



Silvertown Tunnel Reference Design

Siebert Road Options Study

Transport for London

December 2016

ATKINS

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1. Introduction

1.1 Purpose of this Technical Note

Through ongoing consultation with the Royal Borough of Greenwich TfL have been made aware of concerns from residents of Siebert Road and Westcombe Hill in Greenwich relating to noise levels adjacent to the existing A102.

This Technical Note (TN) identifies the options for providing standard noise mitigation measures and recommends potential solutions for each section which could be implemented subject to the results of further survey work.

1.2 Structure of the Technical Note

This TN outlines options for implementing standard noise mitigation along the A102 northbound between Charlton Road and the railway viaduct as shown in Appendix A1. The TN is set out in the following sections:

- Section 2 – Noise Mitigation Measures
- Section 3 – Conclusion and Recommendations
- Appendix A1 - A102 Northbound Environmental Barrier, Location Plan (Sketch No. STWTN-ATK-HGN-XXXX-SK-Z-2002)
- Appendix A2- A102 Northbound Environmental Barrier, Typical Details (Sketch No. STWTN-ATK-HGN-XXXX-SK-Z-2004)

2. Noise Mitigation Measures

2.1 Mitigation Measure Options

For all options please refer to details shown on drawing STWTN-ATK-HGN-XXXX-SK-Z-2004 in Appendix A2.

Option B - A free-standing EB

A free-standing EB as per Details A or B may be proposed where soft verges along the A102 are present. The ownership of the existing fences has to be confirmed to determine if the existing fences could be removed and replaced with a free-standing EB (Detail A). Otherwise, if the fences need to be retained a free-standing EB could be constructed in front of the fences (Detail B).

Where there is an existing retaining wall, a free-standing EB at the back of the existing retaining wall as per Detail E may be used.

Option C – an EB fixed to the top of the existing retaining wall

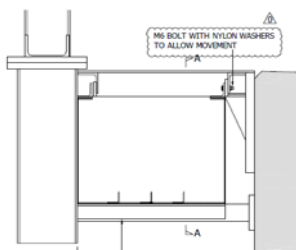
An EB fixed to the top of the existing retaining wall as per Detail C (refer to Appendix A2) may be used. This is likely to require the following:

- removal of any existing attachments at the top of the wall
- breaking down the top of the wall to expose reinforcement
- cast extension to top of wall with cast-in anchorage
- Fix EB to top of extended wall.

Option D – an EB fixed to the back of the existing retaining wall

An EB fixed to the back of the existing retaining wall to detail D (refer to Appendix A2) may also be considered. Steel brackets would need to be drilled and fixed into the side near the top of the retaining wall.

Figure 2-1 An example of Connection used on M25 Widening scheme



A simplified version of this without the arm extensions could be used here.

Option E - a combined road restraint system (RRS) and EB in front of the existing retaining wall

A combined RRS and EB in front of the existing retaining wall as per Detail G (refer to Appendix A2) may be proposed where private land boundary runs along the existing retaining wall.

Figure 2-2 An example of Combined EB System



2.2 Options Assessment

For the purpose of this study, the assessed section of the A102 has been divided into 3 sections. For each section, options considered are labelled as Option A, B, C and so on. Each of these options relate to one of the details shown in Appendix A2.

2.2.1 Options Summary

The summary of options considered for an EB are shown in the Figure 2-3 (replicated from Appendix A1) and in Table 2-1 below.

Figure 2-3 A102 Northbound Environmental Barrier Location Plan

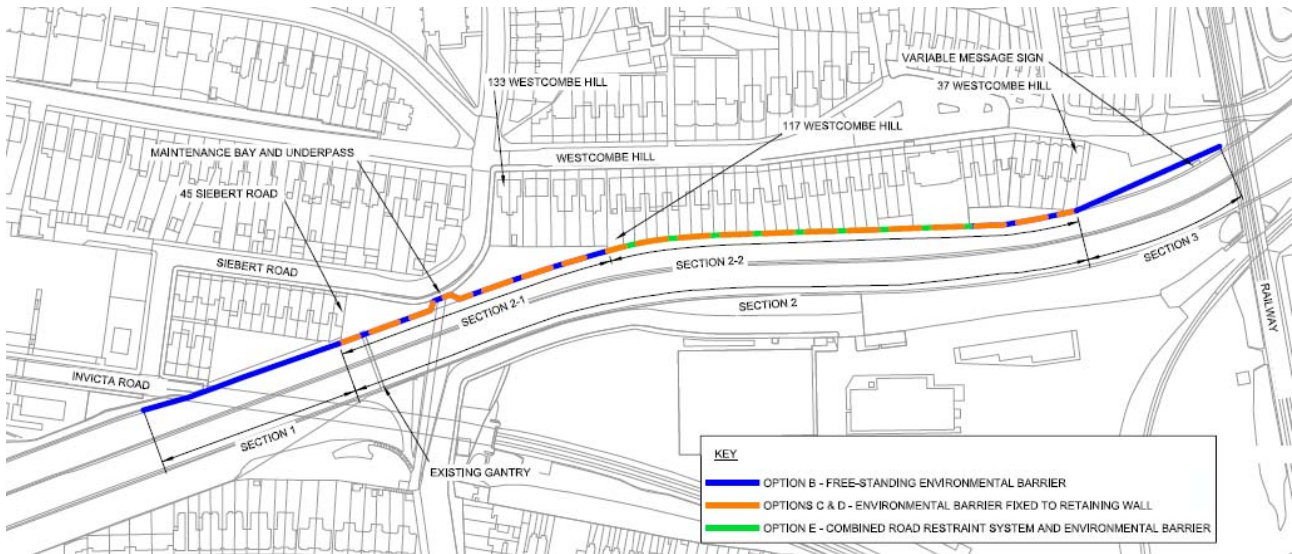


Table 2.1 Options Summary

Section	Length (m)	Options
1	95	Option B1 - Free-standing EB, to Detail A
		Option B2 - Free-standing EB, to Detail B
2-1	120	Option B - Free-standing EB
		Option C – EB fixed to top of retaining wall
		Option D - EB fixed to back of retaining wall
2-2	210	150m Option E – combined RRS and EB, and
		60m Option B - free-standing EB
		Option C – EB fixed to top of retaining wall
		Option D - EB fixed to back of retaining wall
3	70	Option B - Free-standing EB

3. Conclusion & Recommendations

3.1 Conclusions

A 3m high EB should provide appropriate attenuation of noise from the road at most locations.

It is proposed to provide a free standing EB along Sections 1 and 3 by removing existing boundary fences and replacing them with a new EB where possible or by constructing a new EB in front of the existing fences.

It is suggested that along Sections 2-1 and 2-2, if condition of the existing structure allows, an EB could be fixed to the back of the existing retaining wall, as the most economic approach. Otherwise, a free-standing EB at the back of the wall or/and in the front of the wall may need to be implemented.

3.2 Recommendations

It is recommended to undertake a more detailed noise calculation during detailed design stage to examine further the effects of various EB heights and to specify the height required and the location of the EB.

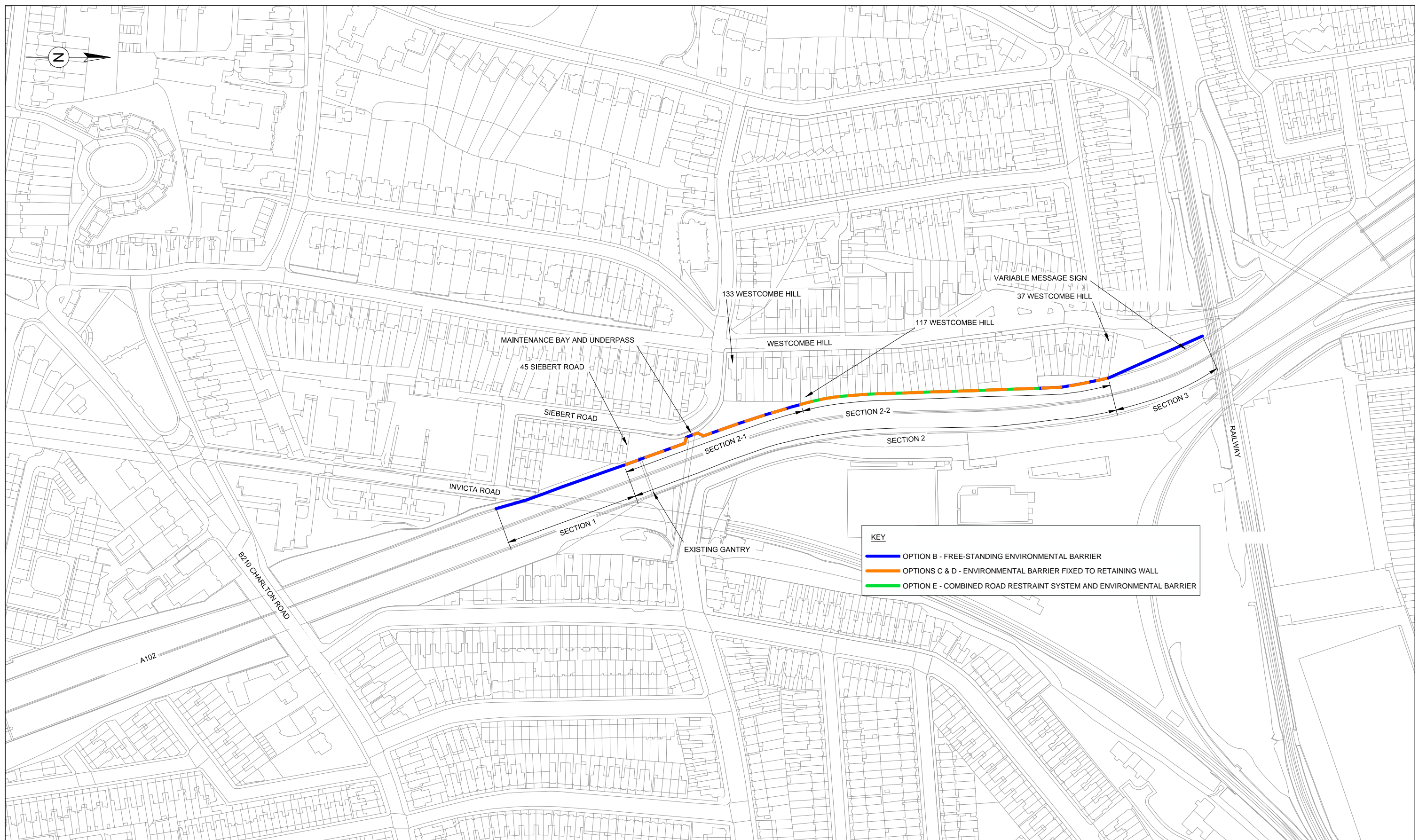
It is recommended that condition of the retaining wall needs to be assessed further to confirm that the structure has sufficient strength to take an additional loading from the EB and to ensure that sufficient strengthening of the structure could be provided for the EB to be fixed to the existing retaining wall. Details of connecting the EB to the existing structure would need to be finalised following the structural assessment.

It is also recommended that ownership of the existing fences is to be confirmed to determine if the existing fences could be removed and replaced with a free-standing EB or they need to be retained and a free-standing EB constructed in front of the fences.

Appendix A.

- A.1. A102 Northbound Environmental Barrier, Location Plan
(Sketch No. STWTN-ATK-HGN-XXXX-SK-Z-2002)**
- A.2. A102 Northbound Environmental Barrier, Typical Details
(Sketch No. STWTN-ATK-HGN-XXXX-SK-Z-2004)**

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Plotted: Dec 12, 2016 - 3:53pm by: BROW3184

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Drawing Status: **WORK IN PROGRESS**

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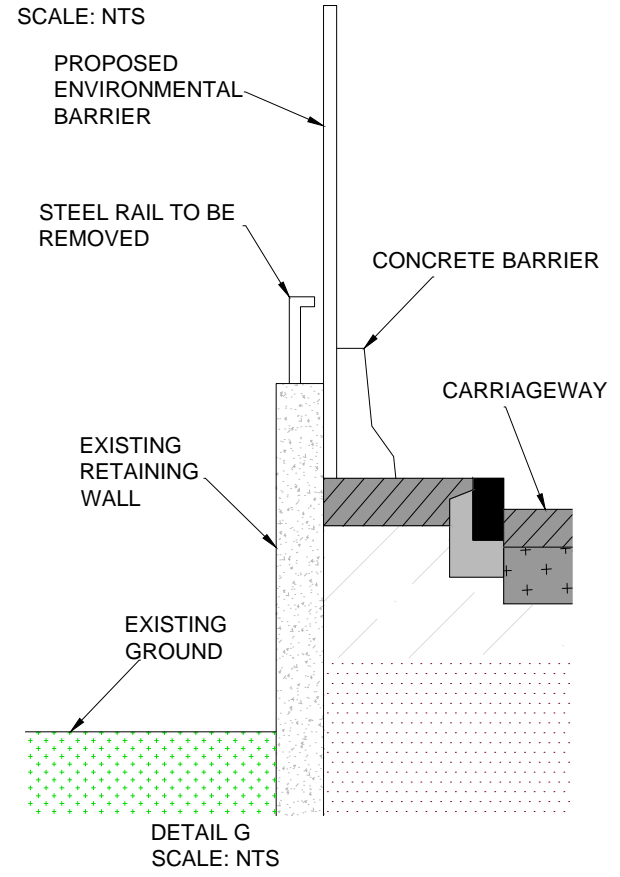
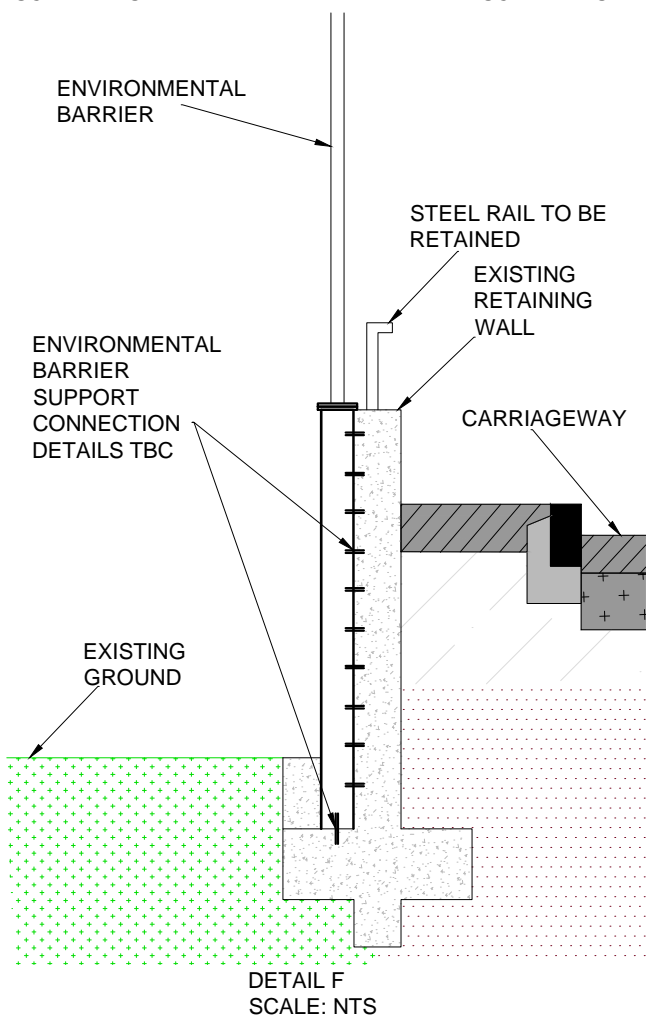
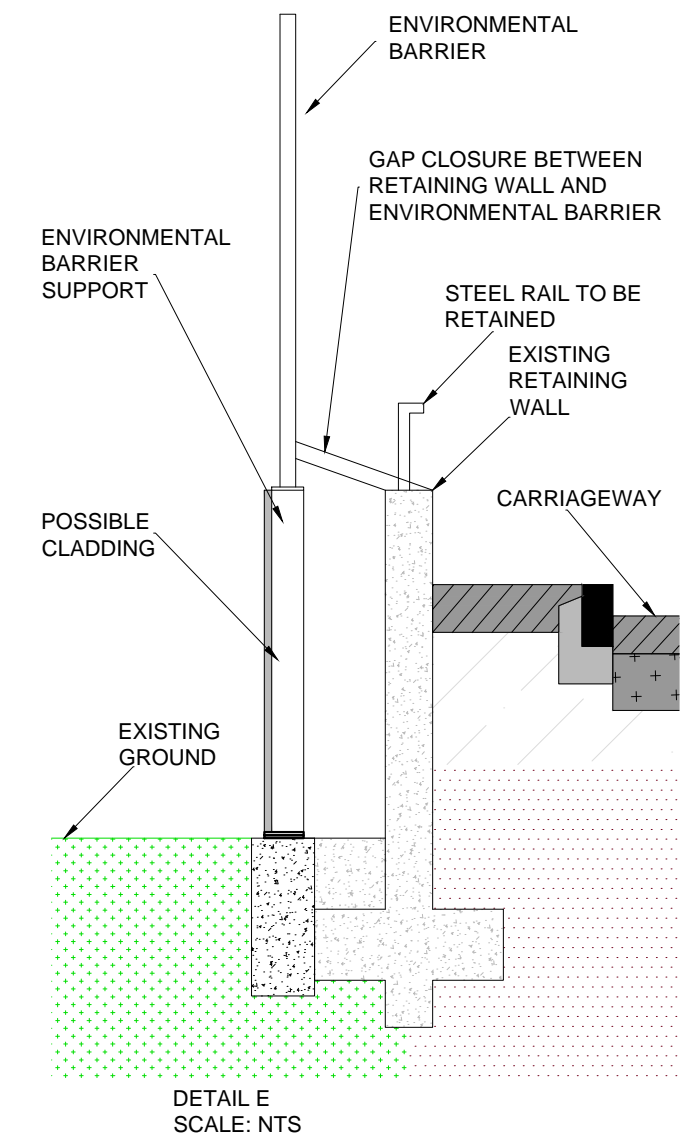
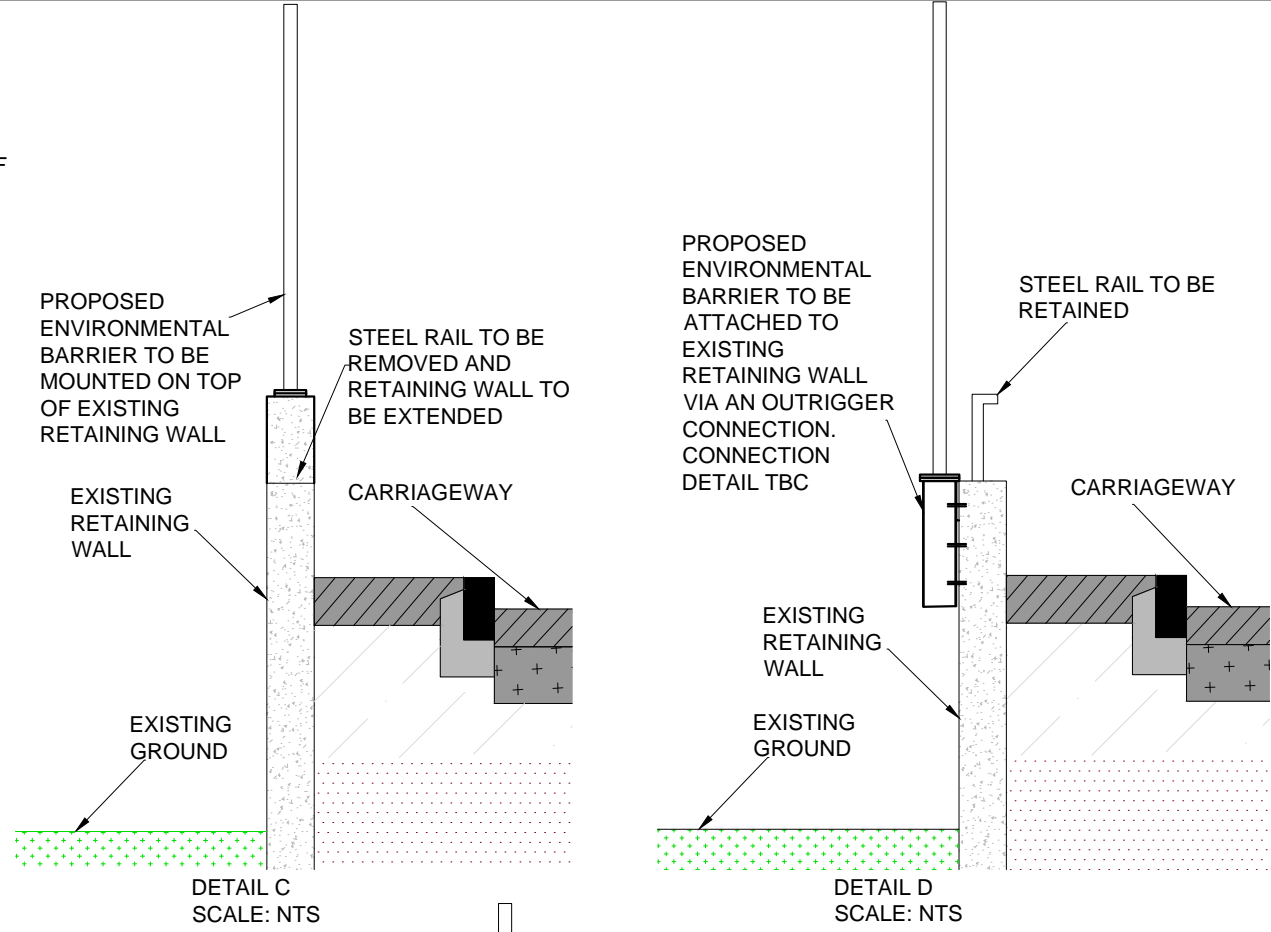
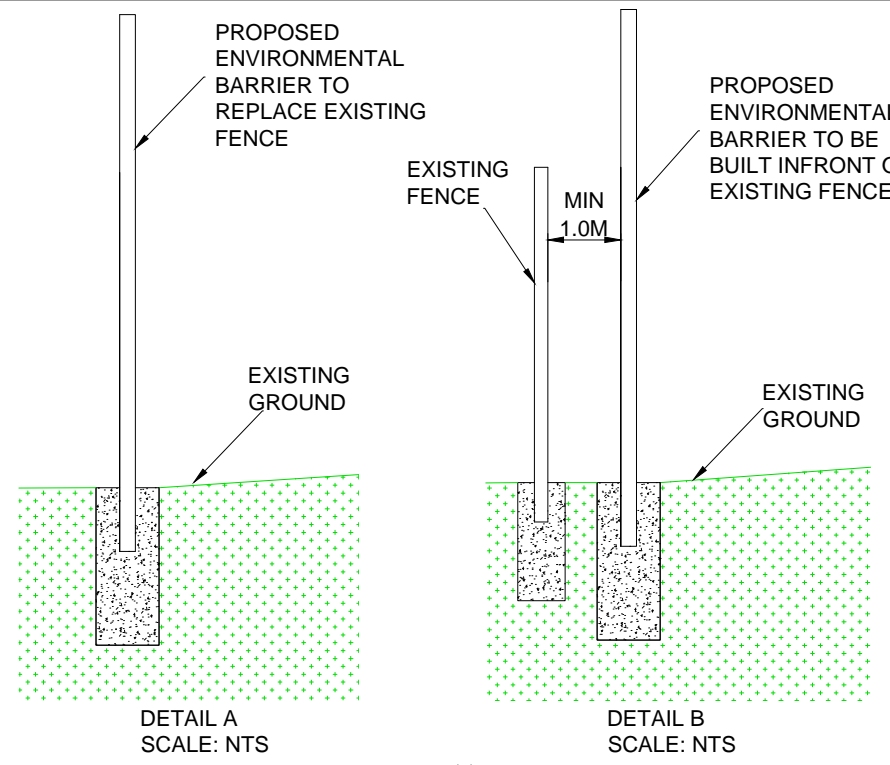
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