

DATE: October 31, 2022
TO: Babak Tafreshi
FROM: Niraj Sunuwar
FILE: 5269.0002.01
SUBJECT: Stonehurst Inn & Bistro, Stonehurst Residences, and Public Parking Development Traffic Impact Study

1.0 INTRODUCTION

Pacific Ray Development retained Urban Systems to conduct a traffic impact study for the proposed Stonehurst Inn & Bistro, Stonehurst Residences Development, and Public Parking. A parking review was previously completed by Urban Systems on February 2, 2022 and has previously been submitted to the Town of Gibsons (Town). This memorandum documents the findings related to the traffic impacts associated with the revised development proposal.

2.0 BACKGROUND

2.1 DEVELOPMENT CHARACTERISTICS

Pacific Ray Development is proposing to build a mixed-use development at the north corner of Gibsons Way and School Road in the Town of Gibsons. The project is located at the heart of Lower Gibsons, the downtown waterfront commercial area with a host of shops, restaurants, and other local destinations (**Figure 1**). The proposed development is on the site of two existing lots, which currently consists of Stonehurst building, Inglis Park, and two surface parking lots for public use. As part of the development, a rezoning application has been submitted to subdivide the existing lots and redefine their zoning designations to reflect the nature of the intended future uses. The proposed development will include Stonehurst Inn & Bistro, expanded Inglis Park, and a new multi-family residential building that will accommodate 22 residential units and public parking.

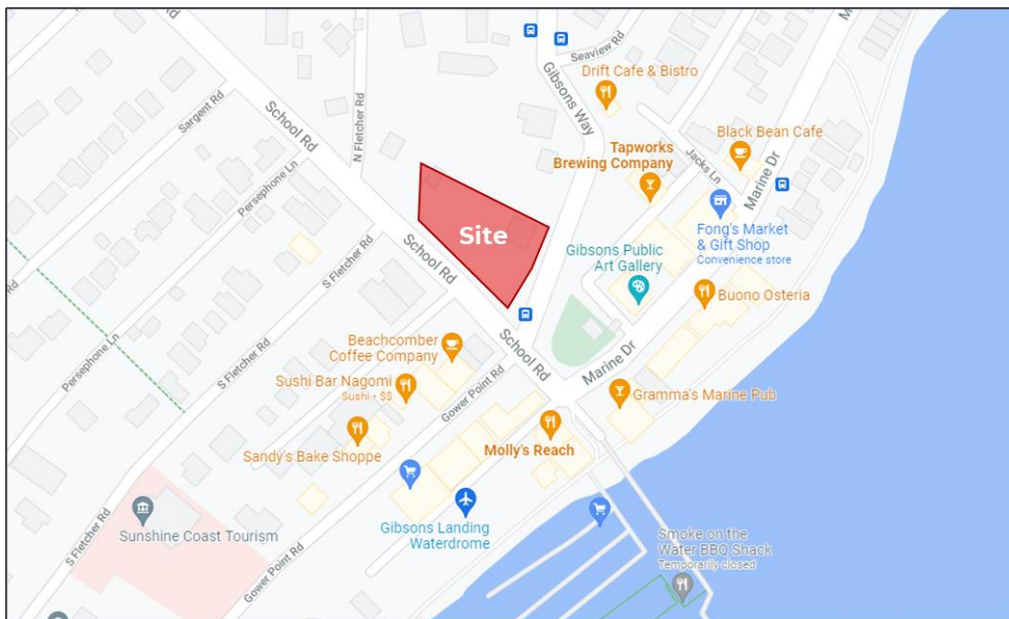


Figure 1: Study Area (Source: Google Maps)

2.2 PROPOSED ACCESSES

As part of the proposed development, the existing surface lots will be replaced by three levels of parking garages (with 4 surface parking spaces proposed near Stonehurst Inn & Bistro), as shown in **Figure 2**. Given the considerable grade of the site topography, each level of parking garage will be provided with direct access from School Road. A brief description of the parking supply on each level are as follows:

- Level -2 – This level is proposed to consist of 16 public parking spaces, 40 Class 1 bicycle parking stalls, 26 lockers, and a loading bay. The access to this level is closest to the future enlarged Inglis Park. The parking supply on this level is planned to replace the existing public parking lots under a Community Amenity Contribution agreement and are dedicated to public use.
- Level -1 – This level is proposed to consist of 26 parking spaces. The parking usage on this level is planned to be shared between residential parking (21 spaces) and patron parking for guests of Stonehurst Inn & Bistro (5 spaces).
- Level 0 – This level is proposed to consist of 12 parking spaces. The parking usage on this level is planned to serve as residential parking.
- Surface parking – Four (4) surface vehicle parking spaces are proposed along the widened driveway of Stonehurst Inn & Bistro. These parking spaces are planned to serve the staff parking. Additionally, 14 surface bicycle parking spaces are proposed near the inn.

Overall proposed vehicular parking capacity of the future development is 58 spaces.

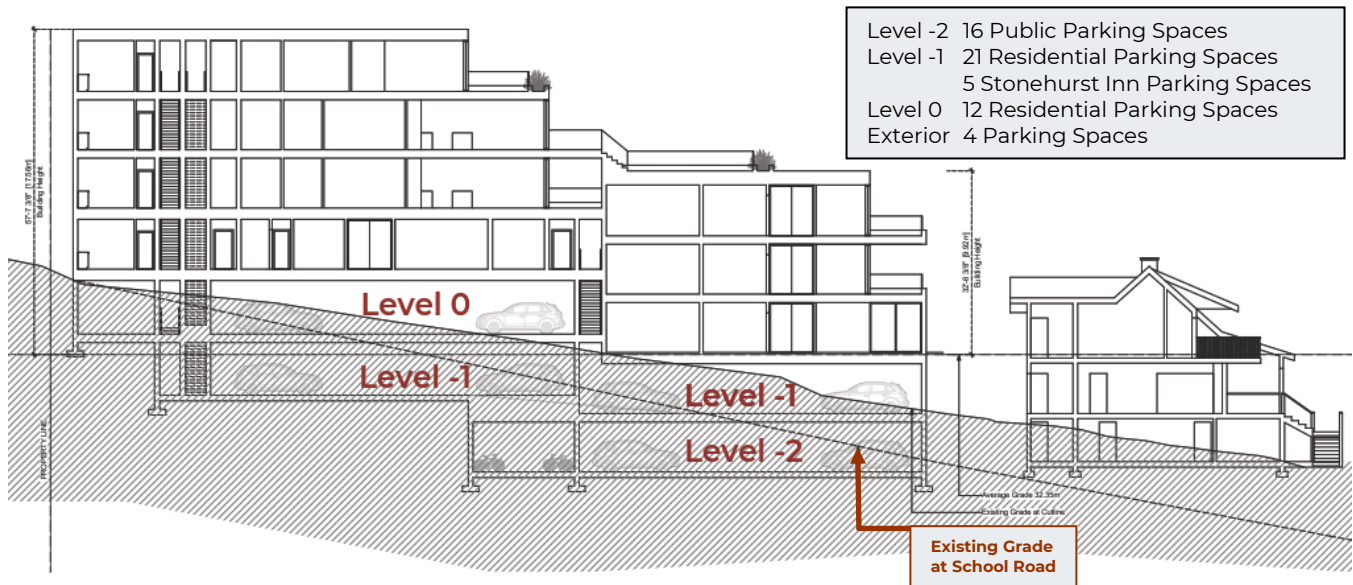


Figure 2: Proposed Parking Garage Levels

3.0 PARKING REQUIREMENTS

The parking requirements and proposed parking supply based on the Town of Gibson’s Zoning Bylaw (No. 1065) are summarized in **Table 1**. As shown, based on the current bylaw requirements, the proposed parking supply would meet the vehicular parking requirements and exceed the bicycle parking requirements.

Table 1: Summary of Bylaw Parking Requirement and Supply

	Gibsons Parking Vehicular Bylaw Requirement	Required	Provided
Residential	1.5 stalls / unit	33	33
Tourist/Accommodation	1 stall / sleeping unit 1 stall / 8 dining seats	9	9
Public	-	-	16
	Gibsons Parking Bicycle Bylaw Requirement	Required	Provided
Class 1	1.25 stalls / unit	28	40
Class 2	0.2 stalls / unit	5	8
Lockers	-	-	26

4.0 EXISTING ROAD NETWORK

School Road is Type-1 collector road that runs in the northwest-southeast direction and connects Upper and Lower Gibsons. It has a two-lane cross section with 21% grade. Trucks aren’t allowed to travel along this route except for local delivery and garbage pickup. Sidewalk is located only on the west side of the road. The peak hour two-way traffic volumes range between 360 and 440 vehicles per hour (based on traffic counts conducted in 2018).

5.0 TRAFFIC REVIEW

The Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition) was referenced to estimate the number of trips expected to be generated by the future development potential. The weekday AM peak hour, weekday PM peak hour, and Saturday peak hour entering and existing traffic volumes were calculated for expected future development.

The trip generation rates used for the current study are summarized in **Table 2**.

Table 2: Estimated Development Generated Trips Per Hour

Land Use	ITE Land Use (LU) Code	Time Period	Average Trip Rate Per Hour	In%	Out%
Low-Rise Residential	220	AM Peak Hour	0.40 per unit	24%	76%
		PM Peak Hour	0.51 per unit	63%	37%
		Saturday Peak ¹ Hour	0.41 per unit	50%	50%
All Suites Hotel	311	AM Peak Hour	0.34 per unit	53%	47%
		PM Peak Hour	0.36 per unit	49%	51%
		Saturday Peak ² Hour	0.44 per unit	56%	44%
High-Turnover (Sit-Down Restaurant)	932	AM Peak Hour	9.57 per 1,000 sq. ft GFA	55%	45%
		PM Peak Hour	9.05 per 1000 sq. ft GFA	61%	39%
		Saturday Peak Hour	11.19 per 1000 sq. ft GFA	51%	49%

1. In/Out% sourced from LU Code 221

2. Due to LU Code 311 not having Saturday rates estimated using LU Code 310 (Hotel)

The estimated weekday AM, PM, and Saturday peak hour development generated trips are summarized in **Table 3**.

Table 3: Estimated Development Generated Trips

Land Use	Size	AM Peak			PM Peak			Saturday Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total
Low-Rise Residential	22 units	2	7	9	7	4	11	5	5	10
Inn	6 rooms	1	1	2	1	1	2	2	1	3
High-Turnover (Sit-Down Restaurant)	761 sq. ft	4	3	7	4	3	7	5	4	9
Total		7	11	18	12	8	20	12	10	22

As seen in the table above, the total number of vehicle trips generated by the development during peak hours are marginal. When compared to the existing traffic volumes along School Road (360 – 440 vehicles per hour), the development traffic (18 – 22 vehicles per hour) would account for less than 10% of the total traffic from all cars travelling on School Road (accounting the vehicle trips also generated by the future Inglis Park). Moreover, the traffic generated by the development will be split between two accesses with the third access only accommodating public parking. The increase in traffic from the proposed development will have marginal impact on traffic operations and is not expected to require any significant changes to existing transportation infrastructure. A geometric review was conducted to confirm that adequate sightlines are maintained at each access.

6.0 SITE ACCESS REVIEW

The site access review included a geometric review of the three proposed access along School Road and fourth access along Gibsons Way. All accesses are expected to accommodate all movements i.e. no turn restrictions from/to any direction. **Figure 3** through **Figure 6** shows the swept path analysis for each access with a design vehicle of passenger car.

The driveway spacing requirements are stipulated in Section 8.9.8 of TAC Design Guide, which is 1 metre for residential use. As such, the three proposed accesses along School Road meet the spacing requirements. A Stopping Sight Distance (SSD) review was also completed for each access along School Road with design speed of 50 km/hr. **Figure 7** shows the SSD and locations adjacent to the accesses that require to be free of obstructions to provide clear sightlines.

Figure 3: Swept Path Analysis (Access to Level 0)

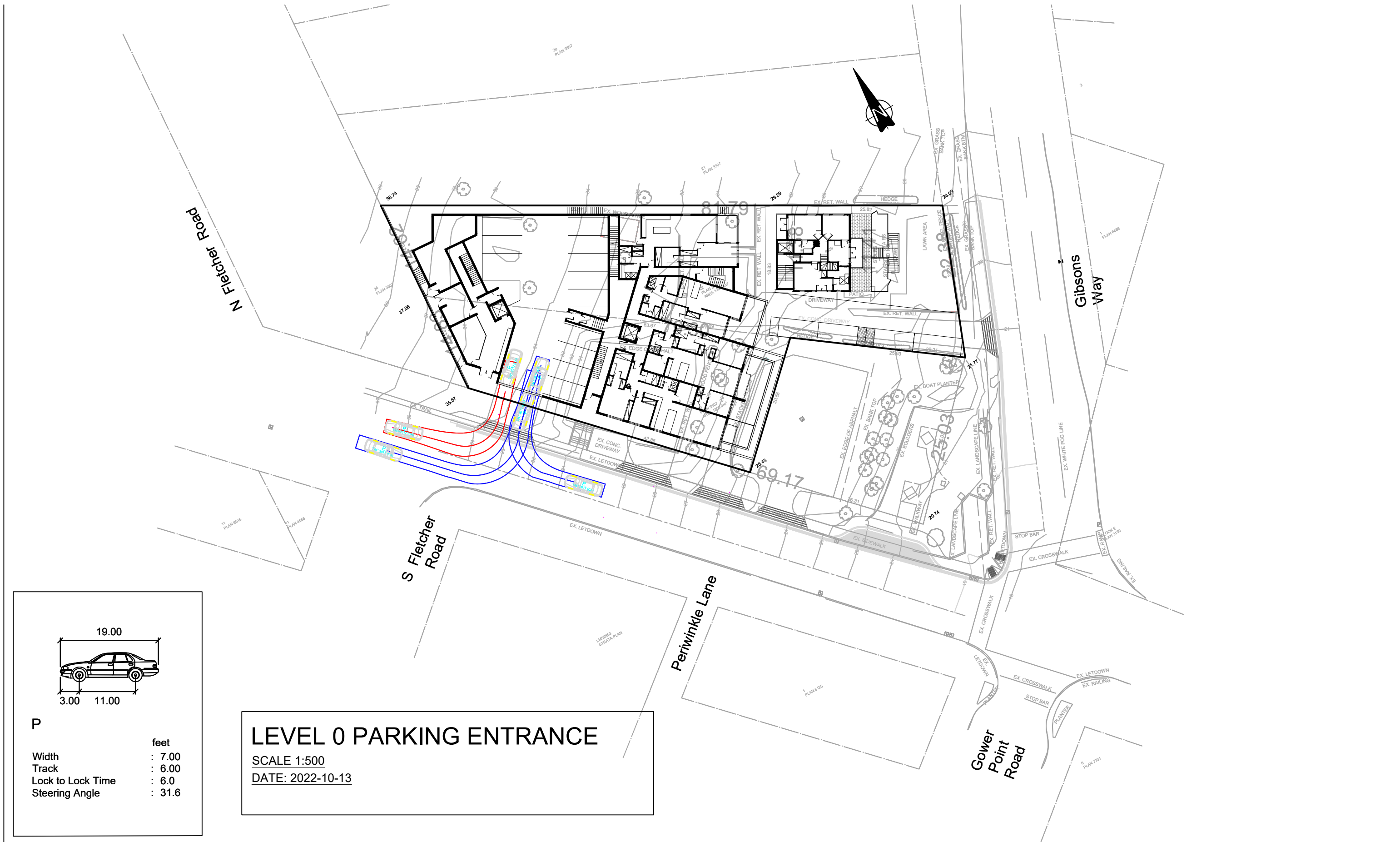
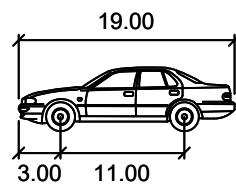
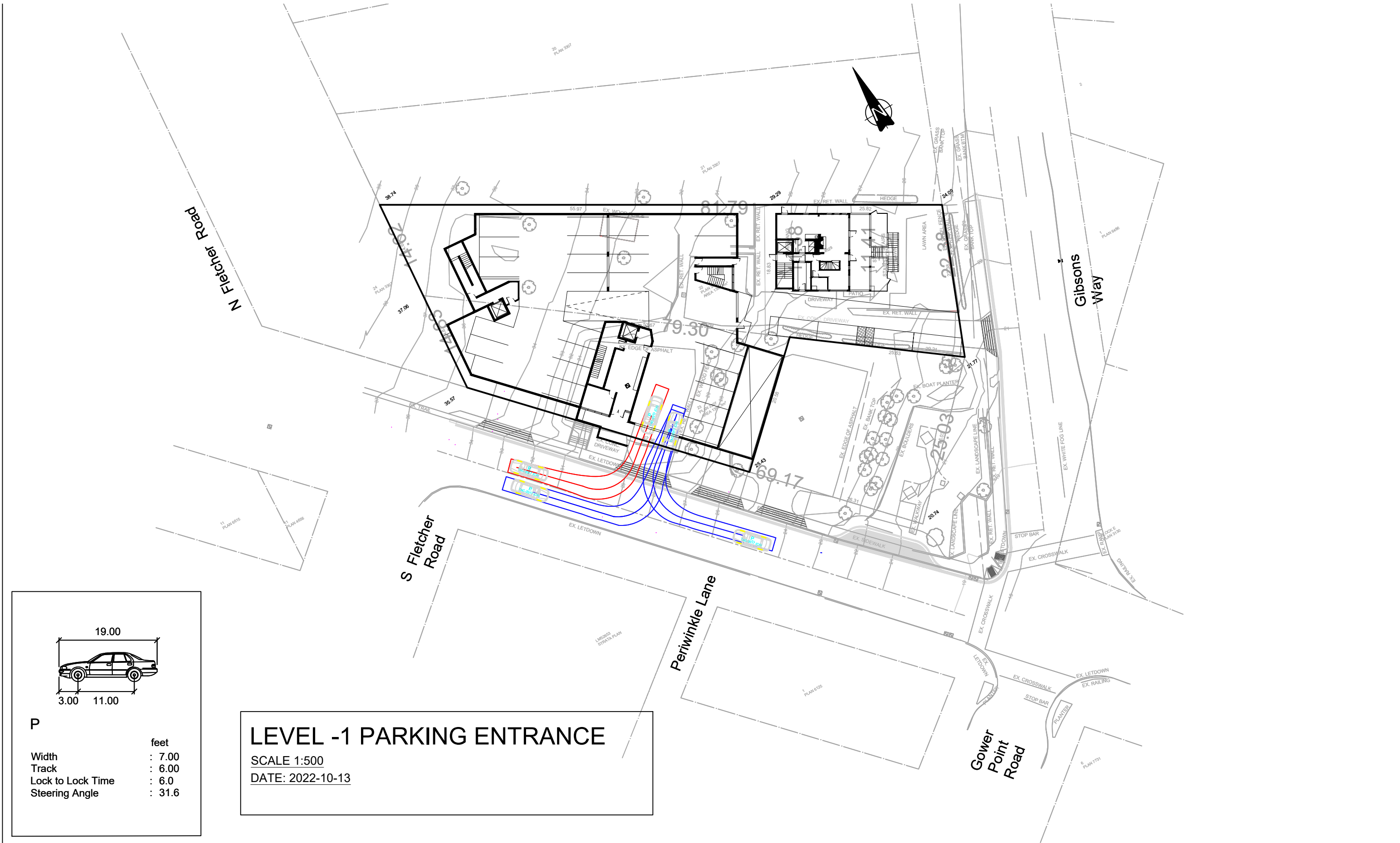


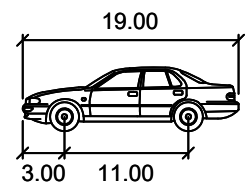
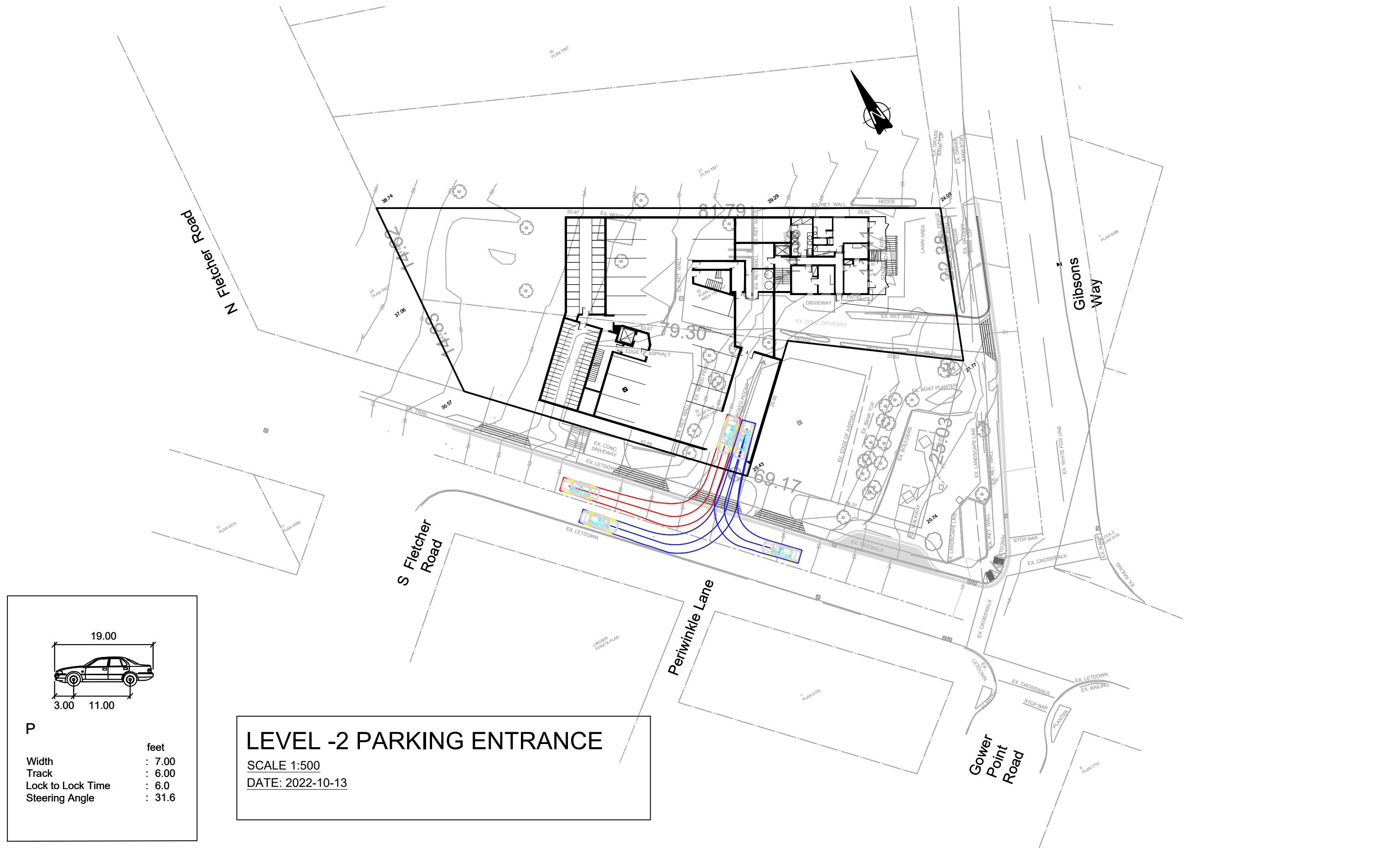
Figure 4: Swept Path Analysis (Access to Level -1)



P	feet
Width	: 7.00
Track	: 6.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.6

LEVEL -1 PARKING ENTRANCE
SCALE 1:500
DATE: 2022-10-13

Figure 5: Swept Path Analysis (Access to Level -2)



P

	feet
Width	: 7.00
Track	: 6.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.6

LEVEL -2 PARKING ENTRANCE
SCALE 1:500
DATE: 2022-10-13

Figure 6: Swept Path Analysis (Surface Parking)

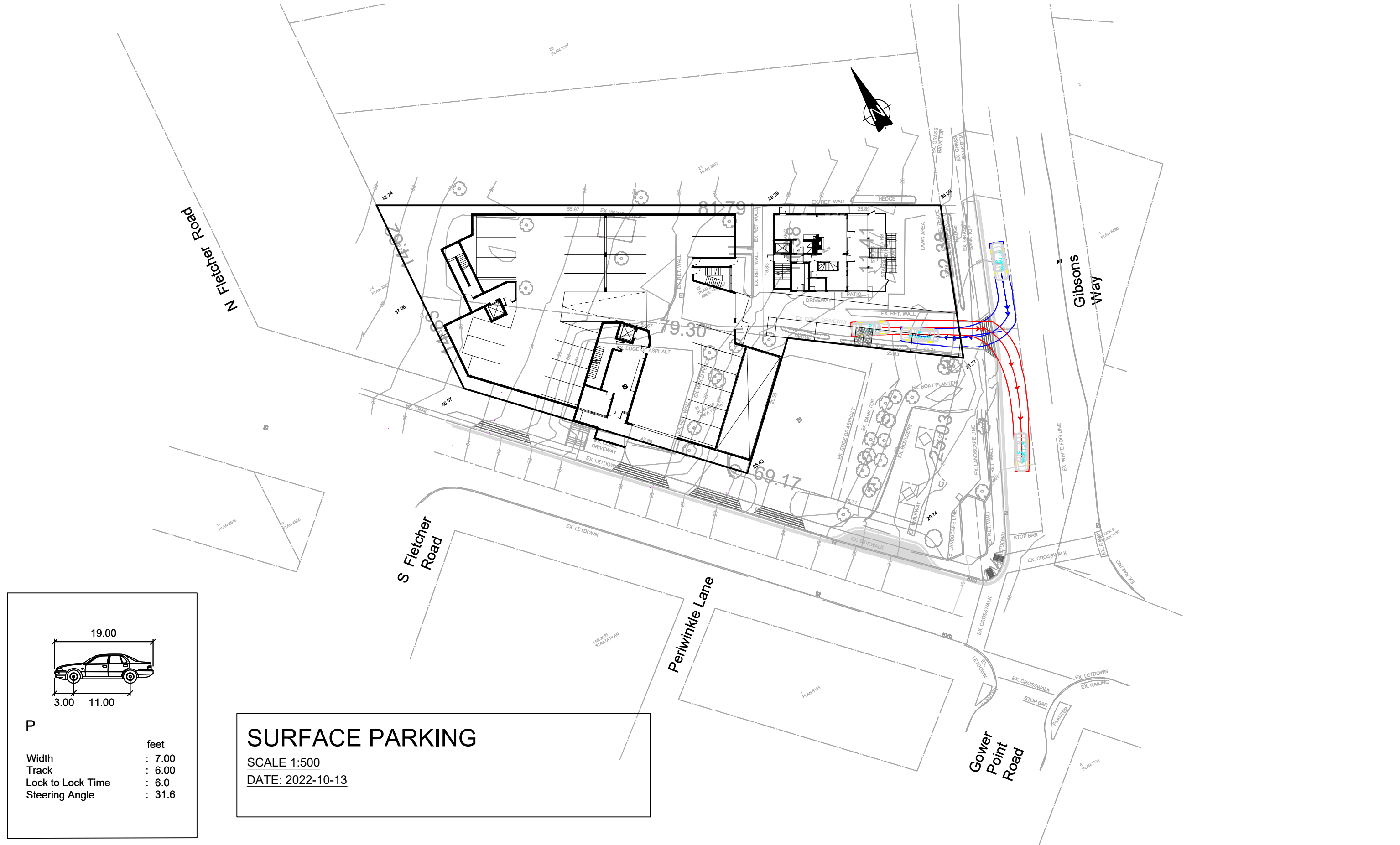
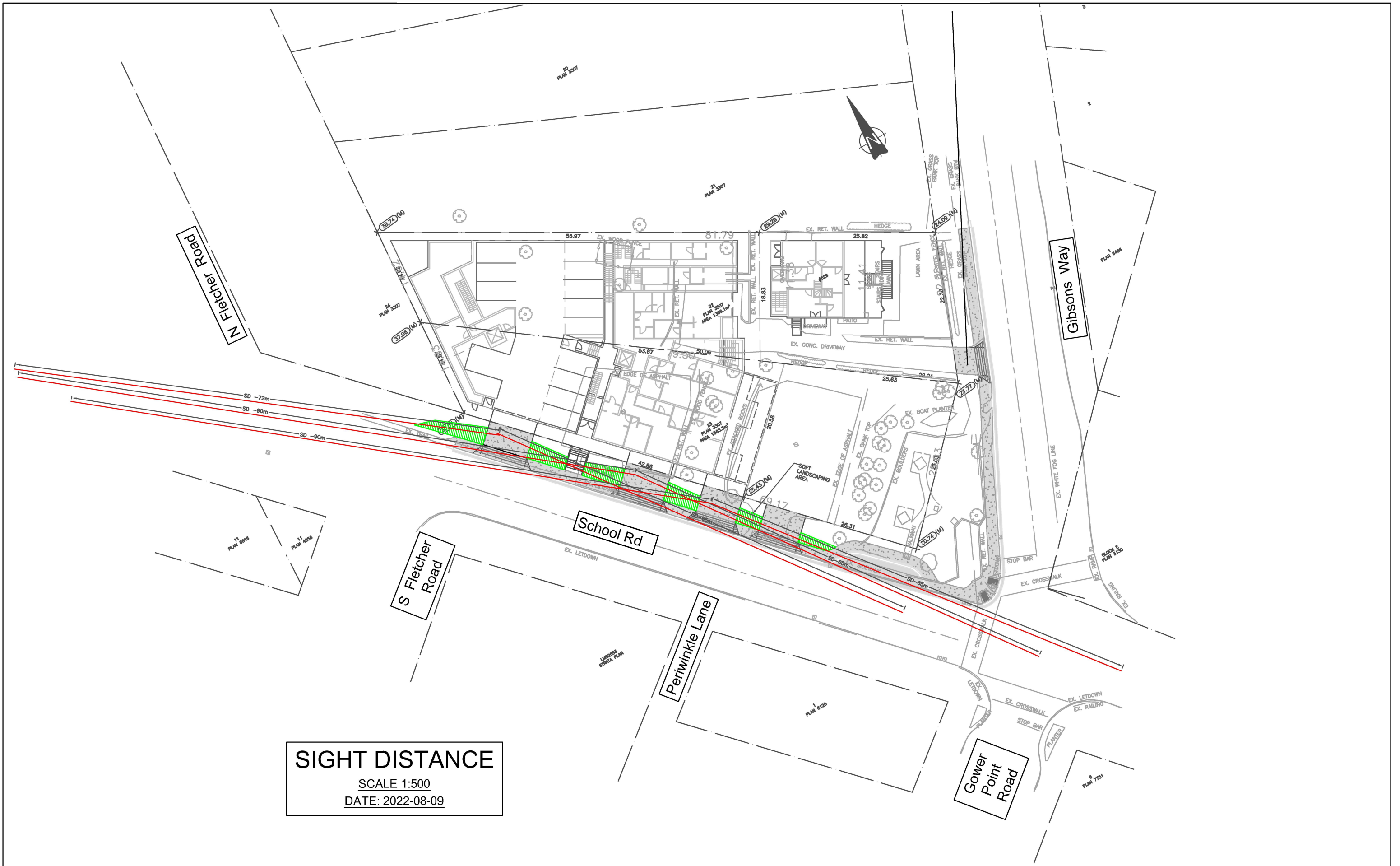


Figure 7: Sight Distance and Sightline Review



7.0 SITE CIRCULATION REVIEW

A concern raised by the Town included potential road closure of School Road and the development requiring an alternate access along Gibsons Way. A permanent one-way access is provided along Gibsons Way that will primarily serve the Stonehurst Inn & Bistro guests. The traffic flow from access along Gibsons Way, within the parkade, and access along School Road is shown in **Figure 8**.

In case of School Road closure, an option to facilitate parking during the closure of School Road can be as follows: Level -1 Parkade has 26 stalls for Stonehurst Inn and Residences to park their primary vehicles and have alternative access through Gibsons Way. Public Parking access will be closed. Level 0 Parkade will have 11 stalls available for residents who would like to park their secondary vehicles. Two-way traffic flow from the access along Gibsons Way will accommodate traffic flow in both directions, as shown in **Figure 9**, allowing the vehicles to enter and exit onto Gibsons Way. Since the development traffic volumes are minimal, the two-way traffic flow could be accommodated on these rare occurrences.

As such, the access along Gibsons Way will primarily operate as one-way but will be converted to operate as two-way during the closure of School Road.

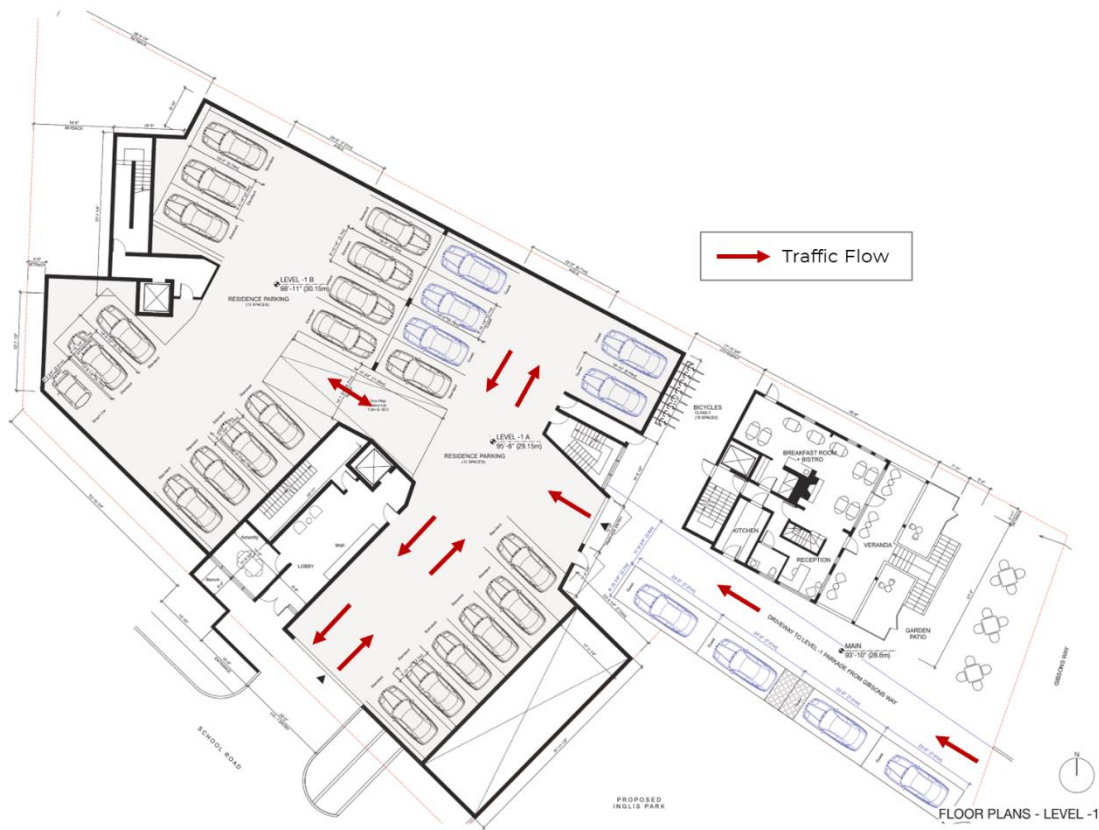


Figure 8: One-Way Traffic Flow across the site between Gibsons Way and School Road

URBAN SYSTEMS MEMORANDUM

DATE: October 31, 2022

FILE: 5269.0002.01

PAGE: 12 of 15

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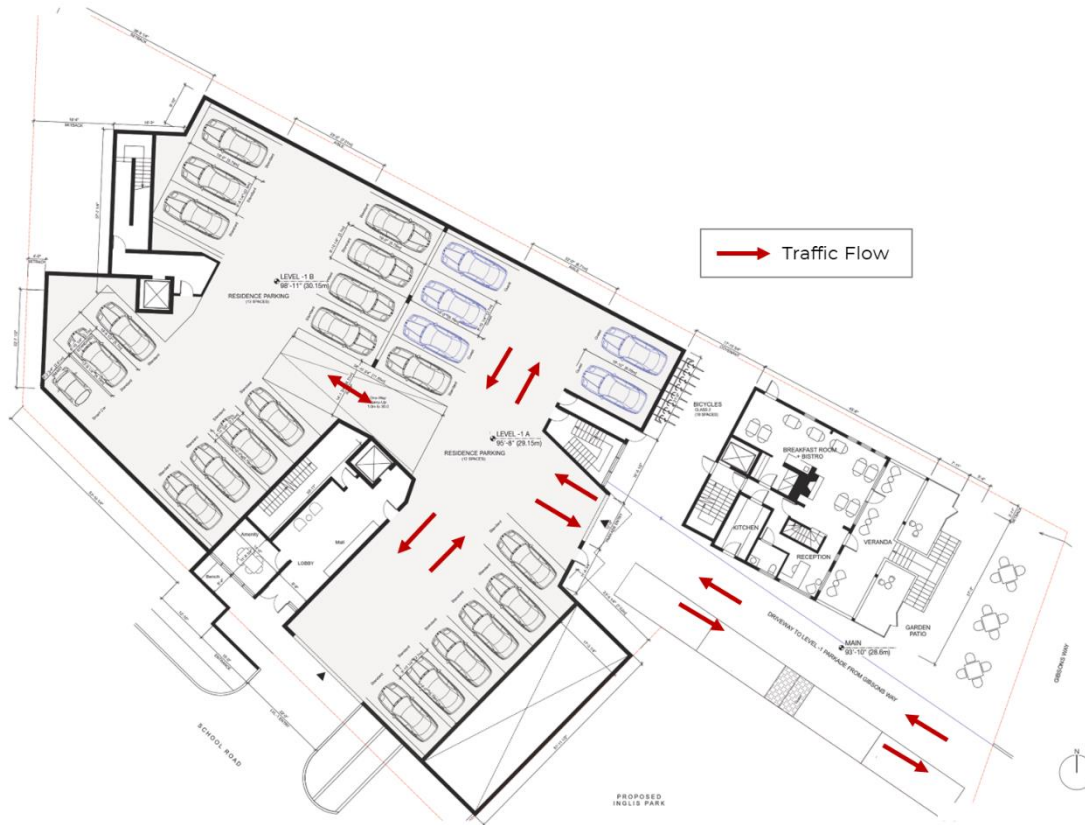


Figure 9: Two-Way Traffic Flow across the site between Gibsons Way and School Road

8.0 LOADING BAY REVIEW

The Town's bylaw Section 6.13 stipulates that every building must provide at least one off-street loading space, which must be able to accommodate a vehicle not less than 9.0 m (29.5 ft) in length, 2.5m (8.2 ft) in width, and 3.6m (11.5 ft) in height. A cross section of the proposed loading bay, located in Level -2, is shown in **Figure 10**. The proposed loading space meets the Town's bylaw requirement.

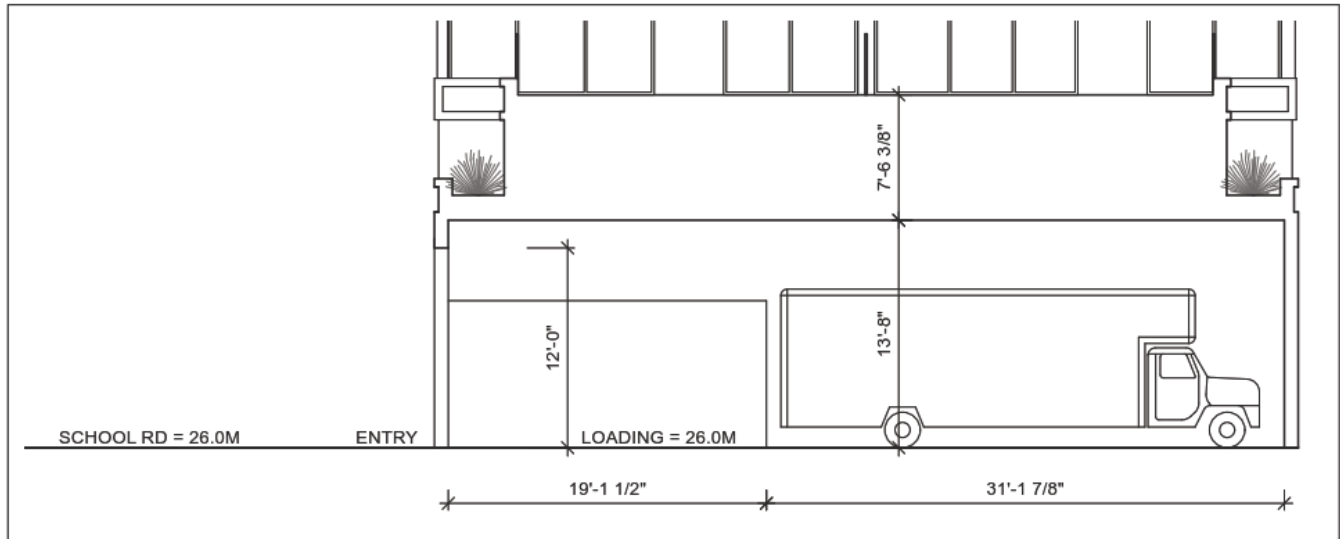
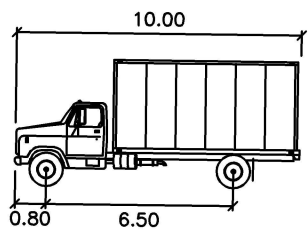
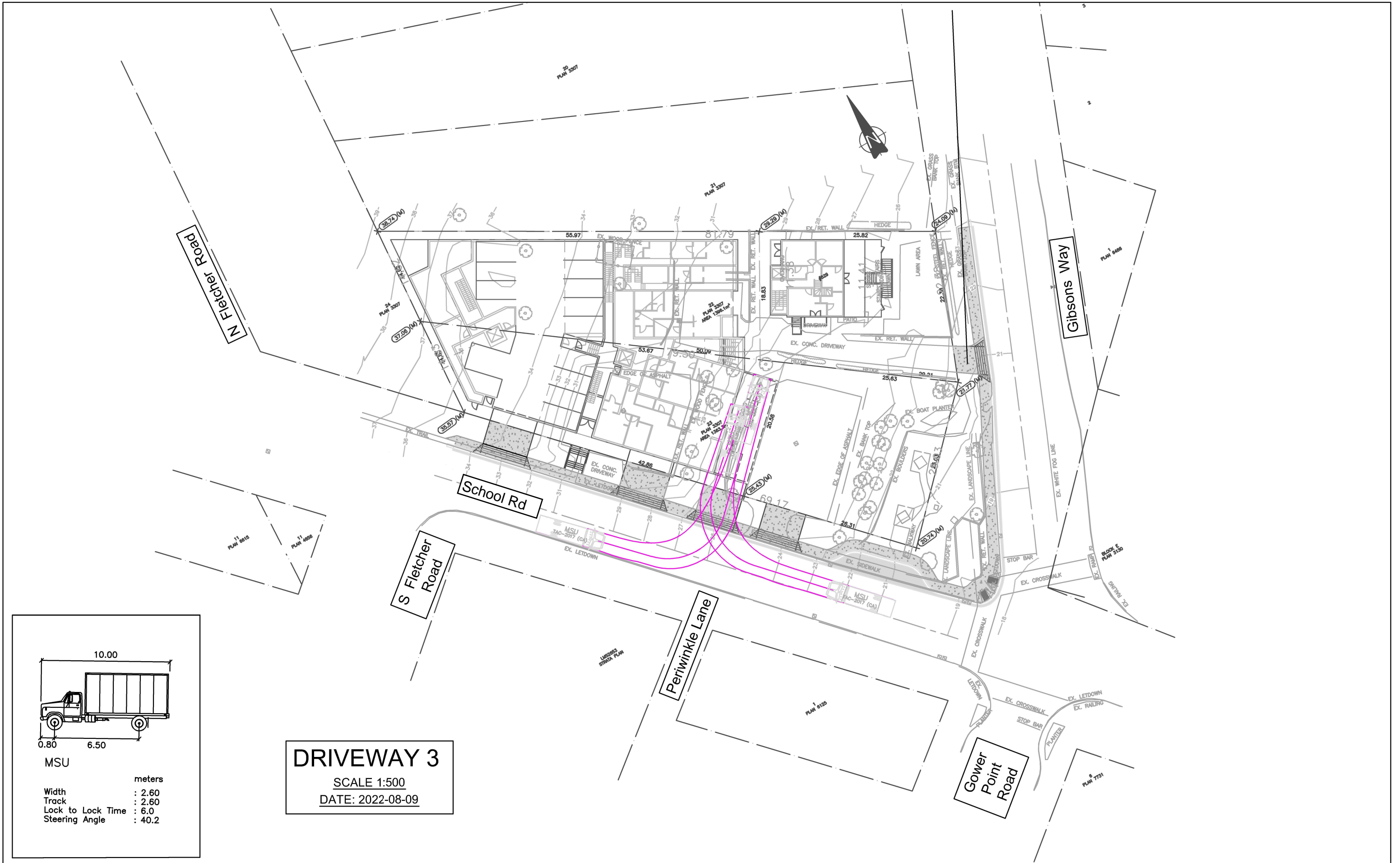


Figure 10: Loading Bay Section

A vehicle turning template was undertaken with a design vehicle of Medium Single Unit Truck (MSU), which is 10 metres long and 2.6 metres wide. **Figure 11** shows the turning template and confirms that the proposed driveway can accommodate the truck manoeuvre from School Road.

Figure 11: Truck Turning Template for Loading Bay (Design Vehicle: MSU)



MSU

	metres
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

DRIVEWAY 3
 SCALE 1:500
 DATE: 2022-08-09

9.0 FINDINGS AND RECOMMENDATIONS

Based on the traffic review completed as part of this study, key findings and recommendations are summarized below.

- The proposed development is expected to generate minimal traffic, which will not significantly affect traffic operations along School Road.
- The proposed accesses meet the requirements and guidelines outlined in the Town's bylaw and TAC Design Guide. In order to maintain clear sightlines at each access along School Road, areas adjacent to the driveways have been identified to be clear of obstructions.
- The access along Gibsons Way will primarily operate as one-way but will be converted to operate as two-way during the closure of School Road.

Sincerely,

URBAN SYSTEMS LTD.

Niraj, Sunuwar, P.Eng., PTOE
Transportation Engineer

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