Reference: 11.361

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30 November 2011

Hansen Yuncken
Level 6, 15 Bourke Road
Mascot NSW 2020

Attention: Mr Nader Zreik, Design Manager

Re: Greystanes Industrial Estate; Access and Internal Design Assessment of Precinct C

Dear Nader,

We refer to the subject application and recent correspondence concerning the proposed warehouse and ancillary office development. In particular, we note that TRAFFIX has been commissioned to undertake an access and internal design assessment of Precinct C (Buildings 8 to 12) of the Greystanes Industrial Estate. In this regard, we have reviewed all relevant plans and documentation provided to us and now advise as follows:

- Access

Building 8:

The car park nominally requires a Category 1 Driveway under AS 2890.1 (2004), being a combined entry-exit driveway of 3.0 to 5.5 metres in width. In response, the development proposes a combined entry-exit driveway of 6.5 metres in width to Basalt Road and therefore exceeds (is superior to) the requirements of AS 2890.1 (2004) and is considered satisfactory.

A single access is proposed to serve the loading docks associated with Building 8, which is required to accommodate up to a 26 metre B-Double truck. This access forms the southern leg of an existing roundabout controlled intersection with Basalt Road and Bellevue Circuit.

Reference should also be made to the swept path analysis included in **Attachment 1**, which demonstrates satisfactory operation of the critical entry and exit manoeuvres.

Building 9:

The car park nominally requires a Category 2 Driveway under AS 2890.1 (2004), being a combined entry-exit driveway of 6.0 to 9.0 metres in width. In response, the development proposes a combined entry-exit driveway of 6.5 metres in width and an exit only driveway of 6.5 metres in width, both accessing Basalt Road. Accordingly, the proposed car park access arrangements exceed (is superior to) the requirements of AS 2890.1 (2004) and are considered satisfactory.

Two accesses are proposed to serve the loading docks associated with Building 9. It should be noted that these accesses will also serve Buildings 10, 11 and 12 and are required to accommodate

up to a 26 metre B-Double truck. The northernmost access Basalt Road has been designed in accordance with AS 2890.2 (2002) and exceeds the minimum requirements of Figure 3.1 for access to a minor road.

The southernmost access is to Reconciliation Drive and forms the south-eastern leg of a 4-way intersection, adjacent to the south-western corner of Building 11. This intersection has been designed by Colston Budd Hunt and Kafes Pty Ltd under a separate Project Application.

Reference should also be made to the swept path analysis included in Attachment 1, which demonstrates satisfactory operation of the critical entry and exit manoeuvres.

Buildings 10 and 11:

The car park associated with Buildings 10 and 11 nominally requires a Category 2 Driveway under AS 2890.1 (2004), being a combined entry-exit driveway of 6.0 to 9.0 metres in width. In response, the development proposes a single combined entry-exit driveway of 6.5 metres in width, which accesses Basalt Road. In addition to this, a secondary driveway of 6.5 metres in width has been provided, which accesses the internal roadway, adjacent to its intersection with Reconciliation Drive. This driveway does not access a public road and therefore, it is technically not an 'access'. Nevertheless, it is recommended that this driveway also be designed in accordance with AS 2890.1 (2004). Accordingly, the proposed car park access arrangements exceed (is superior to) the requirements of AS 2890.1 (2004) and are considered satisfactory.

Access to the loading docks associated with Buildings 10 and 11 is provided via the aforementioned internal roadway accesses to Basalt Road and Reconciliation Drive.

Reference should also be made to the swept path analysis included in Attachment 1, which demonstrates satisfactory operation of the critical entry and exit manoeuvres.

Building 12:

The car park is accessed via a combined entry-exit driveway of 6.5 metres in width, which accesses the internal roadway, adjacent to its intersection with Reconciliation Drive. This driveway does not access a public road and therefore, is technically not an 'access'. Nevertheless, it is recommended that this driveway be designed in accordance with AS 2890.1 (2004). This requires a Category 1 Driveway, being a combined entry-exit driveway of 3.0 to 5.5 metres in width. Accordingly, the proposed car park access arrangements satisfy the requirements of AS 2890.1 (2004) and are considered satisfactory.

Access to the loading docks associated with Building 12 is provided via a combined entry-exit driveway of 12.0 metres in width. This access has been assessed using swept path analysis with the use of a 12.5 metre heavy rigid vehicle, demonstrating satisfactory performance. Accordingly, the proposed driveway is considered acceptable.

Reference should also be made to the swept path analysis included in Attachment 1, which demonstrates satisfactory operation of the critical entry and exit manoeuvres.

- Internal Design

The car parks and loading dock areas of Precinct C comply with the requirements of AS 2890.1 (2004) and AS 2890.2 (2002) and the following characteristics are noteworthy:

- Parking facilities are required to be of a User Class 1 (employee and commuter parking), having bay and aisle widths of 2.4 metres and 6.2 metres respectively. In response, the development proposes bay and aisle widths of 2.5 metres and 6.2 metres. Accordingly the proposed layout is compliant with AS 2890.1 (2004) and will operate satisfactorily.

- Disabled spaces have been provided in accordance with AS 2890.6 (2009). This requires a bay width of 2.4 metres, with a 2.4 metre wide shared area provided adjacent to the space.

- A 1 metre aisle extension has been provided beyond the last space at end of blind aisles, in accordance with AS 2890.1 (2004).

- An internal two-way circulation roadway has been provided linking the Basalt Road and Reconciliation Drive accesses. The internal circulation roadway provides access to Buildings 9 to 12. The roadway has been designed in accordance with AS 2890.2 (2002) and assessed using swept path analysis with the use of a 26 metre B-Double truck, and demonstrates satisfactory operation. The roadway is to be line marked which will ensure sufficient delineation is provided between the roadway and loading docks.

- All critical entry and exit movements to loading docks associated with Buildings 8 to 11 have been assessed using swept path analysis with the use of a 19 metre articulated vehicle. The swept path analysis is included in Attachment 1 and confirms compliance with AS2890.2.

- All critical entry and exit movements to loading docks associated with Building 12 have been assessed using swept path analysis with the use of a 12.5 metre heavy rigid vehicle. The swept path analysis is included in Attachment 1 and confirms compliance with AS2890.2.

- Three trailer storage zones have been provided to serve the loading docks of Buildings 9 to 11. These trailer drop-off zones are provided to ensure that at no time are trailers stored within the main circulation roadway. As such access docks will not be impeded at anytime.

In summary, the internal design of the car parks and loading dock areas is considered satisfactory.

Conclusions

The proposed access and internal design arrangements are considered satisfactory and will ensure safe and efficient manoeuvring of vehicles throughout the car parks and loading dock circulation areas associated with Precinct C (Buildings 8 to 12).

Please contact the undersigned should you have any queries or require any further information regarding the above.

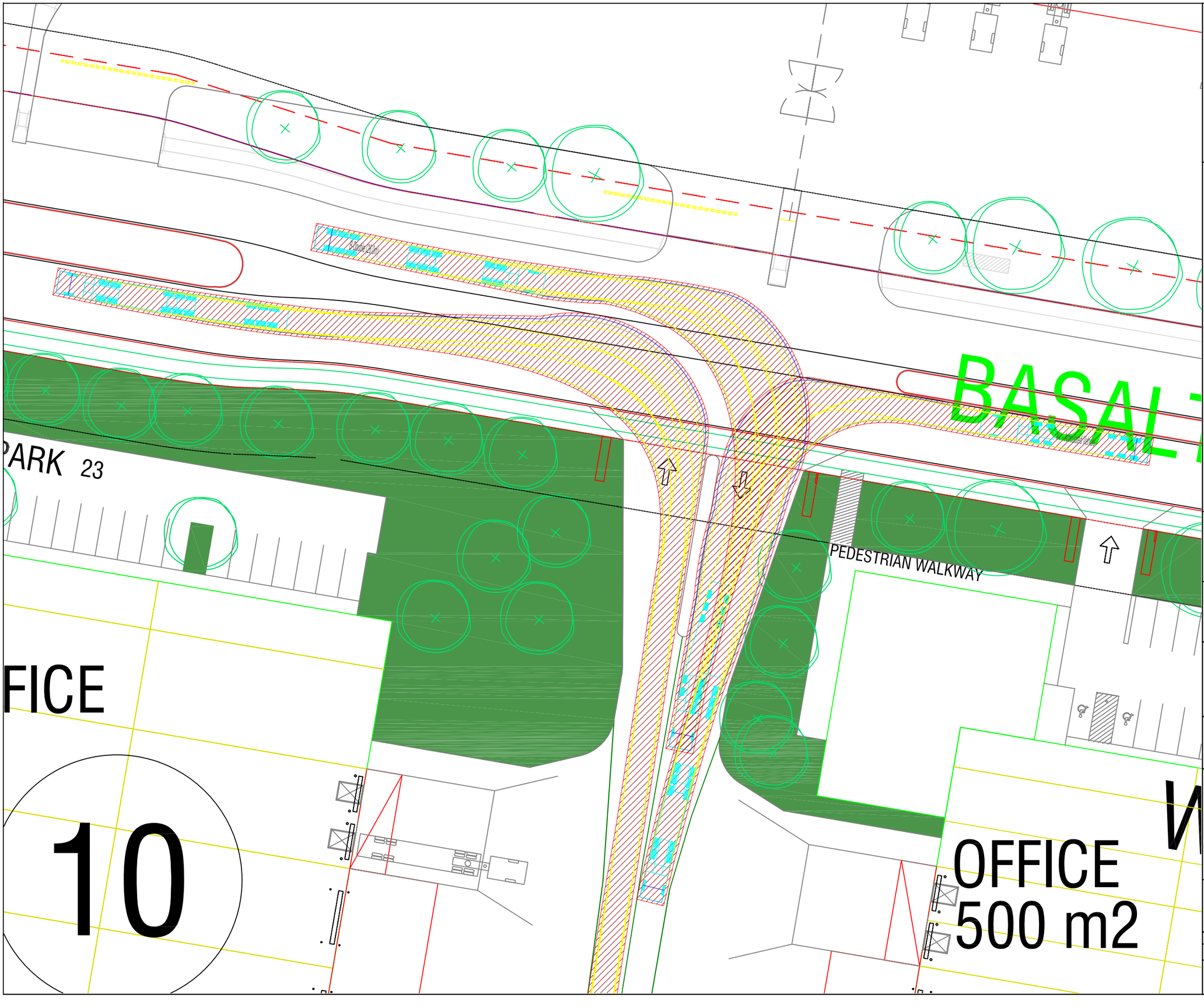
Yours faithfully,

traffix

Andrew Johnson
Associate Engineer

Attachments: 1) Swept Path Analysis

Attachment 1



notes

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no.	revision note	by.	date

architect

client

Hansen Yuncken

Levle 6, 15 Bourke Road
Mascot NSW 2020

scale

1:400 @ A3

0m 4 8 12 16

project

GREYSTANES INDUSTRIAL ESTATE

drawing prepared by

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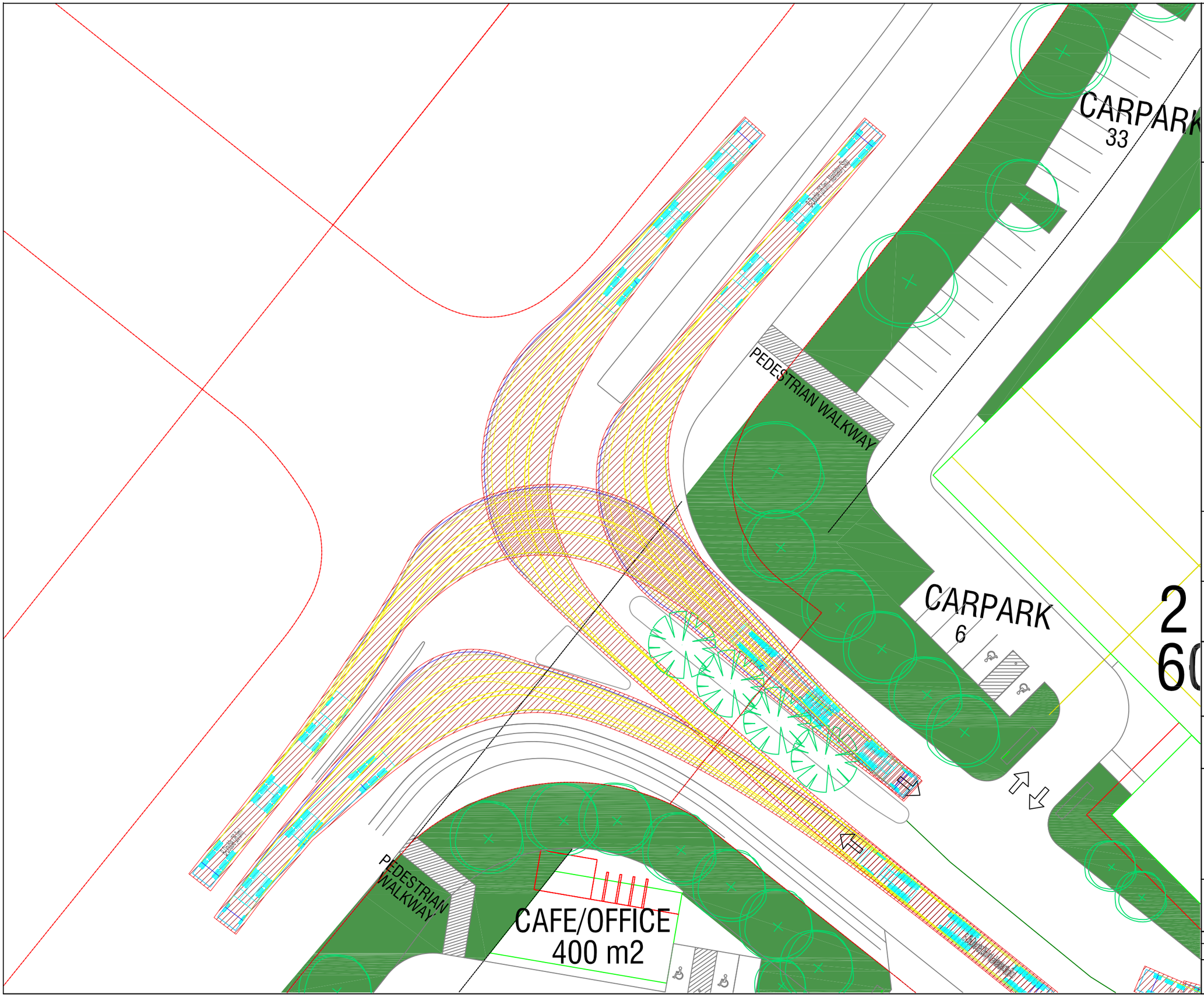
drawing title

Basalt Road Heavy Vehicle Access Driveway
26m B-Double Truck Left-Out and Right-In
19m Articulated Truck Left-In

drawn:	checked: -	date: 29/11/2011

11 361	-	TX.01	-
project no.	drawing phase.	drawing no.	rev



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drawing title

Reconciliation Drive Heavy Vehicle Access
26m B-Double Truck Left-Out, Right-Out,
Left-In and Right-In

drawn:	checked: -	date: 29/11/2011

11 361	-	TX.02	-
project no.	drawing phase.	drawing no.	rev

2 STOREY OFFICE
615 m2

CARPARK
(AS APPROVED)

OFFICE
380 m2

CARPARK
33

0 10 20 30 40

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client
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Mascot NSW 2020

scale
1:500 @ A3
m 5 10 15 20
0

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drawing title
Roundabout Intersection of Basalt Road and Bellevue Circuit
26m B-Double Truck Manoeuvres

drawn:	checked: -	date: 29/11/2011

11 361	-	TX.03	-
project no.	drawing phase.	drawing no.	rev

8

OFFICE
380 m2

CARPARK
25

CARP
33

CARPARK
67

AV - Articulated Vehicle

AV - Articulated Vehicle

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0m 4 8 12 16

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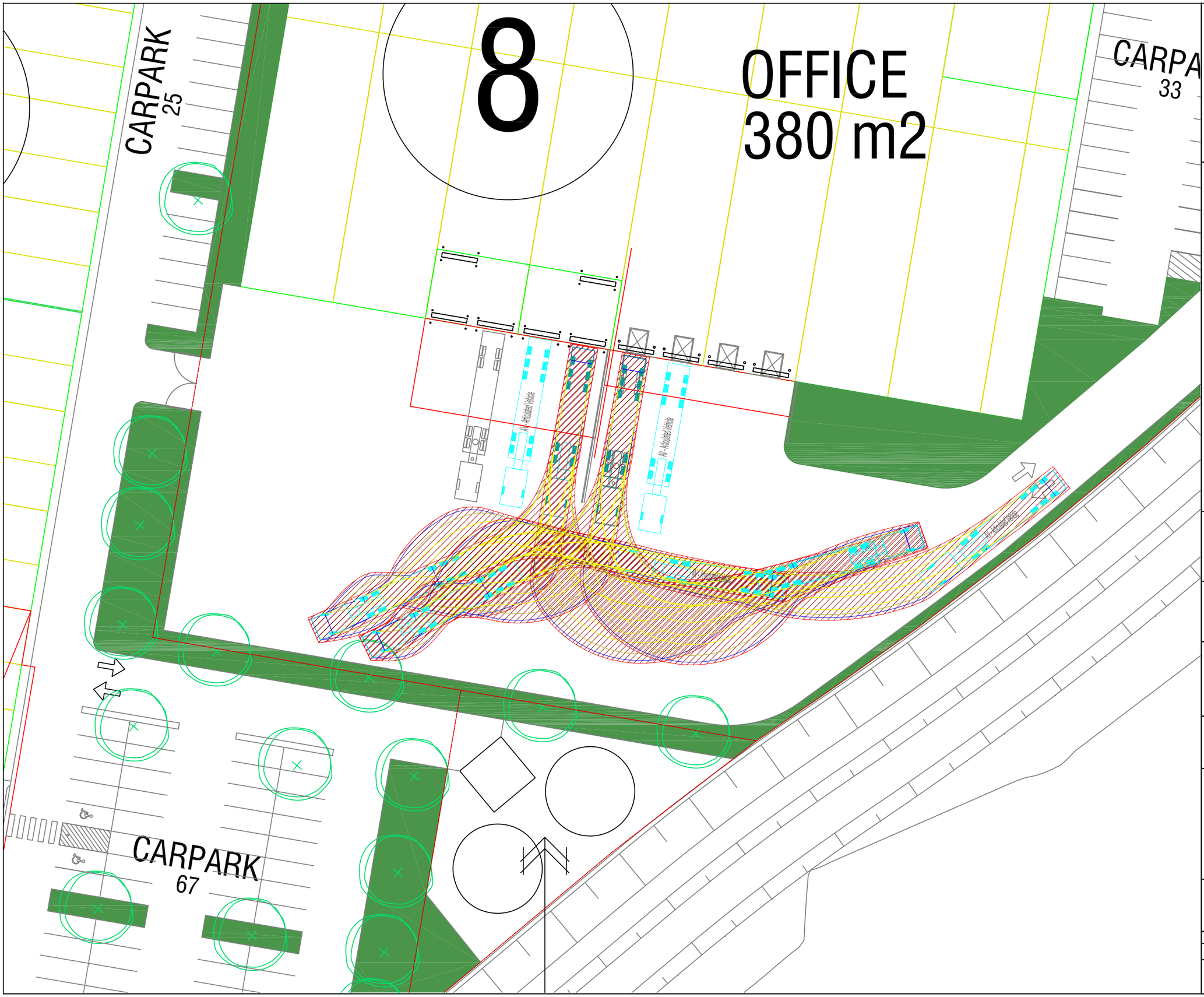
drawing title
Building 8
19m Articulated Truck Entry and Exit Manoeuvres to Outermost Loading Docks

drawn:	checked: -	date: 29/11/2011

11 361	-	TX.04	-
project no.	drawing phase.	drawing no.	rev



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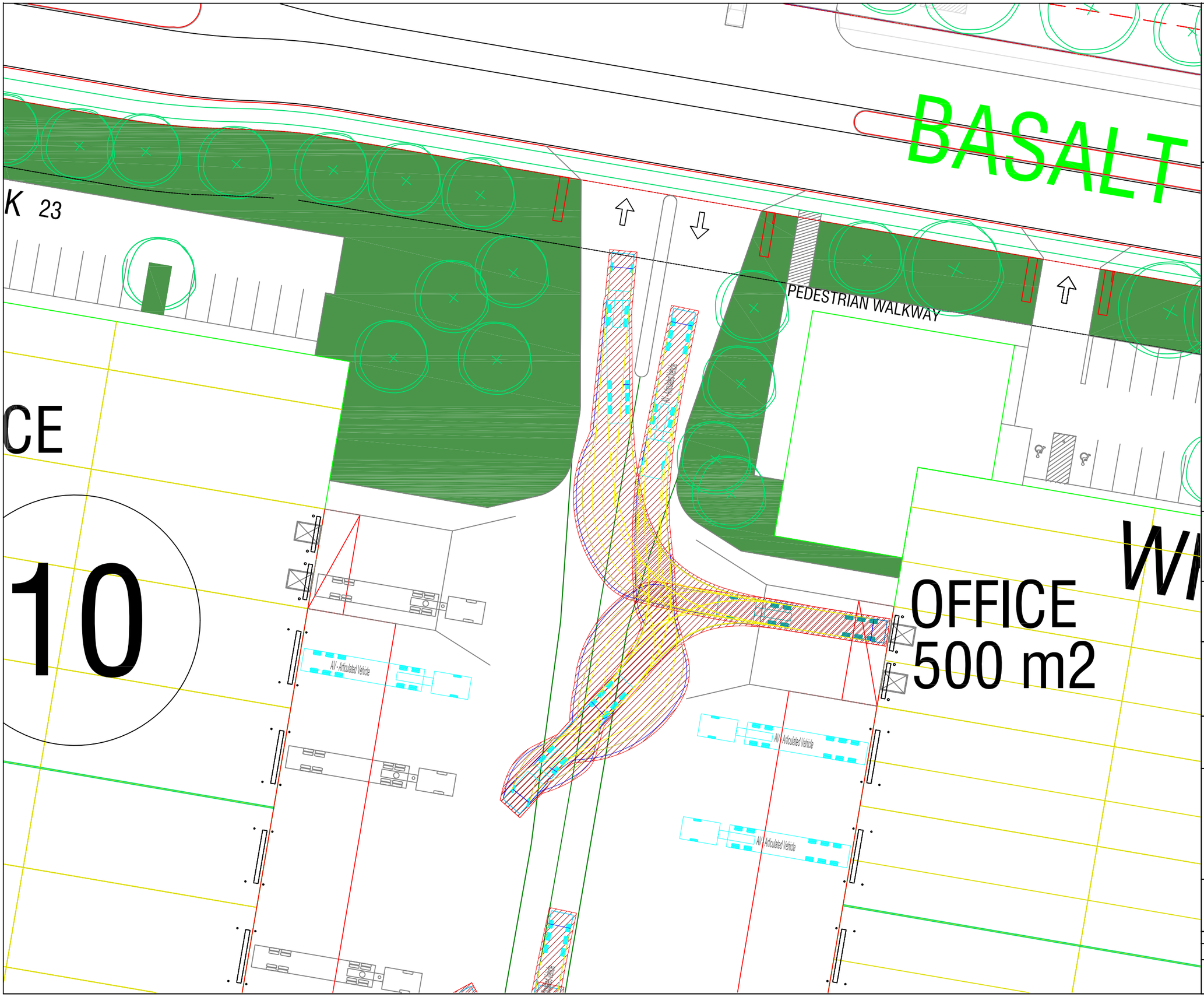
drawing title
Building 8
19m Articulated Truck Entry and Exit Manoeuvres to Innermost Loading Docks

drawn:	checked: -	date: 29/11/2011

11 361	-	TX.05	-
project no.	drawing phase.	drawing no.	rev



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0m 4 8 12 16

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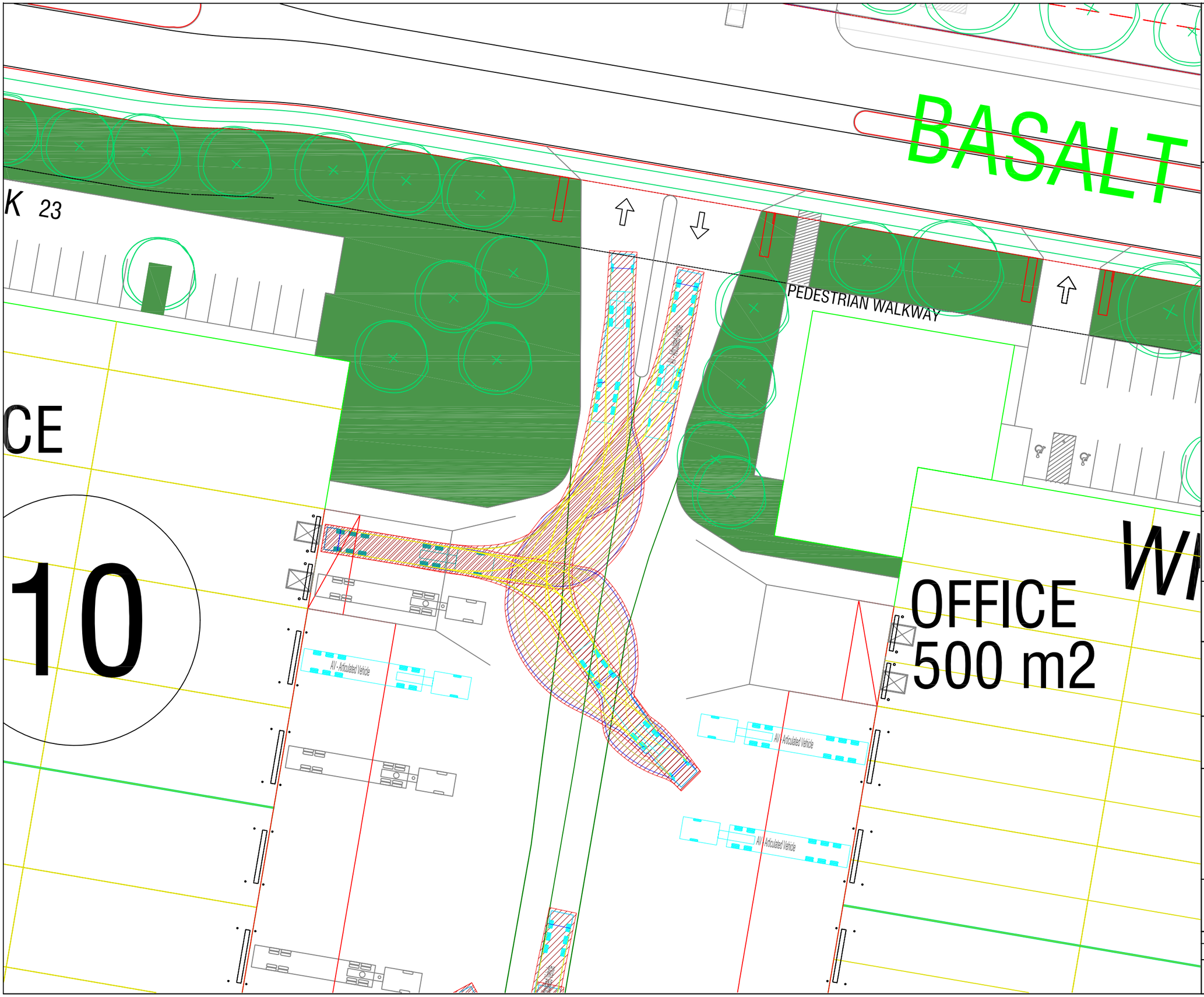
Building 9
19m Articulated Truck Entry and Exit Manoeuvres to Northernmost Loading Dock

drawn:	checked: -	date: 29/11/2011

11 361	-	TX.06	-
project no.	drawing phase.	drawing no.	rev



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Mascot NSW 2020

scale
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0m 4 8 12 16

project
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drawing title
Building 10
19m Articulated Truck Entry and Exit Manoeuvres to Northernmost Loading Dock

drawn:	checked: -	date: 29/11/2011

11 361	-	TX.07	-
project no.	drawing phase.	drawing no.	rev

OFFICE

16500 m2

20

NH 13065

TRAILER STORAGE AREA

TRAILER STORAGE AREA

OFFICE
500 m2

CARPARK
49

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0m 4 8 12 16

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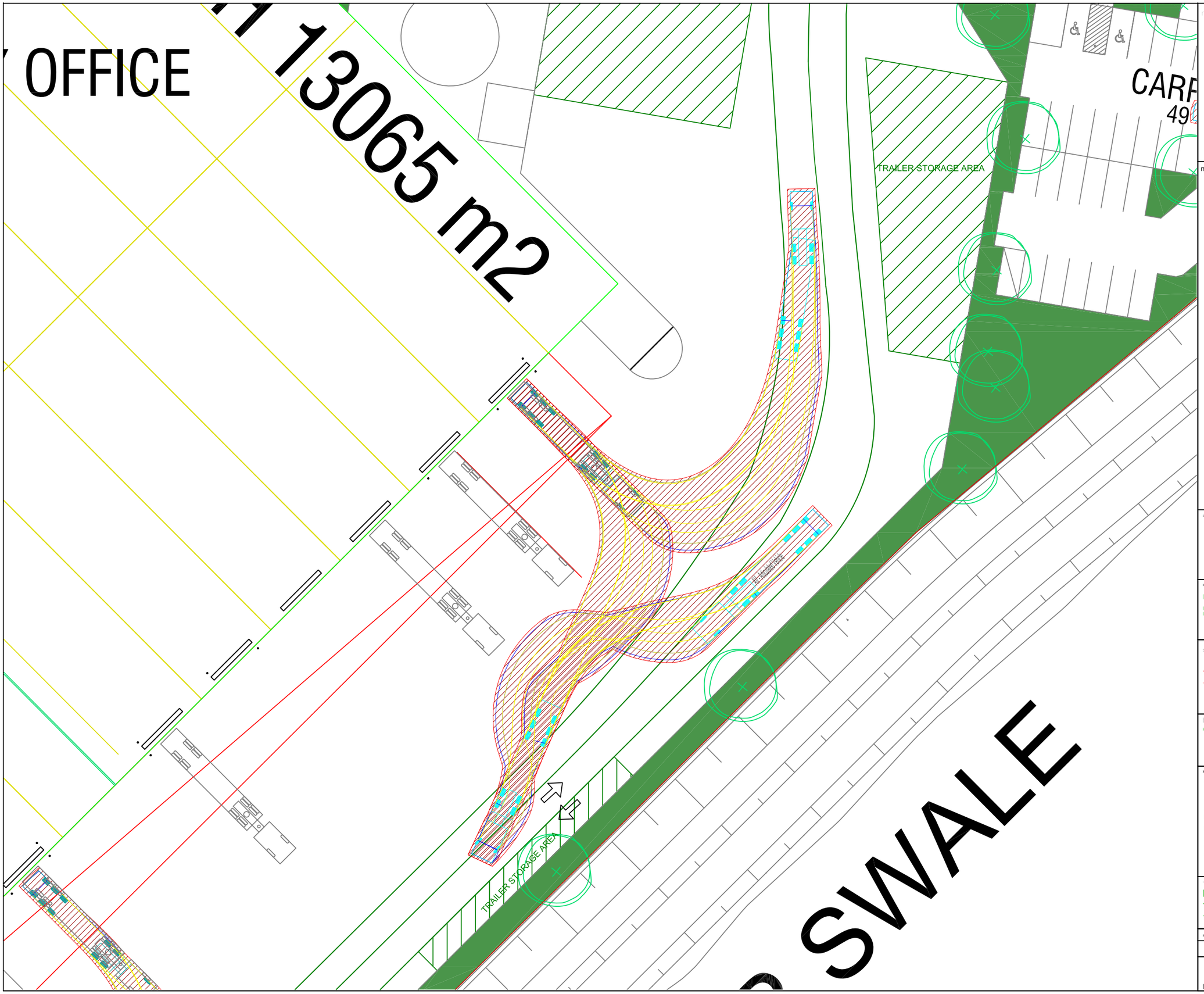
drawing title
Building 10
19m Articulated Truck Entry and Exit Manoeuvres to Southernmost Loading Dock

drawn:	checked: -	date: 29/11/2011

11 361	-	TX.08	-
project no.	drawing phase.	drawing no.	rev



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0m 4 8 12 16

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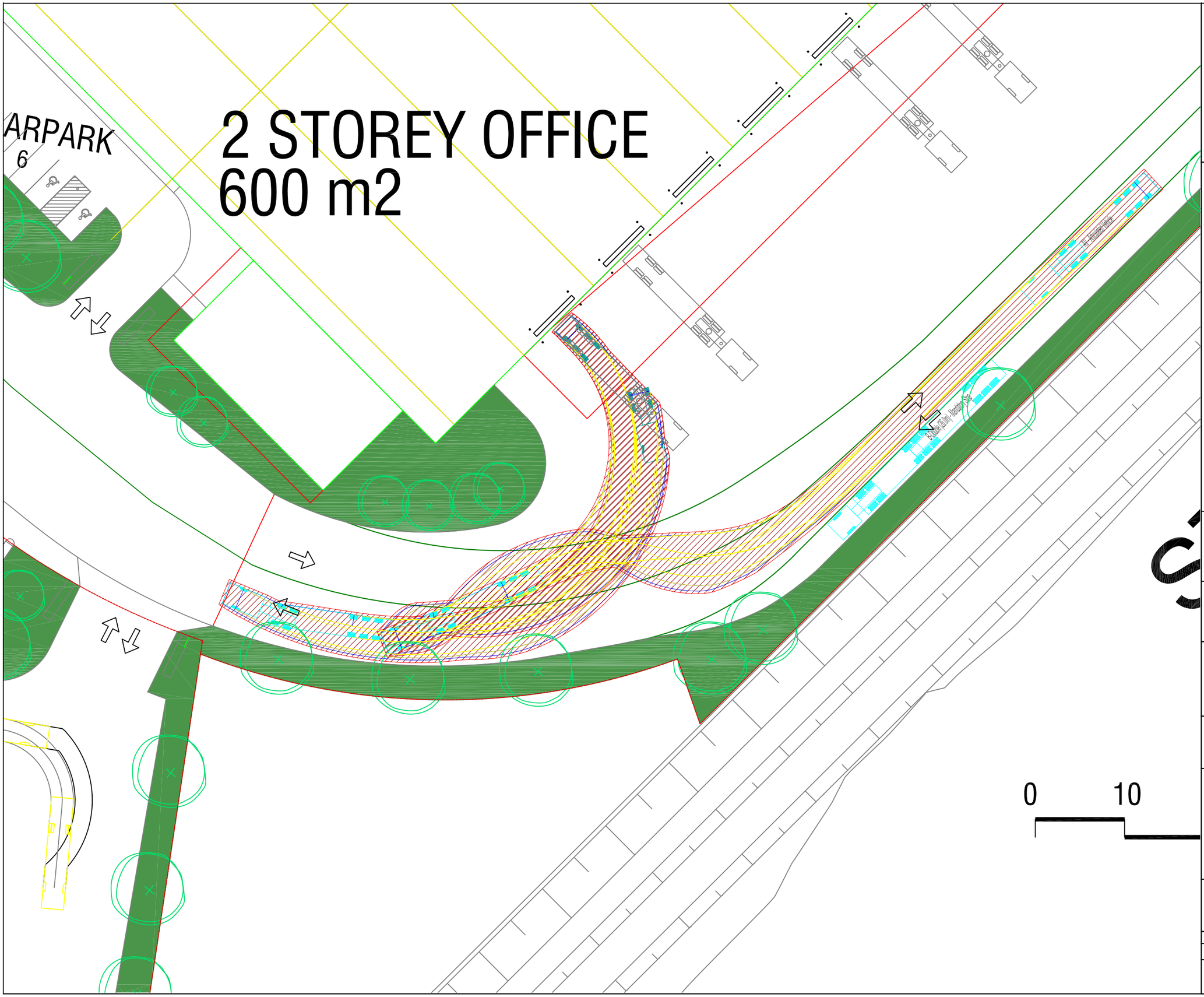
drawing title
Building 11
19m Articulated Truck Entry and Exit Manoeuvres to Northernmost Loading Dock

drawn:	checked: -	date: 29/11/2011

11 361	-	TX.09	-
project no.	drawing phase.	drawing no.	rev



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Building 11
19m Articulated Truck Entry and Exit Manoeuvres to Southernmost Loading Dock

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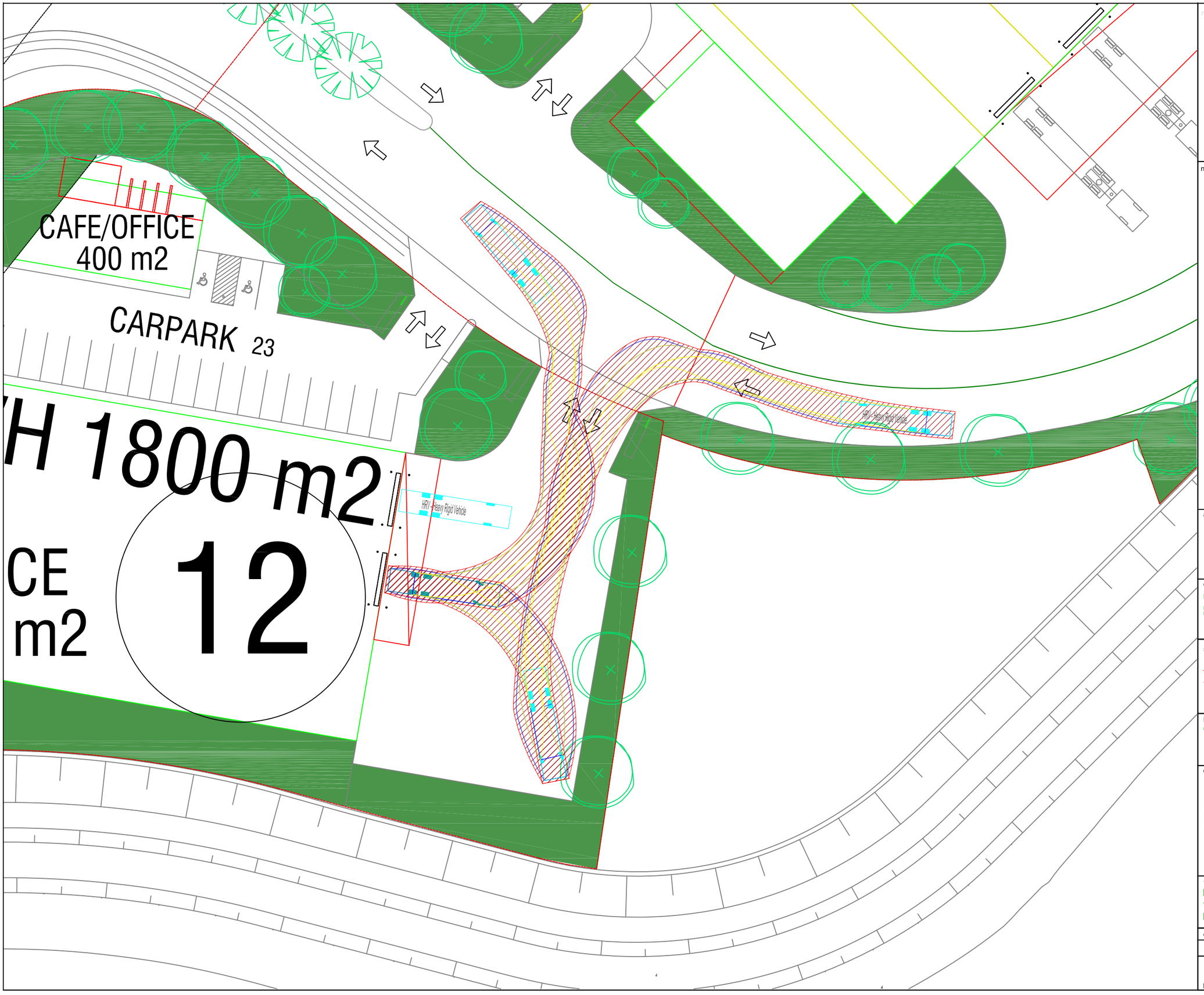
11 361	-	TX.10	-
project no.	drawing phase.	drawing no.	rev



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Building 12
12.5m Heavy Rigid Vehicle Entry and Exit
Manoeuvres to Southernmost Loading Dock

drawn:	checked: -	date: 29/11/2011

11 361	-	TX.11	-
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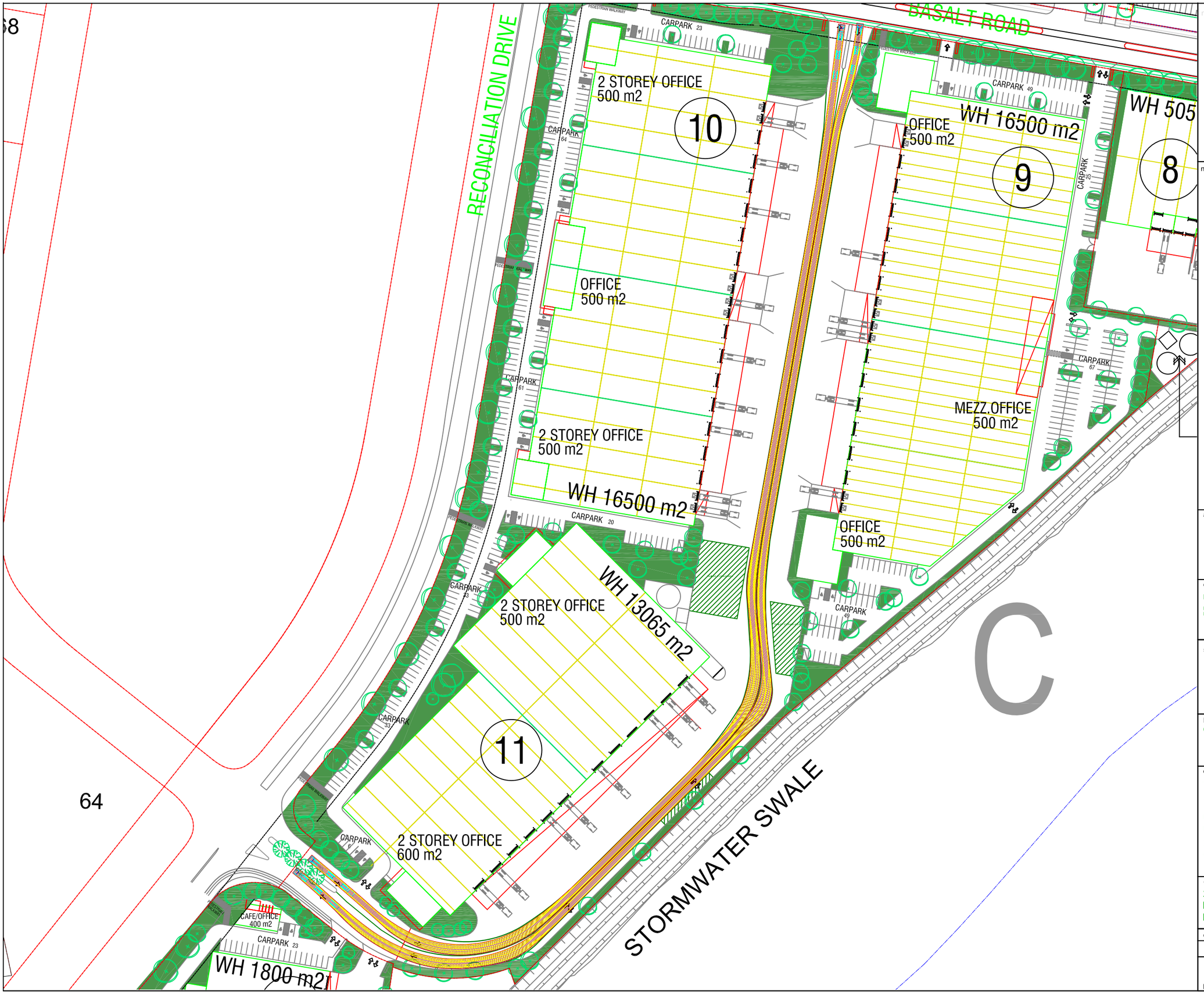

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1

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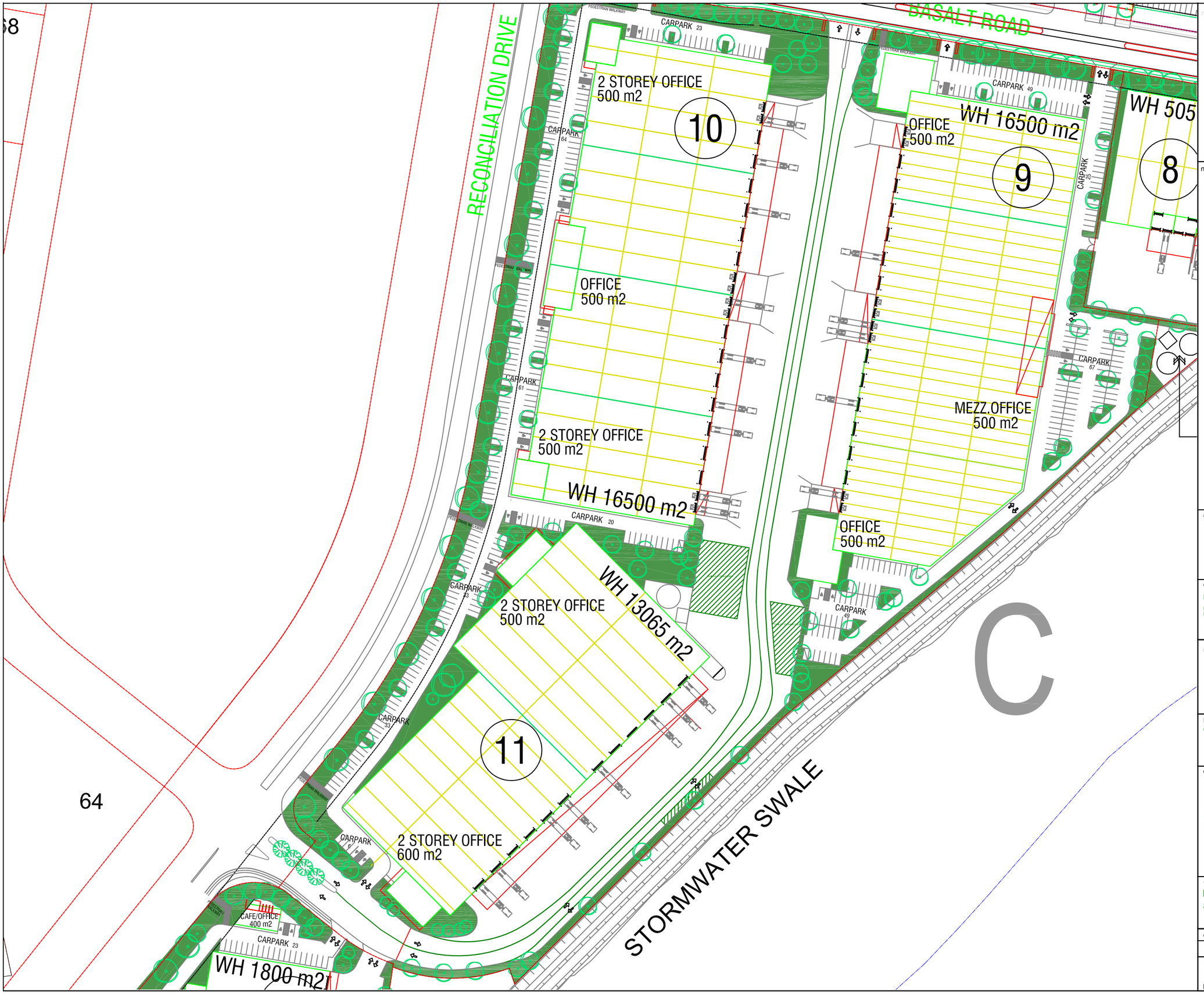
drawing title

26m B-Double Trucks Circulating Along Internal Roadway between Basalt Road and Reconciliation Drive Accesses

drawn:	checked: -	date: 29/11/2011

11 361	-	TX.12	-
project no.	drawing phase.	drawing no.	rev



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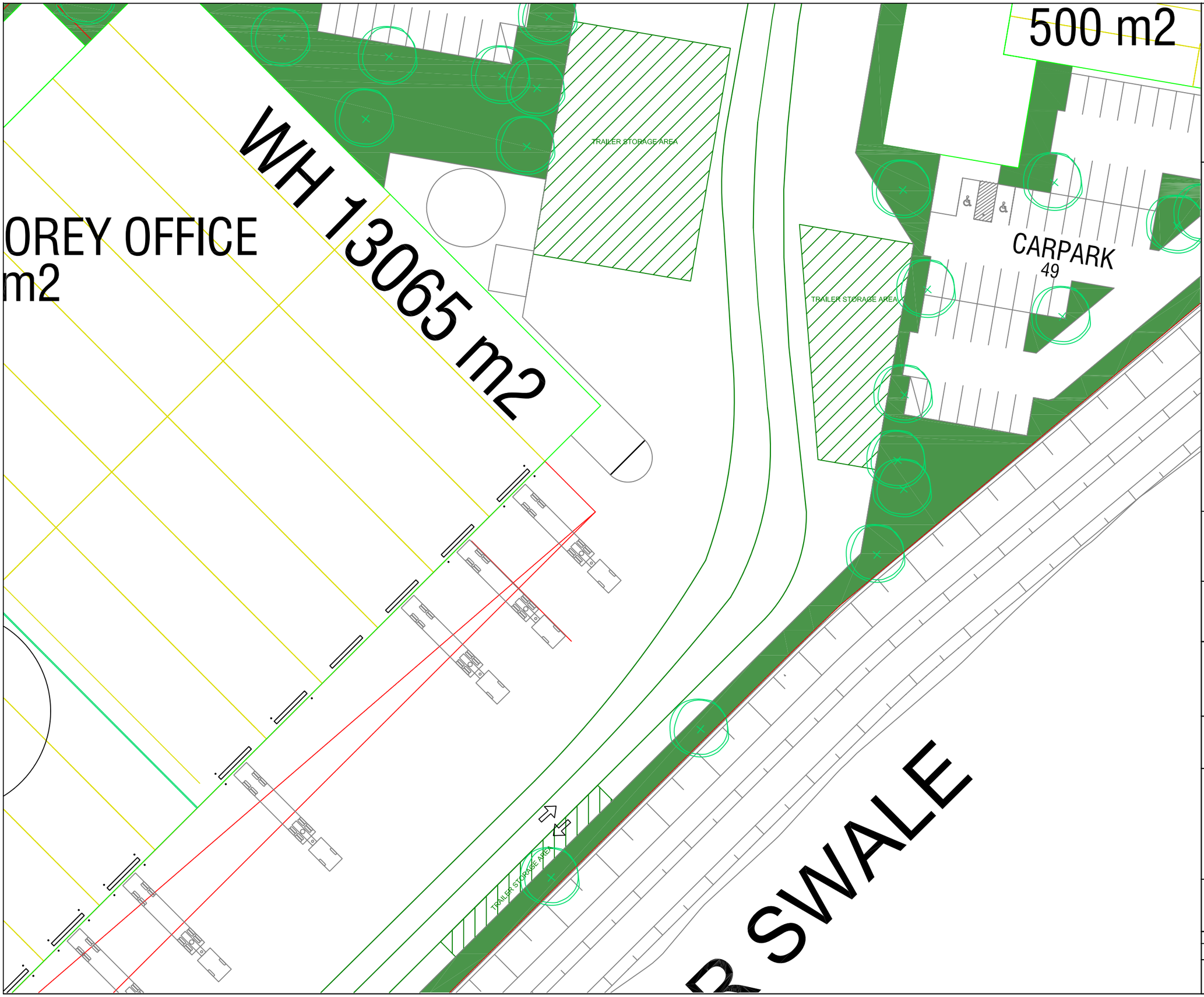
drawing title

Proposed Internal Roadway between Basalt Road and Reconciliation Drive Accesses

drawn:	checked: -	date: 29/11/2011

11 361	-	TX.13	-
project no.	drawing phase.	drawing no.	rev



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drawing title

Location of Proposed Trailer Storage Areas

drawn:	checked: -	date: 29/11/2011

11 361	-	TX.14	-
project no.	drawing phase.	drawing no.	rev