

St James Senior School,  
Ashford  
Esso's Southampton to London  
Pipeline Project – Comments  
on Applicant's and School's  
alternative pipeline routes  
Prepared for St James School  
January 2020



## **St. James Senior School, Ashford**

### **Esso's Southampton to London Pipeline Project – Comments on Applicant's and School's alternative pipeline routes**

#### **1.0 Introduction**

##### **1.1 Background**

Esso's Southampton to London Pipeline Project comprises the installation of a new 300mm diameter fuel pipeline to replace an existing fuel oil line (FOL) which was installed approximately 50 years ago. The existing FOL runs along the western boundary of St James School and adjacent to the boundary with Thomas Knyvett College. There are two other adjacent pipelines which run adjacent to the FOL in this area which Esso state were installed at a similar time; an Esso owned White Oil Line (WOL) and a Cadent Gas owned intermediate pressure gas main. Both of these will remain.

The School have objected to the impact of Esso's preferred route for the pipeline (the 'Application Route') and have proposed alternative alignments relating more closely to the alignment of the existing pipelines (Scenarios 1a and 1b in SLT's Technical Note). Esso have considered these alternative options but have advised the School that they do not consider it appropriate for the project to progress either alternative.

The School are continuing to object to the Application Route through the Development Consent Order process, and have asked Alan Baxter to review Esso's considerations of the Applicant Route and the School's alternative options and prepare a report on our findings.

##### **1.2 Information received**

Alan Baxter have been provided with the following information:

- SLP Project Team Fischer German letter to Carter Jonas dated 8<sup>th</sup> October 2019 with The Application Route Mitigation Proposals and Analysis of the School's proposed Alternative Routes (SLP Technical Note)
- Esso Deadline 1 Responses to Relevant Representations Application Document: 8.3
- Esso Deadline 3 Written Summary of Oral Submissions put at the Issue Specific Hearing on Environmental Matters on 4 December 2019 (ISH3) Application Documents: 8.21
- Esso Deadline 3 Response to Action Points from the Issue S Specific Hearing on Environmental Matters on 4 December 2019 (ISH3) Application Documents: 8.22
- Richter Associates Comments on Route Mitigation Proposals dated 6<sup>th</sup> November 2019
- Soils Ltd Main Investigation Report at St James Senior Boys School dated December 2019
- Carter Jonas summary of St James School Planning Applications, Listed Buildings and Tree Preservation Orders

#### **2.0 Existing considerations**

##### **2.1 St James School site**

The School is located close to Ashford Station, accessed from Church Road. The oldest parts of the school date back to the late 1850's, with the 'Welsh School', Chapel and Gatehouse Grade II listed. The school grounds contain playing fields to the east and north sides of the school.

The school grounds are bounded by Thomas Knyvett College to the west, fields to the north, and lakes (presumed to be flooded gravel pits) to the east. We understand there are old landfill sites to the north of the School, including the area of the northern playing fields, which are likely to have infilled areas of gravel extraction.

## 2.2 Planning consents

The school has been granted planning consent for a new sports hall facility along its western boundary (Application Reference: 19/00428/FUL)

The school also has a separate consent for new laboratories, classrooms and assembly hall (Application Reference: 10/00461/FUL).

## 2.3 Ground conditions

Soil Ltd's site investigation report for the proposed sports hall confirms the geology as Kempton Park Gravels over London Clay. The depth of the gravel was not proved in the site investigation, but was found to extend to a depth of at least 3 metres. Ground water was recorded at a depth of around 2metres below ground level in the ground water monitoring undertaken in the area of the proposed sports hall. This would be at a level of around 13.2m AOD, which is very similar to the water level of 13.3m obtained from lidar data for the lakes on the east side of the school.

## 2.4 Construction zones, clearances and easements

SLP's Technical Note and Response to Relevant Representations set out that the project would aim to have a maximum 10m working width through the school grounds, which can be locally reduced to 5m (around the Chapel in Esso's preferred route). The minimum depth of construction is stated as 1.2m to the top of the pipeline below ground level. Esso are also seeking an easement of 3.0m either side of the pipeline within which there would be restrictions on any permanent buildings or structures.

Requirements for safe working is provided by Linewatch Fischer German LLP in the Linewatch document 'Special Requirements for Safe Working in Close Proximity to High Pressure Pipelines' which is available from the Linewatch.org.uk website. Esso are one of the Linewatch member organisations, and Fisher German are Esso's agent for the project. The Basic Guidelines within this document do not set a minimum clearance for construction to existing pipelines, but simply require that any excavations within 3m either side of an existing pipeline need to be supervised by a representative of the Pipeline Organisation and undertaken using manual digging unless another method is specifically authorised. This is important in considering the issues raised by Esso against alternative option 1B discussed below.

## 2.5 TPOs

There are a number of designated TPO areas on and adjacent to the school site.

## 3.0 Esso's proposed route and School Alternative Options

### 3.1 Esso's proposed route and the School's Alternative Route Options 1A and 1B are described in SLP's Technical Note.

Esso's proposed route extends through the school grounds along the eastern edge of the sports pitch adjacent to the lake before passing close to the Grade II listed Chapel Tower and through a TPO area into the northern playing fields, extending along the eastern boundary until the northern exit point of the school grounds as shown in sketch 1 in SLT's Technical Note. Esso

proposed open excavation along the length of this route. An overlay of this route on an aerial view of the school is shown in SK 1 attached. An overlay of this route on the TPO zones as advised to us by Carter Jonas is attached as SK 2.

The Schools alternative scenarios 1a and 1b as shown on sketches 2 and 3 within SLP's Technical Note follow an alignment along the southern and western boundaries of the school before running along the western and northern edges of the northern playing fields to the northern exit point. Scenario 1b is based upon an open cut construction along the full length of its route as for Esso's proposed route. Scenario 1a assumes Horizontal Directional Drilling (HDD) along much of the western school boundary.

#### **4.0 Comments on Esso's critique of options**

##### **4.1 Esso's Proposed Route**

A significant issue not considered in SLT's Technical Note is the high ground water level within the gravel adjacent to the lake. As noted in section 2.3, water levels recorded in Soils Ltd site investigation for the proposed sports hall record water levels as very similar to the water level within the lake obtained from lidar data. Consequently, the water table in the ground is likely to be hydraulically linked to the lake. Lidar data records existing ground levels along the eastern side of the east playing fields at around 14.7m AOD which is only 1.4m above the water level in the lake. An excavation depth of around 1.8m would be required to lay the 300mm diameter pipe on a suitable bedding and with the required minimum 1.2m cover over the pipe. This would require excavating below the water table adding significant cost and complexity to the installation of the pipeline. Measures would be required during construction to prevent the pipe line floating. See section A-A on SK 3 attached.

It is likely that a dewatering technique such as well point dewatering would be required to lower the water table below the underside of the trench excavation. This is a specialist technique which would require site investigations to establish the permeability of the soils and pumping trials to determine the extent of works required, particularly with the close proximity of the adjacent lake. Trench supports may also be required to maintain stability of the sides of the trench excavation. It is unlikely that Esso would be intending to undertake detailed site investigations at this stage, so this remains a significant cost and programme risk for their preferred option.

##### **4.2 School Alternative Scenario 1b**

As Scenario 1b is based upon an open cut construction as for Esso's proposed route, we have considered this first. Scenario 1a is based upon horizontal directional drilling (HDD) replacing a significant length of the open cut construction in Scenario 1b.

4.2.1 Esso's assessment of the alternative Scenario 1b as set out in the SLP Technical Note and Responses to Relevant Representations is that although this option would still be constructed in open cut, in their view it would have a higher engineering complexity than their preferred route due to space and physical constraints, and have a greater impact on the school grounds and existing planning consents. Our comments on these issues are set out below. An overlay of this route on an aerial view of the school is shown in SK 4 attached.

4.2.2 Esso state that this alternative option would result in a wider cumulative permanent easement and restrictions within the core operating area of the school grounds. However, as this route would align the new pipeline adjacent to the existing pipeline along the western boundary of the school, it would only result in a slight widening of any easement associated with the existing pipeline, and avoid the new easements required by Esso's preferred route through the eastern playing fields and adjacent to the chapel and other school buildings in the NE corner of the school. Furthermore, the required easements for this option would be in an area where the

school would be less likely to carry out further development due to the existing easements and the proximity of other buildings outside the site boundary. As such, the likelihood of invoking a 'lift and shift' clause is reduced. (It is not known whether there is a 'lift and shift' requirement for the existing pipelines).

- 4.3.2 Esso state that this alternative alignment would impact on the proposed sports hall consented under planning permission 19/00428/FUL, as illustrated on sketch 3 and section B-B in SLT's Technical Note. However, the alignments shown by Esso are based upon allowing a 3m wide construction zone for the pipeline with a 3.2m clearance from the existing pipeline on the west side, and the corner of the proposed sports hall on the east side. This seems unnecessarily conservative based upon the guidance on clearances and Esso's proposed restricted working widths elsewhere as noted in section 2.5.

Based upon the position of the existing fuel pipeline shown on sketches 3 and 4 in SLT's Technical Note, the proposed sports hall would be about 4 metres away from the existing pipeline at its closest corner, which would quickly increase away from the corner of the building due to its proposed alignment. It should be possible by locally hand digging in this area to lay the proposed pipeline much closer to the existing pipeline to retain the full 3 metre wide easement between the pipeline and the proposed sports hall, or to accept a locally reduced easement width over a very short distance adjacent to the corner of the building. This is illustrated on SK5 and SK6 attached. It is also worth noting that the existing pipeline is made redundant by the new pipeline, and consequently will not impact on future maintenance of the new pipeline.

Similar considerations apply to existing building D which is implied in sketch 3 in SLT's Technical Note as also clashing with their proposed easement. See SK 7 attached.

As the construction of the sports hall has not yet commenced, it is likely to be feasible to make a slight adjustment to the proposed location if this was deemed necessary.

- 4.3.3 Esso also state that this alignment would require partial demolition of the existing bungalow (Building B). This is based upon a 10 metre wide construction zone rather than a locally reduced 5 metre wide construction zone. Impact on the existing building could be avoided either through a reduced construction width and accepting some further incursion into the TPO zone, or by adopting an alignment to the north of the bungalow as Esso have considered for scenario 1A as discussed below. See SK 8 attached.
- 4.3.4 The ground levels along the western boundary of the school are around 1 metre higher than along Esso's preferred route along the eastern playing fields. Consequently, the open cut construction for this option will avoid encountering the water table which as described in section 4.1 is likely to add significant cost and complexity to Esso's preferred option.
- 4.3.5 Esso highlight that this option would pass through three TPO areas of mature trees. However, it would be possible to mitigate this by further adjustment to the pipeline route if required to the north of Building B (see 4.3.3 and SK 8) and keeping the alignment closer to existing Building C. As noted in section 3.1 and illustrated on SK 2, Esso's preferred route would need to pass through the large TPO area of mature trees near to the Chapel, so these are considerations for both options.
- 4.3.6 Esso have also assessed this option as having a greater impact on Cultural Heritage with construction activity and the pipeline route closer to listed buildings. However, the proposed alignment for Scenario 1b would only involve construction adjacent to the grade 2 listed gatehouse, whereas Esso's proposed option would still impact on the gatehouse as the school entrance is shown as being used as a construction access, and also require construction close to the grade 2 listed chapel as shown on SK 9 attached.

Any impacts on Cultural Heritage are only temporary impacts during the construction phase, and therefore of limited significance.

#### **4.3 School Alternative Scenario 1a**

- 4.3.1 This option would also install the pipeline along the western boundary of the school, but would use horizontal directional drilling (HDD) to install the new pipeline below the existing fuel pipeline to keep construction and future easements clear of the proposed sports hall and existing building D. However as noted above in consideration of Scenario 1a, it should be possible to address these issues without the need for the additional construction complexity of using HDD.
- 4.3.2 The assessment of this option in SLT's Technical Note highlights the construction complexities of using HDD compared to open cut construction particularly through sands and gravels. However, this HDD installation technique is also proposed by Esso elsewhere including the crossing below the adjacent railway line which would be through similar ground conditions, so they must be satisfied this construction technique is suitable.
- 4.3.3 As Esso note, HDD would have the additional impact of the necessary launch and reception pits which would be within the school grounds. The required size and exact location of the launch pit could be considered further to see if any of its impacts on Building B could be mitigated.

#### **5.0 Summary**

From our review of Esso's preferred route and the Schools' Alternative Scenarios 1a and 1b as described and assessed in SLT's Technical note and Esso's Responses to Relevant Representations, it would seem that many of the potential impacts raised by Esso regarding the School's alternative options can be overcome, particularly for Scenario 1b.

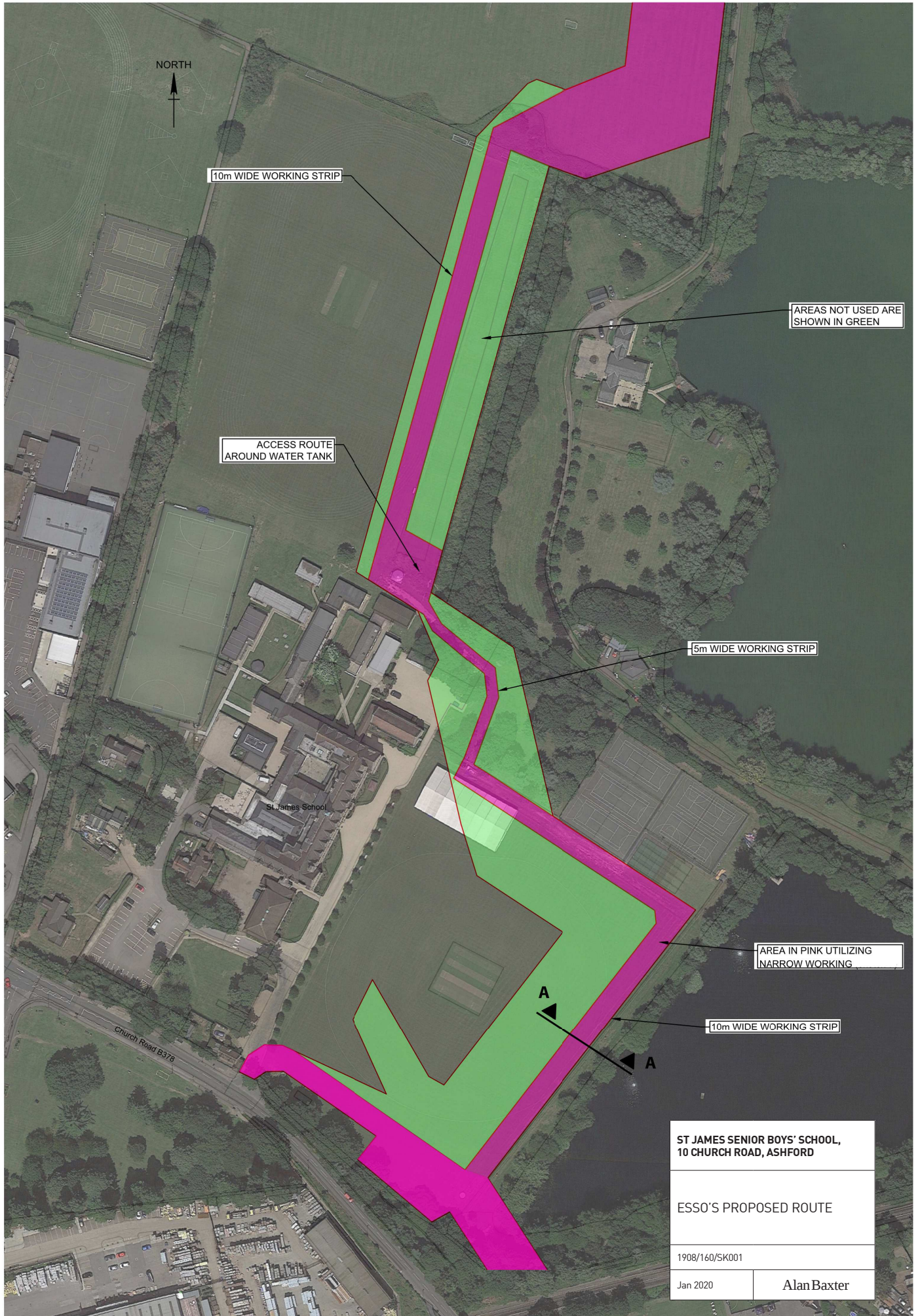
Importantly, Esso do not seem to have considered the construction impacts on their preferred option of the high water table within the gravel layer below the eastern playing field which would seem likely to add significant cost and complexity to the construction of their preferred route. The higher ground level along the western boundary of the school means this is not a consideration for the School's alternative scenario 1b.

Consequently, the engineering complexity of the school's alternative option is likely to be less than for Esso's preferred route.

#### **6.0 Next Steps**

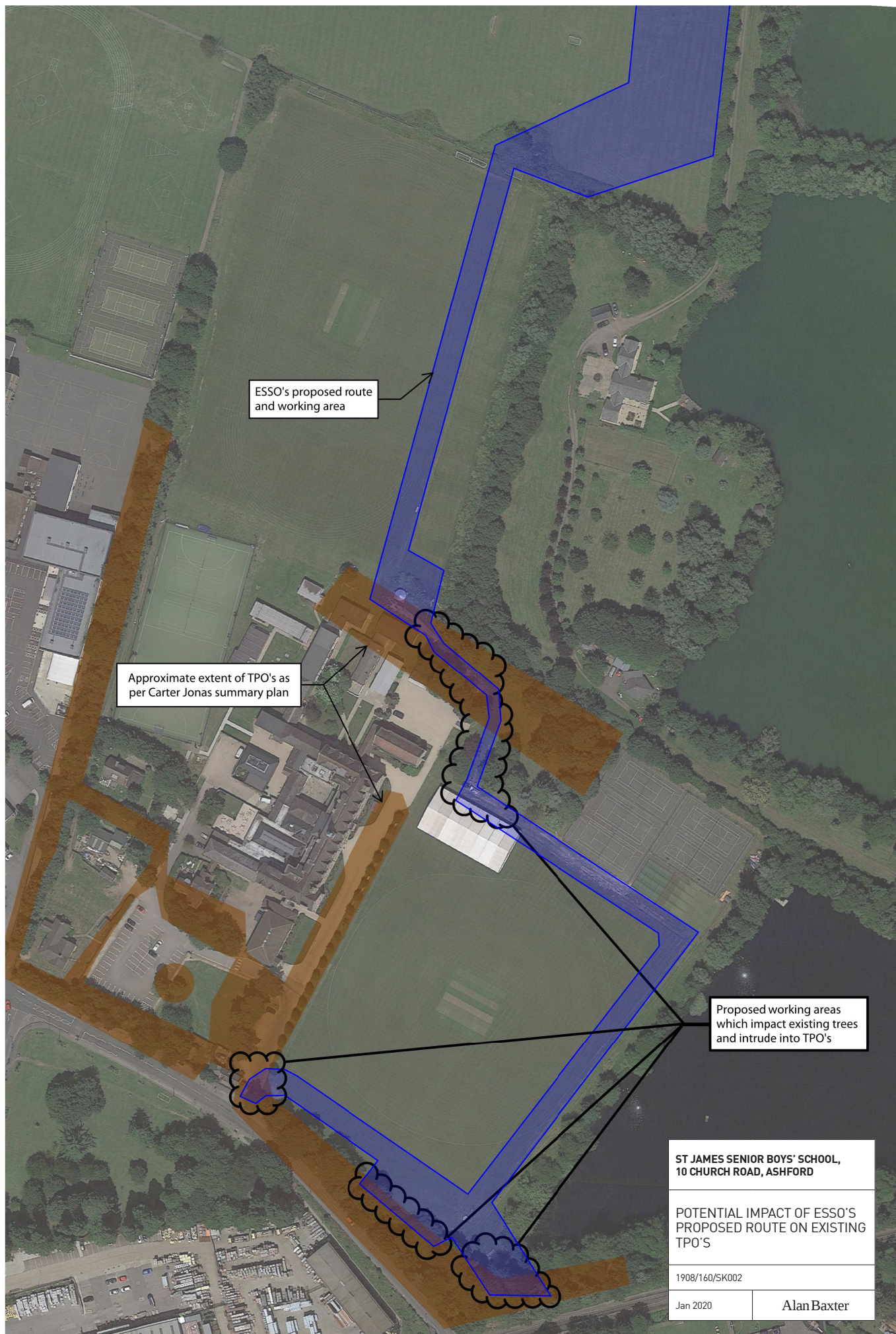
Esso should be requested to consider the points raised in this report, and review their assessment of the route options accordingly.





ST JAMES SENIOR BOYS' SCHOOL, 10 CHURCH ROAD, ASHFORD	
ESSO'S PROPOSED ROUTE	
1908/160/SK001	
Jan 2020	Alan Baxter





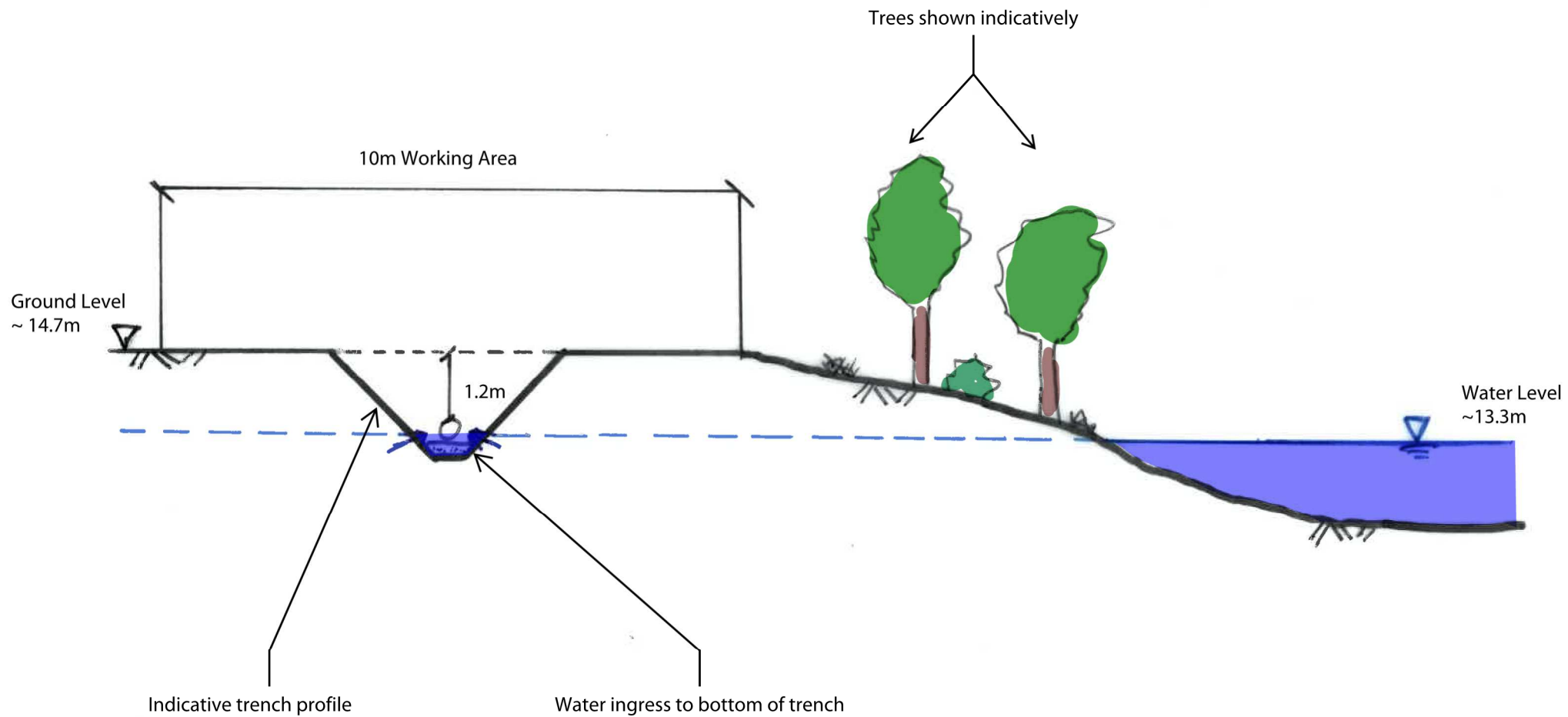
ESO's proposed route and working area

Approximate extent of TPO's as per Carter Jonas summary plan

Proposed working areas which impact existing trees and intrude into TPO's

<b>ST JAMES SENIOR BOYS' SCHOOL, 10 CHURCH ROAD, ASHFORD</b>	
<b>POTENTIAL IMPACT OF ESSO'S PROPOSED ROUTE ON EXISTING TPO'S</b>	
1908/160/SK002	
Jan 2020	Alan Baxter





ST JAMES SENIOR BOYS' SCHOOL,  
10 CHURCH ROAD, ASHFORD

ESSO PROPOSED PIPELINE  
ROUTE SECTION A-A

1908/160/SK003

Jan 2020

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ST JAMES SENIOR BOYS' SCHOOL,  
10 CHURCH ROAD, ASHFORD

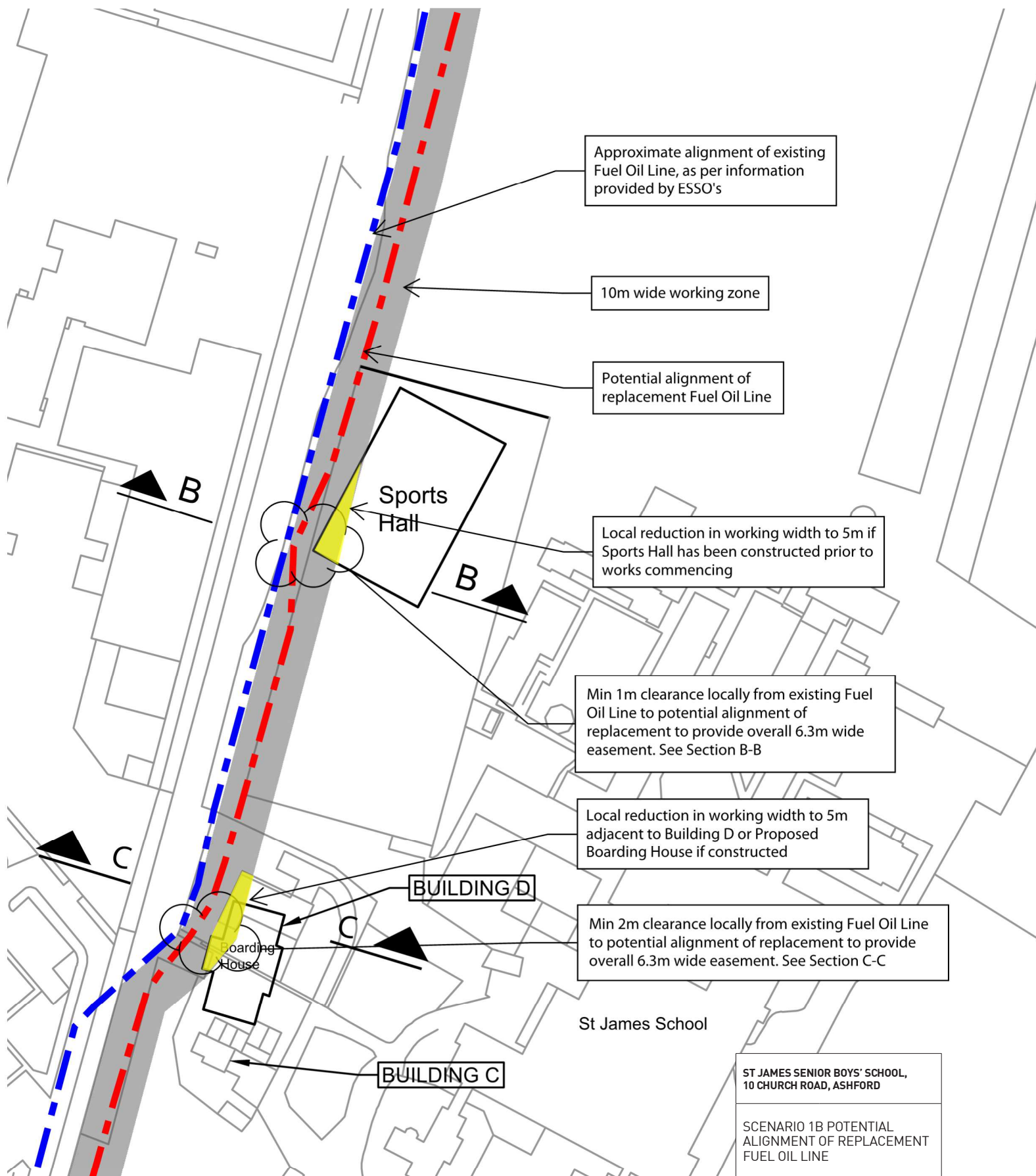
SCENARIO 1B ROUTE

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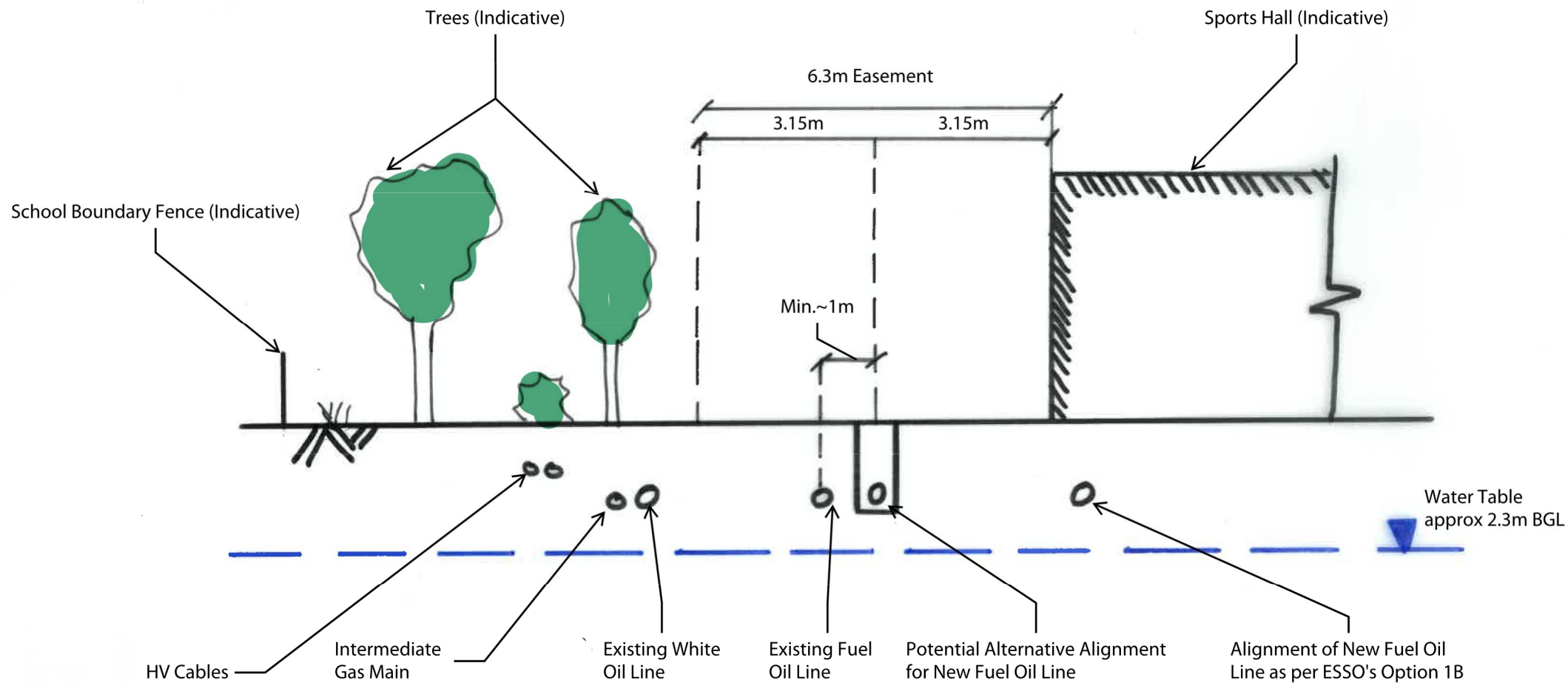
SCENARIO 1B POTENTIAL  
ALIGNMENT OF REPLACEMENT  
FUEL OIL LINE

1908/160/SK005

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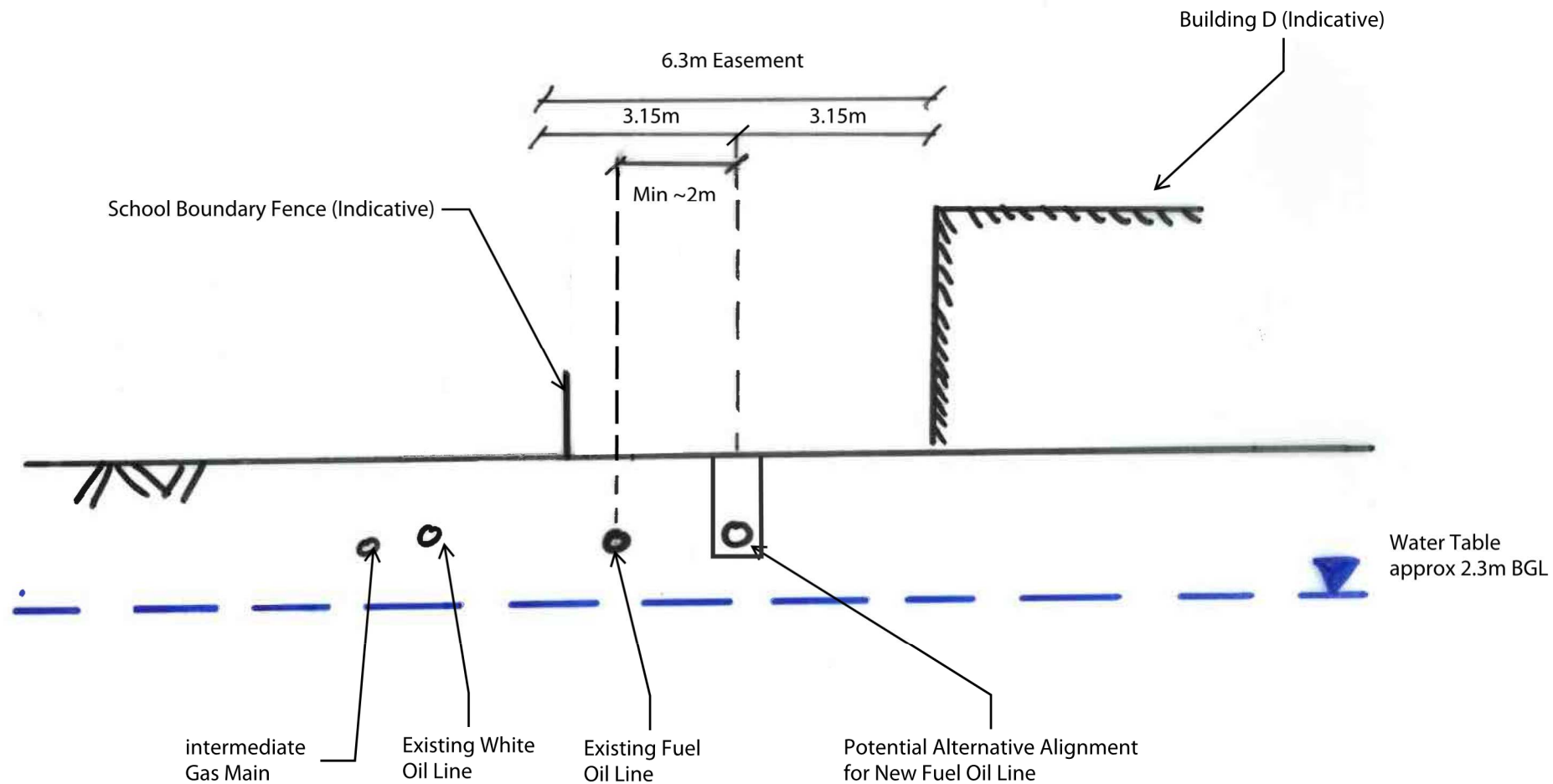
ST JAMES SENIOR BOYS' SCHOOL,  
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SCENARIO 1B PROPOSED ROUTE  
- SECTION B-B

1908/160/SK006

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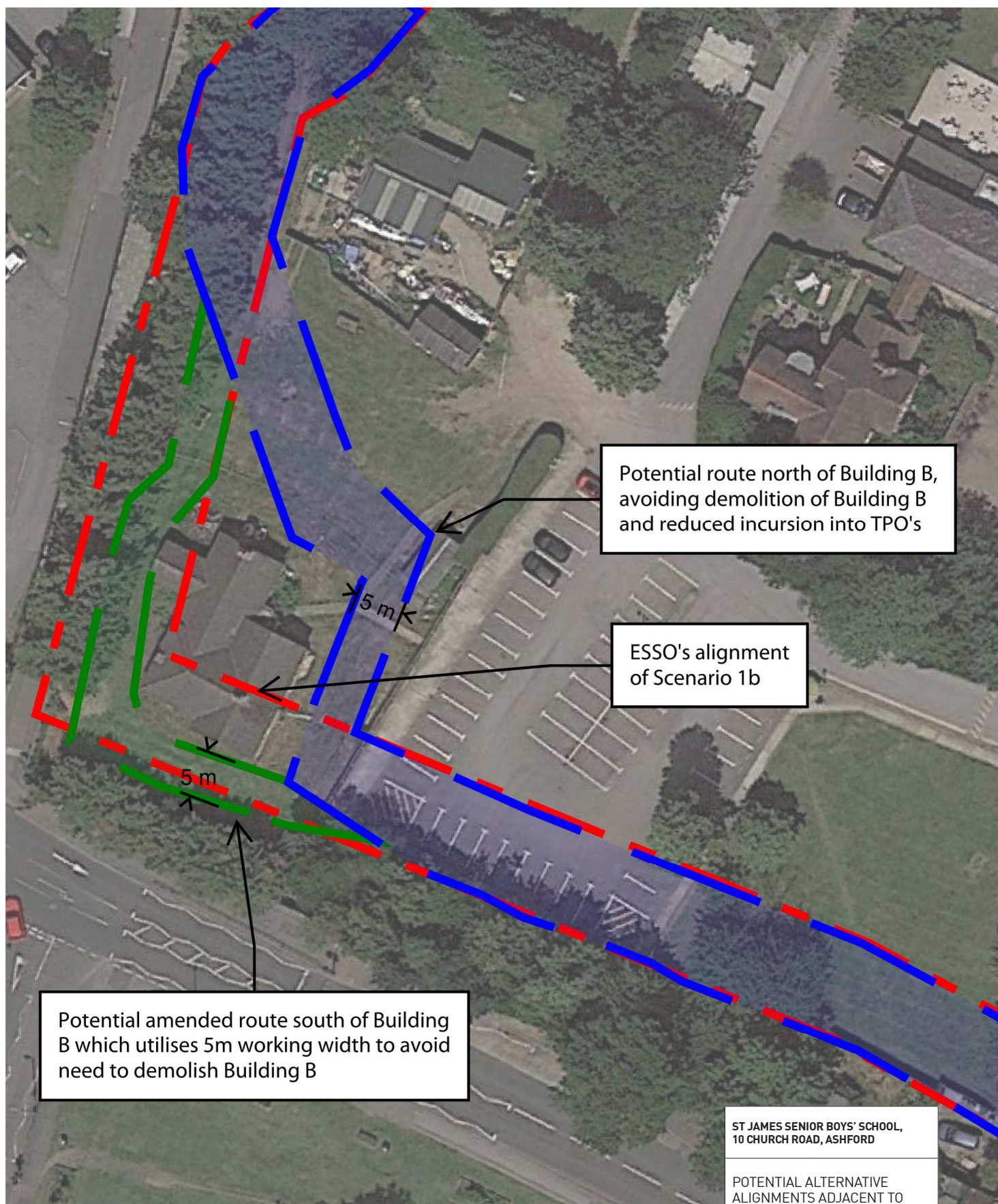
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SCENARIO 1B PROPOSED ROUTE  
- SECTION C-C

1908/160/SK007

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Potential route north of Building B, avoiding demolition of Building B and reduced incursion into TPO's

ESSO's alignment of Scenario 1b

Potential amended route south of Building B which utilises 5m working width to avoid need to demolish Building B

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10 CHURCH ROAD, ASHFORD

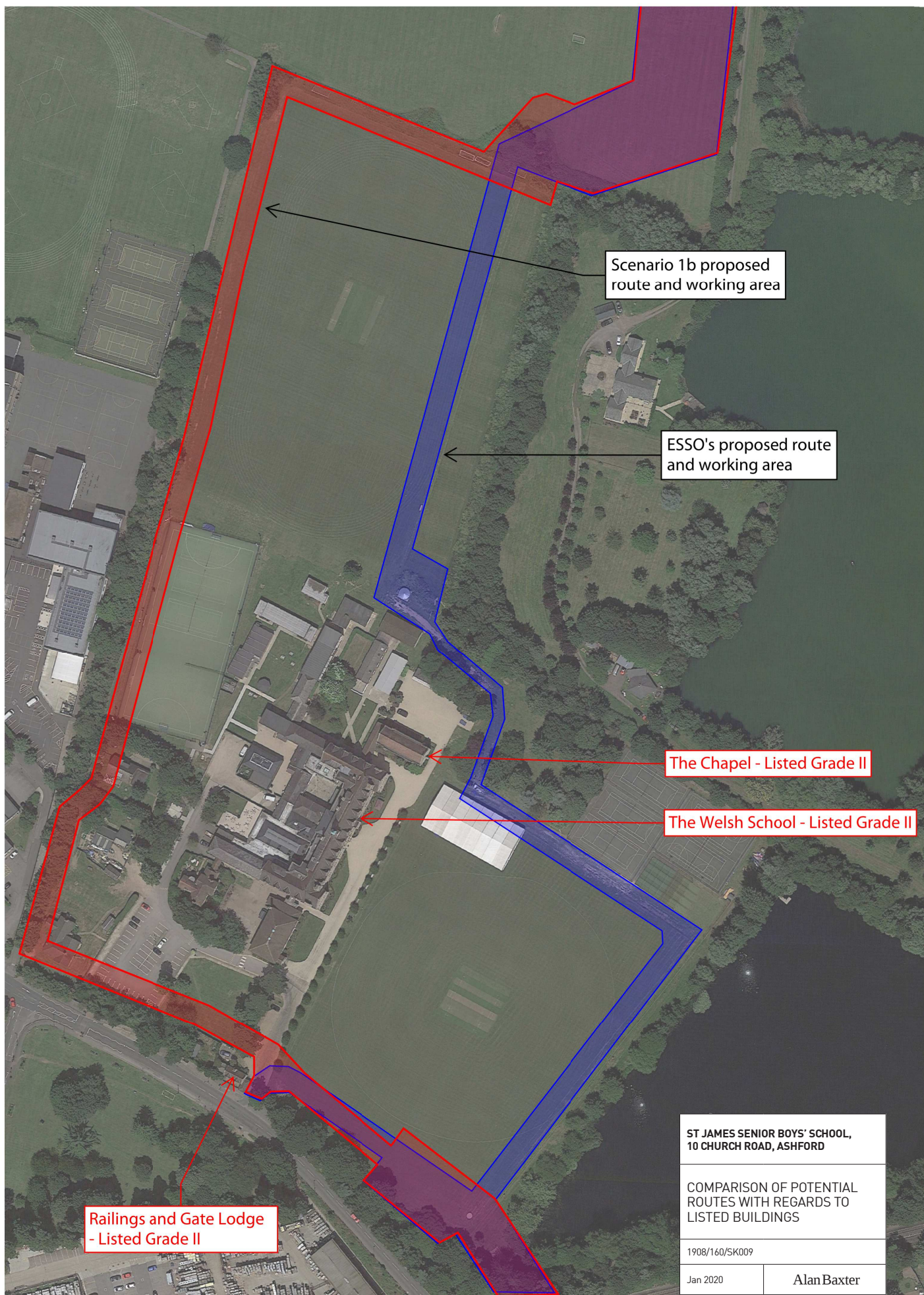
POTENTIAL ALTERNATIVE  
ALIGNMENTS ADJACENT TO  
BUILDING B

1908/160/SK008

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Scenario 1b proposed route and working area

ESSO's proposed route and working area

The Chapel - Listed Grade II

The Welsh School - Listed Grade II

Railings and Gate Lodge - Listed Grade II

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COMPARISON OF POTENTIAL  
ROUTES WITH REGARDS TO  
LISTED BUILDINGS

1908/160/SK009

Jan 2020

Alan Baxter

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**Reviewed by** Jim Gardiner

**Draft issued** January 2020

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