00**
TOTAL DEMAND	**6.0 MW**

Assumptions
Toll Lease area to be considered a warehouse
Relevant Rail Body to provide power to Rail Corridor/Siding Area
Cos Fi = 0.9
Assumed Occupancy and Instantaneous Demand rate for refrigeration points as per SPC statement in "Minor Comments on Draft of 9 May 2005"

APPENDIX E

Utility Authorities Contact List

Utility	Company	Contact Name	Number	
Telecoms	Telstra	Network Integrity Help Desk	02 9204 0989	Contact to arrange for engineering advice on the relocation, protection and/or avoidance of Telstra's cable.
Natural Gas	Agility	Mr Danny Guerrera, Agility Lands Services Officer	02 8977 6993	Contact to discuss possible engineering solutions for works near Agility's high-pressure pipelines.
Ethylene Gas	Qenos Pty Ltd	Mr Mark Walker	0418 522326.	Contact to arrange/authorise survey of Ethylene pipeline as well as easement restrictions.
Electricity	Energy Australia	Mr Cedric Halforty	02 9585 5663	Contact to arrange an assessment of the Energy Australia infrastructure required for servicing the ILC electrical demands.
Railway	RIC	Mr Suresh Kumar, RIC External Party	02 97528284	Contract to arrange a ground survey of existing railway infrastructure.