TECHNICAL NOTE

GPA Manchester SIP RIB

SUBJECT	PROJECT NO.	DATE
GPA Manchester Swept Path Analysis	100096142	29 January 2025

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Document history

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Swept Path Analysis

The vehicle swept path analysis for the GPA access road was undertaken using three representative vehicle models, as illustrated in Figure 1 in the following pages. A 7.9m DB32 refuse vehicle was selected to assess ingress and egress at all checkpoints, as it represents the largest vehicle anticipated to use the proposed access road. The analysis confirmed that the 7.9m refuse vehicle could successfully navigate all access and egress points, including the initial rejection point. For further details, refer to Figure 3 in the following pages.

The vehicle swept paths provided are indicative and will be refined at the detailed design stage to ensure a conceptually safe layout. However, the analysis identified that a 12m Fire Vehicle was unable to manoeuvre safely through the access lane under the original design, necessitating modifications to the kerbed splitter islands to accommodate emergency vehicle. The proposed kerb line adjustments and the revised swept paths for the 12m Fire Vehicle are illustrated in Figure 4 of the following pages.

The 34m-long western layby, acting as a drop-off zone, with a 23m section between tapers, was assessed using a 7.17m FTA Design Rigid Vehicle, representing the largest expected user of the facility as shown Figure 5 in the following pages. Additionally, swept path analysis for a 4.8m Standard Design Vehicle has been conducted, the results demonstrate that the layby can accommodate up to three standard cars while maintaining a minimum 1.5m clearance between vehicles.

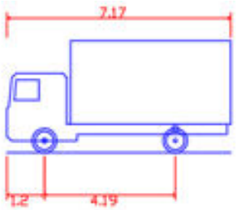
The large splitter island south of the access road on Great Ancoats Street was extended in accordance with CD123, Section 6.18, to eliminate the existing right-turn movement into the site. A minimum 15m length of central reserve opening was maintained to ensure that the right turn from Laystall Street onto Great Ancoats Street remained feasible. To assess this movement, a 16.5m FTA Design Articulated Vehicle was used for swept path analysis illustrated in Figure 5 of the following pages.

It is important to note that all vehicle movements through the proposed access road will be pre-planned, with speeds reduced to approximately 5 mph to ensure safe and controlled access. Also, some minor amendments to kerb setting out are required during the detail design stage.

Visibility Splays

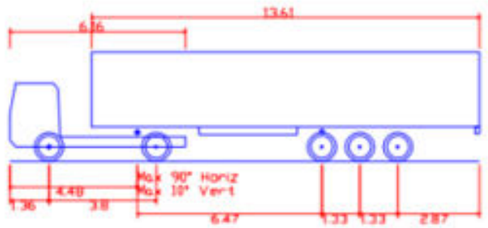
The visibility splays have been plotted from the egress points of the eastern layby onto Great Ancoats Street and are illustrated in Figure 2 in the following pages.

Figure 1: Vehicle Details & Dimensions



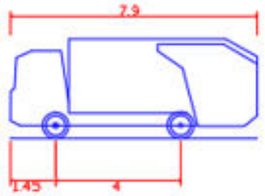
FTA Design 7.5 Tonne Rigid Vehicle (2016)

Overall Length	7.170m
Overall Width	2.300m
Overall Body Height	3.580m
Min Body Ground Clearance	0.375m
Track Width	2.120m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	7.000m



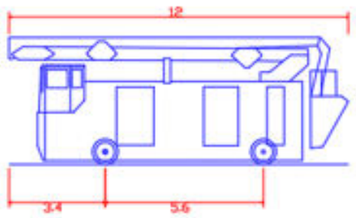
FTA Design Articulated Vehicle (2016)

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.600m



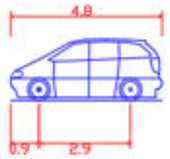
DB32 Refuse Vehicle

Overall Length	7.900m
Overall Width	2.400m
Overall Body Height	3.183m
Min Body Ground Clearance	0.388m
Max Track Width	2.400m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	9.625m



Aerial Platform/ Turntable Ladder/ Special Appliance

Overall Length	12.000m
Overall Width	2.550m
Overall Body Height	4.500m
Min Body Ground Clearance	0.130m
Track Width	2.550m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	13.750m



Standard Design Vehicle (SDV)

Overall Length	4.800m
Overall Width	2.000m
Overall Body Height	1.950m
Min Body Ground Clearance	0.100m
Track Width	2.000m
Lock to lock time	4.00s
Wall to Wall Turning Radius	6.000m

Figure 2 - Visibility Splays

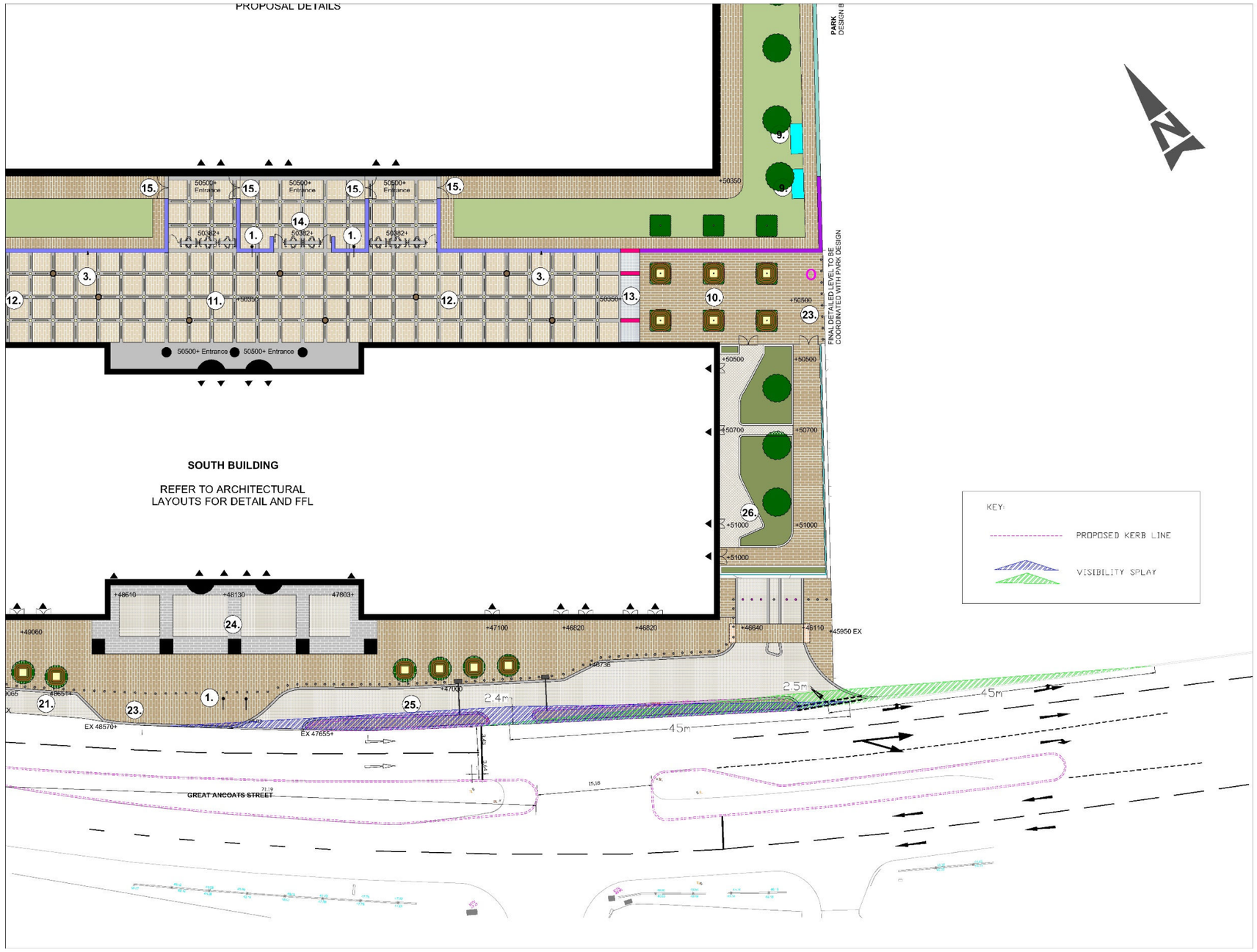


Figure 3 – Tracking of Refuse Vehicle

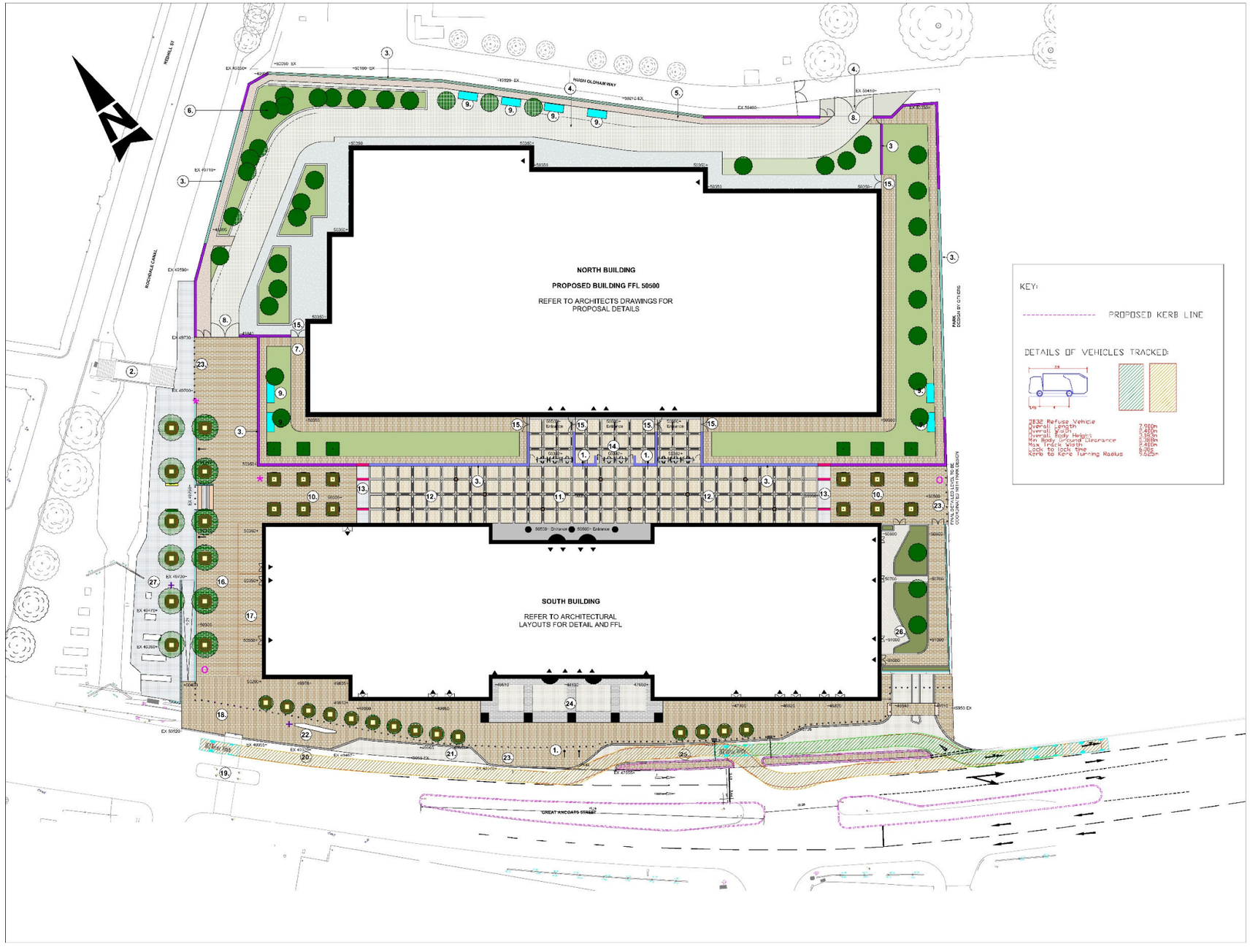


Figure 4 – Tracking of Fire Vehicle

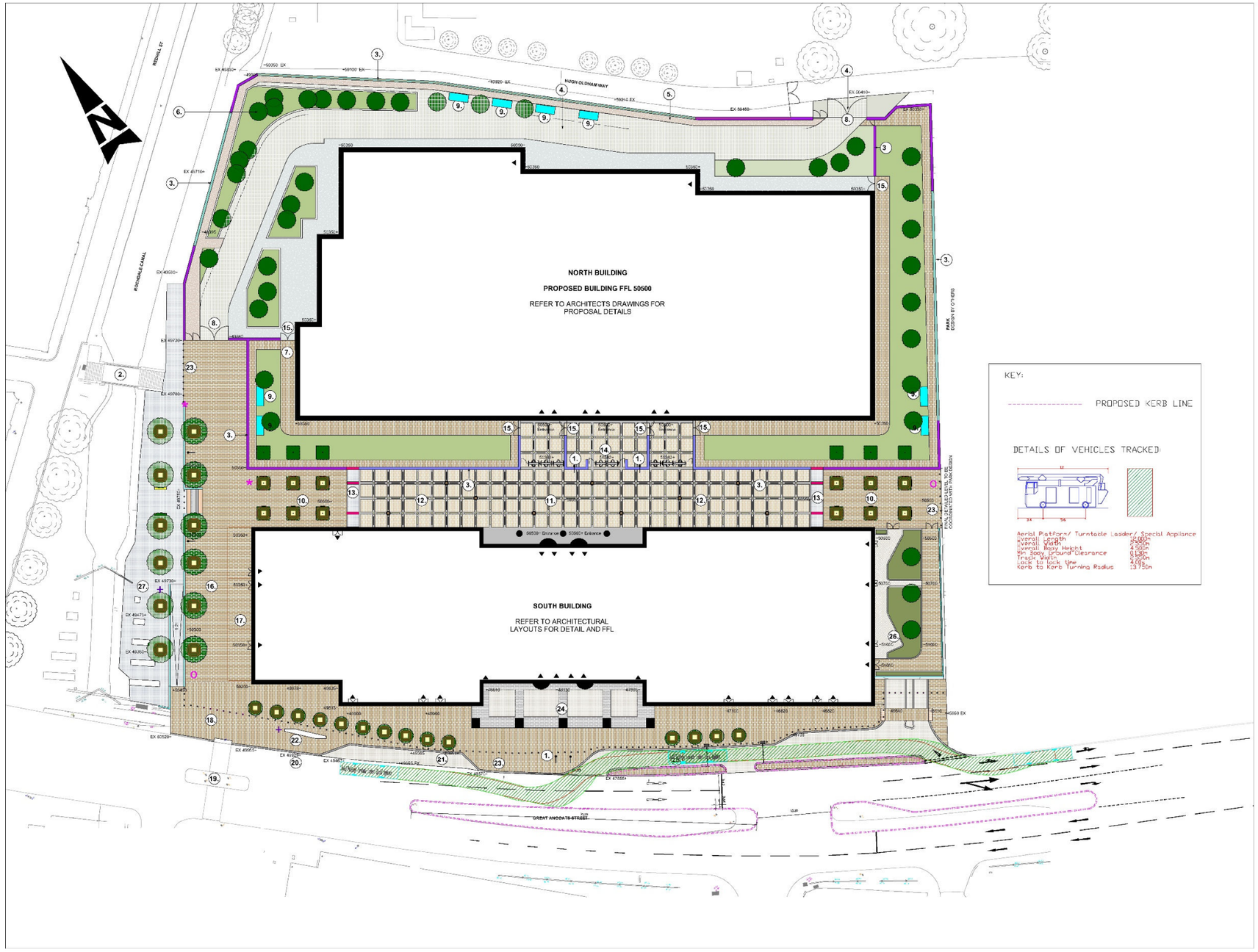


Figure 5 – Goods Vehicles

