TECHNICAL NOTE 1

DATE:	26 May 2020	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Car Park Concept Layout Design Options		
PROJECT:	Castleton Triangle Site Concept Design Temporary Car Park Layout	**AUTHOR:**	Huw Nicholas
CHECKED:	James Howe	**APPROVED:**	Richard Jones

INTRODUCTION

Rochdale Council have instructed WSP to produce layout options for a temporary car park on a parcel of land they own off Railway Approach, Castleton, known as the 'triangle site'.

The temporary use of this site for car park is a critical stage in assisting the delivery of early phases of development that have been identified in the recently completed Castleton Station Area Masterplan (2019) and the development of the Manchester Road Mayor's Challenge Cycle Scheme.

Under the Masterplan, an existing area of rail commuter parking on the east side of Castleton station will be used to form part of a comprehensive residential development scheme on Maltings Lane. In addition to this, the Council are in the process of identifying sites to relocate on-street parking along Manchester Road that are to be removed through for the Manchester Road cycle scheme along a 500m section the high street of Castleton. The use of the Triangle Site to provide parking capacity to replace those spaces removed by the above two initiatives has therefore been investigated.

TECHNICAL NOTE PURPOSE & STRUCTURE

The purpose of this Technical Note is to summarise the optioneering process and proposed options. The structure of this Technical Note is as follows:

- Site description
- Summary of design standards and assumptions
- Layout options
- Recommendation

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SITE DESCRIPTION

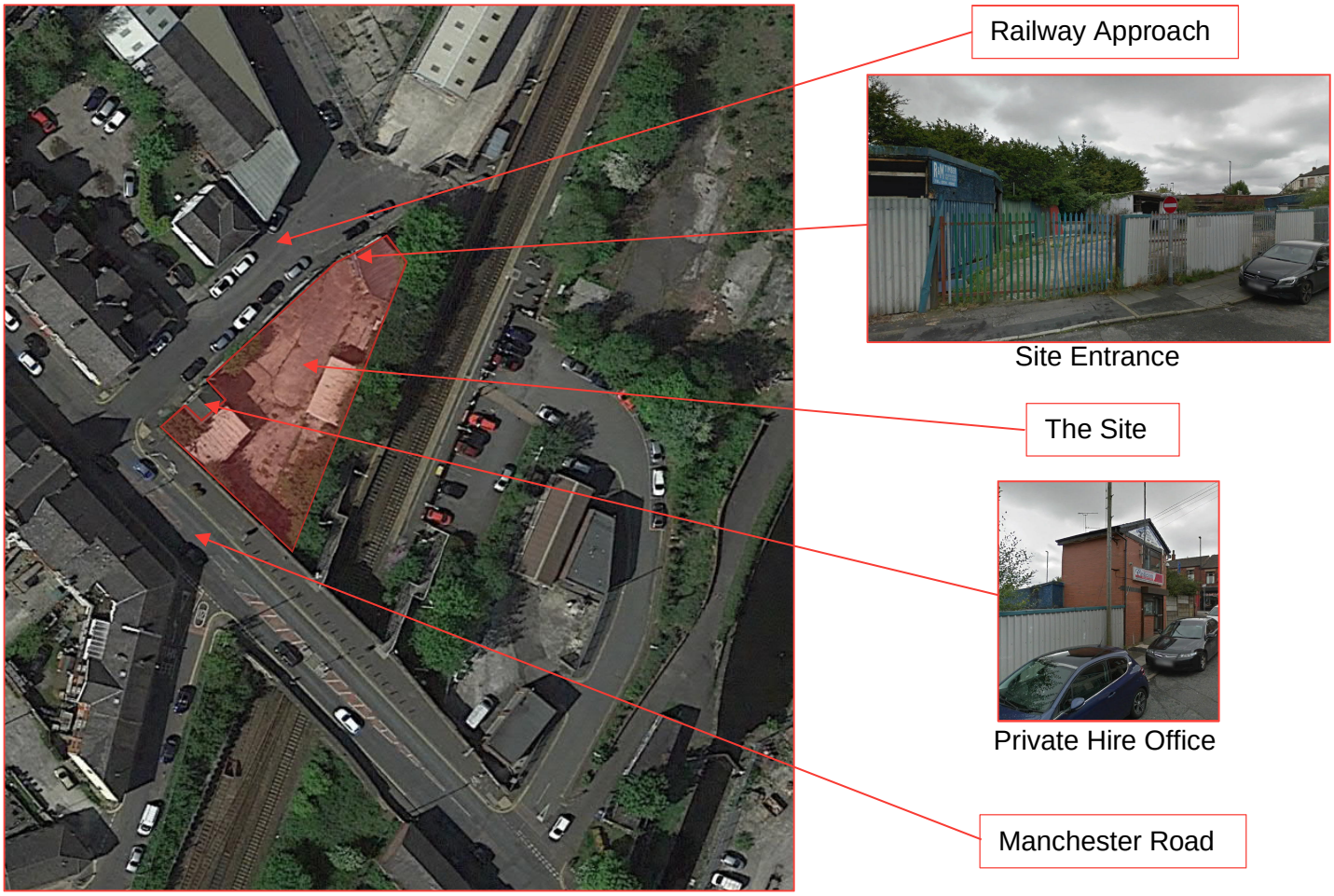
The site is a triangular parcel of land that is bound by Railway Approach to the west; Castleton station Rochdale-bound platform to the east; and Manchester Road to the south.

The site is comprised of a few derelict small brick and corrugated metal constructed garages / units on a concrete apron. There is a small brick building that is occupied by a private taxi firm that is on the site but is not within the ownership of the Council.

Access to the site is at the northern end where the site and Railway Approach share the same grade. To the south of the entrance Railway Approach rises to meet with Manchester Road, immediately east of the take-off point of the bridge over the Calder Valley railway line.

Figure 1 refers.

Figure 1 – Triangle Site, Castleton



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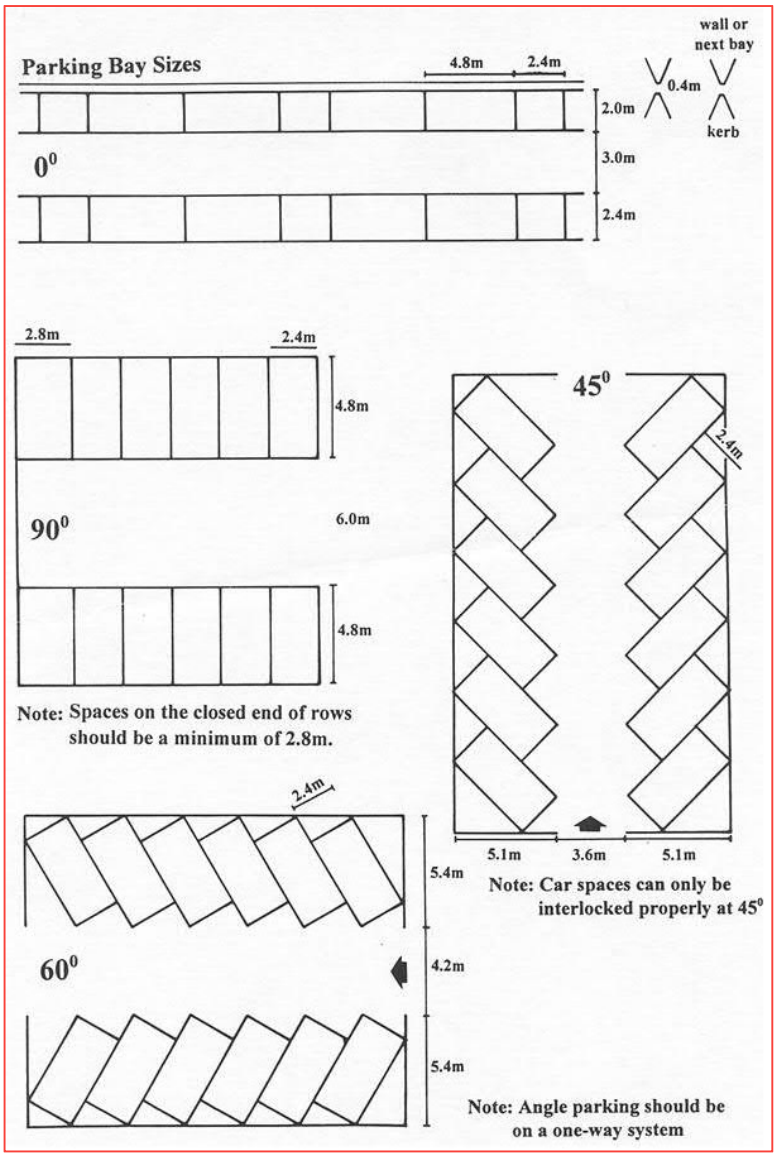
DESIGN STANDARDS & ASSUMPTIONS

The following sets out the design standards and assumptions that have informed the development of the layout options.

Space Sizes and Spacing

Industry-standard parking space and aisle width dimensions shown in Figure 2 have been used to determine potential layouts depending on the generally parking arrangement adopted.

Figure 2 – Standard Parking Bay and Aisle Dimensions



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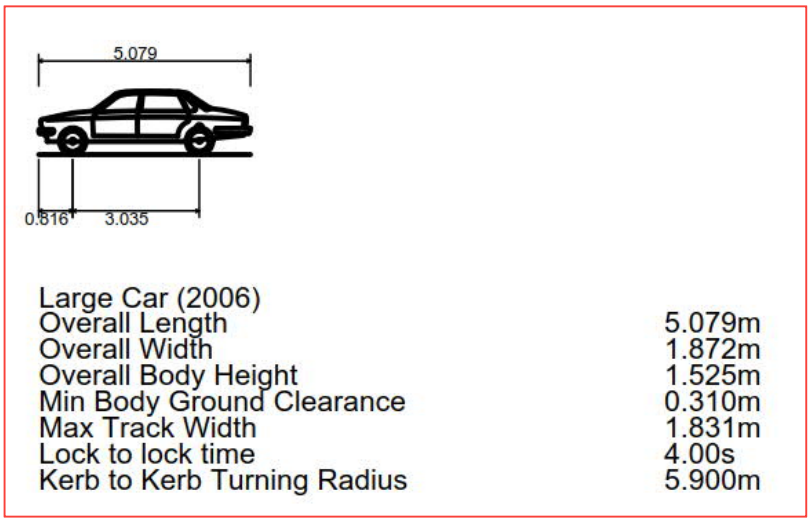
Site Entrance Location

The site is generally at around the same level as the station platforms. Manchester Road, which forms the southern boundary of the site, bridges over the railway line and so there is a significant level difference between the carriageway and the ground level of the site. At the junction of Railway Approach and Manchester Road the site is approximately 3m lower than the carriageway, and the level difference decreases over a distance of 40m until both Railway Approach and the site are at the same grade, close to the station entrance. To take an access from Railway Approach outside of the section where they are at-grade would require a ramp that would take up space within the site, and thus reduce the number of spaces that could be provided, and add further cost to what is intended to be a temporary facility to be replaced by a permanent facility on land to the north of the site

Design Vehicle

The shape of the site does not readily lend itself to a standard car park layout. Therefore, where any areas of parking are not obviously in line with the above standards, the layout has been tested by using AutoTrack swept path analysis. The chosen design vehicle for swept path analysis is a large car with the dimensions and characteristics shown in Figure 3.

Figure 3 – Design Vehicle Characteristics (Autodesk – Auto-Track)



Target Number of Spaces

In developing options, the design team has assumed that the minimum number of spaces that are sought to be achieved is 20 spaces (2 of which are reserved for Blue Badge holders) which is the current capacity of the existing station car park. Any increase over this would be beneficial in transferring commuter parking in the surrounding residential streets to the new car park.

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Availability of Private Hire Office

It has been assumed that for the purpose of the temporary car park the private hire office is not brought within the scheme and as such the layout options take this into account. The small footprint of the building and the location in the site mean in could provide only an additional 1 or 2 spaces, and trying to bring the building within the temporary car park scheme is likely to result in delivery and impact upon the delivery of the Maltings Lane scheme.

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LAYOUT OPTIONS

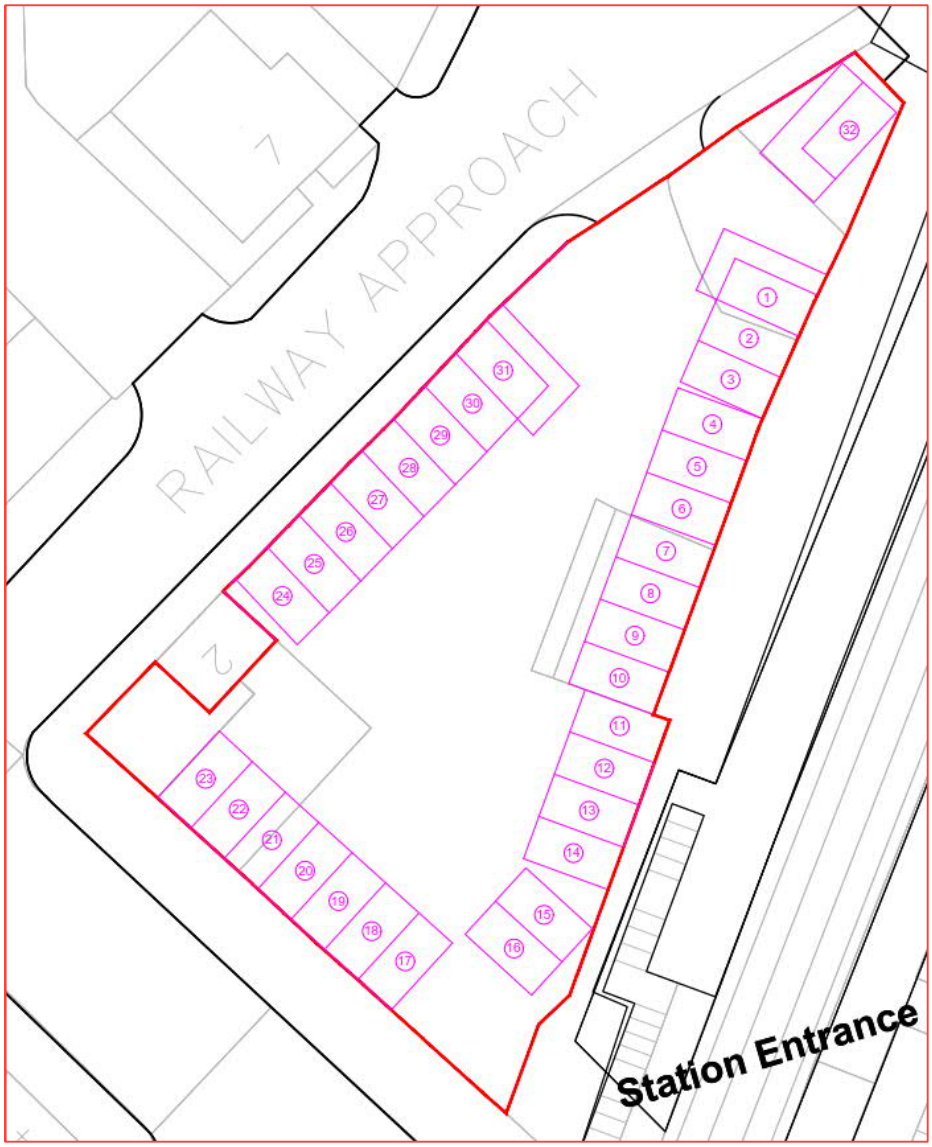
Option 1

Spaces are arranged around the edge of the site. The option retains the private hire office building.

This option can deliver:

- 32 spaces in total; and
- 3 Blue Badge holder spaces.

A larger drawing of Option 1, along with a series of swept-path assessments of those spaces where it is considered that needed to demonstrate that they are accessible, is provided in Appendix A.



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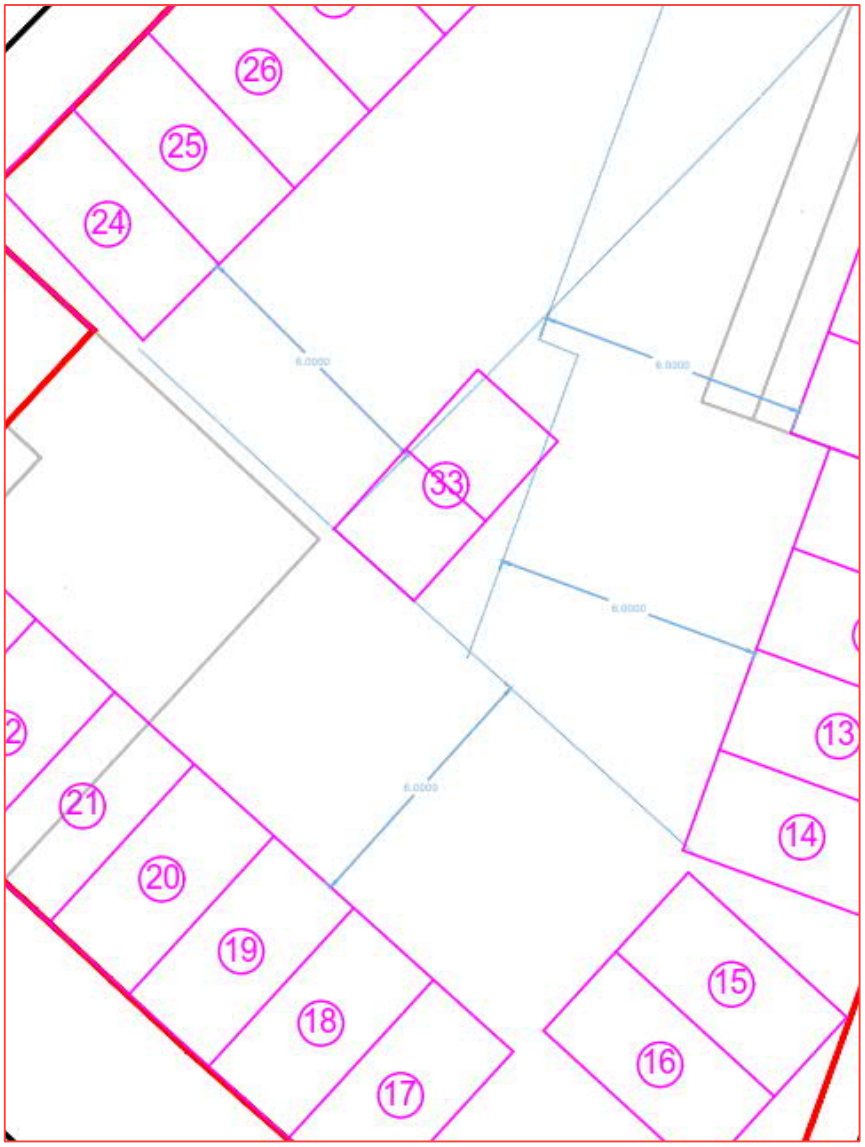
Option 1a

The arrangement of Option 1 leaves a large area of space in the centre of the site. Without regular enforcement at this site there is the potential for drivers to informally park in this area and could result in some vehicles being blocked into their space and access to other not possible for larger vehicles.

The design team as looked at the possibility of providing spaces in this area and as can be seen in the figure (right), one space can be provided with only a small part of the space encroaching on the 6m aisle width requirement. The provision of this parking space will assist in deterring informal parking in this area.

A larger drawing of Option 1 is provided in Appendix A.



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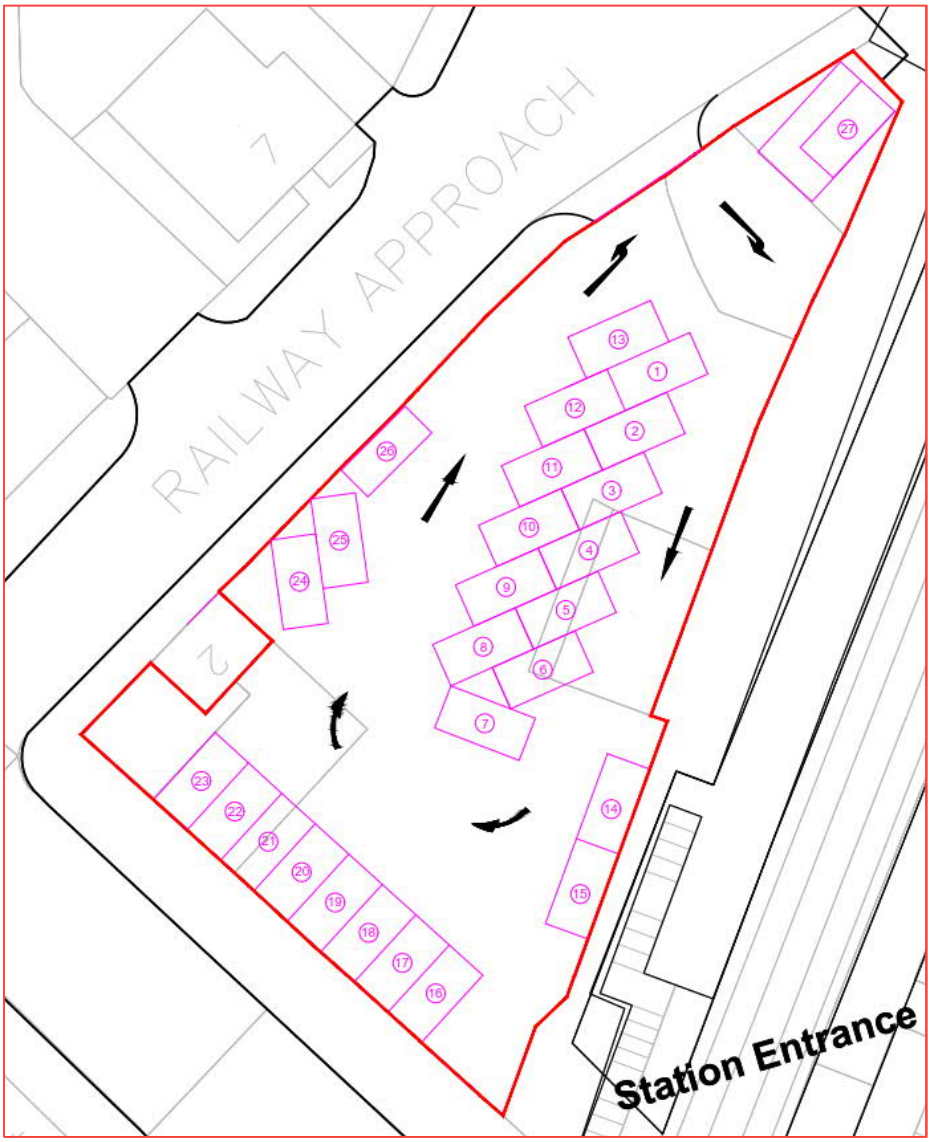
Option 2

Spaces are arranged around the boundary of the site, with a mix of perpendicular, angled and parallel spaces. This includes a central bank of spaces in a 45 degree saw-tooth arrangement. This option proposes a one-way clockwise circulation to allow ease of access to spaces.

This option can deliver:

- 27 spaces in total; and
- 1 Blue Badge holder space.

A larger drawing of Option 2, along with a series of swept-path assessments of those spaces where it is considered that needed to demonstrate that they are accessible, is provided in Appendix B.



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RECOMMENDATION & NEXT STEPS

Recommendation

Option 1a provides the simplest layout for users and highest number of spaces. Following discussions with the Council's Network Improvement & Development team the it was determined that the car park, no matter the management regime, would be visited by the enforcement team and a vehicle parking outside designated spaces would be served with an enforcement notice.

As such, Option 1 is recommended to be progressed to the next stage of design.

Next Steps

In order to deliver the temporary car park, we would recommend that the following activities are undertaken next:

- Determine the management of the car park:
  - Long Stay / Short Stay; and
  - Charging regime
- Topographic survey (topo) of site to include:
  - Site levels;
  - Accurate site boundary;
  - Accurate location of trees (if within site boundary) and any other obstacles which may prevent spaces being used; and
  - Location of any drainage and other utilities.
- Review layout following topo survey.
- Scoping of change of use planning application with the Planning Authority and Local Highway Authority.
- Develop a detailed design of the layout for the purpose of:
  - Submission of a planning application
  - Costing
  - Tender documentation

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APPENDIX A

OPTION 1 & OPTION 1A: LAYOUTS AND SWEPT-PATH ANALYSIS



DO NOT SCALE

Key:

Car Park Boundary

Notes:

Total number of spaces: 32

Square spaces 4.8 m x 2.4m : 29

Disabled parking 6.5 m x 3.9 m : 3

REV	DATE	BY	DESCRIPTION	CHK	APP
A	28/04/2020	KC	FIRST ISSUE	HN	HN

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CLIENT: ROCHDALE METROPOLITAN BOROUGH COUNCIL

ARCHITECT: N/A

PROJECT: Castleton Station Area Masterplan

TITLE: Car Park Layout - Option 1

SCALE @ A3:	CHECKED:	APPROVED:
1:300	HN	HN

PROJECT No:	DESIGNED:	DRAWN:	DATE:
70059903	KC	KC	May 20

DRAWING No:	REV:
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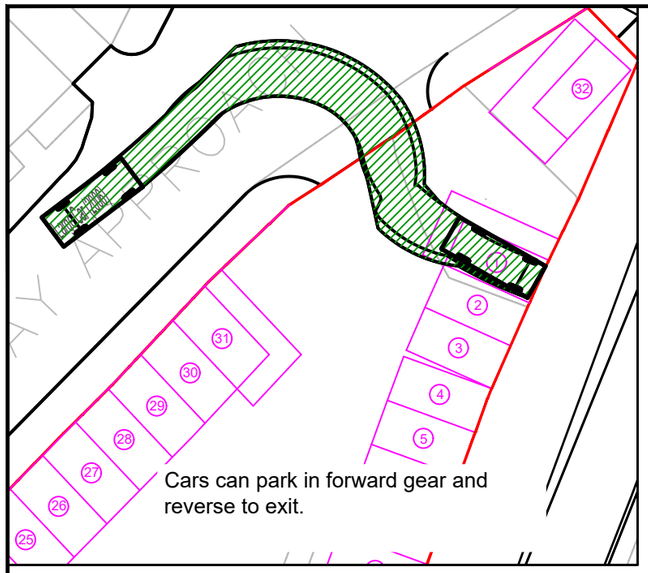

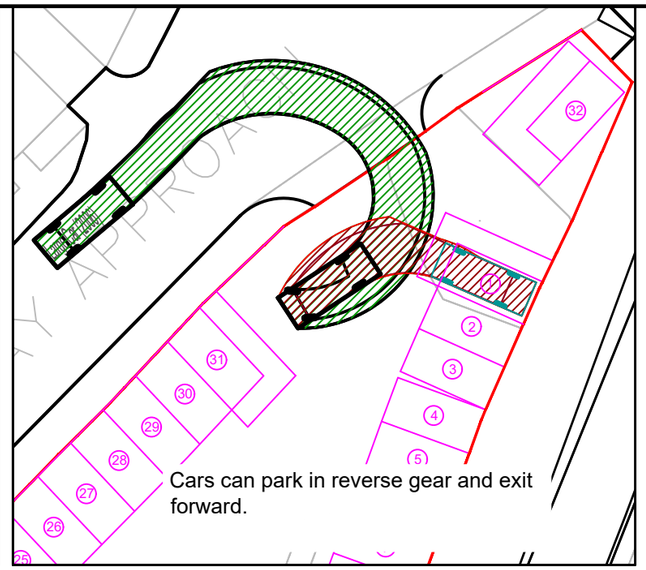

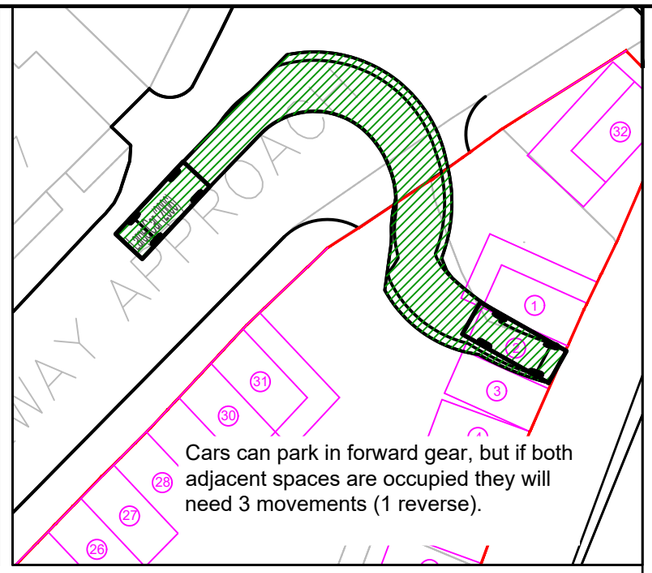

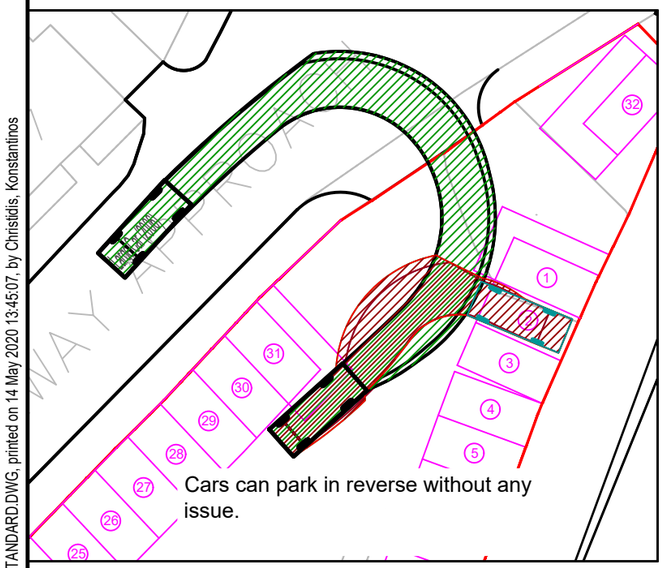

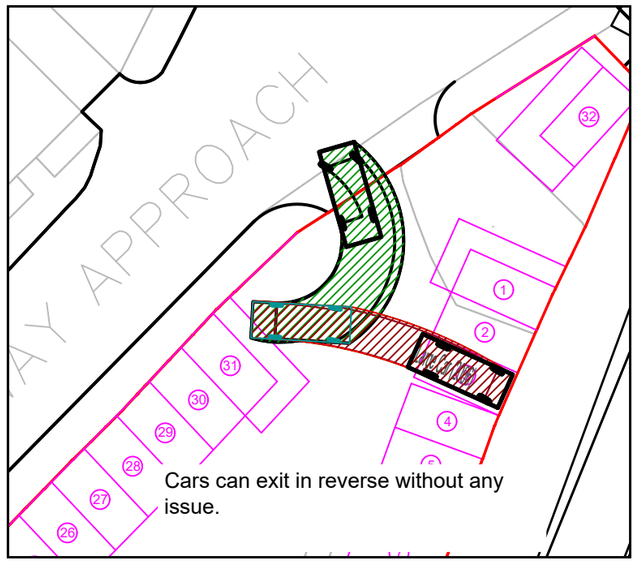

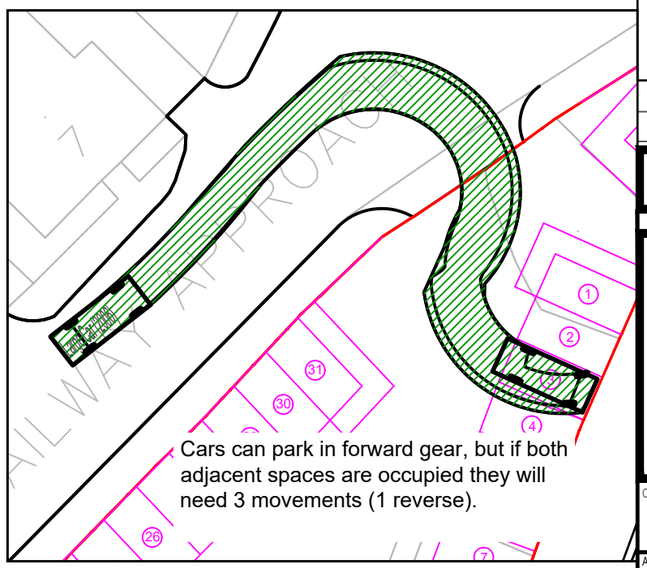

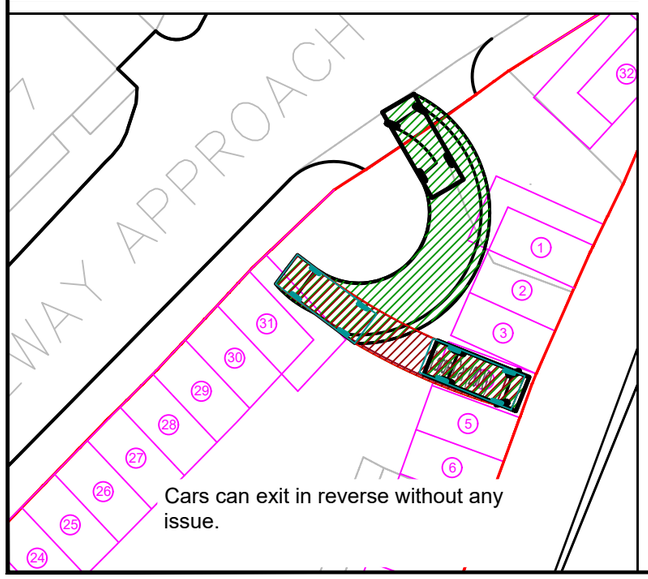

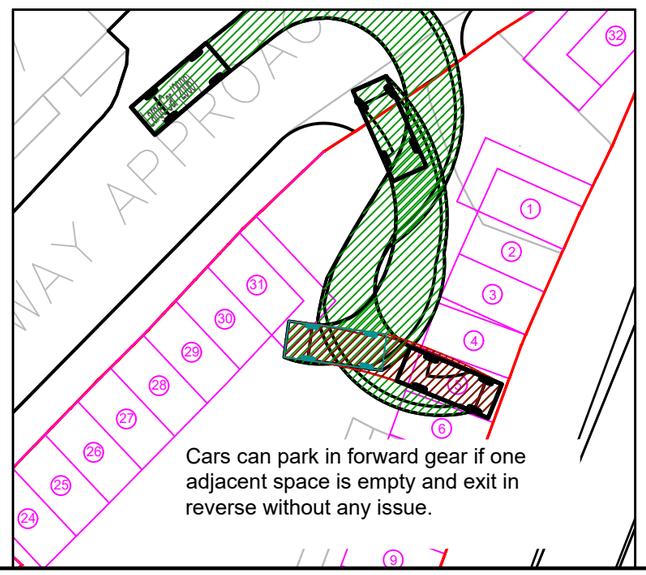

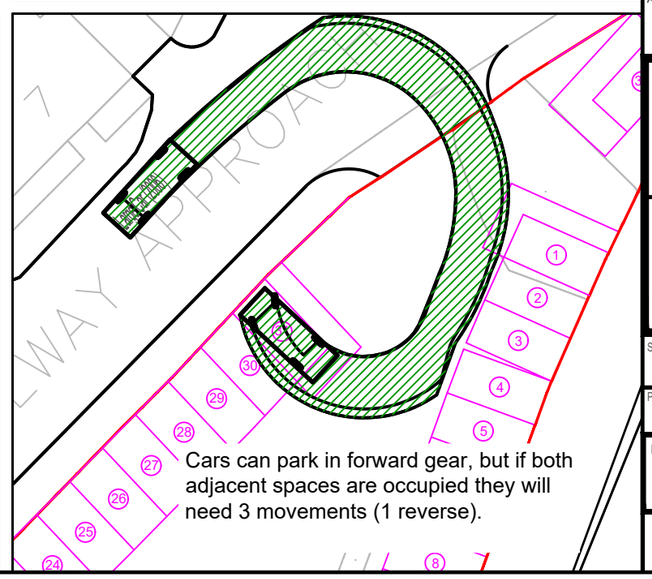

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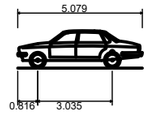

Large Car (2006)	
Overall Length	5.079m
Overall Width	1.872m
Overall Body Height	1.525m
Min Body Ground Clearance	0.310m
Max Track Width	1.831m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.900m

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ARCHITECT: N/A

PROJECT: Castleton Station Area Masterplan

TITLE: Car Park Layout - Option 1

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1:300	HN		HN
PROJECT No:	DESIGNED:	DRAWN:	DATE:
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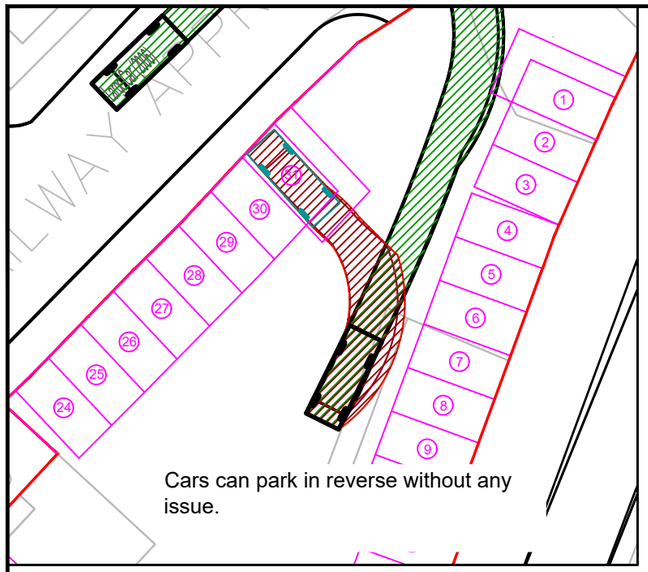

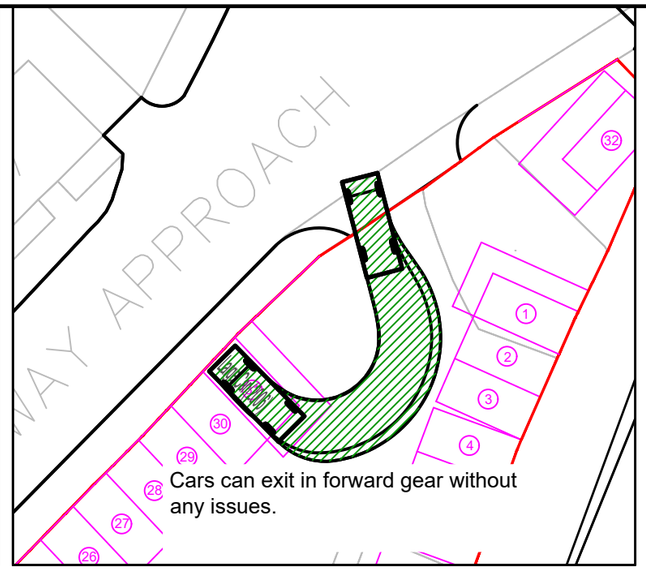

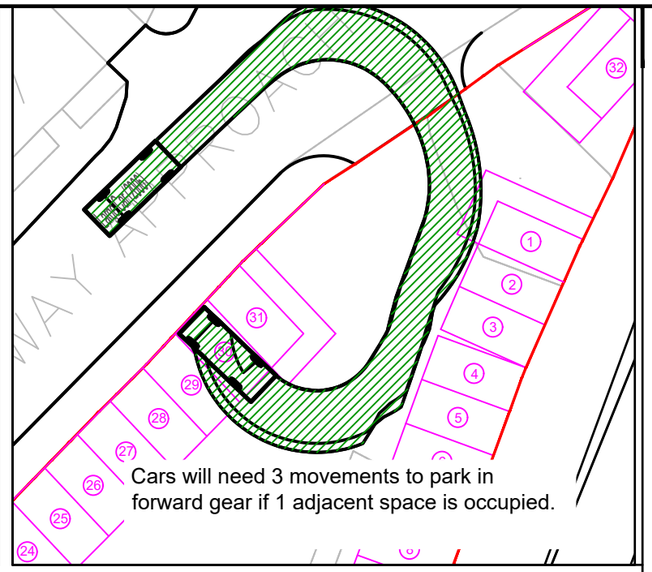

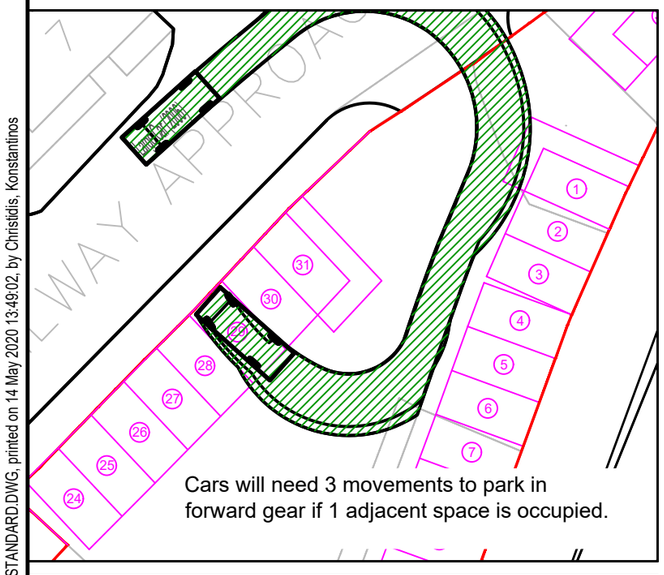

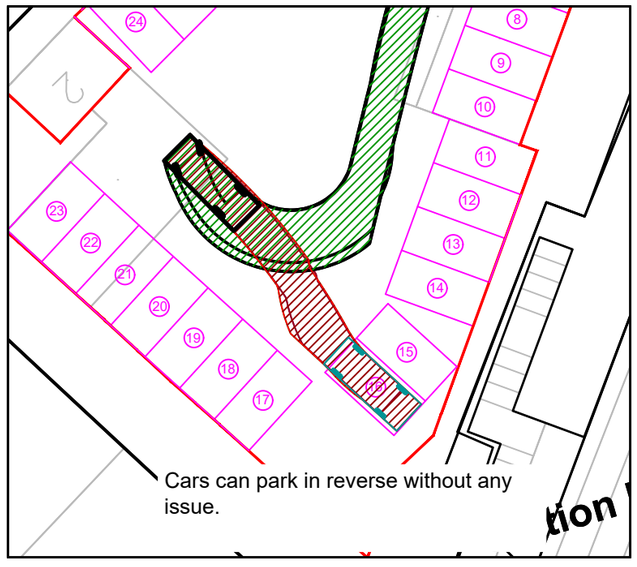

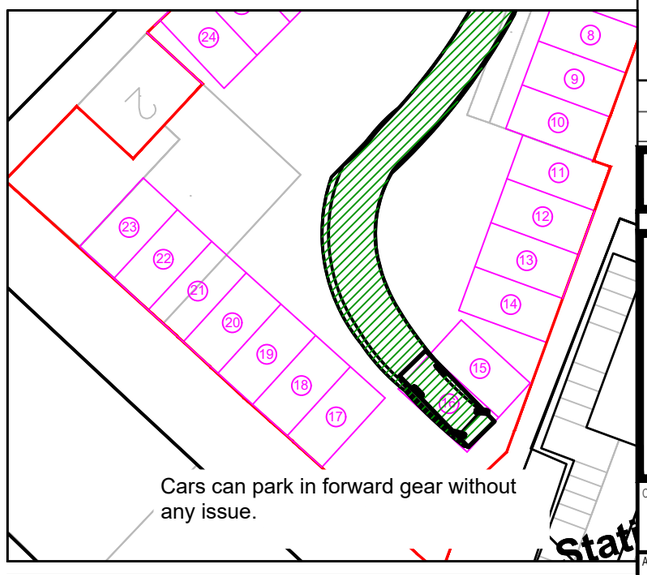

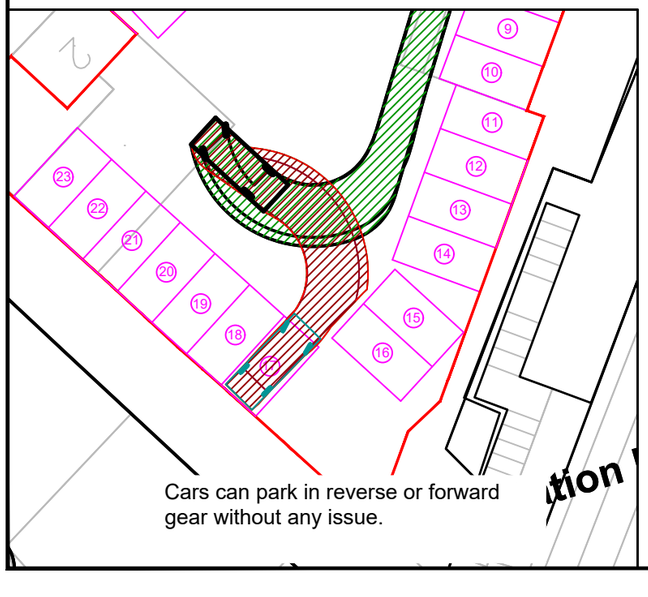

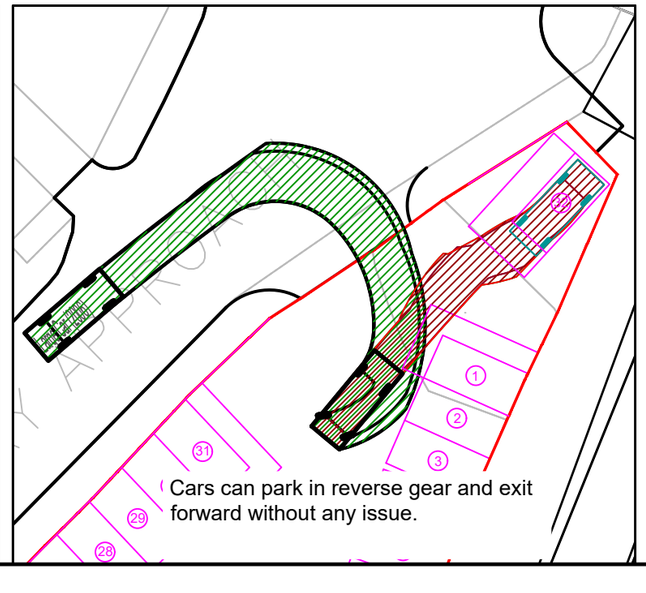

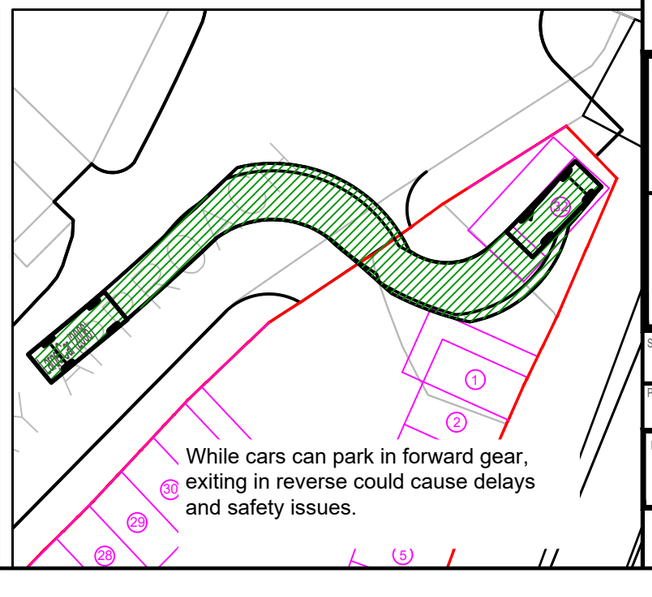

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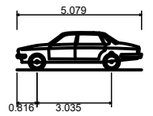

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DO NOT SCALE

Key:

Car Park Boundary

Notes:

Total number of spaces: 33

Square spaces 4.8 m x 2.4m : 30

Disabled parking 6.5 m x 3.9 m : 3

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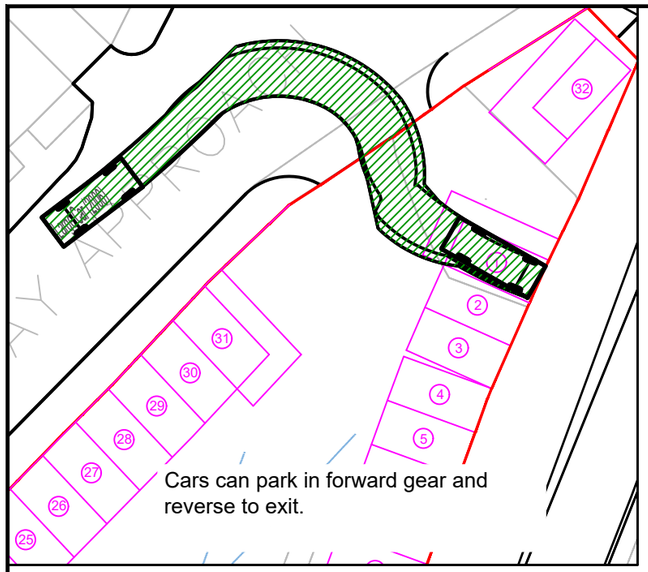

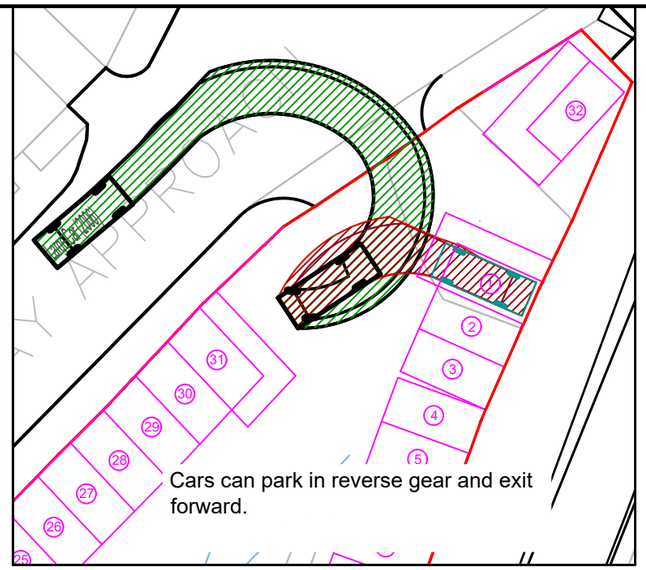

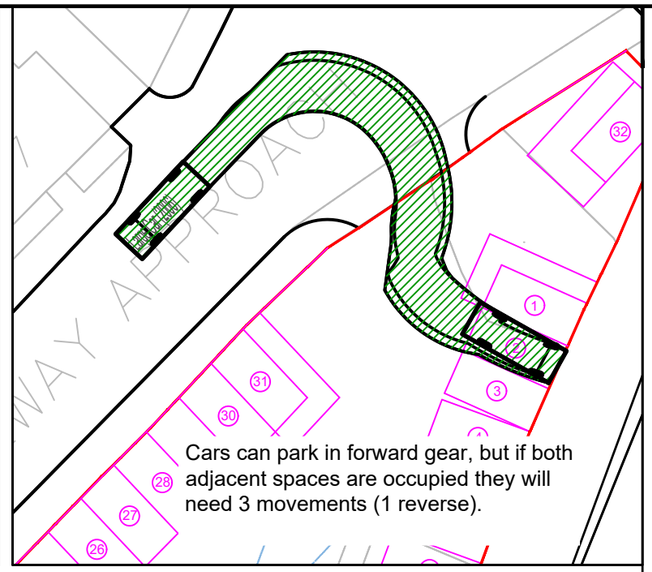

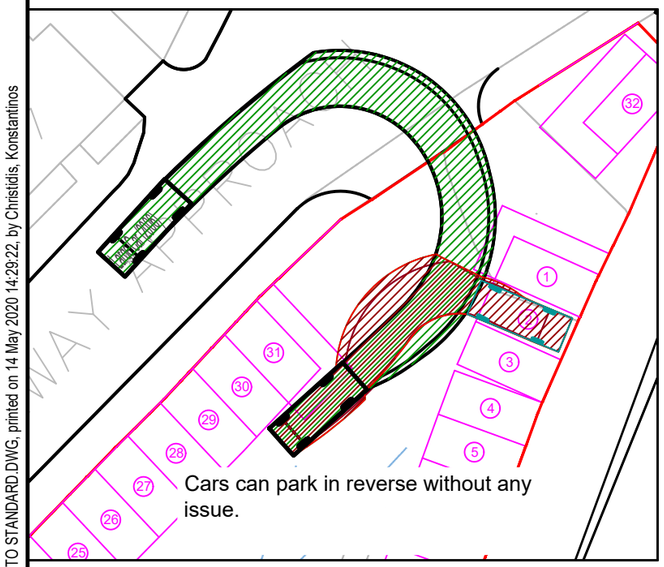

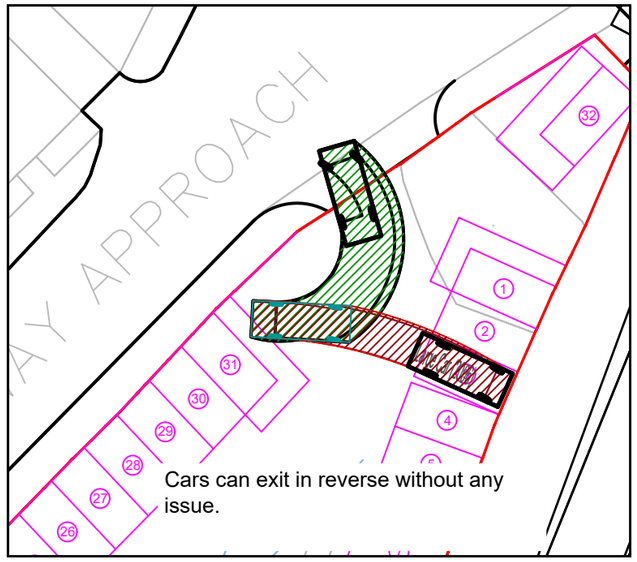

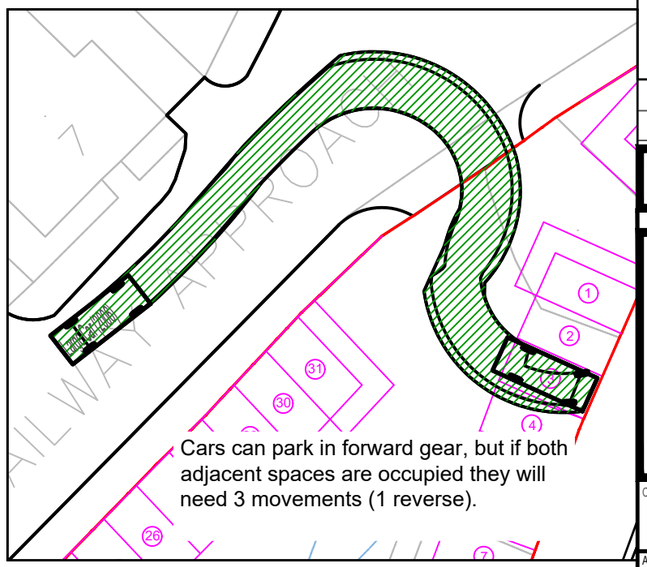

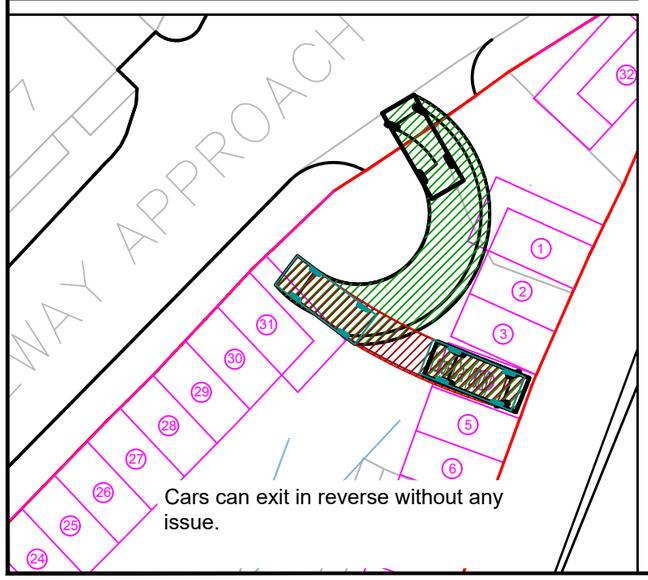

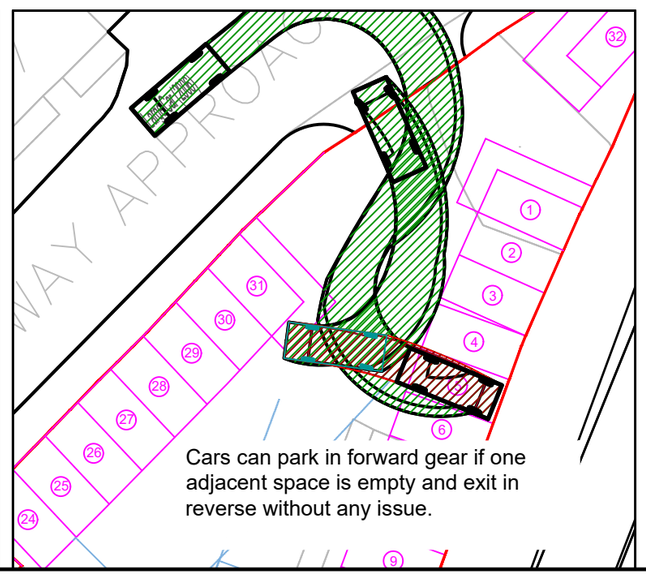

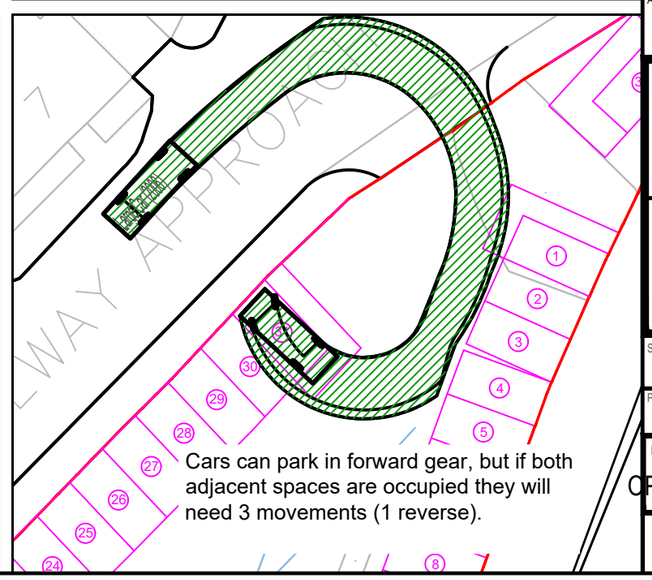

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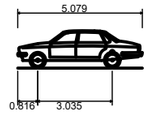

Large Car (2006)	
Overall Length	5.079m
Overall Width	1.872m
Overall Body Height	1.525m
Min Body Ground Clearance	0.310m
Max Track Width	1.831m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.900m

REV	DATE	BY	DESCRIPTION	CHK	APP
A	28/04/2020	KC	FIRST ISSUE	HN	HN

DRAWING STATUS: S2 - FOR INFORMATION

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CLIENT: ROCHDALE METROPOLITAN BOROUGH COUNCIL

ARCHITECT: N/A

PROJECT: Castleton Station Area Masterplan

TITLE: Car Park Layout - Option 1

SCALE @ A3:	CHECKED:		APPROVED:
1:300	HN		HN
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70059903	KC	KC	May 20

DRAWING No: OPTION 1 – DO MINIMUM NOT TO STANDARD REV: A

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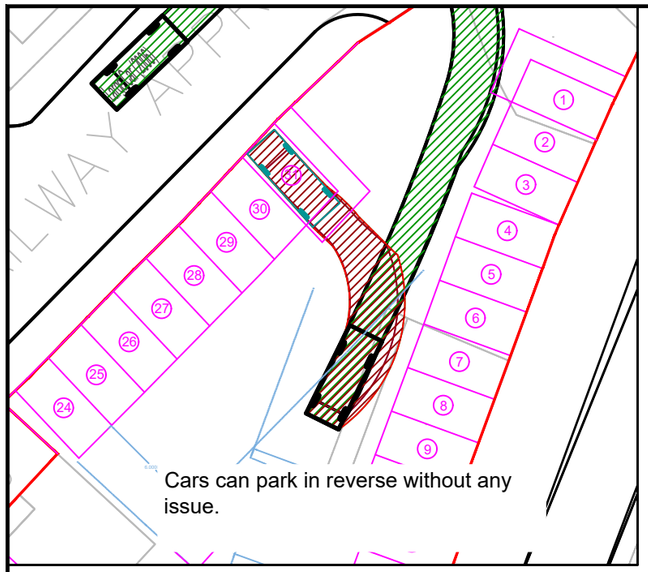
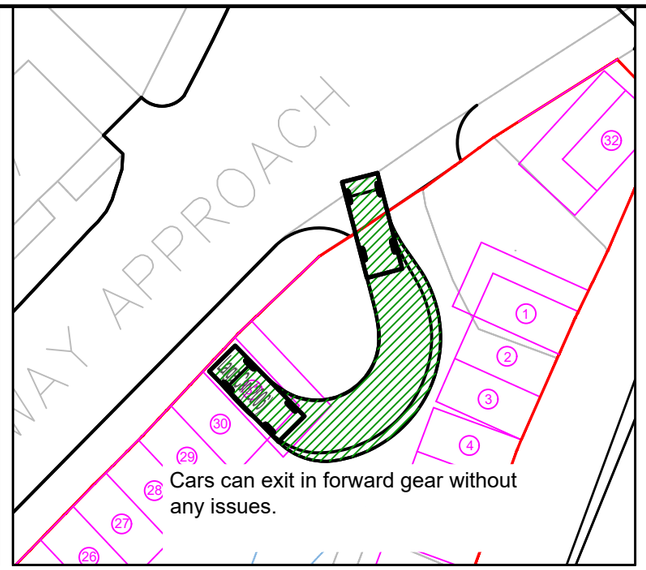
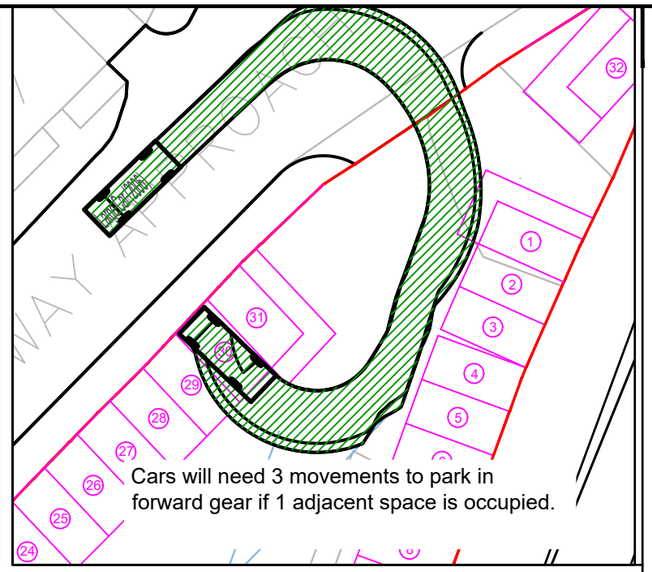


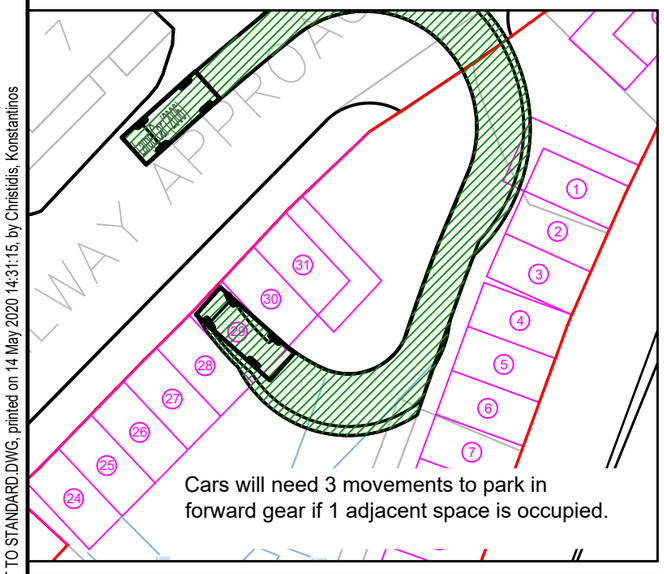
Cars can park in reverse without any issue.



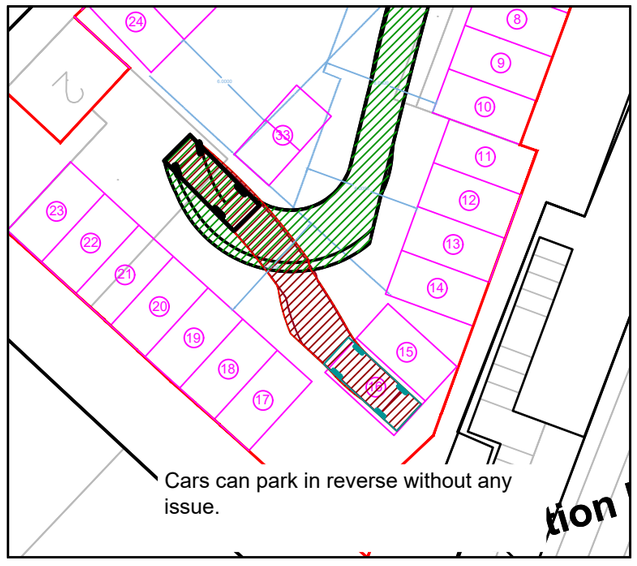
Cars can exit in forward gear without any issues.



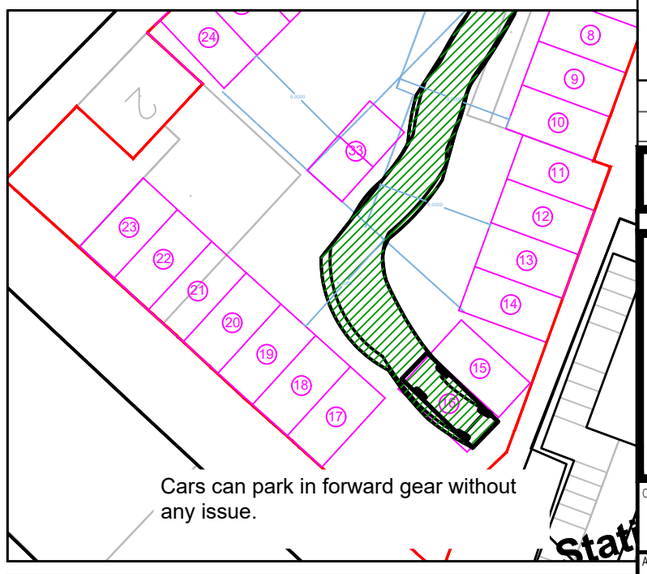
Cars will need 3 movements to park in forward gear if 1 adjacent space is occupied.



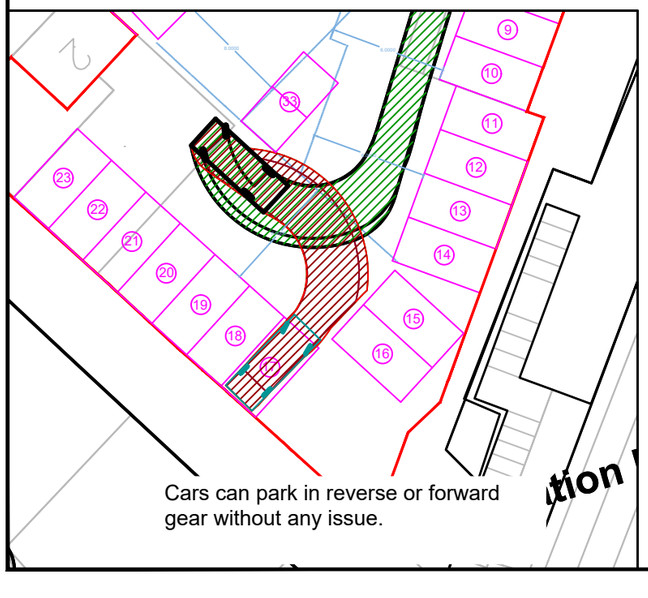
Cars will need 3 movements to park in forward gear if 1 adjacent space is occupied.



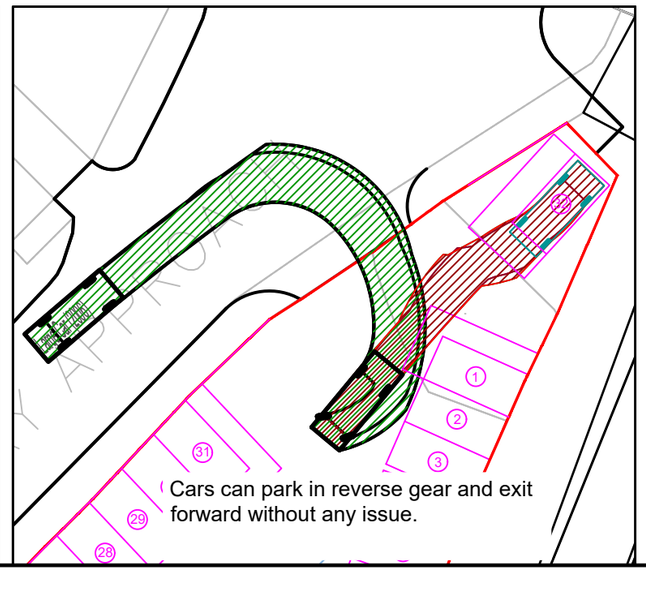
Cars can park in reverse without any issue.



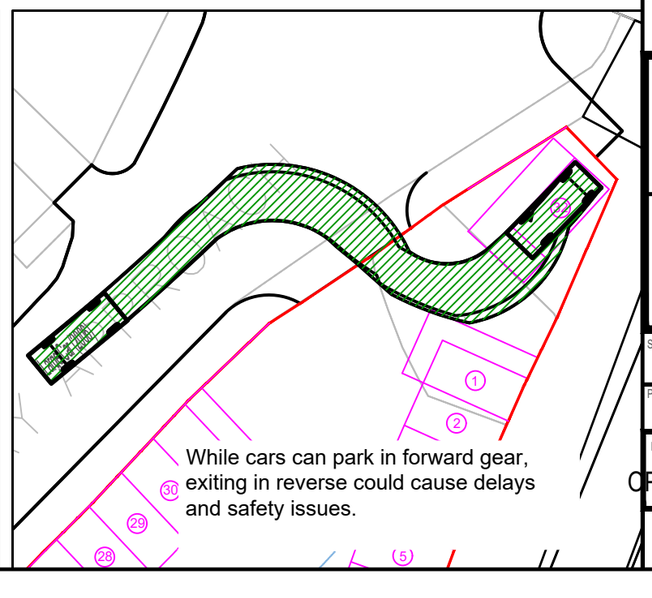
Cars can park in forward gear without any issue.



Cars can park in reverse or forward gear without any issue.



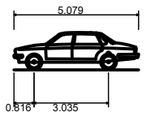
Cars can park in reverse gear and exit forward without any issue.



While cars can park in forward gear, exiting in reverse could cause delays and safety issues.

DO NOT SCALE

Key:



Large Car (2006)	
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Overall Body Height	1.525m
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Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.900m

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A	28/04/2020	KC	FIRST ISSUE	HN	HN

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CLIENT: ROCHDALE METROPOLITAN BOROUGH COUNCIL

ARCHITECT: N/A

PROJECT: Castleton Station Area Masterplan

TITLE: Car Park Layout - Option 1

SCALE @ A3:	CHECKED:	APPROVED:
1:300	HN	HN

PROJECT No:	DESIGNED:	DRAWN:	DATE:
70059903	KC	KC	May 20

DRAWING No: OPTION 1 – DO MINIMUM NOT TO STANDARD | REV: A

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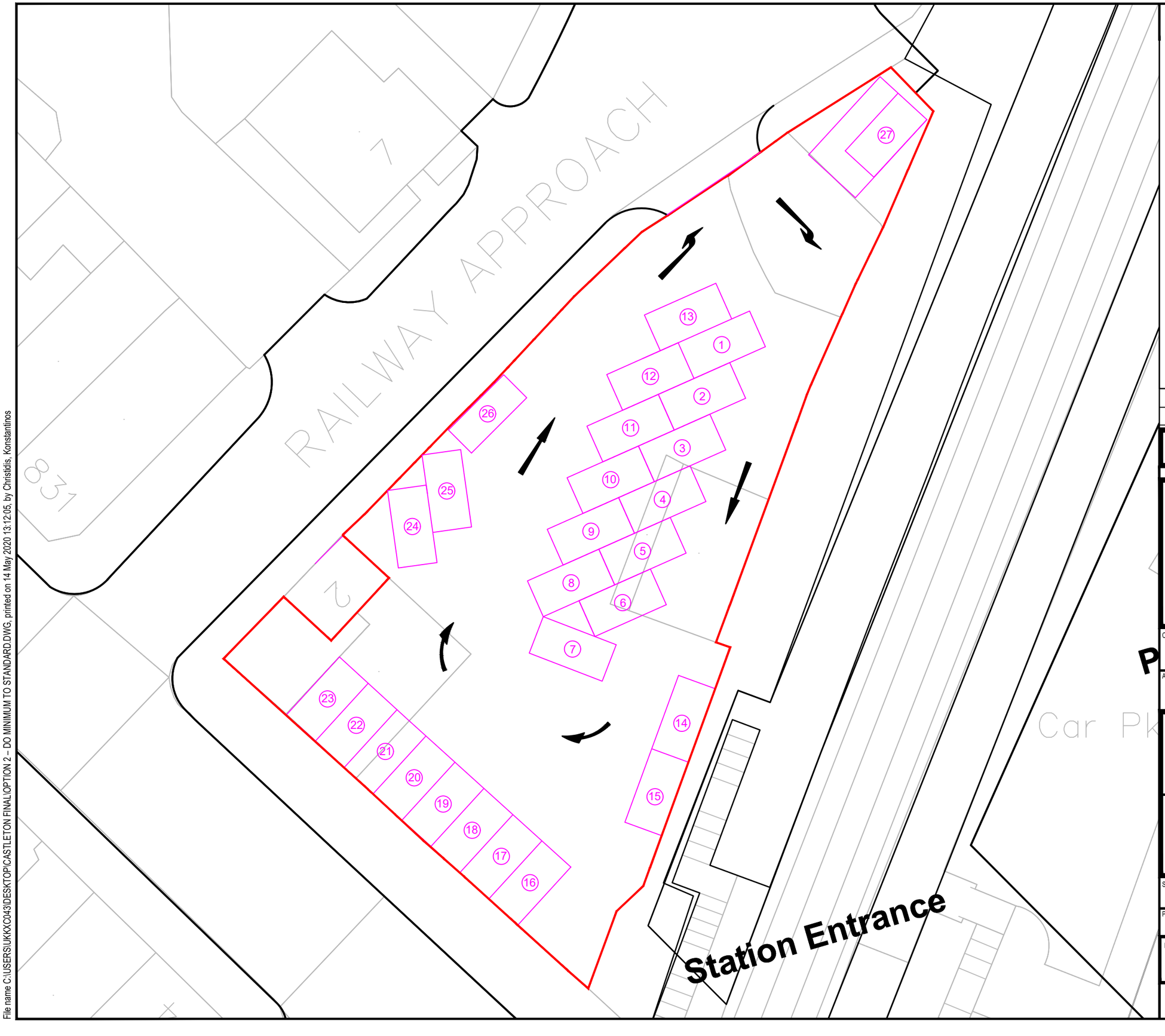
DATE:	26 May 2020	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Car Park Concept Layout Design Options		
PROJECT:	Castleton Triangle Site Concept Design Temporary Car Park Layout	**AUTHOR:**	Huw Nicholas
CHECKED:	James Howe	**APPROVED:**	Richard Jones

APPENDIX B

OPTION 2: LAYOUT AND SWEPT-PATH ANALYSIS



DO NOT SCALE

Key:

Car Park Boundary

Notes:

Total number of spaces: 27

45 degree spaces 4.8m x 2.4m : 14

Square spaces 4.8 m x 2.4m : 9

Parallel spaces 4.8 m x 2.4 m : 3

Disabled parking 6.5 m x 3.9 m : 1

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CLIENT: ROCHDALE METROPOLITAN BOROUGH COUNCIL

ARCHITECT: N/A

PROJECT: Castleton Station Area Masterplan

TITLE: Car Park Layout - Option 2

SCALE @ A3:	CHECKED:		APPROVED:
1:300	HN		HN
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70059903	KC	KC	May 20

DRAWING No: OPTION 2 – DO MINIMUM TO STANDARD | REV: A

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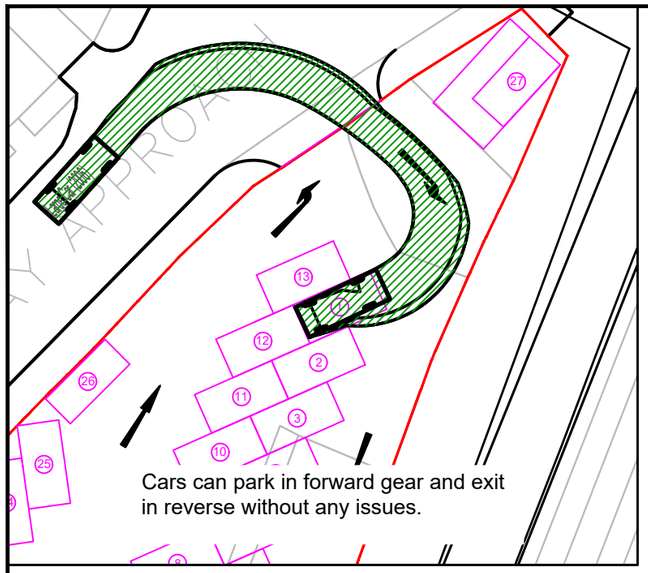
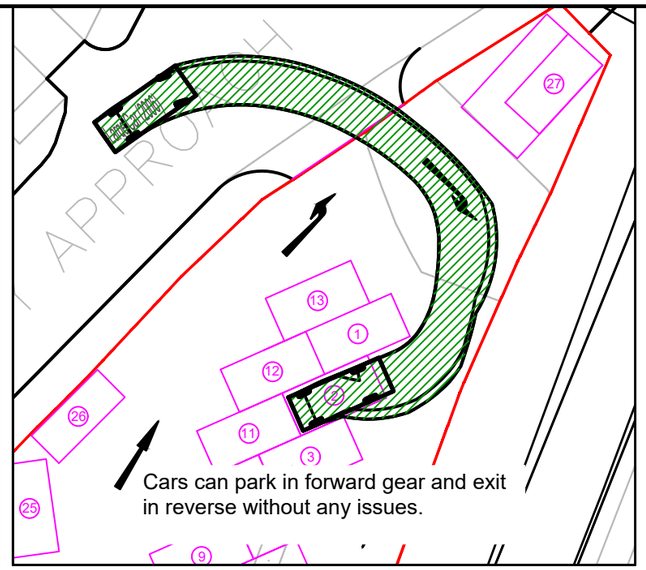


Cars can park in forward gear and exit in reverse without any issues.



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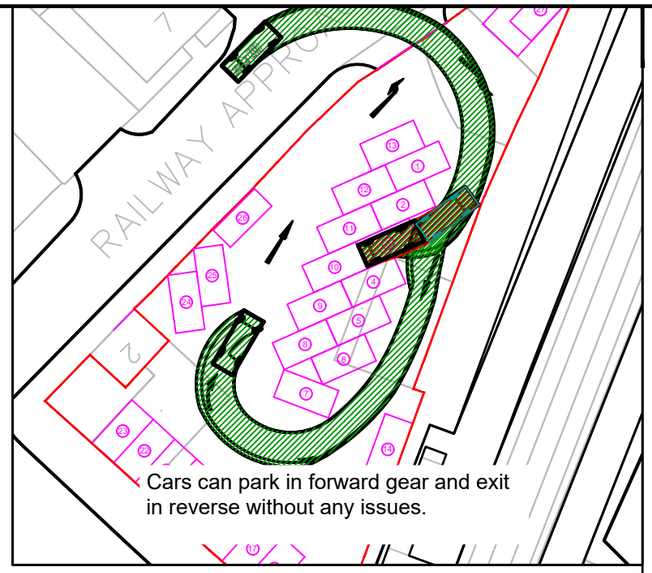

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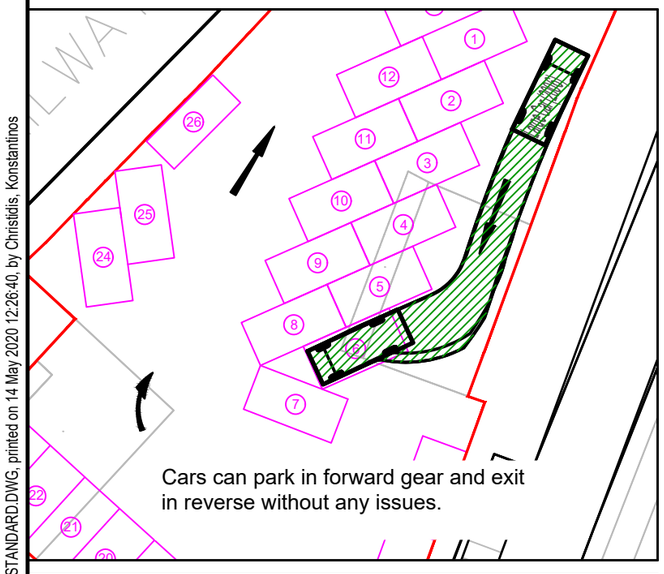
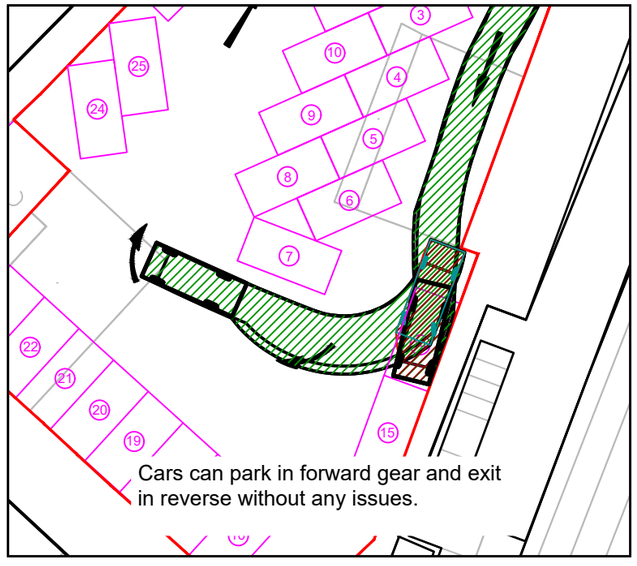
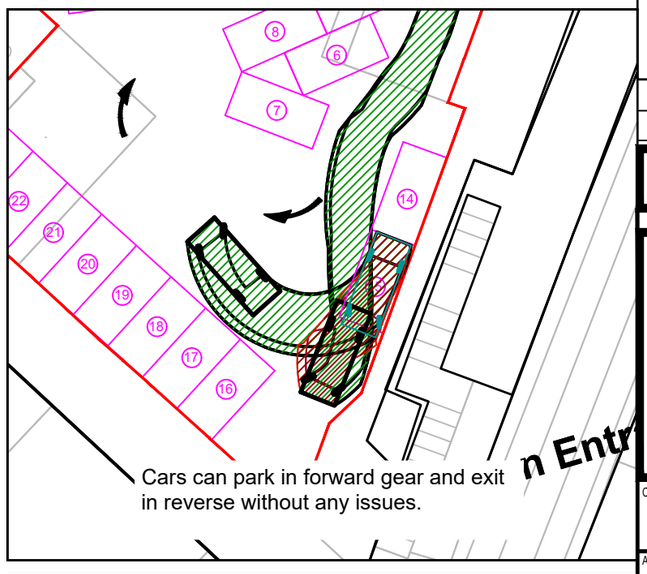


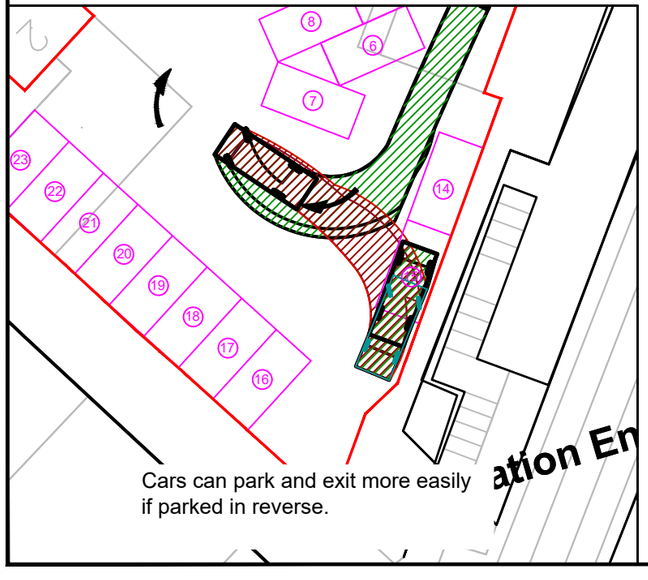
Cars can park in forward gear and exit in reverse without any issues.



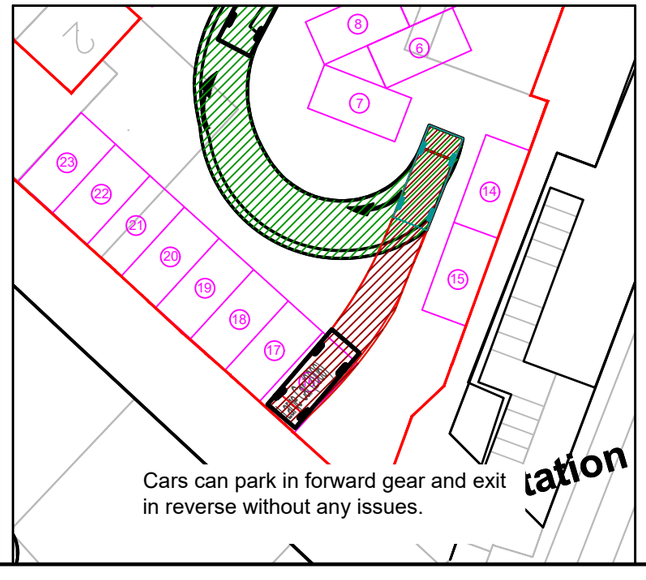
Cars can park in forward gear and exit in reverse without any issues.



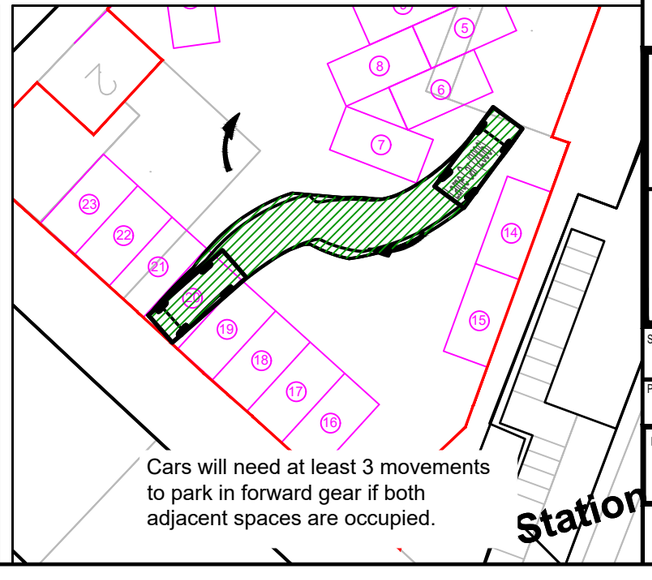
Cars can park and exit more easily if parked in reverse.



Cars can park in forward gear and exit in reverse without any issues.



Cars will need at least 3 movements to park in forward gear if both adjacent spaces are occupied.



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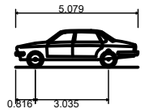

Large Car (2006)	
Overall Length	5.079m
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Overall Body Height	1.525m
Min Body Ground Clearance	0.310m
Max Track Width	1.831m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.900m

REV	DATE	BY	DESCRIPTION	CHK	APP
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ARCHITECT: N/A

PROJECT: Castleton Station Area Masterplan

TITLE: Car Park Layout - Option 2

SCALE @ A3:	CHECKED:	APPROVED:
1:300	HN	HN

PROJECT No:	DESIGNED:	DRAWN:	DATE:
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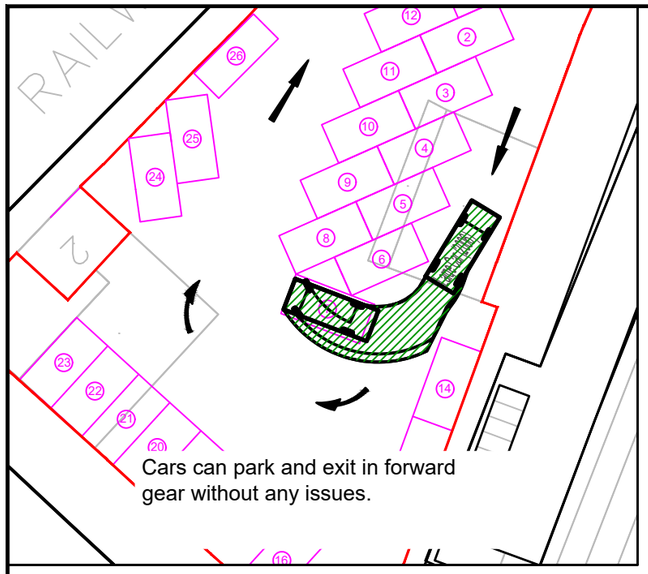
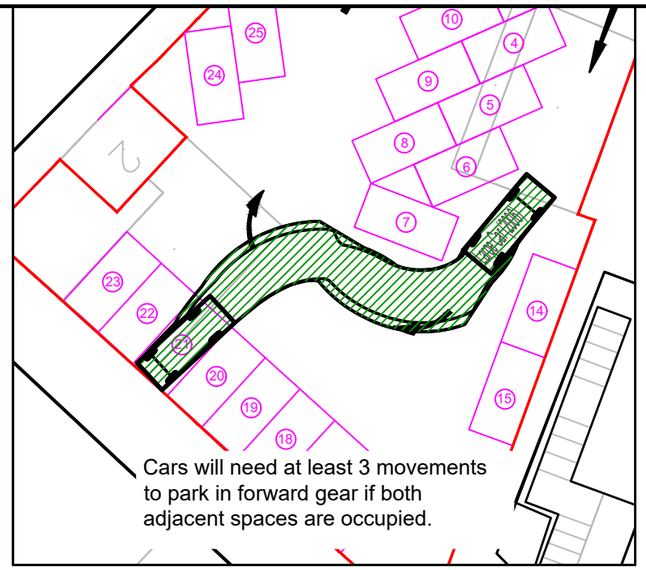
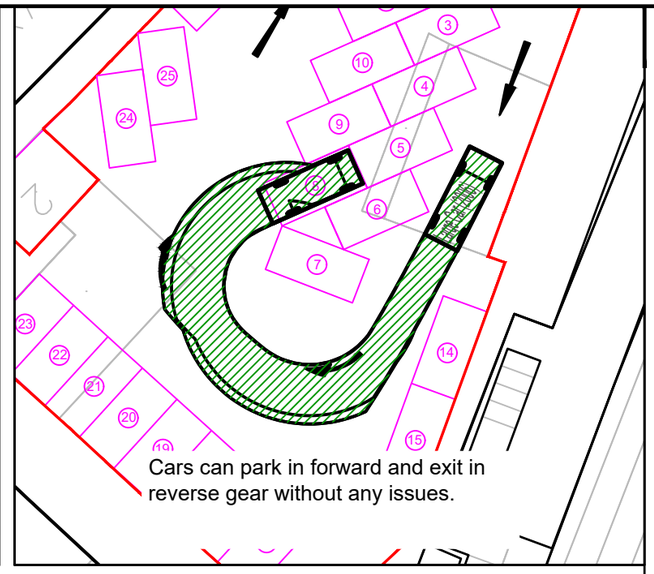


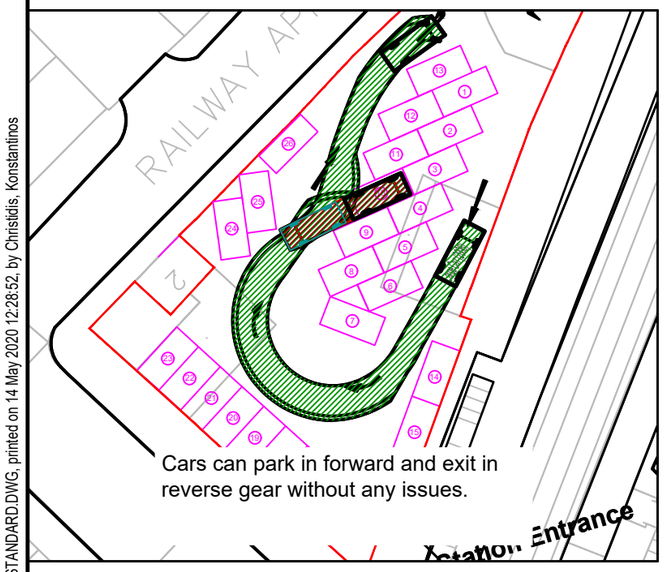
Cars can park and exit in forward gear without any issues.



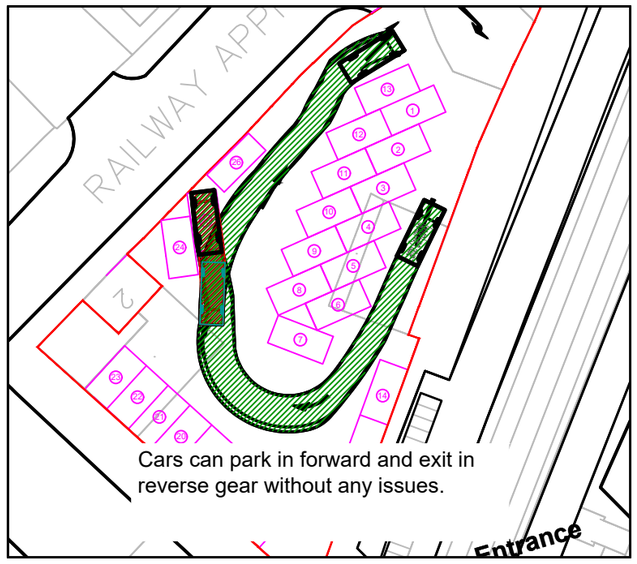
Cars will need at least 3 movements to park in forward gear if both adjacent spaces are occupied.



Cars can park in forward and exit in reverse gear without any issues.



Cars can park in forward and exit in reverse gear without any issues.



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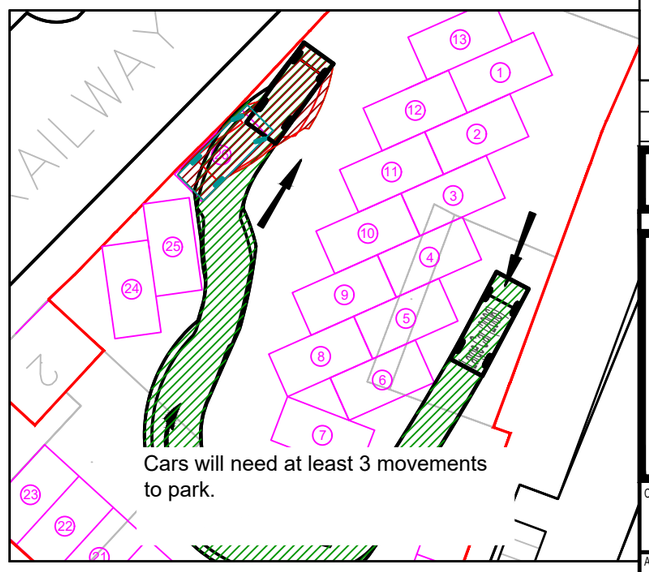
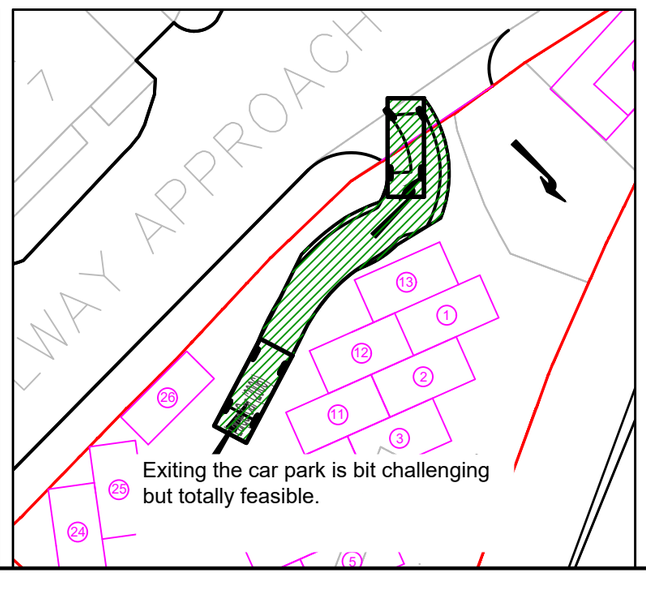


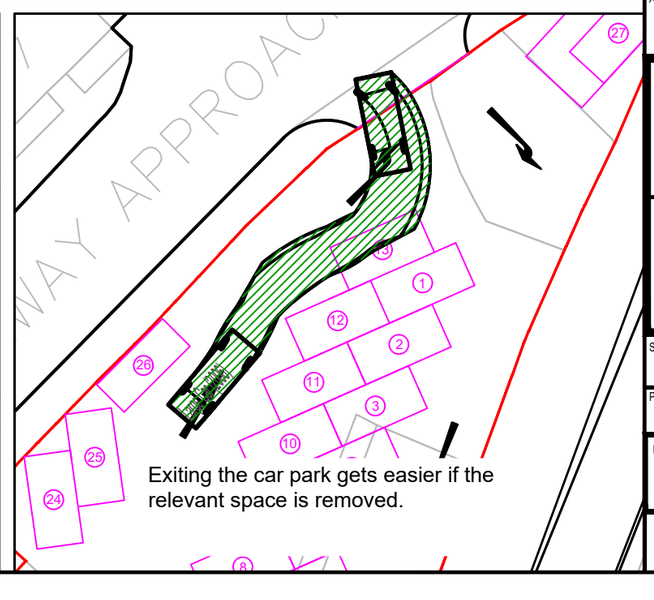
Cars will need at least 3 movements to park.



Cars can park and exit in forward gear without any issues.



Exiting the car park is bit challenging but totally feasible.



Exiting the car park gets easier if the relevant space is removed.

DO NOT SCALE

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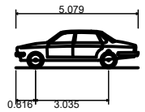

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