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3 March 2022  
Project: 210754

Ayr Coach Lines Ltd  
c/o Andrew Head  
Dryden, Smith and Head Planning Consulting Ltd.  
54 Cedar St N  
Kitchener ON N9J 2S4

Dear Mr. Head:

**RE: AYR COACH LINES TRANSPORTATION STUDY, 3081 OLD BEVERLY ROAD,  
NORTH DUMFRIES**

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**Paradigm Transportation Solutions Limited** (Paradigm) was retained to conduct an operation analysis for the expansion of Ayr Coach Lines.

## **Background and Development Concept**

The subject site is located at 3081 Old Beverly Road in the Township of North Dumfries. The site currently has two buildings of approximately 3200 sq. ft. and approximately 2900 sq. ft. The proposed plan is to construct a new 8900 sq. ft. building, replacing the smaller building, for an additional 6000 sq. ft. overall. The building expansion includes the addition of the storage, repair, and maintenance of coach and school buses. There is a repurposed house located on site, which is remaining unchanged. There are two existing driveways to the property, with the main access being the east driveway.

The study will explore the current vehicular trips generated from the site and assess the impact of the expansion of the storage and maintenance.

**Figure 1** illustrates the location of the site. **Figure 2** illustrates the development concept.

## **Existing Conditions**

### **Road Network**

**Old Beverly Road (Regional Road 97)** is an east-west two-lane regional road with a posted speed limit of 60 km/h within the vicinity of the study area. According to the Transportation Association of Canada's Geometric Design Guide for Canadian Roads, a rural arterial road has a typical AADT of greater than 12,000.

## Data Collection

8-hour traffic volumes on Old Beverly Road at the east driveway was collected on a Thursday, 10 February 2022 from 7:00AM-10:00AM, 12:00PM-2:00PM, and 3:00PM-6:00PM. **Figure 3** shows existing traffic volumes of all vehicle types for the 8 hours.

## Traffic Operation

The daily traffic on Old Beverly Road can be estimated by applying a factor to the 8-hour counts. The Region of Waterloo uses a factor 1.74 to determine the Estimated Daily Traffic (EDT) volumes from 8-hour traffic count volumes. The total 8-hour volume observed on Old Beverly Road at the subject site location was 2663 vehicles, which results in EDT of 4556 vehicles per day. In comparison, the Average Annual Daily Traffic (AADT) from 2015 on Old Beverly Road between Robinson Road and Shellard Side Road was reported as 4426<sup>1</sup> vehicles per day by the Region of Waterloo. Therefore, the counts performed in 2022 are considered to be representative of average conditions.

With an AADT of 4426 and EDT of 4556, Old Beverly Road is not near capacity of a typical rural arterial.

A total of 57 bus trips in and out of the site were counted throughout the 8-hour traffic count (10 during the AM peak hour of 7am – 8am and 15 during the PM peak hour of 4:15 pm – 5:15 pm). The total 8-hour volume of 57 bus trips account for 2.2% of the volumes on Old Beverly Road.

## Anticipated Operation with the Expansion

The proposed expansion includes the additional 6000 sq. ft. to the existing 6100 sq. ft. buildings which serves to provide 4 working bays with 1 drive-thru and a wash bay. For the purposes of this study, it is assumed that the bus traffic will increase proportionally with the addition of maintenance buildings. It should be noted that there is no significant change to the number of bus parking spaces on site, so simply factoring up the bus trips by the addition of building space is considered a conservative approach to the trip forecasting.

The addition of 6000 sq. ft. to the existing 6100 sq. ft. is a growth factor of 98%. Applying this growth factor to the observed number of bus trips would add 56 bus trips to the highest 8-hours of traffic (10 during the AM peak hour and 15 during the PM peak hour). Overall, the percentage of bus trips in the Old Beverly Road traffic is forecast to be 4.2% over the highest 8-hours of traffic after the expansion.

As Old Beverly Road is not close to capacity of a typical rural arterial, and the percentage of the traffic contributed by the proposed development is small, it is forecast that the impact of the development will be minimal.

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<sup>1</sup> Regional Municipality of Waterloo Traffic Counts (2015 Average Annual Daily Traffic), January 17, 2017



## Conclusion

Based on the analyses contained in this study, it is not forecast that the expansion of the subject site will impact to the road network in a significant way.

Yours very truly,

**PARADIGM TRANSPORTATION SOLUTIONS LIMITED**



**Matt Brouwer**  
P.Eng.  
Senior Project Manager





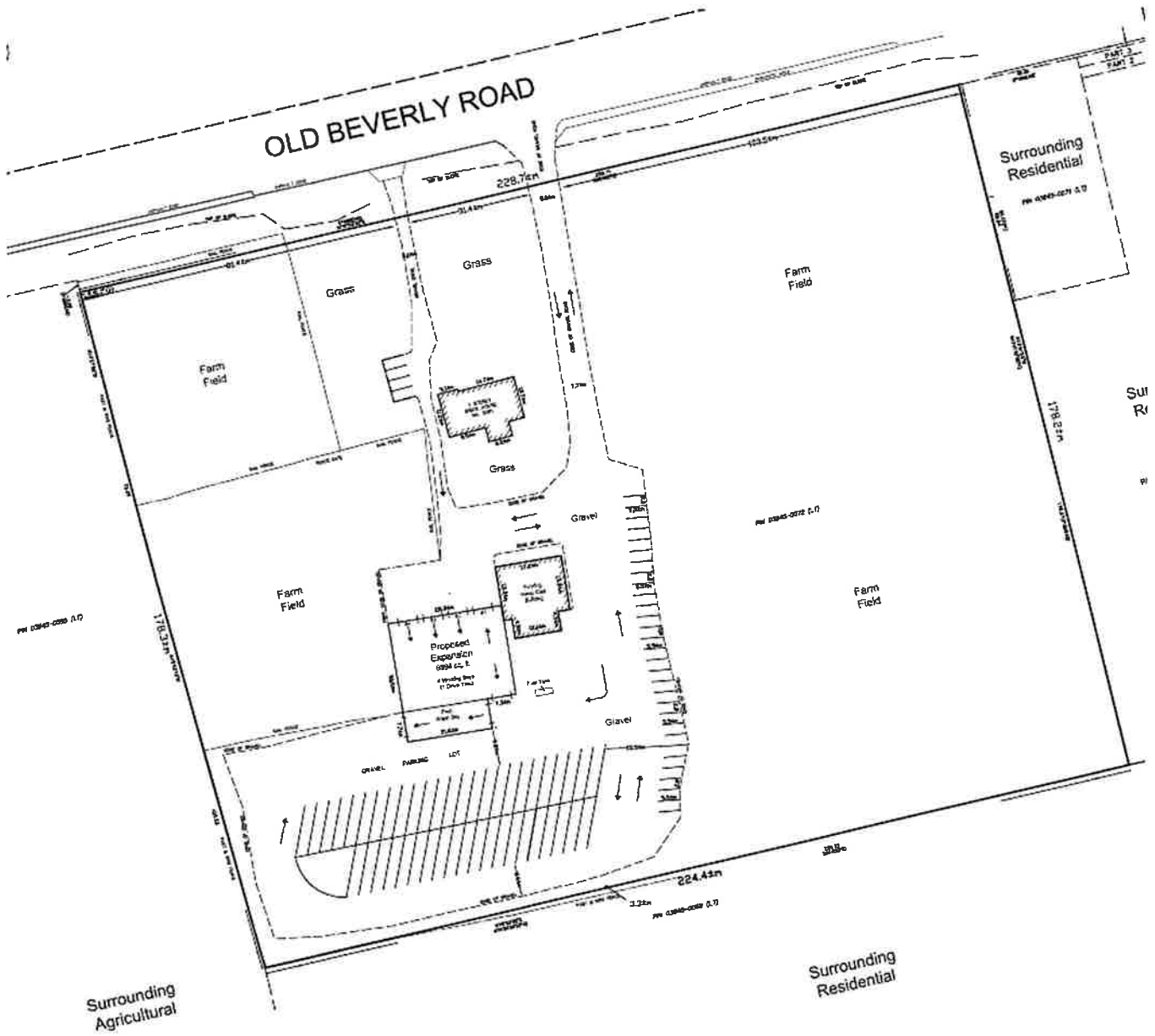
Source: Google Maps  
NTS



## Site Location

Old Beverly Road – TIB  
210754

Figure 1



NTS



## Development Concept

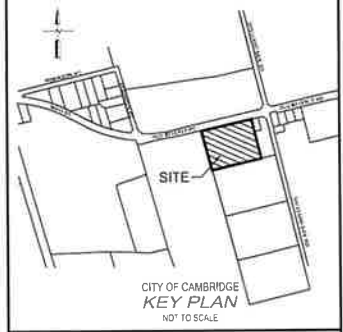


Old Beverly Road	
← 1391	← 1352
1266 →	↘ 21 ← 1373
1231 →	↙ 39 ↗
35	20
↘ 56	↙ 59 →
	<b>Site Access</b>
	1251 →



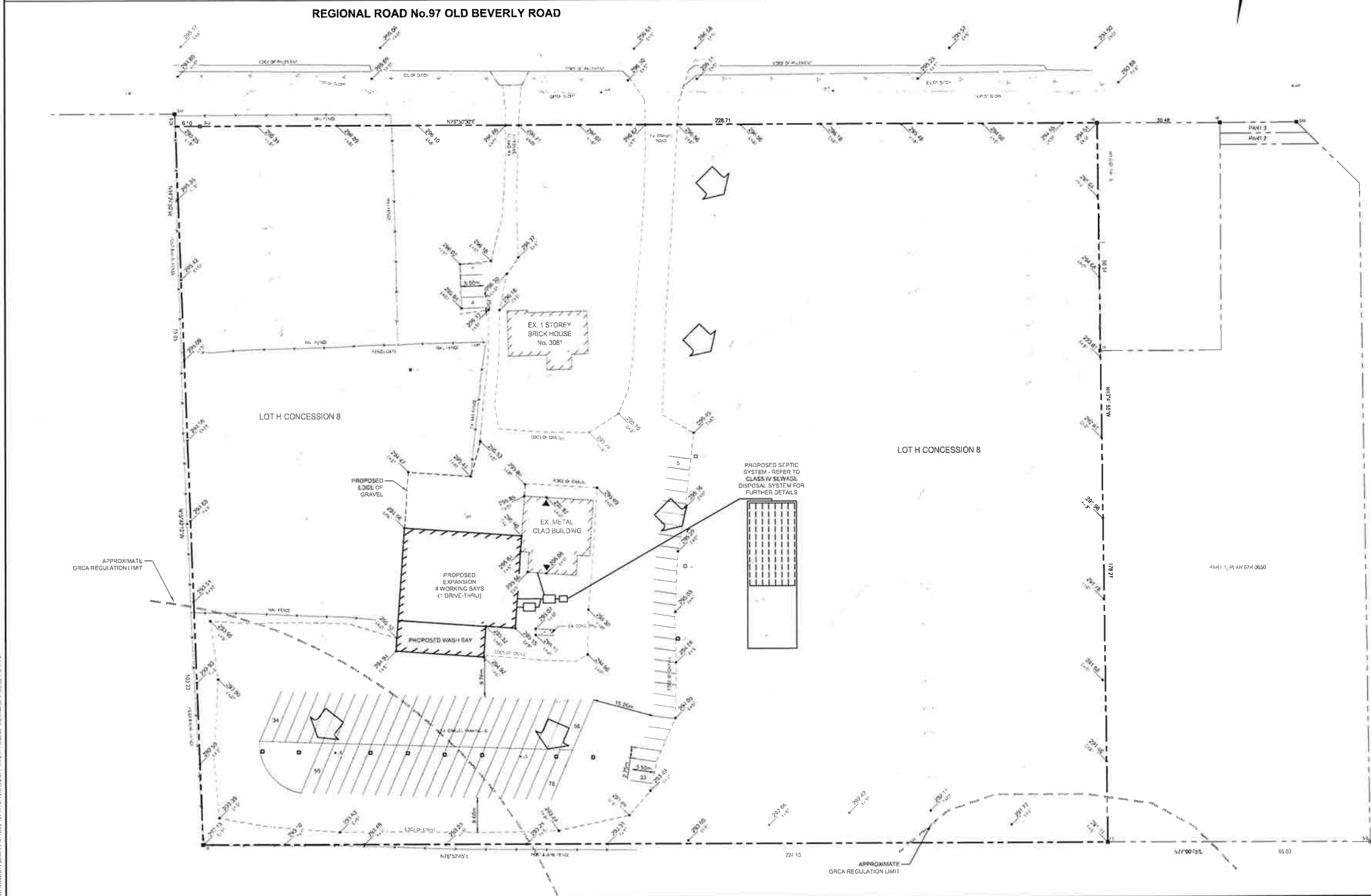


LEGEND	
	PROPERTY LINE
	EX. SANITARY SEWER
	EX. STORM SEWER
	EX. WATER MAIN
	EX. DITCH
	EX. BELL LINE
	EX. GAS LINE
	EX. FENCE LINE
	EX. CONTOURS
	EX. CATCH BASIN
	PROP. SANITARY SEWER
	PROP. STORM SEWER
	PROP. CATCH BASIN
	PROP. SWALE
	EX. FIRE HYDRANT
	EX. LIGHT STANDARD
	PROPOSED GRADE
	EXISTING GRADE
	PROPOSED SWALE GRADE
	DRAINAGE FLOW
	HEDGE
	CONIFEROUS/DECIDUOUS TREES
	MAJOR OVERLAND FLOW
	EX. HYDRO JUNCTION BOX



NOTES:

- TOPOGRAPHICAL SURVEY DERIVED FROM MACDONALD TAMBLYN LORD SURVEYING DRAWING "PLAN OF SURVEY SHOWING TOPOGRAPHIC FEATURES ON PART 'H' CONCESSION 8 TOWNSHIP OF NORTH DUMFRIES" RECEIVED FROM ANDREW HILL ON APRIL 29, 2021
- SITE PLAN DERIVED FROM DRYDEN SMITH & HEAD PLANNING CONSULTANTS LTD. DRAWING "3081 OLD BEVERLY RD" RECEIVED ON APRIL 29, 2021



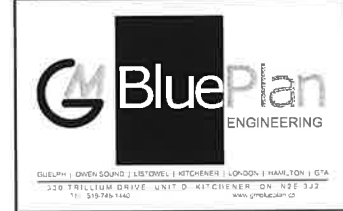
BENCH MARKS

REGION OF WATERLOO BENCHMARK No. RMW 310  
ELEV=266.95m

THE POSITION OF ALL LINES, CONDUITS, WATERWAYS, SEWER, AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT GUARANTEED BY THE CONTRACT DRAWINGS AND THESE DRAWINGS SHOW THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED BEFORE STARTING WORK. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.



NO.	DATE	REVISION DESCRIPTION	CHKD.
1	2022/05/16	ISSUED FOR REVIEW	P.M.W.



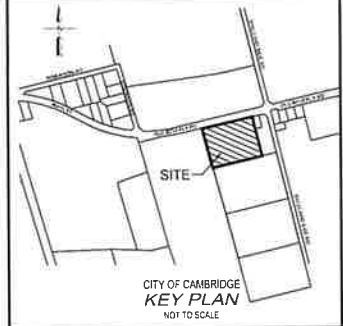
3081 OLD BEVERLY ROAD  
 DRYDEN, SMITH & HEAD PLANNING CONSULTANTS  
 CITY OF CAMBRIDGE

DRAWN BY	APPROVED BY	PROJECT NO.	DRAWING NO.
M.T.	S.J.P.	42-075	2
DESIGNED BY	DATE	SCALE	
G.E.A.	MAY 2021	1:500	

ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF CAMBRIDGE STANDARD SPECIFICATIONS FOR CONSTRUCTION AND THE CITY OF CAMBRIDGE STANDARD SPECIFICATIONS FOR UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF CAMBRIDGE AND ANY OTHER AFFECTING AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.



LEGEND	
	PROPERTY LINE
	EX DITCH
	EX FENCE LINE
	EX CONTOURS
	PROP SWALE
	EX FIRE HYDRANT
	EX LIGHT STANDARD
	HEDGE
	CONIFEROUS/DECIDUOUS TREES
	EX HYDROLACHON BOX



NOTES:

- 1 TOPOGRAPHICAL SURVEY DERIVED FROM MACDONALD TAMBLYN LORD SURVEYING DRAWING "PLAN OF SURVEY SHOWING TOPOGRAPHIC FEATURES ON PART 11 CONCESSION 8 TOWNSHIP OF NORTH DUMFRIES" RECEIVED FROM ANDREW HILL ON APRIL 28 2021
- 2 SITE PLAN DERIVED FROM DRYDEN SMITH & HEAD PLANNING CONSULTANTS LTD DRAWING "3081 OLD BEVERLY RD" RECEIVED ON APRIL 29 2021

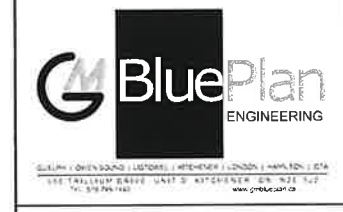
BENCH MARKS

REGION OF WATERLOO BENCH-MARK No. RMW 310  
ELEV=286.95m

THE POSITION OF POLE LINES CONDUITS WATERMANS SEWERS AND OTHER UTILITIES AND OTHER STRUCTURES IS NOT GUARANTEED AS SHOWN ON THE CONTRACT DRAWINGS AND WHERE SHOWN THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED BEYOND STATING WORK. THE CONTRACTOR SHALL INDEPENDENTLY OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM.

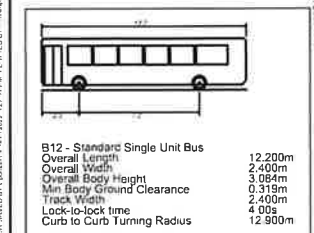
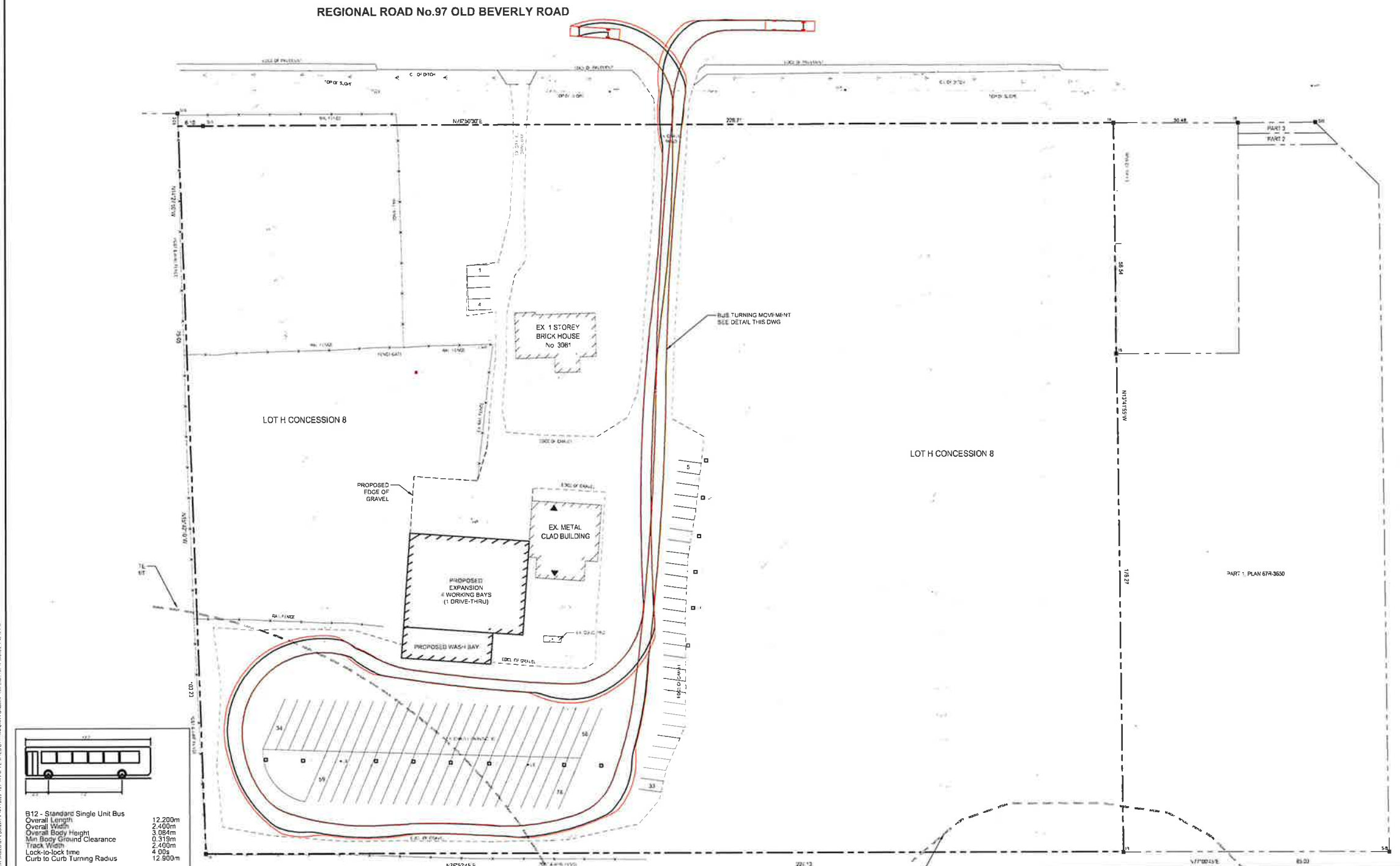


NO.	DATE	REVISION DESCRIPTION	CHKD.
1	2022/05/10	ISSUED FOR REVIEW	P.W.



3081 OLD BEVERLY ROAD  
 DRYDEN, SMITH & HEAD PLANNING CONSULTANTS  
 CITY OF CAMBRIDGE  
 BUS MOVEMENT PLAN

DRAWN BY	APPROVED BY	PROJECT NO	DRAWING NO
M.T.	S.J.P.	421075	3
DESIGNED BY	DATE	SCALE	
G.E.A.	MAY 2021	1:500	



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