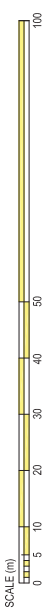
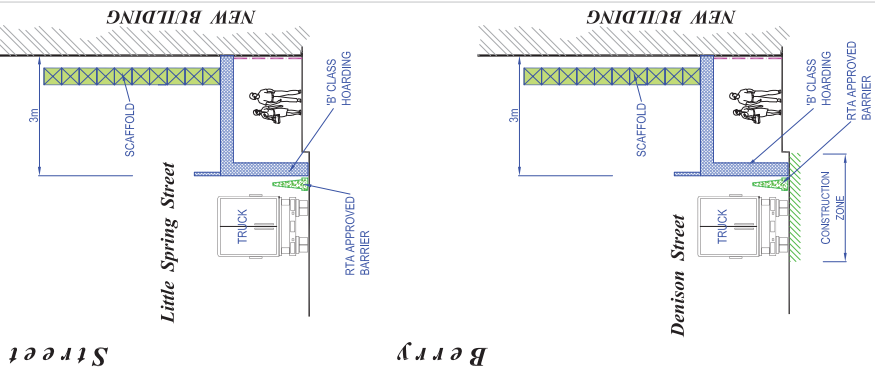
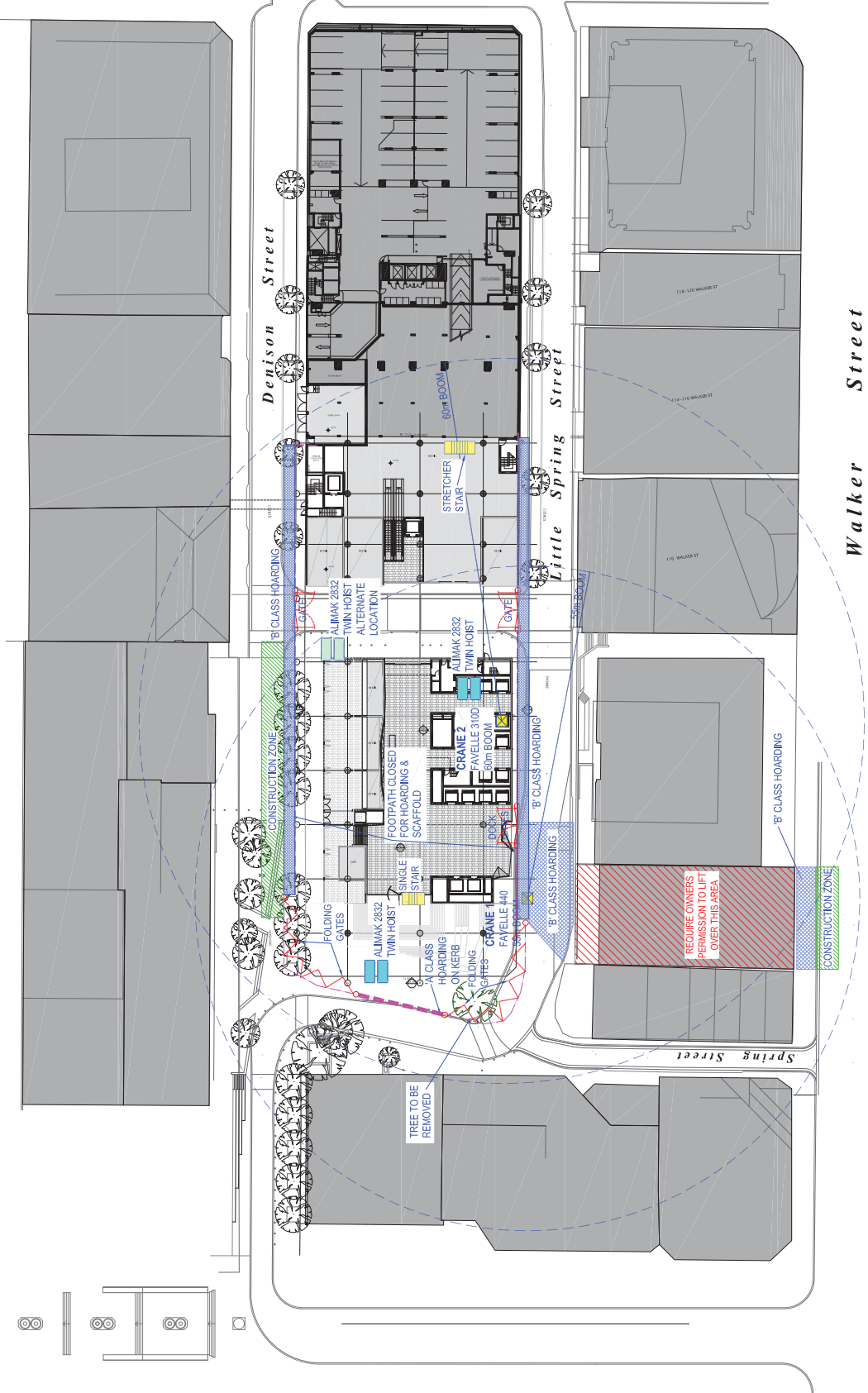




- LEGEND**
- UNLOADING BAY / CONSTRUCTION ZONE
 - A' CLASS HOARDING WITH FOOTPATH CLOSED
 - B' CLASS HOARDING
 - A' CLASS HOARDING



Project

1 DENISON STREET

Project

MATERIALS HANDLING

Drawn by

1 Denison St-410

Job No.

1 Denison St-410

Scale

1:100

Drawn by

1 Denison St-410

Job No.

1 Denison St-410

Scale

1:100

Drawn by

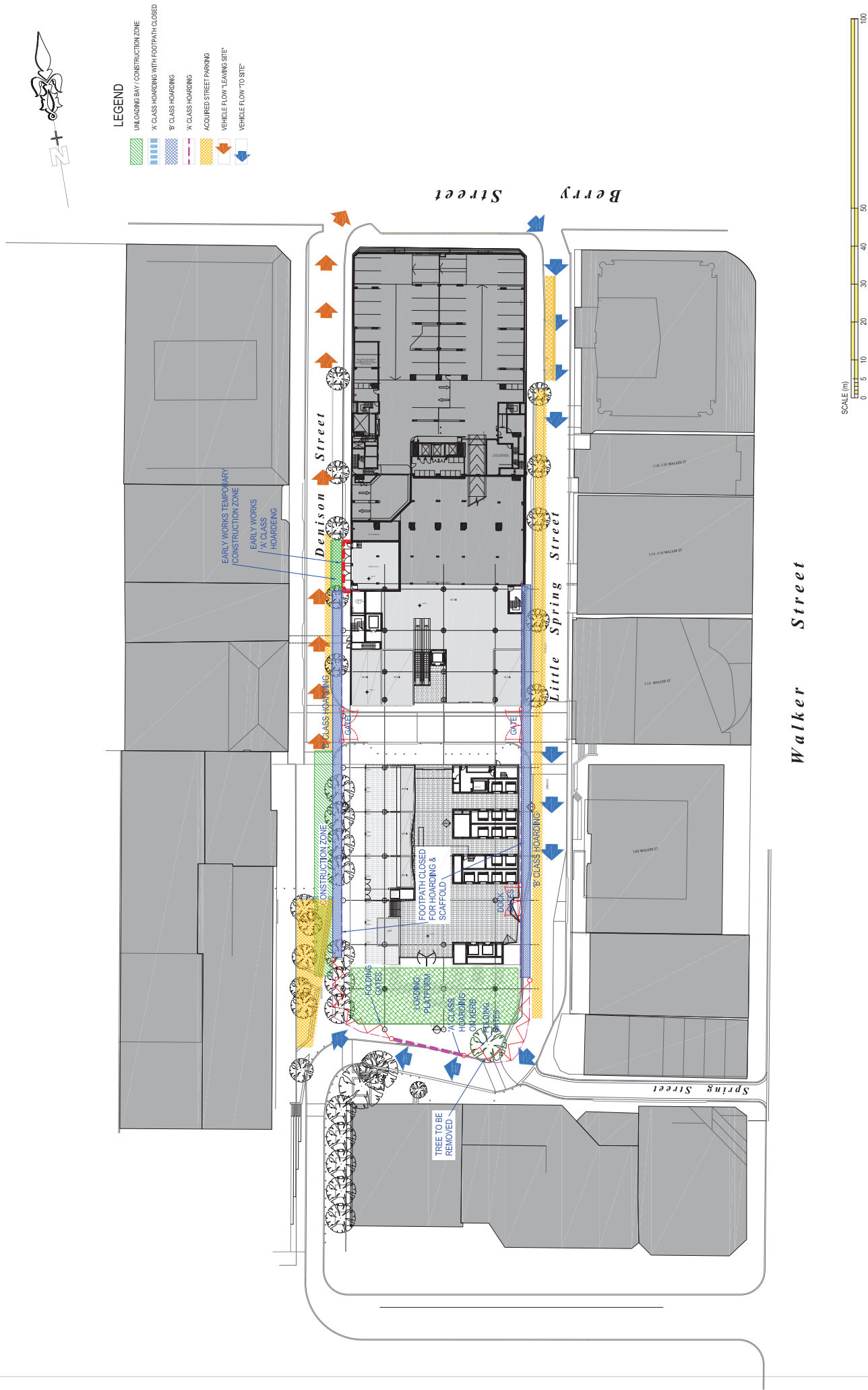
1 Denison St-410

Job No.

1 Denison St-410

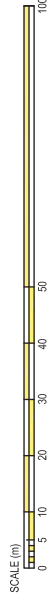
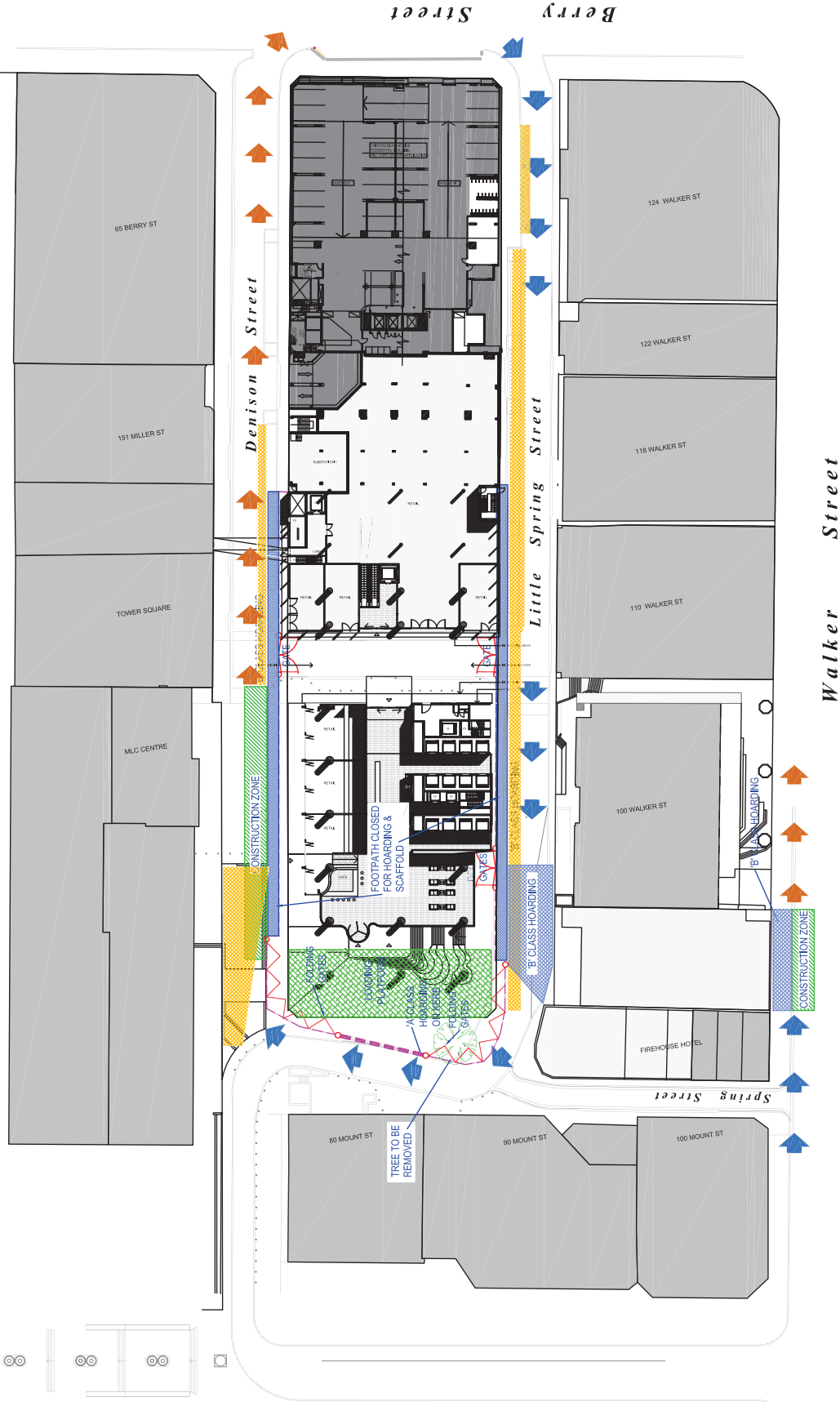
Scale

1:100





LEGEND	
	UNLOADING BAY / CONSTRUCTION ZONE
	A' CLASS HOARDING WITH FOOTPATH CLOSED
	B' CLASS HOARDING
	A' CLASS HOARDING
	ACQUIRED STREET PARKING
	VEHICLE FLOW "LEAVING SITE"
	VEHICLE FLOW "TO SITE"



Legend

Project

100%

Client	Brookfield Multiplex
Project Name	1 Denison St-402
Drawn	06/07/2017
Checked	A
Scale	1:100

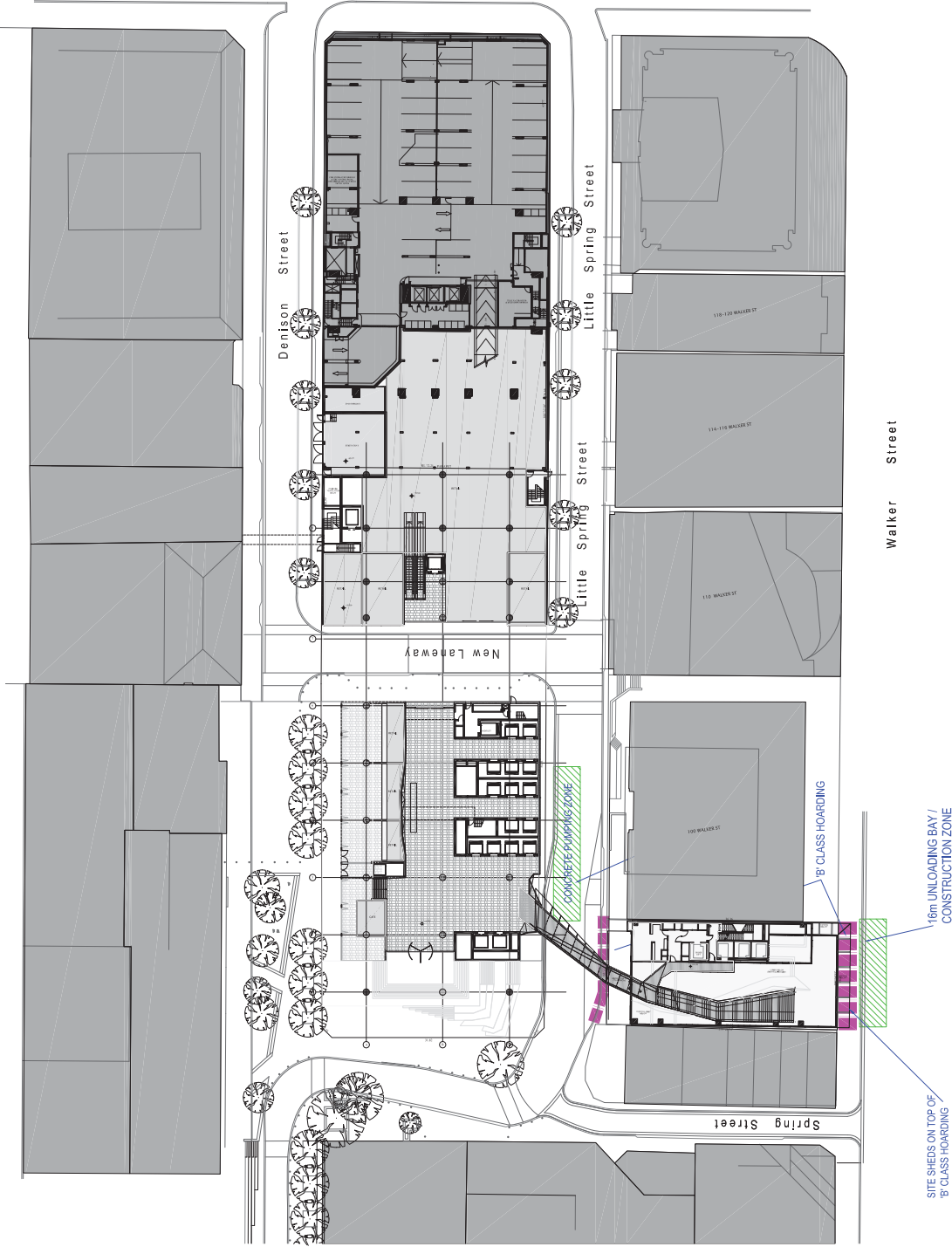
Brookfield MULTIPLEX
Brookfield Multiplex
Constructions Pty Ltd
No.1 KENT STREET, STONEY NSW, 2000
AUSTRALIA

1 DENISON STREET

TRAFFIC FLOW, CONSTRUCTION ZONES & HOARDINGS



- LEGEND**
- UNLOADING BAY / CONSTRUCTION ZONE
 - A' CLASS HOARDING WITH FOOTPATH CLOSED
 - B' CLASS HOARDING
 - A' CLASS HOARDING
 - VEHICLE FLOW "LEAVING SITE"
 - VEHICLE FLOW "TO SITE"
 - PEDESTRIAN FLOW



88 WALKER STREET

CONCRETE PUMPING & SITE AMENITIES

Project

Design Title

CONCRETE PUMPING & SITE AMENITIES

Job No.

1 Denison St-410

Scale

1:500

Drawn

10/10/2017

Checked

10/10/2017

Drawn

10/10/2017

Checked

10/10/2017

Drawn

10/10/2017

Checked

10/10/2017

Legend

Brookfield MULTIPLEX

Brookfield MULTIPLEX

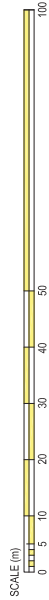
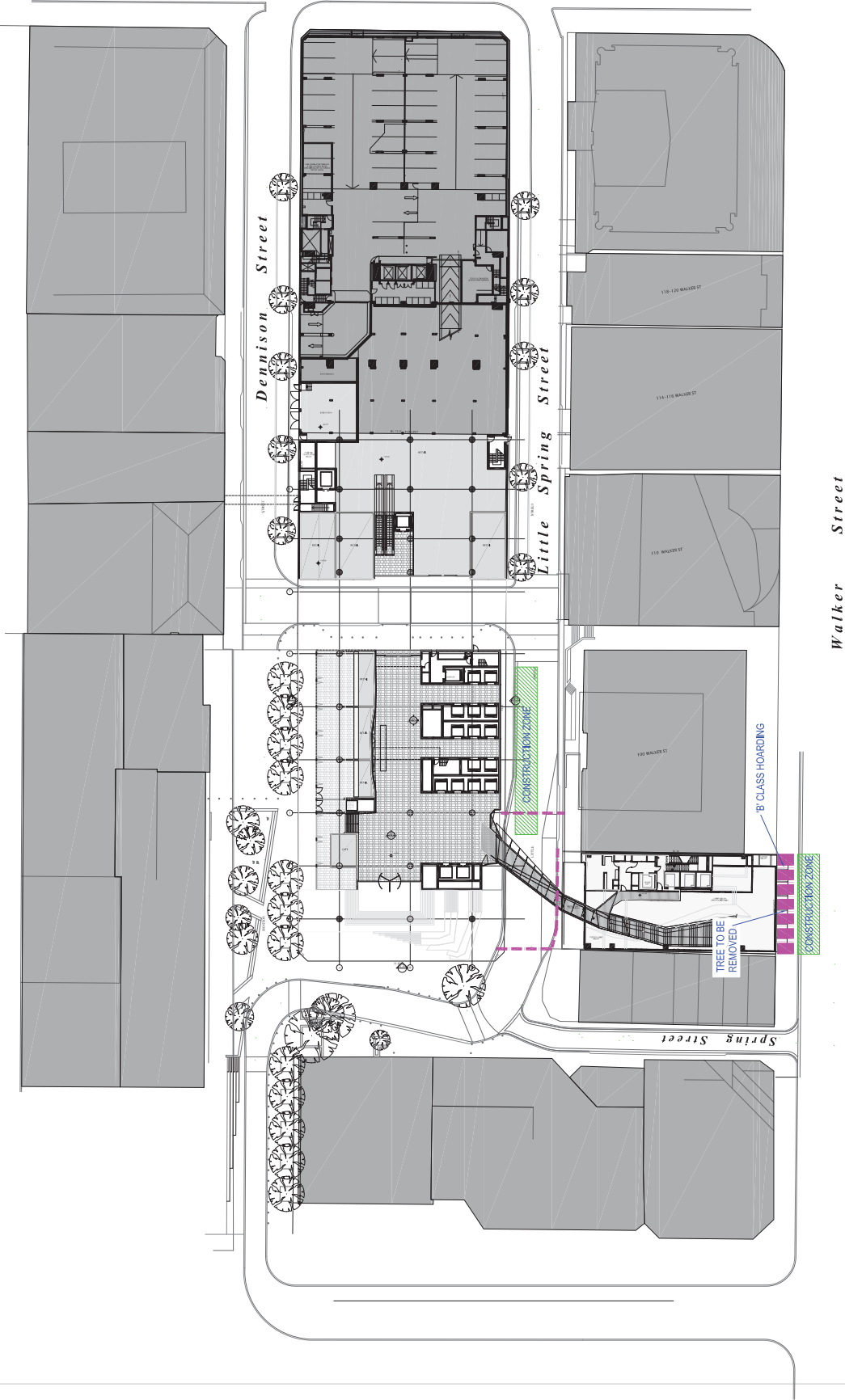
Constructors Pty Ltd

Level 25, 100 Spring Street, Sydney NSW 2000

Tel: 61 2 9222 2001 Fax: 61 2 9222 2001



- LEGEND**
- UNLOADING BAY / CONSTRUCTION ZONE
 - A' CLASS HOARDING WITH FOOTPATH CLOSED
 - B' CLASS HOARDING
 - A' CLASS HOARDING
 - VEHICLE FLOW "LEAVING SITE"
 - VEHICLE FLOW "TO SITE"



Legend

Project

Drawing Title
MATERIALS HANDLING
DEMOLITION / EXCAVATION STAGE

MATERIALS HANDLING DEMOLITION / EXCAVATION STAGE

88 WALKER STREET

**Brookfield
MULTIPLEX**

Brookfield MULTIPLEX
Constructions Pty Ltd
Level 25, 200 King Street, Sydney NSW 2000
Tel: 61 2 9322 2001 Fax: 61 2 9322 2001

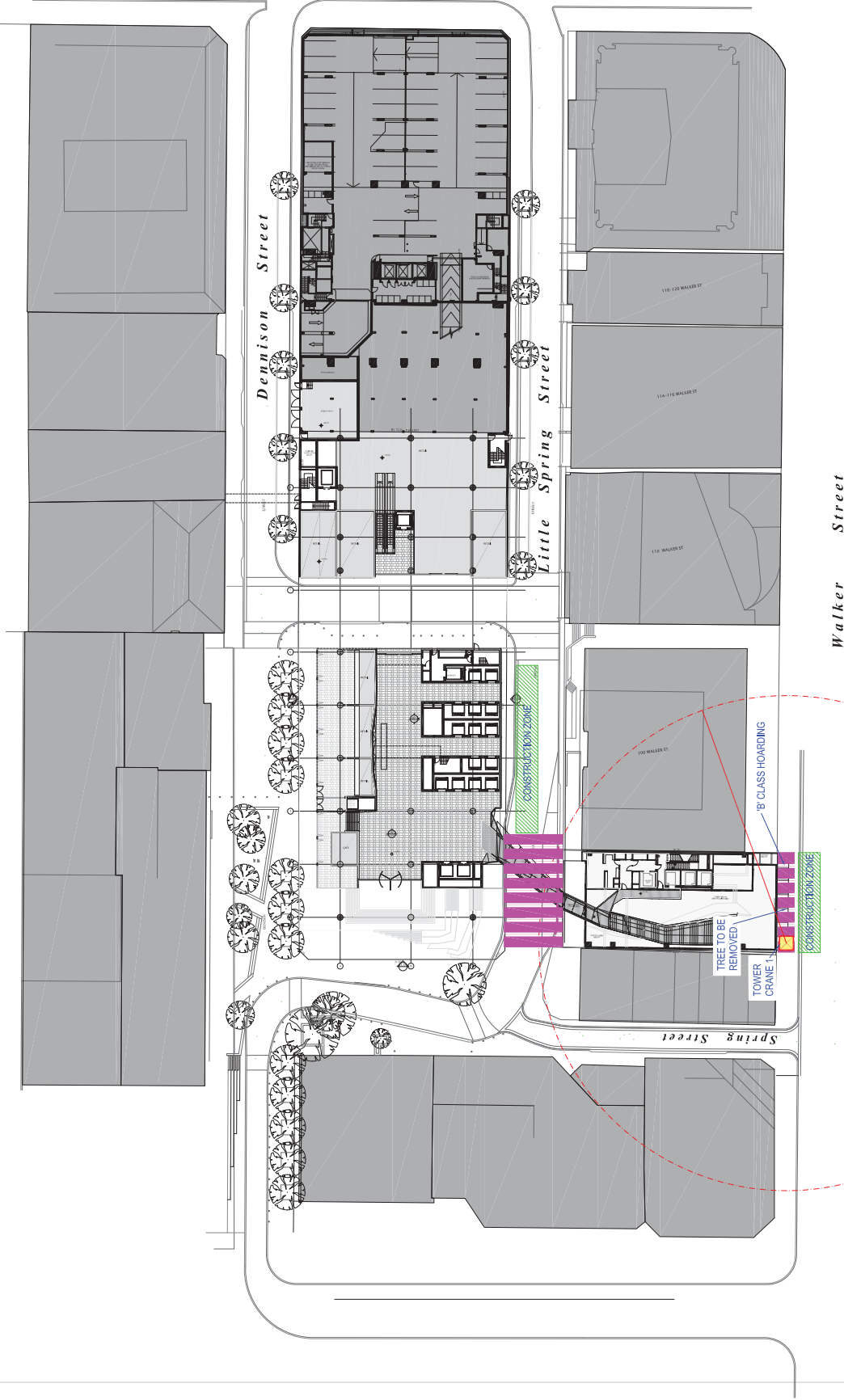


Job No. 1 Denham St-410
Date 1-04-2011
Sheet A

Sheet A



- LEGEND**
- UNLOADING BAY / CONSTRUCTION ZONE
 - A' CLASS HOARDING WITH FOOTPATH CLOSED
 - B' CLASS HOARDING
 - A' CLASS HOARDING
 - VEHICLE FLOW "LEAVING SITE"
 - VEHICLE FLOW "TO SITE"



88 WALKER STREET

MATERIALS HANDLING

Project

Client

Job No.

Drawn

Checked

Scale

Sheet

Rev

Drawn

Checked

Scale

Sheet

Rev

Brookfield
MULTIPLEX

Brookfield MULTIPLEX
Constructions Pty Ltd
Level 25, 250 King Street, Sydney NSW 2000
Tel: 61 2 9322 2001 Fax: 61 2 9322 2001



- LEGEND**
- UNLOADING BAY / CONSTRUCTION ZONE
 - A' CLASS HOARDING WITH FOOTPATH CLOSED
 - B' CLASS HOARDING
 - A' CLASS HOARDING
 - VEHICLE TRAFFIC FLOW
 - PEDESTRIAN FLOW
 - VEHICLE FLOW TO DRIVEWAYS

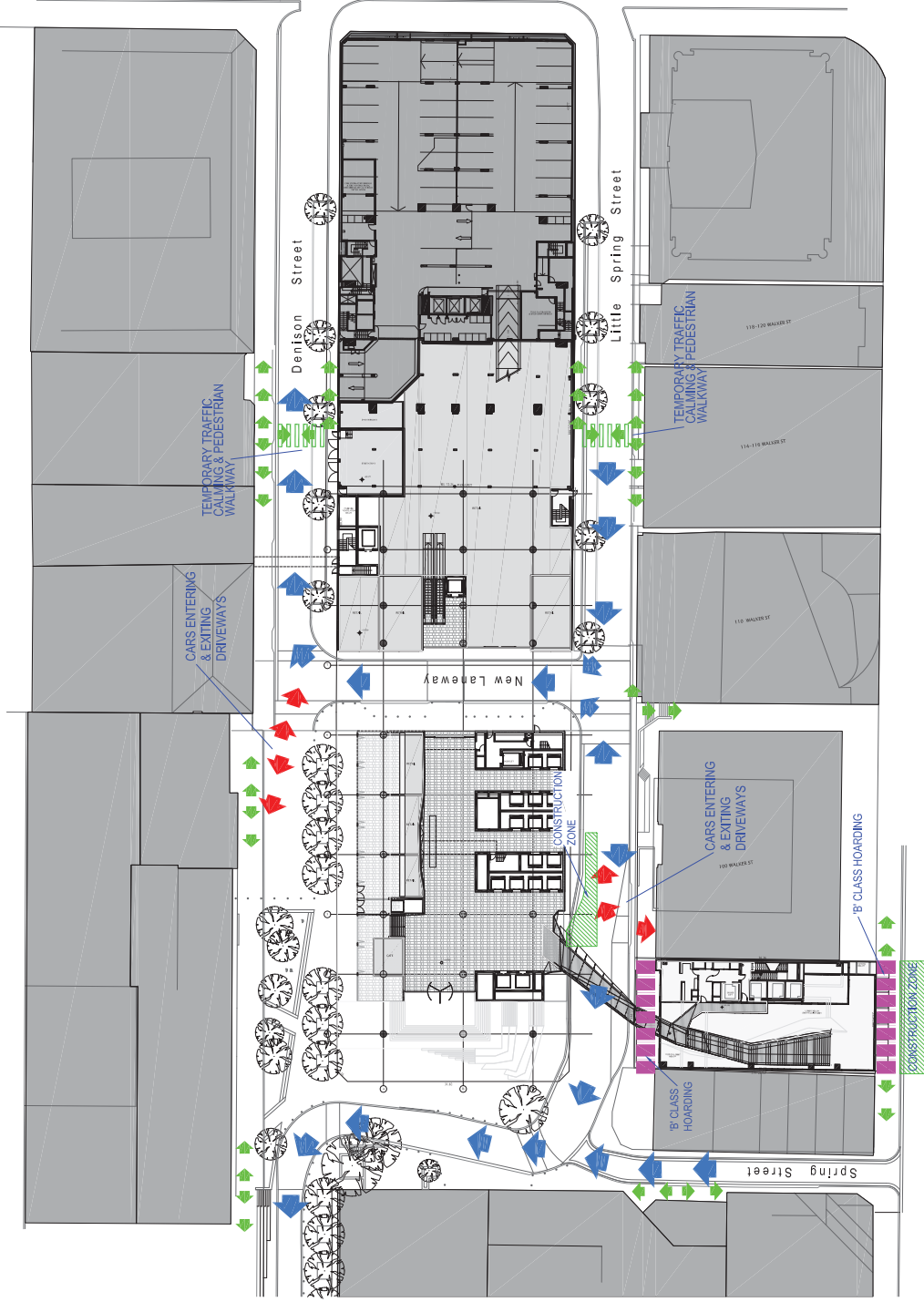
Drawings Title	TRAFFIC FLOW, CONSTRUCTION ZONES & HOARDINGS
Project	DEMOLITION / EXCAVATION STAGE
Job No.	1 Denison St-410
Drawn By	Drawn: S.004
Checked By	Checked: S.004
Scale	Scale: 1:500
Sheet No.	Sheet: 1 of 1

88 WALKER STREET

TRAFFIC FLOW, CONSTRUCTION ZONES & HOARDINGS DEMOLITION / EXCAVATION STAGE



- LEGEND**
- UNLOADING BAY / CONSTRUCTION ZONE
 - A' CLASS HOARDING WITH FOOTPATH CLOSED
 - B' CLASS HOARDING
 - A' CLASS HOARDING
 - VEHICLE TRAFFIC FLOW
 - PEDESTRIAN FLOW
 - VEHICLE FLOW TO DRIVEWAYS



Walker Street



Legend

Project

Drawing Title
TRAFFIC FLOW, CONSTRUCTION ZONES
& HOARDINGS

TRAFFIC FLOW, CONSTRUCTION ZONES & HOARDINGS

**Brookfield
MULTIPLEX**

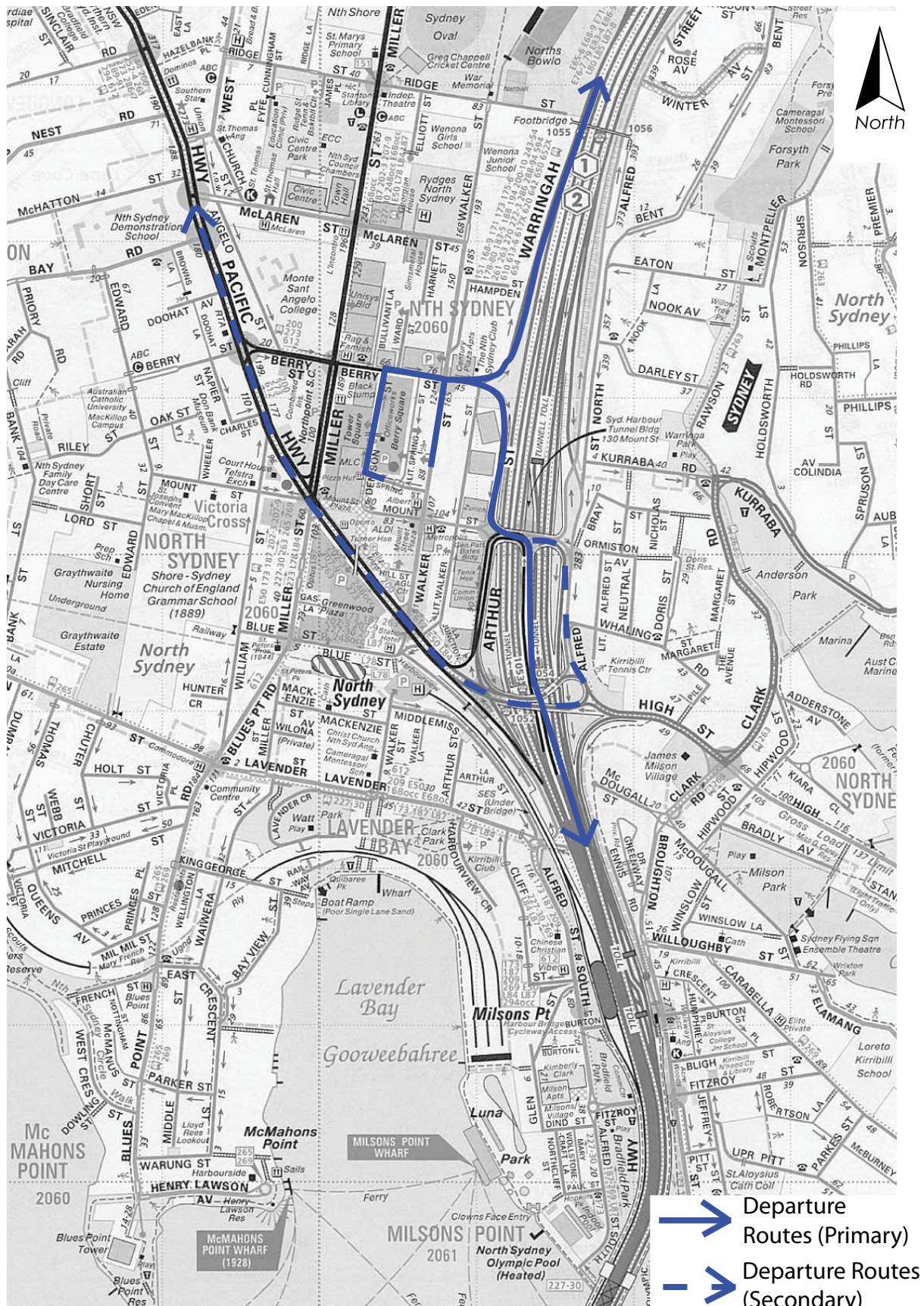
Brookfield MULTIPLEX
Constructions Pty Ltd
Level 25, 250 George Street, Sydney NSW 2000
Tel: 61 2 9322 2001 Fax: 61 2 9322 2001

88 WALKER STREET

Drawn By	1 Denison St-410	Scale	1:500	Sheet No.	1 of 1
Check By	1 Denison St-410	Scale	1:500	Sheet No.	1 of 1
Drawn By	1 Denison St-410	Scale	1:500	Sheet No.	1 of 1

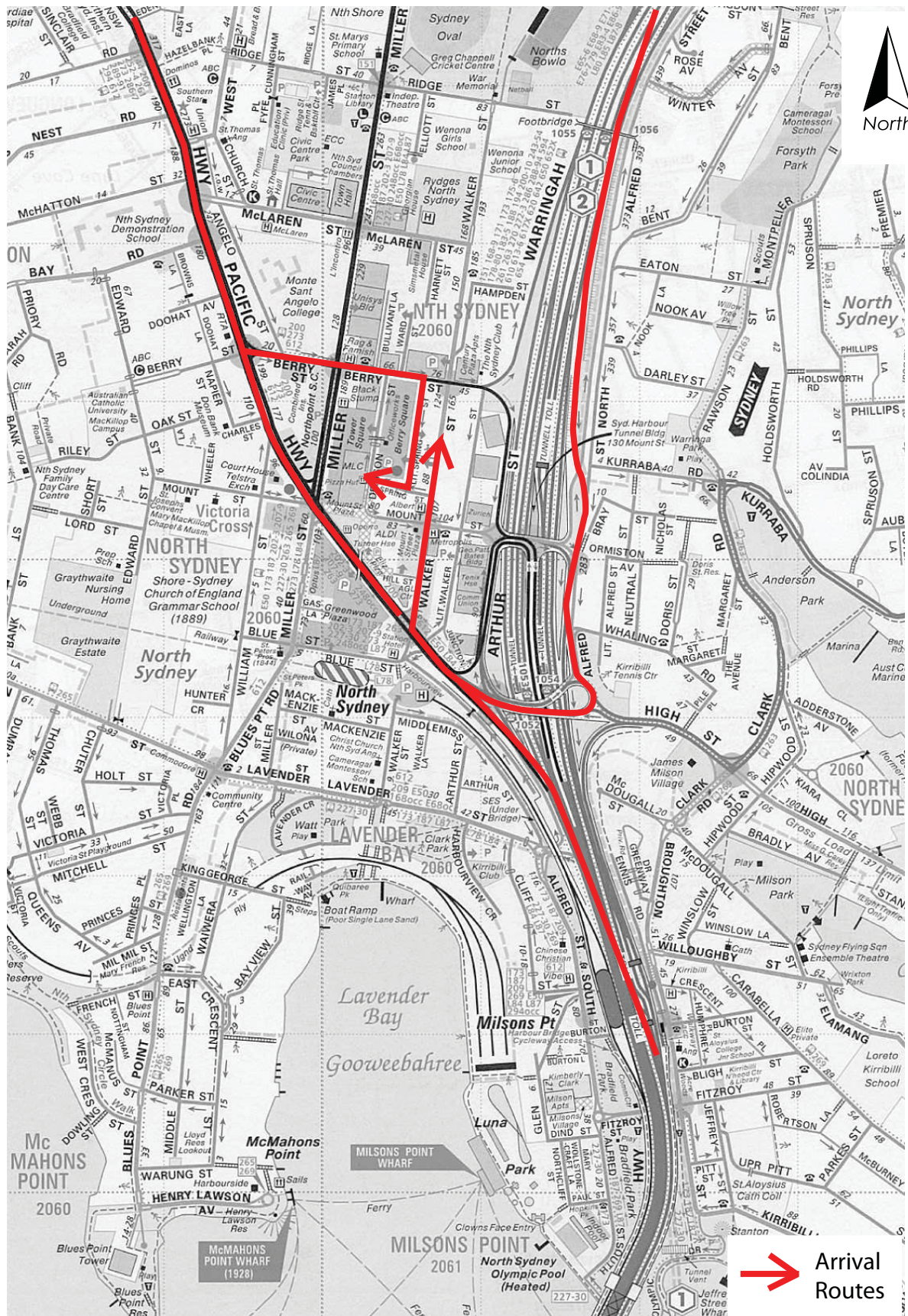
CONSTRUCTION VEHICLE DEPARTURE ROUTES

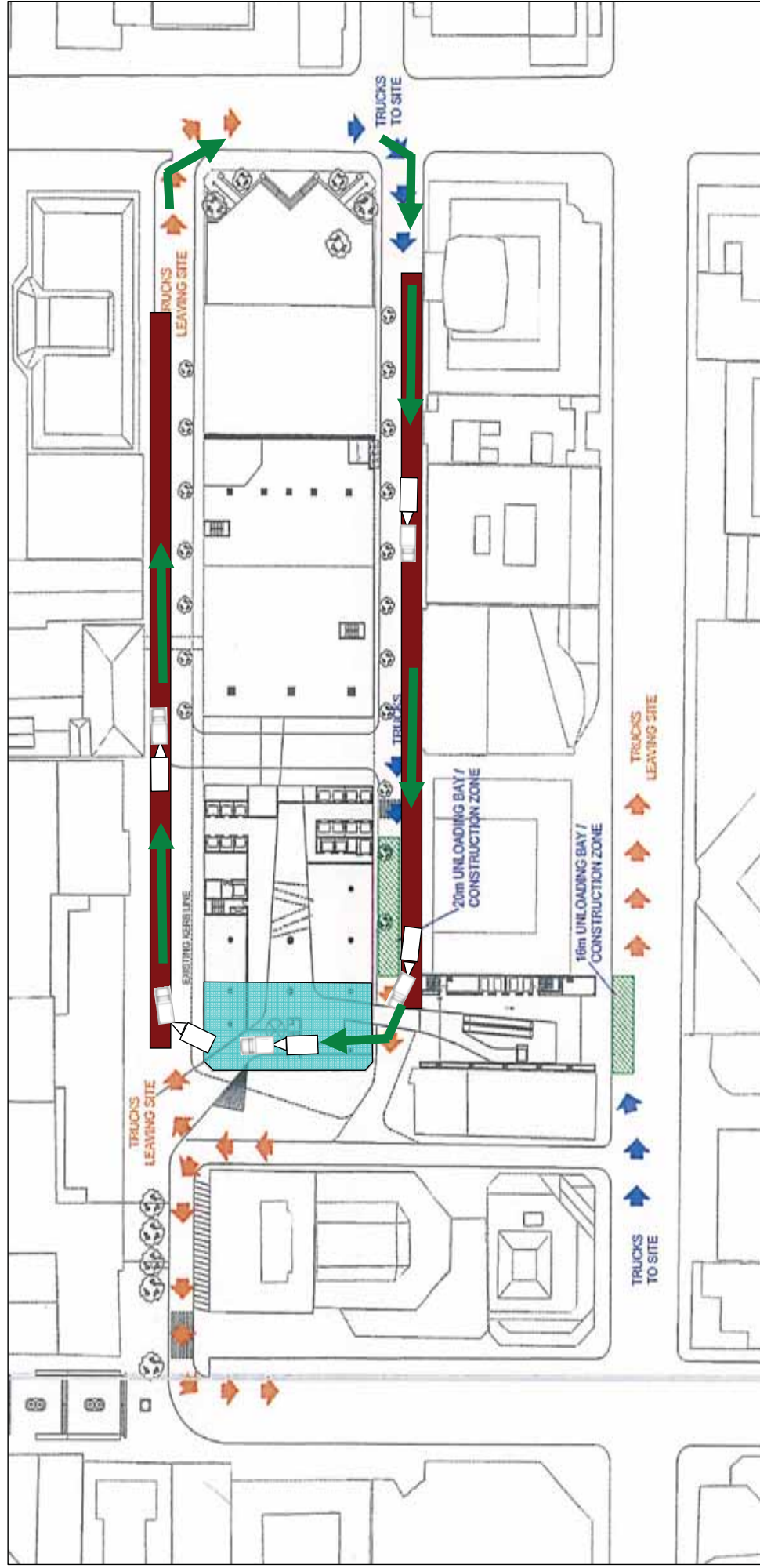
1 DENISON STREET & 88 WALKER STREET, NORTH SYDNEY



CONSTRUCTION VEHICLE ARRIVAL ROUTES

1 DENISON STREET & 88 WALKER STREET, NORTH SYDNEY





Direction of truck route during civil works

All parking (public or otherwise) need to be removed and the lane made a "Construction Zone" or "No Standing Zone"

PROJECT : **88 WALKER STREET, NORTH SYDNEY**

TRUCK ROUTE AND PUBLIC PARKING ADJUSTMENTS

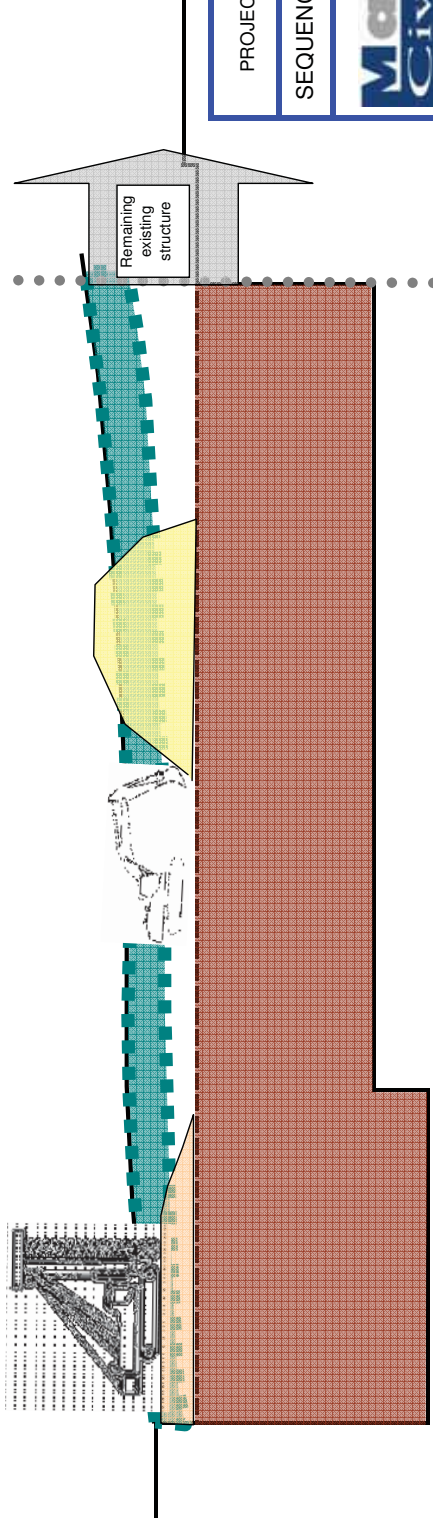
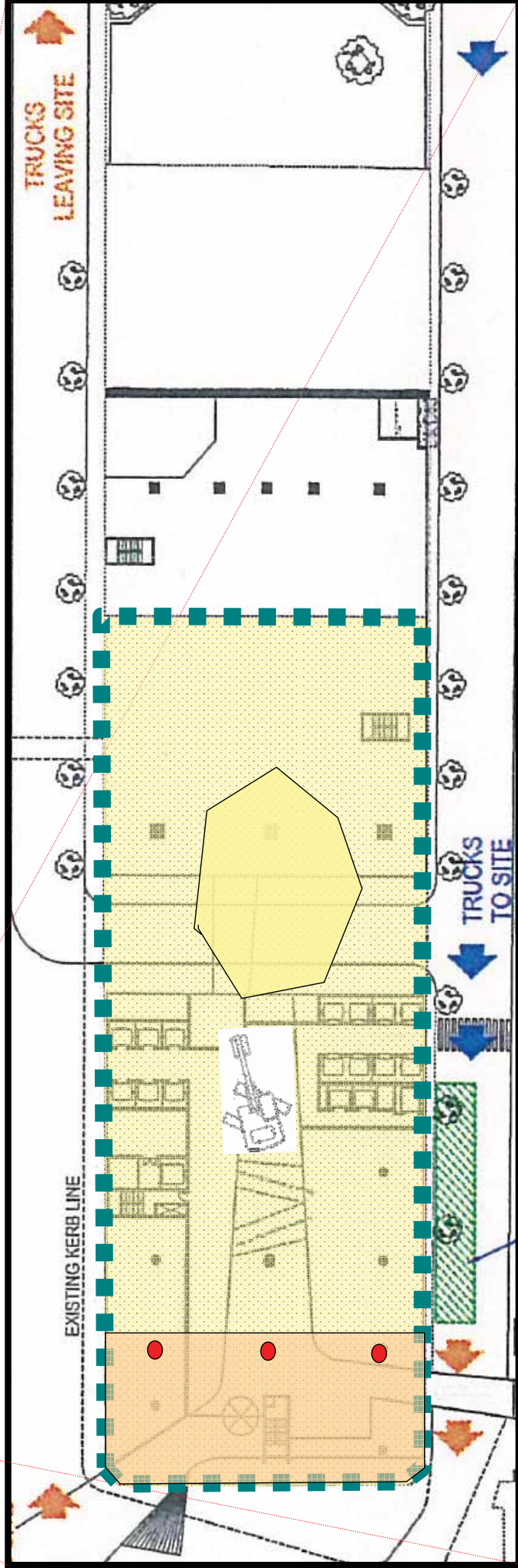
Mainland
Civil

for

BM
Brookfield
MULTIPLEX



EARLY STAGES OF THE CIVIL WORKS	
Key	
	Establish on site
	Grub out footings left by demolition contractor
	Clear site
	Strip site
	Excavate and dispose of OTR in preparation for shoring and anchoring
	Supply and install reo to shoring
	Supply and spray shotcrete to shoring
	Supply and install anchoring
	Remove Temporary shoring installed by demolition contractor
	Prepare pad for the installation of piles for loading platform
	Prepare pad and install piles for loading platform



PROJECT : 88 WALKER STREET, NORTH SYDNEY

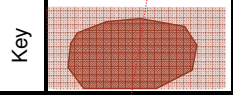
SEQUENCING PLANS Sheet 1 of 4 Date : 29th April 2011

Mainland Civil

for

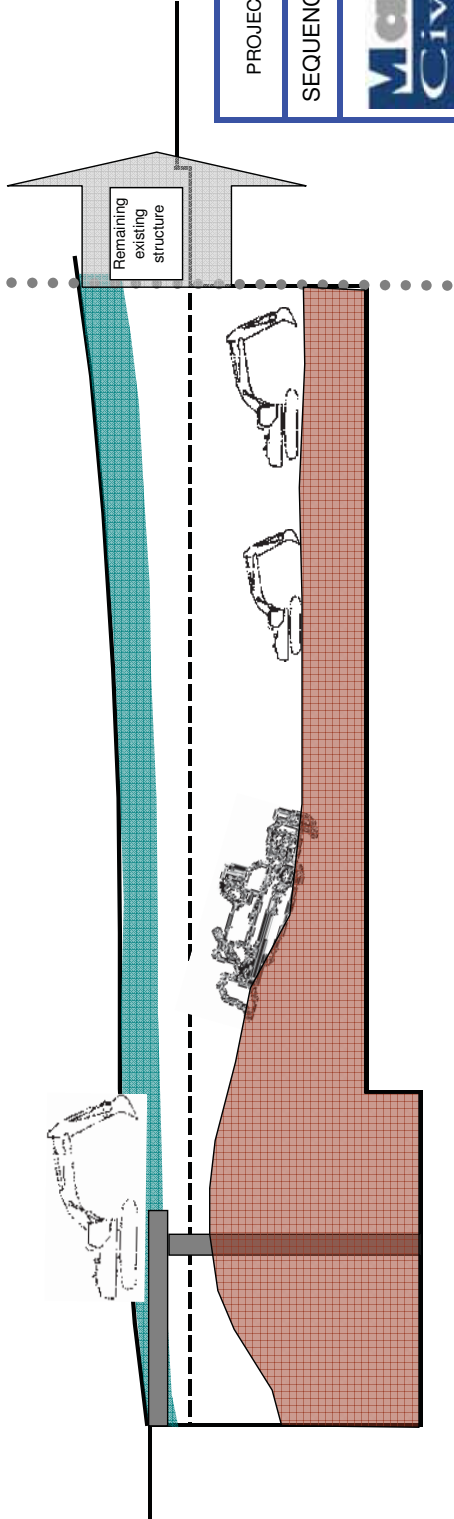
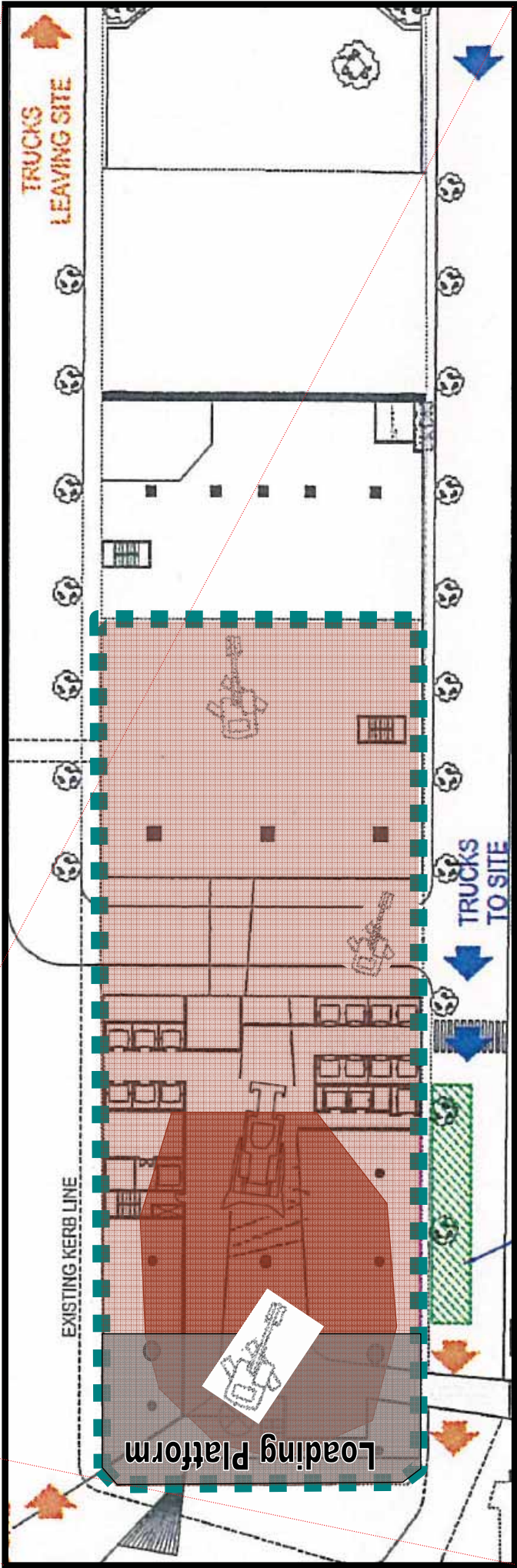
Brookfield MULTIPLEX

BM



MID STAGES OF THE CIVIL WORKS

Key	
Bulk Excavate and dispose of spoil off site	
As the excavation progresses, conventional excavator loading is utilised	
Once excavation is at depths not reachable using conventional excavator, then swap loading machine with a longreach/chameleon	
In the process of lowering the levels, there will be times when loadout operations will cease to allow the pulling back of the load out stockpile and the excavation of the rock beneath the loading platform	
Install rock bolts, as required as the levels lower and the client's geotechnical engineer deems necessary	



PROJECT : 88 WALKER STREET, NORTH SYDNEY

SEQUENCING PLANS Sheet 2 of 4

Date : 29th April 2011



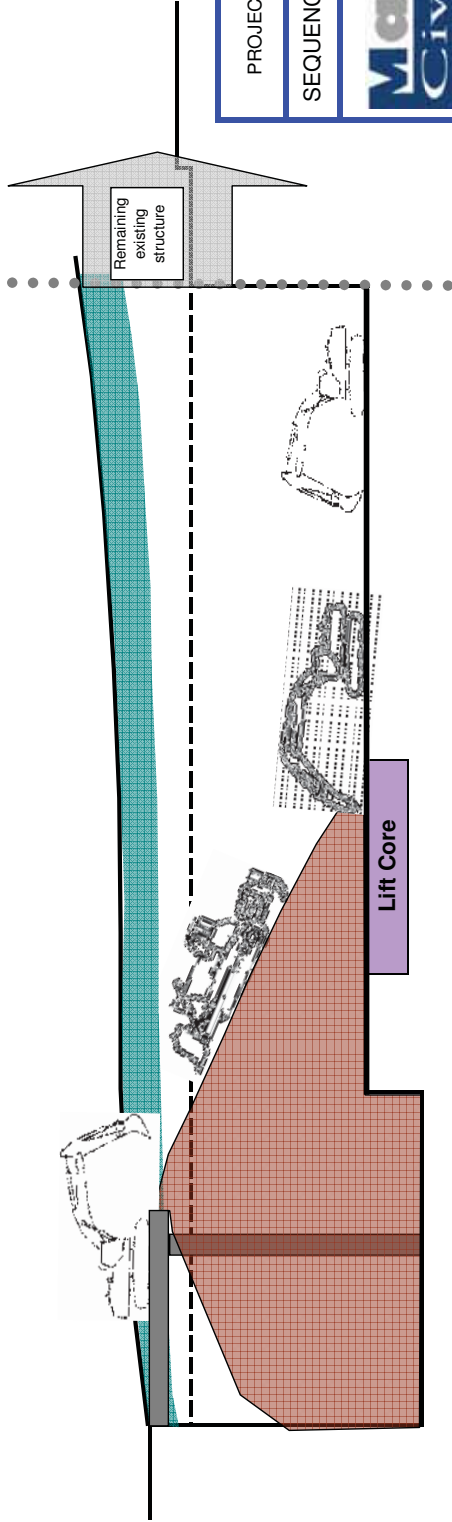
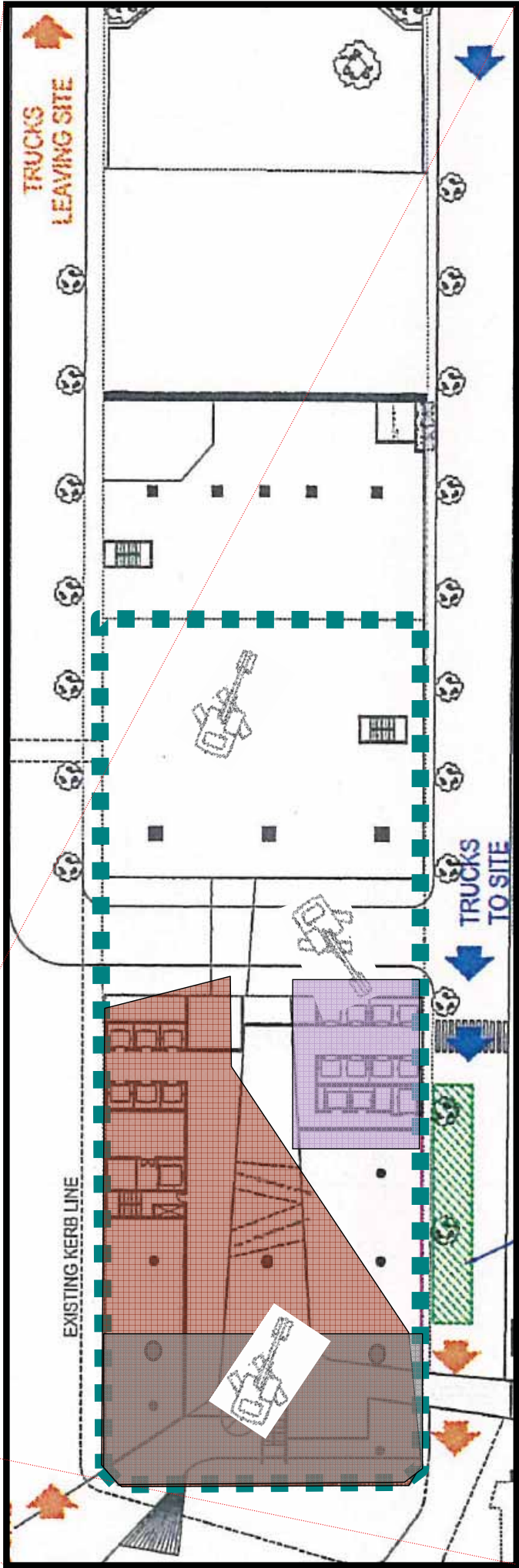
for

Brookfield MULTIPLEX





LATTER STAGES OF THE CIVIL WORKS	
Key	
	Complete the bulk excavation to completion allowing enough material to remain behind so that the dozer can be "walked" out of the excavation
	Booledge the remaining material via excavators in the excavation to the load out excavator and dispose of all bulk excavated material off site
	Commence excavation of the lift core



PROJECT : 88 WALKER STREET, NORTH SYDNEY

SEQUENCING PLANS Sheet 3 of 4 Date : 29th April 2011

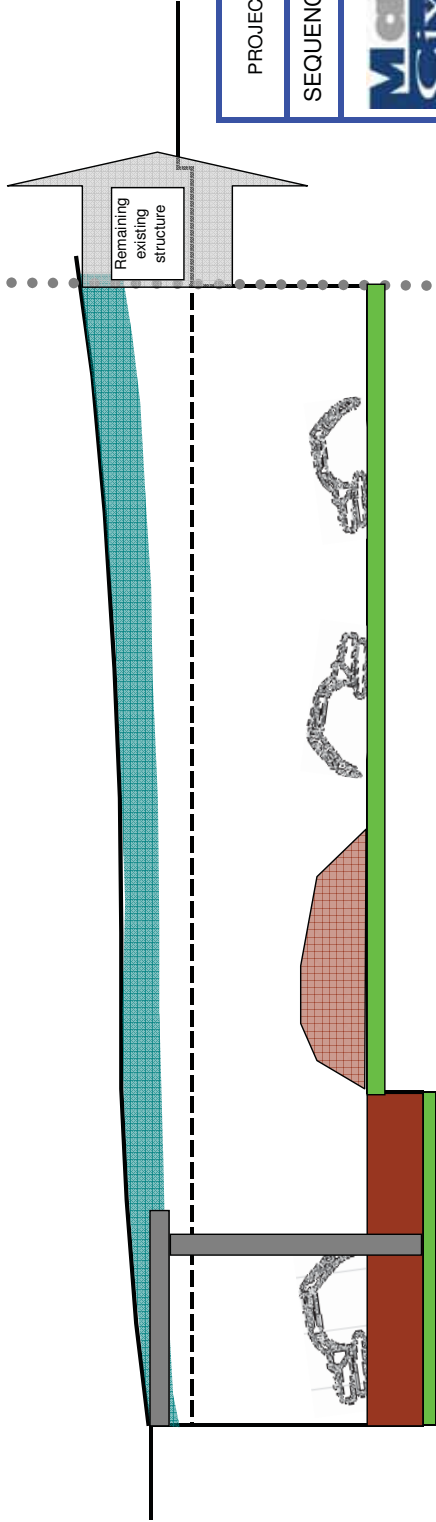
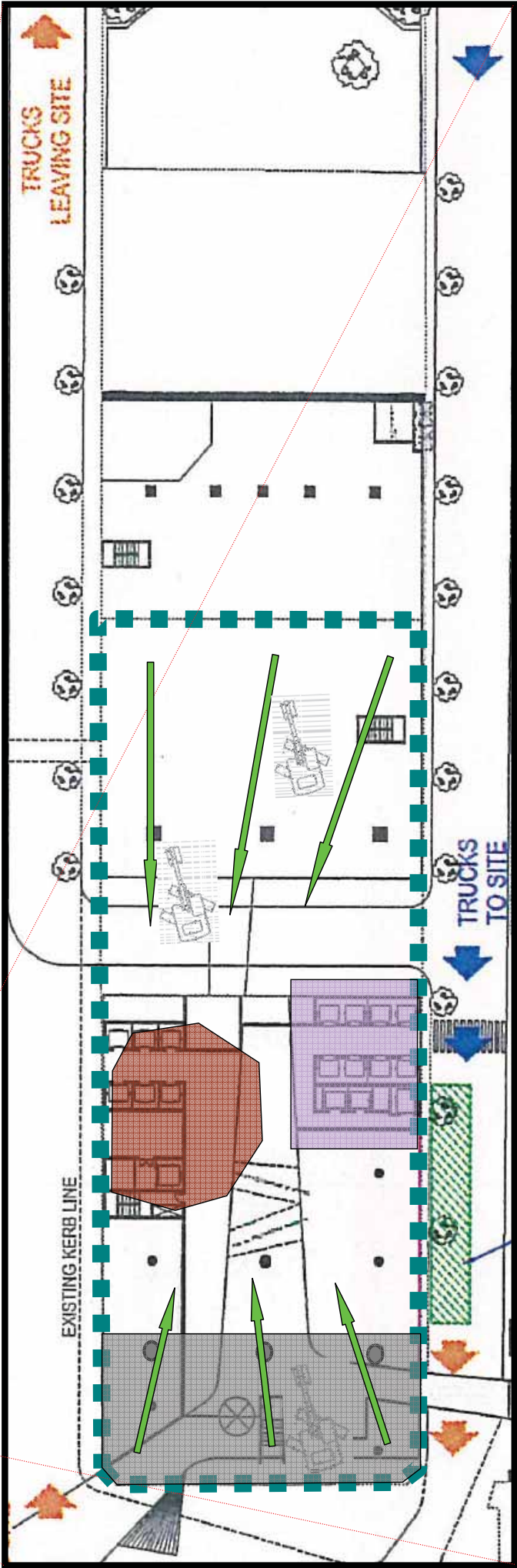
Mainland Civil

for

BM Brookfield MULTIPLEX



FINAL STAGES OF THE CIVIL WORKS	
Key	
	Commence excavation of Basement 5 - Plant
	Loadout the last of the bulk excavation material using excavators
	Lift out large excavators no longer required
	Lift in any excavators required for small detail
	Loadout the remainder of the generated material from the bulk excavation that cannot be reached with the excavator and the detail excavation via BMPX tower crane
	Commence detail excavation from the northern boundary towards Spring Street
	Once excavation of Basement 5 is completed, commence detail excavation from the Spring Street boundary towards the lift core.
	Civil works completion





TaylorThomsonWhitting

16 June 2011

071416E

Eastmark Holdings
c/- Rice Daubney Pty Ltd
Level 1
110 Walker Street
NORTH SYDNEY
NSW 2060

Attention: D Timms

PROPOSED DEVOLPMENT OF 1 DENISON ST AND 88 WALKER ST STRUCTURAL MATTERS REGARDING ADJACENT BUILDINGS

Taylor Thomson Whitting have examined the effect of the proposed development on the existing adjacent buildings, namely 88 Walker St and 1 Denison St.

1 Denison St

The proposed development is bordered by public roads to 3 sides with the Beau Monde tower to the northern end. The Beau Monde tower footings are founded on rock. The new structure footings will also be founded on rock and will be at a level and position which are outside the area of influence of the existing footings. They will not therefore affect the existing footings.

The integrity of the public roads will be preserved during excavation works by suitable standard shoring systems to retain the varying depths of fill above the rock. Detailed design of these systems will be subject to further investigation.

88 Walker St

The proposed development is bordered by 100 Walker St to the north, the Firehouse Hotel to the south and public roads to the east and west. The footings of the existing building are founded on rock as will be the footings of the proposed building.

100 Walker St has a number of basement car park levels. These extend to a depth of approximately 9m below the current average ground level at the boundary with the proposed building. This building will have a basement extending to a depth not exceeding that of the 100 Walker St basement. The footings and walls to the existing building will therefore not be affected by the proposed construction.

We expect that the Firehouse Hotel footings are founded in the shallow rock at this location. This will be confirmed by geotechnical investigation during the detailed design phase of the project. If it transpires that the footings are not founded on rock we will design a sequential underpinning system which will result in the footings being founded on rock.



Structural

Civil

Traffic

Facade

Engineers

TTW Group

Directors

RT Green BE(Hons) MEng Sc FIE Aust
D Carolan BE(Hons) MEng Sc MIE Aust
R VanKatwyk BE(Hons) DipEng MIE Aust
R Mackellar BE(Hons) MIE Aust
B Young BE(Hons) MIE Aust
M Eddy BE(Hons)

Technical Directors

P Yannoulatos BE(Hons) Dip LGE MIE Aust
D Genner BE(Hons) MIE Aust
S Brain BE(Hons) MIE Aust
D Jeffree BE MIE Aust
R McDougall BE MIE Aust

Associate Directors

G Hetherington BE(Hons) MIE Aust
S Schuetze BE(Hons) MIE Aust
M Rogers BSc(Hons) MIE Aust
A Scroggie BE(Hons) LLB MIE Aust
G Freeman BE(Hons) Grad Dip IT MIE Aust
N Foye BE(Hons) MIE Aust
G Janes BE(Hons) MIE Aust
H Nguyen BSc(Eng) MIE Aust
D Taylor BE(Hons) MIE Aust
J Tropiano BE MIE Aust
P Lambley BE MIE Aust
R Pratikna BE MIE Aust MConstMgt

Associates

G. Petschack JP
M. Raddatz

The integrity of the public roads will be preserved during excavation works by suitable standard shoring systems as per 1 Denison St.

In general the vibrations from construction activities such as rock sawing and bulk excavation will be limited to levels recommended by the Geotechnical Engineer with respect to the construction types of the adjacent buildings. Vibration levels would be monitored by specialist equipment to ensure the recommended levels are not exceeded.

For and on behalf of
TAYLOR THOMSON WHITTING (NSW) PTY LTD

A handwritten signature in black ink, appearing to read 'Richard Green', written in a cursive style.

Director
RT Green

P:\2007\0714\071416\Letters\110617 CMP Letter.mr.doc



TaylorThomsonWhitting

16 June 2011

071416E

Eastmark Holdings
c/- Rice Daubney Pty Ltd
Level 1
110 Walker Street
NORTH SYDNEY
NSW 2060

Attention: D Timms

PROPOSED DEVOLPMENT OF 1 DENISON ST AND 88 WALKER ST OVERHEAD PROTECTION TO 88 WALKER ST

The Construction Management Plan for the above project calls for construction materials to be offloaded by crane in Walker St and taken over the building at 88 Walker St to the main construction site.

The Workcover document "Overhead Protective Structures, Code of Practice 1995" calls for structures under such craneage paths to have a protective structure with a live load capacity of 10 kPa.

We have examined the structure of 88 Walker St and have determined that a protective deck structure can be constructed on the roof of the building which will be able to satisfy this requirement.

The structure would consist of a steelwork grillage supported on steel columns. The grillage would be decked out with plywood and have a bracing system to resist wind loads and accidental lateral loads in both directions.

The level of the deck would be above the existing plantroom steel roof.

The steel columns would be anchored into the existing roof main structural beams below which themselves frame into the main building columns. We have determined by survey and analysis that the existing building columns will be strong enough to support the loading from the protective overhead structure.

For and on behalf of
TAYLOR THOMSON WHITTING (NSW) PTY LTD

Director
RT Green

P:\2007\0714\071416\Letters\110617 Protection Platform Letter.mr.doc



Structural

Civil

Traffic

Facade

Engineers

TTW Group

Directors

RT Green BE(Hons) MEng Sc FIE Aust
D Carolan BE(Hons) MEng Sc MIE Aust
R VanKatwyk BE(Hons) DipEng MIE Aust
R Mackellar BE(Hons) MIE Aust
B Young BE(Hons) MIE Aust
M Eddy BE(Hons)

Technical Directors

P Yannoulatos BE(Hons) Dip LGE MIE Aust
D Genner BE(Hons) MIE Aust
S Brain BE(Hons) MIE Aust
D Jeffree BE MIE Aust
R McDougall BE MIE Aust

Associate Directors

G Hetherington BE(Hons) MIE Aust
S Schuetze BE(Hons) MIE Aust
M Rogers BSc(Hons) MIE Aust
A Scroggie BE(Hons) LLB MIE Aust
G Freeman BE(Hons) Grad Dip IT MIE Aust
N Foye BE(Hons) MIE Aust
G Janes BE(Hons) MIE Aust
H Nguyen BSc(Eng) MIE Aust
D Taylor BE(Hons) MIE Aust
J Tropiano BE MIE Aust
P Lambley BE MIE Aust
R Pratikna BE MIE Aust MConstMgt

Associates

G. Petschack JP
M. Raddatz

1 Denison Street & 88 Walker Street,
North Sydney

Review of Construction Traffic Management

6 July 2011

Prepared for

Eastmark Holdings Pty Ltd

1 Denison Street & 88 Walker Street, North Sydney

Review of Construction Traffic Management

Prepared for
Eastmark Holdings Pty Ltd

This report has been issued and amended as follows:

Rev	Description	Date	Prepared by	Approved by
V01	Draft client review	5/7/2011	NI	JR
V02	Final for submission	6/7/2011		JR

Halcrow

Suite 20, 809 Pacific Highway, Chatswood, NSW 2067 Australia
Tel +61 2 9410 4100 Fax +61 2 9410 4199
www.halcrow.com/australasia

Halcrow has prepared this report in accordance with the instructions of Eastmark Holdings Pty Ltd for their sole and specific use.
Any other persons who use any information contained herein do so at their own risk.

Contents

1	Introduction	1
2	Proposed Works	3
2.1	Proposed Construction Works and Traffic Management	3
2.2	Timing of the Works	5
3	Construction Vehicle (Truck) Management	6
3.1	Truck Routes	6
3.2	Materials Handling Options	6
3.3	Traffic Control Plans (TCP)	7
3.4	Work Zone Impacts to On-street Parking	8
3.5	Pedestrians	8
3.6	Public Transport	8
3.7	Emergency Vehicle Access	9
3.8	Green (Work Place) Travel Plan	9
Appendix A	CEMP Traffic Management Diagrams	A.1
Appendix B	On Street Parking Signage Plans	B.1
Appendix C	Traffic Control Plans (Principles)	C.1

1 Introduction

On behalf of Eastmark Holdings, Brookfield Multiplex Pty Ltd have prepared a *Construction Environmental Management Plan* (CEMP) ¹ for the proposed construction methodology for the approved development proposal at 1 Denison Street and 88 Walker Street North Sydney.

Included in the CEMP construction methodology is a detailed outline of the proposed staging of construction, operational conditions such as working hours and the associated construction traffic management measures to be implemented during construction.

Halcrow has been engaged by Eastmark Holding to review and provide input into the development of the CEMP regarding the construction traffic management arrangements.

Specifically the review of the CEMP has been prepared to address Condition 14 of Consent MP08_0238 dated 25 February 2010.

Therefore this review of construction traffic management is to be read as a supporting document to the overall construction methodology described in the CEMP.

The purpose of this CTMP is to:

- provide a review of the proposed construction activities with regard to traffic and parking;
- identify potential construction traffic implications on the operation of the surrounding road, transport and pedestrian networks; and
- recommend management measures to be implemented to mitigate these implications.

¹ *Construction Environmental Management Plan – 1 Denison Street & 88 Walker Street North Sydney* (6 July 2011) prepared by Brookfield Multiplex Pty Ltd

It is also noted that the proposed construction methodology was discussed with North Sydney Council officers at a meeting held on the 21 June 2011. The key outcomes of this meeting regarding construction traffic were:

- in principle the use of kerb side “work zones” for construction loading / unloading was supported by Council. Changes to the on street parking arrangements would need to be accompanied with a signage plan;
- any proposed amendments to the existing Berry Street parking conditions would need not generally be supported by Council and would need to consider other construction activities in the area; and
- pedestrian access and safety in the laneways (ie. Little Spring Street, Denison Street and Spring Street) needs to be considered and maintained at all times; and
- access to adjacent properties (both vehicular and pedestrian) to be maintained at all times.

These issues have been considered and incorporated into the CEMP submitted to Council for approval via the North Sydney Traffic Committee.

It is noted that the CEMP and this review sets out the principles for construction traffic management including standard TCPs to be implemented. Detailed traffic control plans (TCP's) including signage location, details of traffic control and work zone occupation will be made via separate TCPs and applications for road occupation for each of the various stages of development.