Civil

TTW

TaylorThomsonWhitting

VEHICLE SITE ACCESS & TRAFFIC REPORT FOR ROYAL NORTH SHORE HOSPITAL SUBSTATION

For Energy Australia

26 August 2008

081292

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1.0 INTRODUCTION

This report is submitted by Engineering Consultancy firm Taylor Thomson Whitting (TTW) who have been engaged by Brewster Murray on behalf of Energy Australia.

The proposed development is an unmanned Energy Australia substation located in the Royal North Shore Hospital (RNSH) Campus to service the future development of the Hospital precinct.

Within the hospital campus, the proposed Energy Australia substation is to be located north of the North Shore Private Hospital grounds, west of the multistorey carpark on Reserve Road and east of the TAFE grounds.

TTW have been advised that maintenance staff would require occasional access to the substation site during operation.

During the construction phase traffic access is proposed to via Reserve Road through the TAFE right of way under the multistorey car park extension. The construction, fit out and commissioning period is likely to be twelve to twenty four months.

The development features two external car park spaces next to the vehicle entry gates.

This report investigates

- Construction and operation movements

- Easement access and consequences for landholders

- Transformer truck delivery traffic management requirements

- Permanent manoeuvring area requirements for transformer delivery.

- Assessment of the traffic impact of the substation both during construction and during operation on;

    - Westbourne Street due to the proposed Right Of Way (ROW)
    - the proposed Reserve Road entrance
    - the major surrounding arterial roads

2.0 CONSTRUCTION AND OPERATION MOVEMENTS

2.1 Construction Movements – excluding transformer delivery

Construction access would be required for the construction, fit out and commissioning period of approximately twelve to twenty four months.

There is no street frontage access to the RNSH substation land parcel

The construction access for light to medium vehicles will be via Reserve Road through the TAFE undercroft ROW access. This access has a limited height access due to the multistorey parking structure. The clearance available is about 3.6m.

Heavy vehicles and wide loads will be via Westbourne Street through the TAFE ROW (Refer C01-C12). This access has no height restrictions

Note that the use of the Reserve Road access during construction was used for the multi storey car park extension in 2006.

Use of this route will reduce the impact on the Westbourne Street access to the Private Hospital and will have a lower impact on parking and pedestrian movement in the TAFE grounds.

Construction of cable routes within the electricity easement from the substation site to Westbourne Street will affect the use of existing TAFE parking.

A traffic management plan will be submitted by the managing contractor to the director of planning prior to commencement on site.

TTW recommends a dilapidation report for road, service infrastructure and vegetation is undertaken to establish a base for repair of any construction traffic damage.

2.2 Construction Movements – transformer delivery

Transformer access is envisaged to be required for a period of three days during construction and then for occasional access every 20 years.

Transformer movement would affect parking in the TAFE grounds and along Westbourne Street during the delivery period which is expected to last one day.

Transformer transport access is recommended to be via Westbourne Street and through the TAFE ROW as set out in option 4 below.

Transformer access would require;

- Possible trimming or removal of trees.
- Removal and replacement of boom gates
- Restriction of parking during the transport period

- Reinstatement of any pavement damaged during transport
- Repair of damaged below ground services, if any, within the ROW during transport – dilapidation report recommended.
- Widening the Right of Way (ROW) to suit the manoeuvres required.

TTW considered four options for the transformer delivery. Refer to appendix A for the truck manoeuvres considered (C01 – C12)

Option 1 – Forward entry into the ROW from Westbourne Street, reverse entry into the substation site, then forward exit into Westbourne Street (C01, C02, and C03)

Possible solution, however this manoeuvre would require a wider ROW allocation adjacent to the substation from TAFE land involving construction of retaining walls and additional pavement.

Option 2 – Reverse entry into the ROW from Westbourne Street, reverse entry into the substation site, then forward exit into Westbourne Street (C04, C05, and C06).

Possible solution, however this manoeuvre would require a wider ROW allocation adjacent to the substation from TAFE land involving construction of retaining walls and additional pavement.

Option 3 – Forward entry into the ROW from Westbourne Street, skid transfer of the transformers to the substation site transformer road, then forward exit unloaded via Reserve Road (C07, C08, and C09).

Possible solution, however this manoeuvre requires the unloaded transformer transport to transit under the multistorey car park and that the required clearance is available. Decamping old material in the future would require the Westbourne street ROW access as the load height is 5.3m.

Option 4 – Reverse entry into the ROW from Westbourne Street, continue to reverse directly to the EA site transformer road, then forward exit into Westbourne Street (C10, C11, and C12).

Preferred solution, This manoeuvre causes the least disruption to neighbouring properties. An extended removable fence will be required for the frontage of the substation. The proposed two car park spaces at the EA site entry will be widened and form part of the entry layback to the transformer roadway during transformer manoeuvres.

Note that this option has been checked with a 26m long truck with a 3.6m wide load to confirm its sensitivity. The 3.6m wide option as modelled can be successfully manoeuvred to the substation site as shown on drawings C105 and C106.

3.0 EASEMENT CONSIDERATIONS

3.1 Easement access and consequences for landholders

Refer to sketches C01 to C12.

Note that the preliminary cable easement routes require detail confirmation on site. As discussed on site the RNSH Multi Storey carpark is proposed for two easement routes. The following should be investigated to confirm the viability of these routes;

1. Working clearance for placement of the conduits
2. Stability of the northern boundary of the multi storey carpark with respect to proposed new trenching.
3. Limiting the disruption period to the RNSH & TAFE carpark as parking on the site is in high demand.
4. Investigation of the condition of existing services within the vicinity of the proposed cable routes.

3.2 Transformer Truck Management

Refer to sketches C01 to C12. Note that delivery and manoeuvring is recommended to be carried out over night or when parking and access demand is low.

Transformer transport access can be via Westbourne Street and through the TAFE site. Transformer access would require;

- Possible trimming or removal of trees and removal and replacement of boom gates as well as road plating service covers.
- Restriction of parking during the transport period
- Replacement of any pavement damaged during transport
- Construction of additional pavement and retaining walls on TAFE land to allow the manoeuvring required for the 25m long delivery truck for options 1 and 2.
- Construction of additional ROW driveway pavement on TAFE land to allow turning from Westbourne Street.
- Repair of any services damaged during transport – a dilapidation report recommended by TTW.

3.3 Permanent manoeuvring area requirements for transformer delivery

Refer to sketches C01 to C12. Note the requirement for;

1. construction of additional pavement and retaining walls on TAFE land to allow the manoeuvring required for the 25m long delivery truck on options 1 and 2.

2. adjustment of the ROW at the Westbourne Street driveway

4.0 TRAFFIC IMPACT OF SUBSTATION

4.1 Construction

Construction access will be via Reserve Road.

The construction fit out and commissioning period is estimated to be from 12 to 24 months.

A temporary site compound location will be negotiated with the TAFE within the adjacent TAFE property.

4.2 Operation

The substation will be unmanned and will not generate any significant traffic volume during its operation or create a parking demand. Site parking for maintenance vehicles is intended to be on the transformer road within the substation compound and in two external car spaces adjacent to the substation gates.

No current formal parking capacity will be impacted on the Royal North Shore Hospital Campus site.

Approximately 15 parking spaces will be removed when the breast clinic is demolished.

As the proposed parking and access arrangements are acceptable and comply with the relevant guidelines, subject to detail design, the substation should have no traffic implication.

4.3 Adjoining NSPH development

Note that the substation development does not generate parking demand or add any significant traffic volume to the Reserve Road access.

The access for the NSPH development is via its own driveway access to Westbourne Street separate to the TAFE driveway including proposed Energy

Australia Right of Way.

The access for the NSPH via Reserve Road is via the Royal North Shore Hospital carpark exit, again this is separate to the access for the TAFE.

We have reviewed the traffic report for the NSPH stage 3 development and we do not see the substation development having any significant traffic generation or parking demand effect on the operation of the adjoining NSPH in its current form or for the proposed development.

Prepared by:
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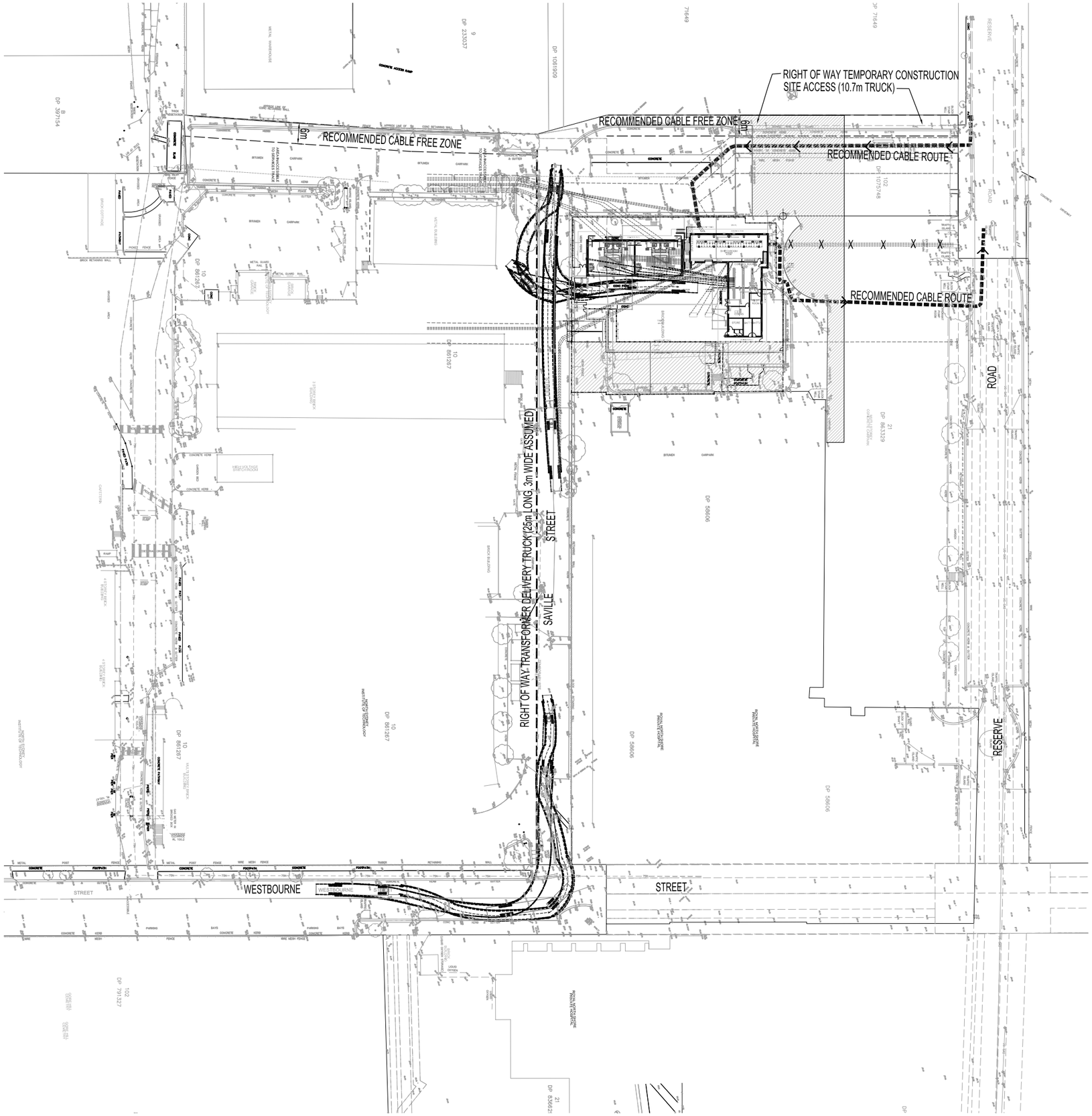
STEPHEN BRAIN]
Technical Director



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P4	ISSUE FOR COMMENT	SB	JW	24.06.08
P3	ISSUE FOR COMMENT	SB	JW	13.06.08
P2	ISSUE FOR COMMENT	SB	JW	04.06.08
P1	ISSUE FOR COMMENT	SB	JW	30.05.08

Project

ROYAL NORTH SHORE HOSPITAL

Sheet Subject

OVERALL SITE PLAN FOR 26m TRUCK TURNING PATH OPTION 1 FORWARD ENTRY

Client

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RECOMMENDED CABLE FREE ZONE

RECOMMENDED CABLE FREE ZONE

RIGHT OF WAY
TEMPORARY CONSTRUCTION SITE ACCESS (10.7m TRUCK)

RECOMMENDED CABLE ROUTE

RECOMMENDED CABLE ROUTE

RIGHT OF WAY
TRANSFORMER DELIVERY TRUCK
(25m LONG, 3m WIDE ASSUMED)

AREA INACCESSIBLE TO SERVICES TRACE

26m TRANSFORMER TRANSPORT – FOWARD ENTRY
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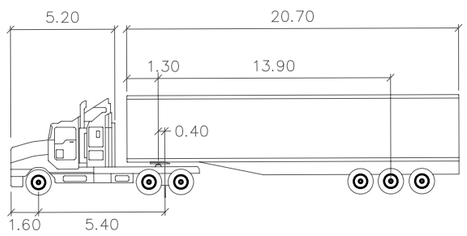

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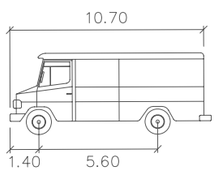

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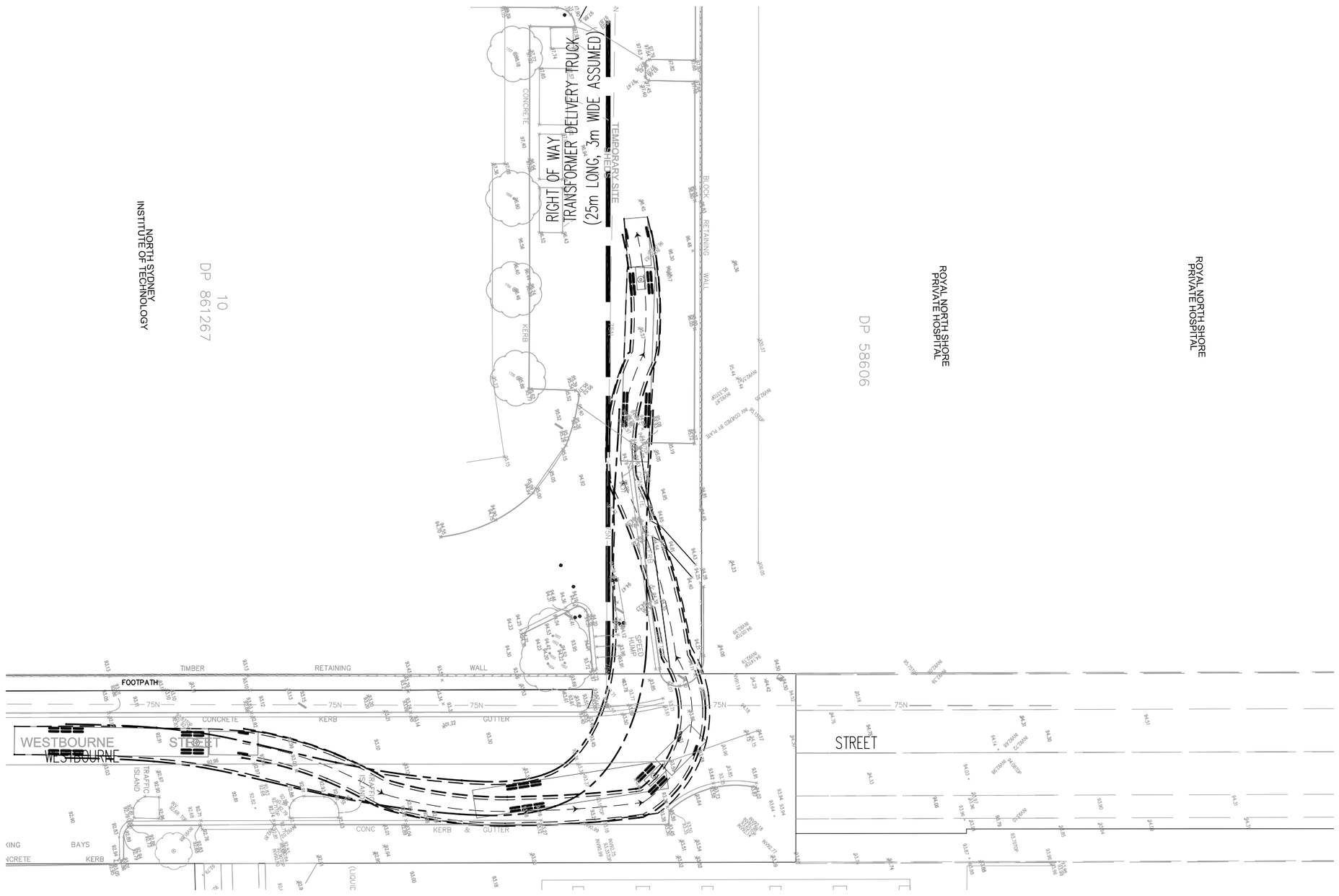

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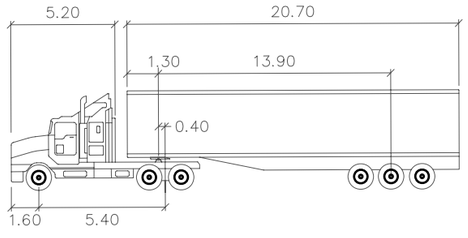

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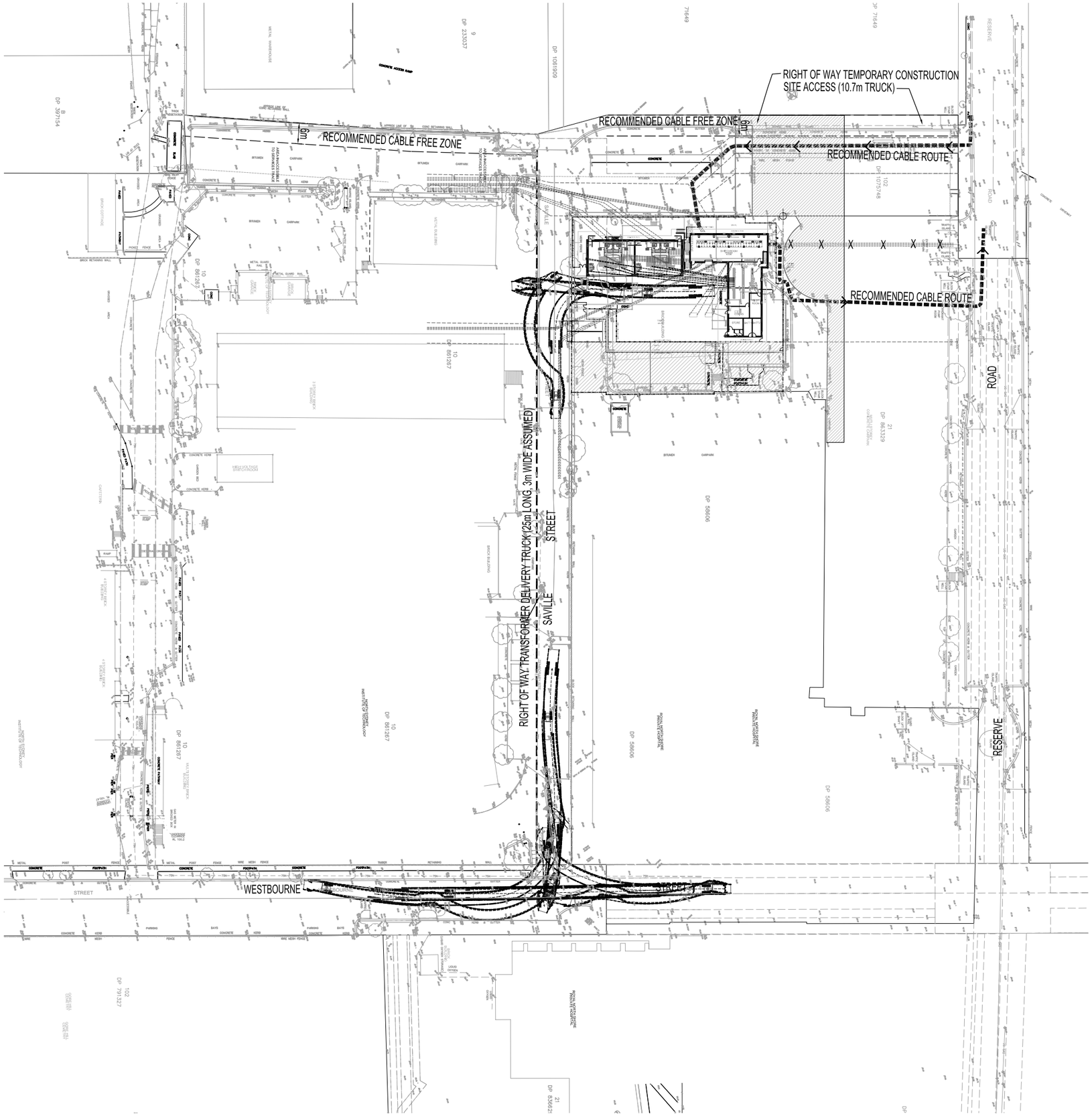

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P1	ISSUE FOR COMMENT	SB	JW	04.06.08

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OVERALL SITE PLAN FOR 26m TRUCK TURNING PATH OPTION 2 REVERSE ENTRY

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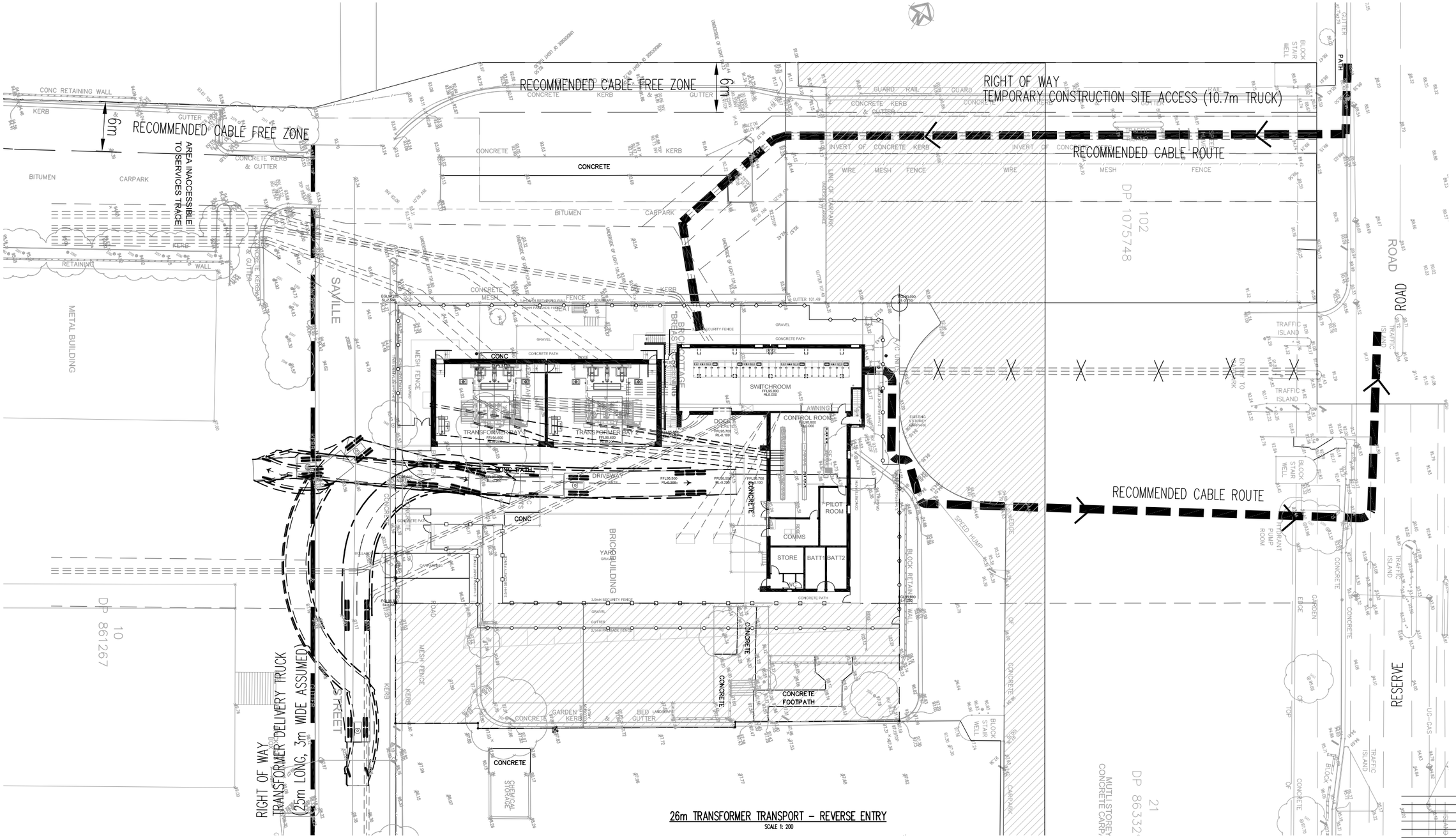

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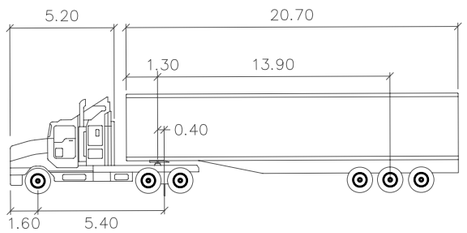

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26m TRANSFORMER TRANSPORT – REVERSE ENTRY

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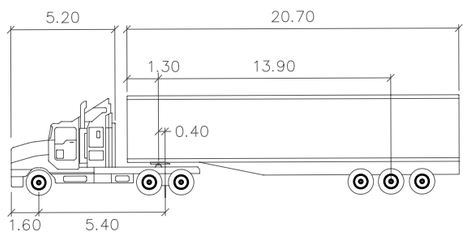

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