

BREDFIELD ROAD, MELTON
PEDESTRIAN SAFETY IMPROVEMENTS
FEASIBILITY STUDY – OPTIONS REPORT
L.A.: 253278

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ISSUE 01

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1 Introduction

Since the construction of the Longwood Fields housing estate there is a new desire line across Woods Lane into Bredfield Road. As there is not a continuous footway on the east side of Bredfield Road the purpose of this feasibility study is to identify ways of improving pedestrian safety in crossing the northern end of Bredfield Road.

Melton Parish Council and some residents are very concerned that school children, on their way to Farlingaye High School from the new housing development, use the new signal-controlled crossing located to the east of Bredfield Road to cross Woods Lane, and then proceed to continue walking down the east side of Bredfield Road.

This is concerning as there is no footway on the east side of Bredfield Road and school children therefore walk in the road and are at risk of being struck by passing traffic. The reason school children walk on the east side is that heavy traffic flow makes it very difficult to cross the junction to gain access to the footway on the west side of Bredfield Road.

Melton Parish Council asked SCC to consider moving the signalled crossing to the west side of Bredfield Road but that was considered too costly and impractical. Also, the right turn lane into Bredfield Road, which is a really useful facility, would be reduced in length.

Suffolk County Council (SCC) have therefore commissioned Suffolk Highways to identify options for improving pedestrian safety at the junction. The objective of this feasibility report is to investigate options that will provide pedestrian safety improvements, to comment on their feasibility, the advantages and disadvantages of each and to give an indication of ball park works costs.

This feasibility study is limited in its scope by the use of OS mapping data and C2 utility records both of which have limited accuracy and reliability. If it is desired to investigate a preferred Option for implementation, then topographical and GPR surveys are recommended to determine precisely where the utility services are. This is to prevent unforeseen circumstances and costs arising at a late stage in the design process.

This initial exercise investigates horizontal road geometry changes only. It does not assess any drainage solutions or vertical road geometry which may also be required.

2 Location

The C317 Bredfield Road is a busy main distributor road running parallel to the A12, which provides a link between the A1152 Woods Lane via North Hill, Bredfield Street and Angel Lane to the B1079 Theatre Street. There are many minor junctions along this route and the road is a direct pedestrian route to and from the new Longwood Fields housing estate located to the north of Woods Lane, Farlingaye High School and Woodbridge Town centre.

In the section of Bredfield Road being studied, the road is subject to a 30mph speed limit by virtue of the existing system of street lighting and the carriageway is approximately 6.0m wide.

On the western side, there is a continuous footway for its entire length, whilst on the eastern side, there is no footway until just before Orchard Close. The western footway is set back from the carriageway by a grass verge which is un-kerbed and has no formal drainage, whilst on the east side the Road the edge of the carriageway edge is kerbed and there is a gully drainage system.

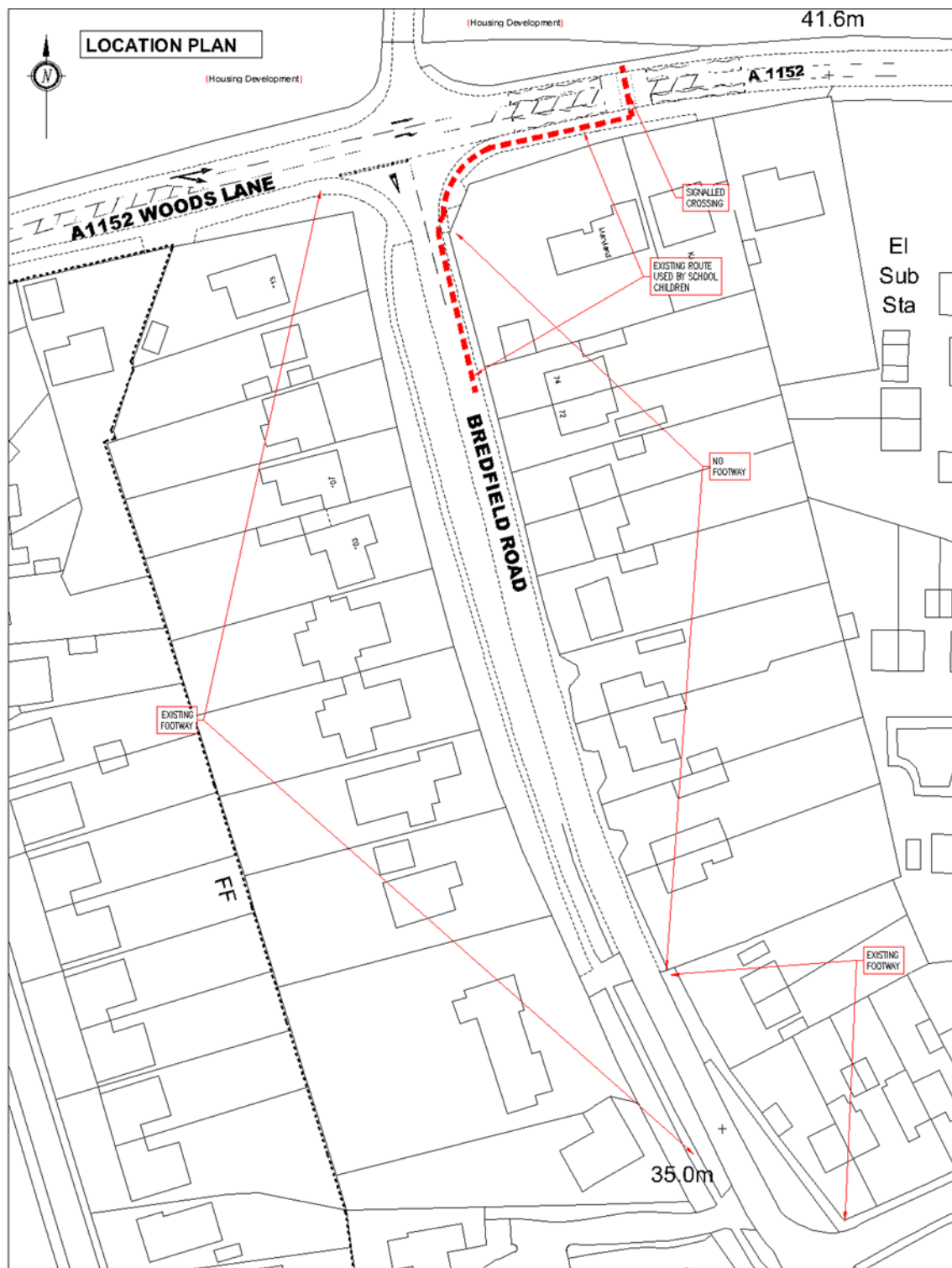
On the western side of the junction, there is a short section of shared use footway which continues into Woods Lane, as part of a shared use footway link to Farlingaye School via footways along Woods Lane and the A12. On the eastern side of the junction, there is a short section of overgrown shrubs on a narrow highway verge which prevents pedestrians from using the verge. This verge narrows very quickly and disappears almost completely where it meets the boundary garden wall between 109 Woods Lane (Maryland) & No. 74 Bredfield Road. See Image No.1 below.



Photograph No.1 Bredfield Road – Image looking northwards towards Woods Lane
School children enter Bredfield Road from Woods Lane and walk along the east (far) side



Image No.2 Bredfield Road – View looking southwards from Woods Lane
note the BT chamber in the western verge close to the carriageway edge and footway at back of
western verge



Location Plan, Bredfield Road – Melton

3 Background Information

Highway Boundary

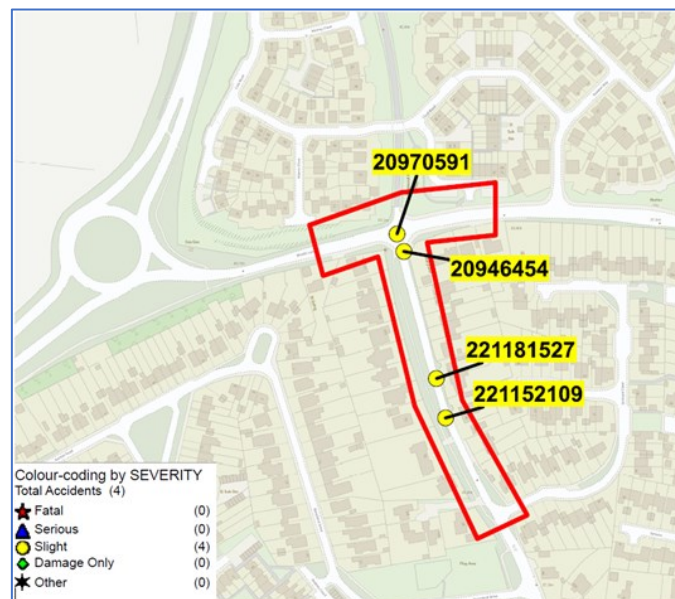
The Highway Boundary record for the area has been obtained from SCC Highway Records team, which is shown below. The area shown in green is the recorded area of highway land and the record confirms that the highway boundary is very narrow on the east side and a wide highway boundary on the west side of Bredfield Road. All the proposed options are all located within the highway boundary and no private land is required.



Highway Boundary

Collision data

Personal injury collision data obtained from SCC Highway Record team has been assessed to identify the location and severity of all collisions and Non-Motorised Users (NMU's) **within the study area** for the last five-year period **2017 to 2022**.



Location of collisions 2017 to 2022

A total of 4 accidents were recorded within the study area, of which:

- 4 collisions resulted in slight injury
- 0 collisions resulted in serious injury
- 0 collisions resulted in fatal injury

Out of the 4 accidents, 2 accidents involved pedestrians.

- **Ref:221152109** – A school student misjudged oncoming vehicle's speed as it came round a bend with poor visibility and made minor contact with her leg.
- **Ref:221181527** – A pedestrian was outside his house strimming grass, and had stopped and taken a squat position on the edge of the pavement; knee slightly sticking out. Oncoming vehicle had veered to the centre of the road, tried to correct its position and this was when contact was made with pedestrian.

Statutory Undertakers

Apart from street lighting services, for which there are no records, there are significant services in Bredfield Road. The C2 record information has been obtained from each utility company and is summarised as follows:-

East side Verge:

- British Telecom (BT) overhead cables
- UKPN U/G Cable & O/H cables

West side verge:

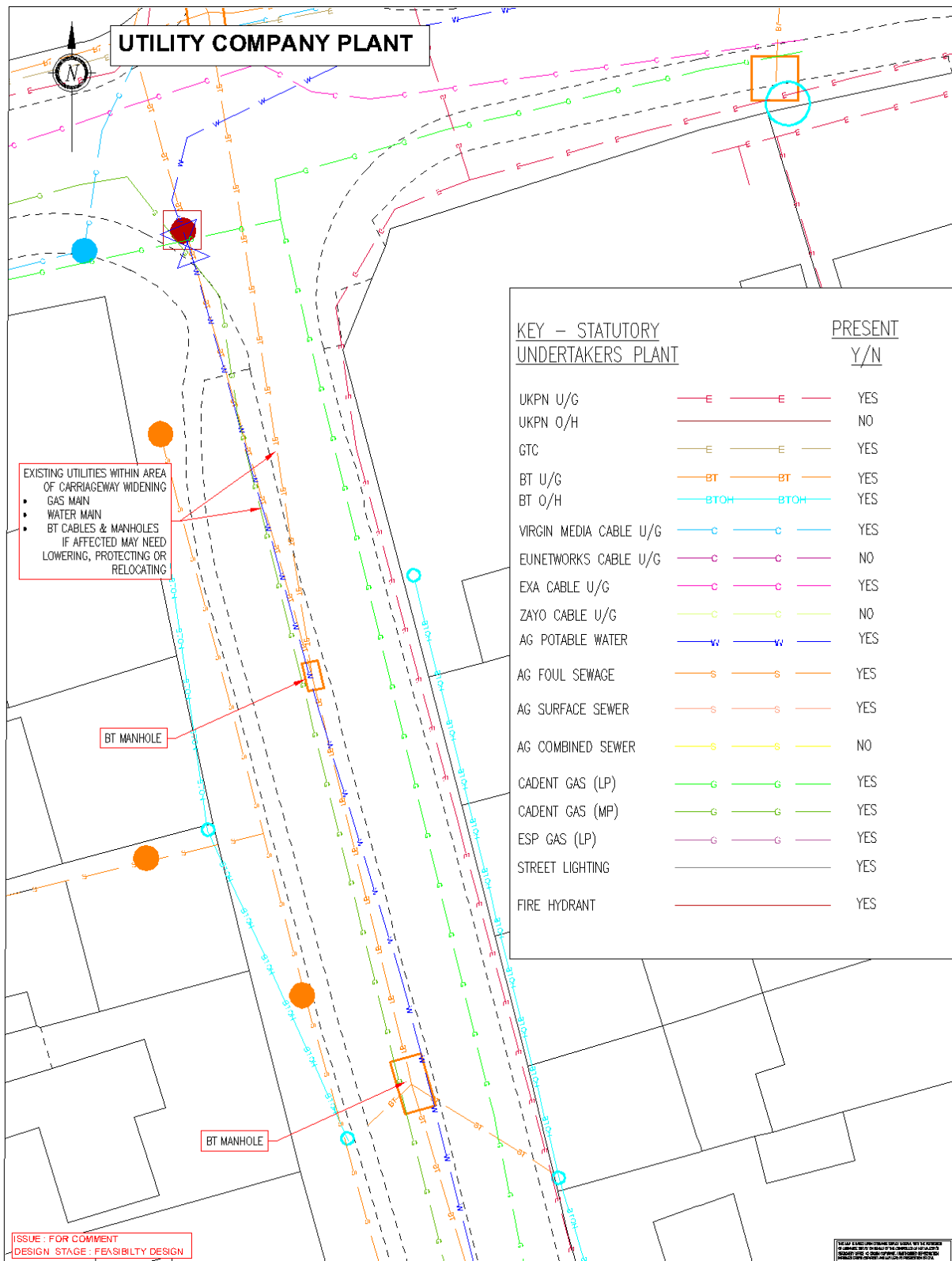
- BT underground cables, overhead cables, poles & chambers
- Anglian Water – 3" cast iron water main
- Anglian Water – 6" Foul Sewer
- Street Lighting – underground cables
- Cadent - 250mm PE medium gas main
- UKPN U/G Cable & O/H cables

Carriageway:

- Cadent – 6" SI Low Pressure Gas Main

Please note Suffolk Highways takes no responsibility for the accuracy of 3rd Party information.

The utility record information has also been plotted in CAD to give a graphical representation. A screen shot is shown below.



4 Design Options

Five options have been drawn up using OS mapping as the backcloth for the design, which tends to be inaccurate. Although the site was visited and a number of check measurements undertaken, it should be noted that the accuracy of the mapping should be treated with caution. For any future preliminary and detailed designs, a topographical survey needs to be undertaken for any of the designs to be accurate and relied upon.

The designs have been based on turning circle for a 10m rigid HGV. If larger vehicles turn into / out of the junction these are unlikely to stay within designated traffic lanes and for Option 4 – pedestrian refuge at the junction, depending on the size of vehicle turning, such vehicles may find it difficult to turn within the width available between kerbing and may mount the footway.

All 5 options require constructing new carriageway within the western verge. As mentioned in the section on existing services, there are BT, gas and water services in the western verge and all 5 options affect these services.

The reason these services are affected is that normally services located within footway / verge are less deep than services within the carriageway. Also manholes and chambers in the verge are usually constructed to a lighter design than those in the carriageway as the loads are lower.

It seems highly likely that these services are affected but whether the services need protecting, lowering or relocating is impossible to know at this stage, without further investigation and detailed design by the affected utility companies.

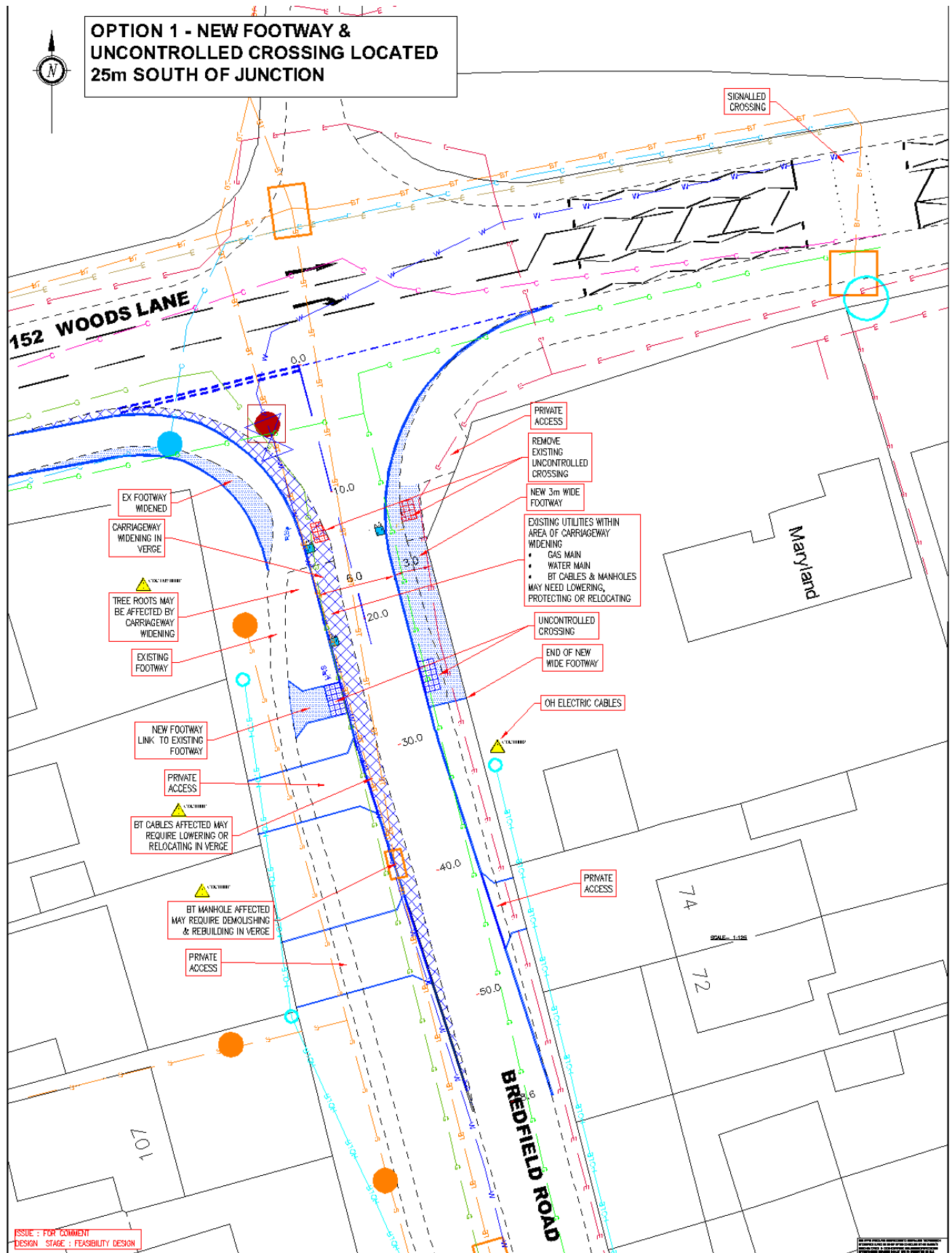
Where services are affected by highway works the normal process is to contact the utility company and ask for a preliminary estimated cost. The preliminary enquiry is called a C3. Openreach whom maintain BT assets have been contacted and they have provided a C3 preliminary assessment of diversionary works necessary, as a consequence of the proposed highway works.

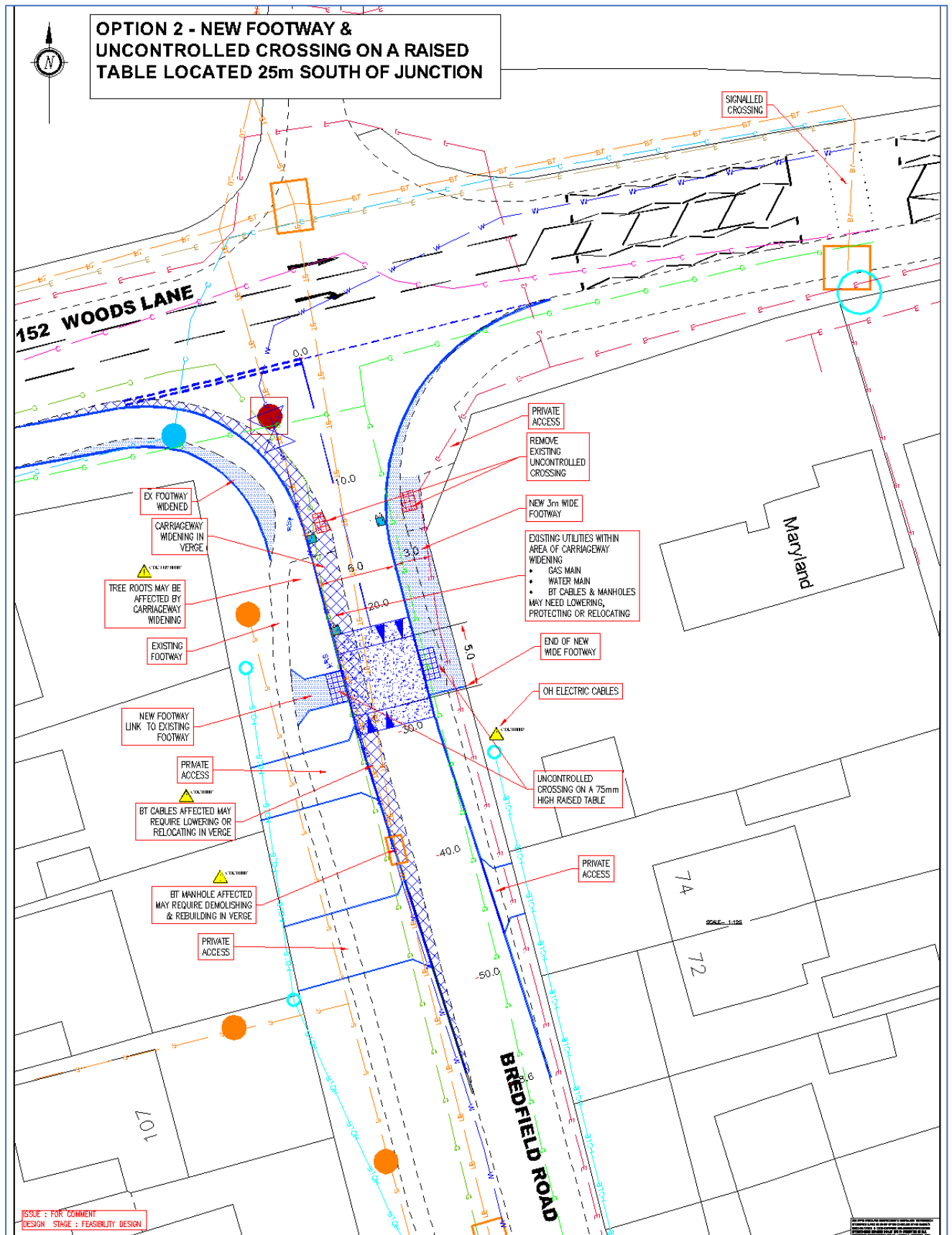
Without further investigation and detailed design, Openreach estimate the diversionary costs to be £236,887 (ex vat) and the anticipated costs for detailed design & survey work to be £5,163 (ex vat). This is a budget estimate of the possible cost of diverting the BT apparatus. It includes all direct costs and overheads likely to arise. It is stressed that this is a budgetary figure and only intended as a guide, the actual amount could be significantly different. To obtain a more realistic cost estimate based on a detailed design by Openreach (called a C4) a design order for £5,163 would need to be sent to Openreach.

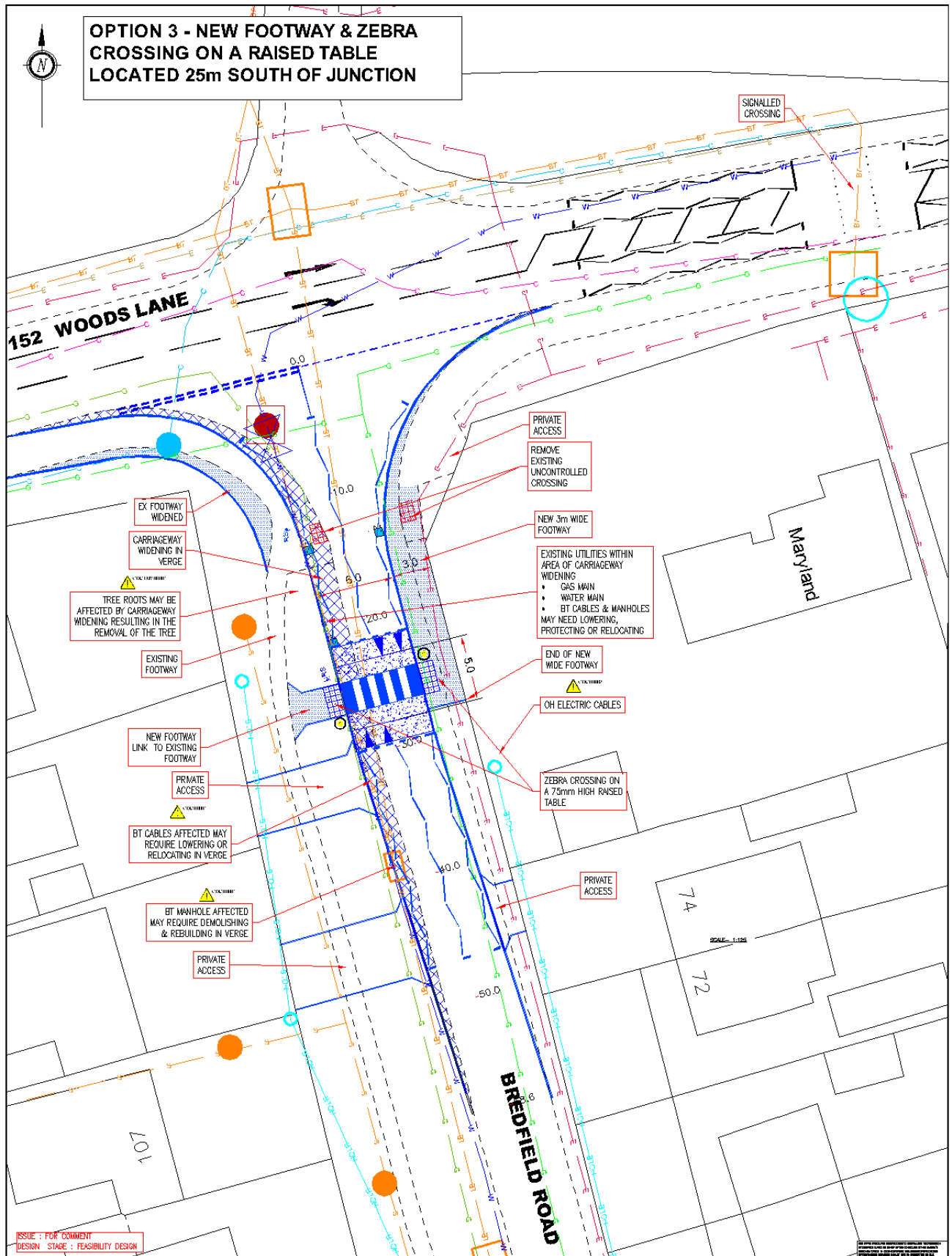
The process is the same for all utilities. The companies responsible for managing the gas and water assets have not been contacted for their estimated diversionary costs as this is outside the scope of the task brief.

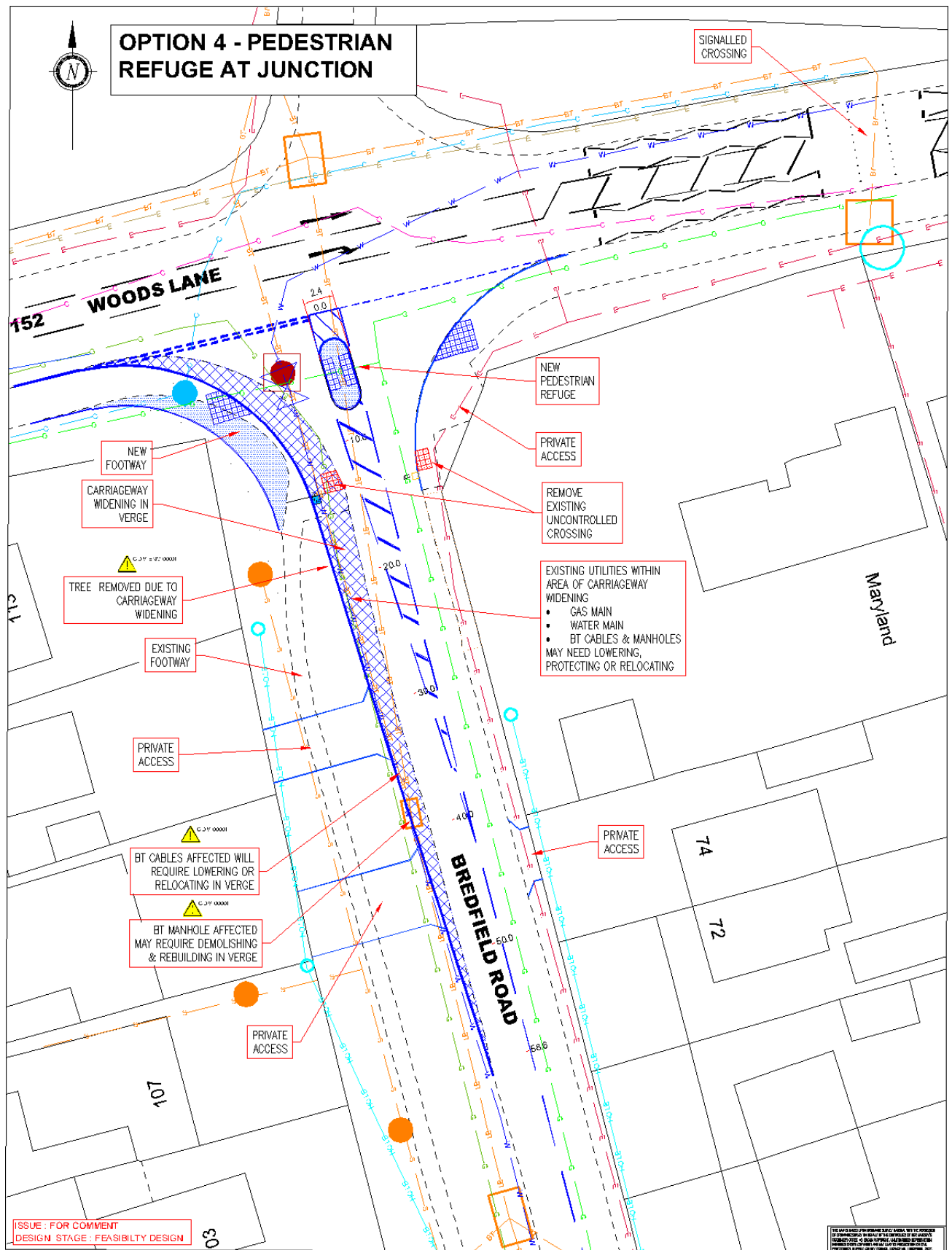
The table below summarises the +ve and -ve operational features for each Option to help assess and identify the best option.

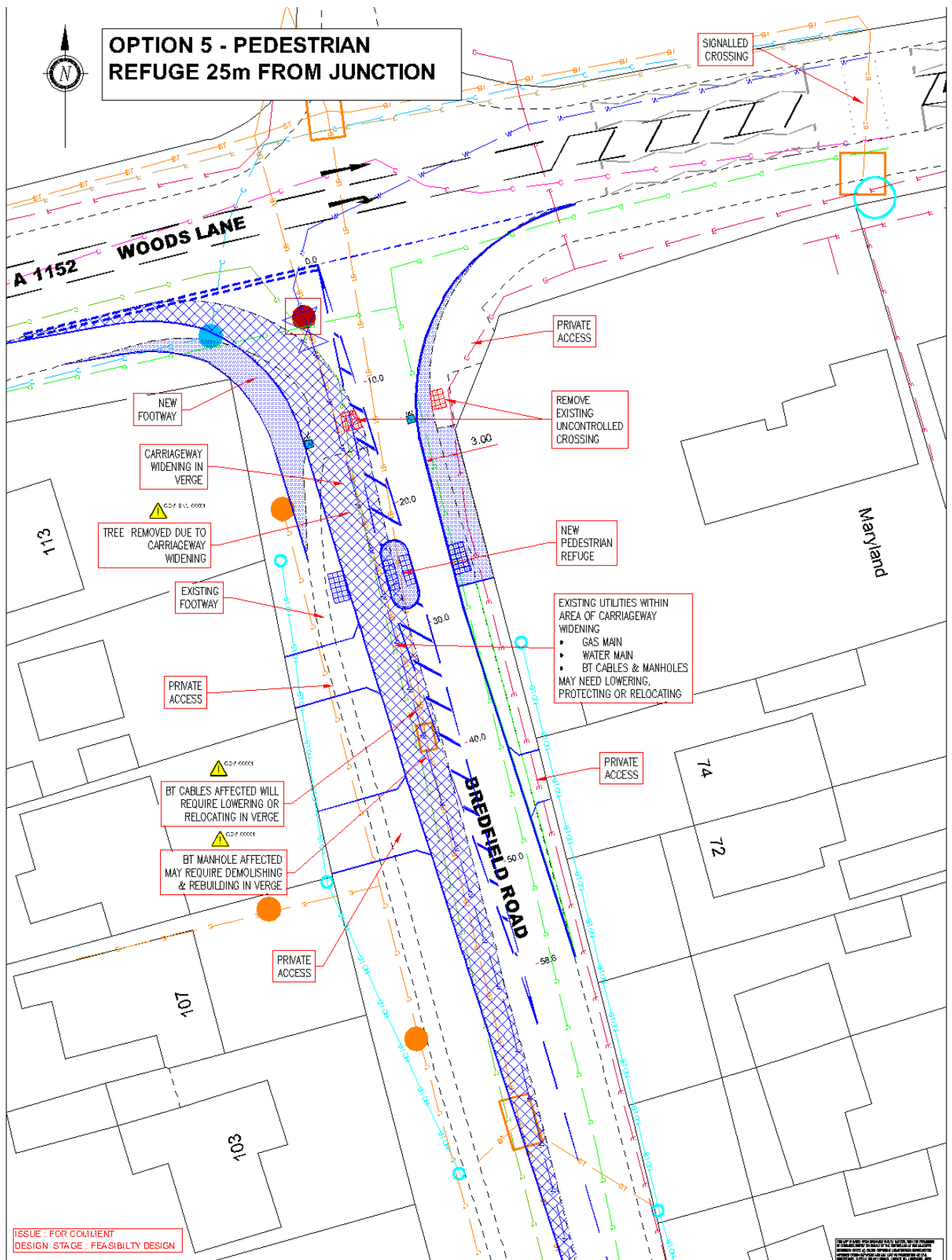
	OPTION 1	OPTION 2	OPTION 3	OPTION 4	OPTION 5
Operational feature	Uncontrolled crossing 25m from junction	Raised uncontrolled crossing 25m from junction	Raised zebra crossing 25m from junction	Pedestrian refuge at junction	Pedestrian refuge 25m from junction
ease of crossing as able to cross in 2 halves				yes	yes
traffic speeds tempered		yes	yes		
pedestrian priority / motorists give way			yes		
safest crossing facility - ranked 1-5 (1 best)	4	3	1	5	2
facility could be used by N-S ped movements & E-W ped movements				yes	
local increase in noise from vehicles braking & traversing table		yes	yes		
mature tree affected	yes	yes	yes	yes	yes
access in/out of Maryland made worse				yes	
utilities affected	yes	yes	yes	yes	yes
Cost ranked 1-5 (1 cheapest)	1	2	3	4	5
area of new carriageway (sqm)	72	72	72	91	280
area of new footway (sqm)	78	78	78	35	92
extra cost of road hump & drainage		yes	yes		
extra cost of zebra crossing, belisha beacons, electrical works & higher PSV surfacing			yes		
extra cost of Legal Notices		yes	yes		
likelihood of not being used by target N-S ped movements				yes	
Duration of works 1-5 (1 shortest)	1	2	3	4	5
Lighting upgrades required			yes		
Potential adverse effect on cyclist safety					yes
crossing facility possibly covered by queuing traffic when busy	yes			yes	











5 Estimated Budget Costs

It is very difficult to give accurate budget costs as there are many unknowns which can only be determined through further investigation during preliminary and/or detailed design stages, liaison with the utility companies and undertaking surveys.

Below is a table that summarises the estimated budget works costs for the 5 options. The cost estimates provided are based on Suffolk Highways Schedule of Rates (Year 10 2022-2023). If the works were undertaken in 2023 then the works would be subject to the rate uplift for that year.

Option	Budget Estimated Works Cost	Preliminaries say 20% of estimated works cost	Openreach diversion costs (ex vat)	National Grid (Gas) diversion costs	Anglian Water diversion costs	total
Option 1	£ 43,000	£ 8,600	£ 242,050	tba	tba	£293,650
Option 2	£ 45,000	£ 9,000	£ 242,050	tba	tba	£296,050
Option 3	£ 53,000	£ 10,600	£ 242,050	tba	tba	£305,650
Option 4	£ 74,000	£ 14,800	£ 242,050	tba	tba	£330,850
Option 5	£ 146,483	£ 29,297	£ 242,050	tba	tba	£417,830

The budget cost estimates are provided for comparative purposes only and do not include for the following:

- The cost of undertaking preliminary and detailed design by Suffolk Highways
- The cost of the design for lowering, protecting or relocating affected utilities by all affected utility companies
- The cost of lowering, protecting or relocating affected utilities by all affected utility companies
- The cost of carrying out a topographical survey by a 3rd party
- The cost of carrying out a drainage survey by a 3rd party
- The cost of carrying out a GPR survey by a 3rd party
- The cost of arranging any permanent traffic orders by Suffolk Highways
- The cost of ecology fees and liaison with other affected 3rd parties
- The cost for undertaking road safety audits at end of detailed design and on completion of the works by a 3rd party

An estimated cost for preliminaries (traffic management, site accommodation & welfare) has been included based on 20% of the estimated works cost. Preliminary costs are also based on duration and the duration of the works is determined by 1) the option chosen 2) the number of men the contractor decides to use 3) whether there are any affected utilities which need to be lowered, protected or relocated. At this stage durations for each option are unknown.

6 Conclusions

All five options would improve pedestrian safety for the pedestrian movement between the new housing estate and the existing footway on the west side of Bredfield Road.

Option 3 provides a zebra crossing on a raised table and is considered to be the safest and therefore the best option.

Option 1 would benefit both the movements from the signalled crossing to the western footway in Bredfield Road and movements along Woods Lane across the junction mouth, but this option is not ideal as there is a risk that pedestrians wanting to go down Woods Lane, may feel it is offline and may not use it. The location of the island is very close to the junction and ideally needs to be located slightly further into Woods Lane but this is not possible due to the vehicular access for Maryland.

All the options involve the widening of the existing carriageway into the western verge and all five would affect BT, Gas and Water services to a lesser or more degree. Openreach have provided a preliminary cost for diversionary works of £242,050 (including design). It is unknown what the diversionary costs for the Gas and Water services are.

At this feasibility stage it is unknown whether all 3 services are affected to the same degree for all five options. The only way this can be determined is by undertaking an accurate detailed design, carrying out a radar survey to find out exactly where the utility services are and having detailed discussions with the utility companies.

It is quite common for utility companies to give high C3 preliminary diversionary costs only for these costs to be reduced once they have undertaken the detailed diversionary design. This is not always the case, and this represents a large risk if a design for a particular option was progressed to detailed design stage.