

Appendix E

Wansey Cottage Heritage Report

CBD and South East Light Rail Wansey Cottage, Royal Randwick Racecourse Heritage Report, October 2015

Background

The CBD and South East Light Rail (CSELR) will comprise the construction and operation of a new light rail service from Circular Quay to Central Station, then to Kingsford and Randwick, via Surry Hills and Moore Park. The project has been approved as a State Significant Infrastructure (SSI) project (SSI-6402). GML Heritage Pty Ltd (GML) prepared a Heritage Impact Assessment (HIA) to accompany the Environmental Impact Statement (EIS) for the project, as well as a number of supplementary reports to address changes in the design.

The purpose of this report is to analyse options around the future of the Wansey Cottage within the Royal Randwick Racecourse. The Ministers Conditions of Approval (MCoA), specifically Condition B59, for the CSELR state that the project should be designed and constructed to avoid any direct impact or impact to the *'curtilage of the cottage located near the corner of Alison and Wansey Roads...within the Racecourse Conservation Area'* (ie Wansey Cottage).

During the detail design process the track alignment has been further refined to accommodate the traffic performance requirements on Alison and Wansey Roads which will result in physical impacts and impacts to the curtilage of the building (in contravention of MCoA Condition B59).

In preparing this report a series of options have been developed by Acciona in collaboration with GML that seek to avoid or minimise the physical impacts to the building and its curtilage. This Options Assessment (attached) has been reviewed and has informed the analysis contained herein. The report also takes into consideration other development approvals for the immediately adjacent land and the long term future of retaining the cottage within an altered physical context.

Site Identification

The Wansey Cottage is located within the Stripping Stalls precinct in the north east corner of the Royal Randwick Racecourse at the corner of Alison Road and Wansey Road (see Figure 1).

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Figure 1 Location plan showing Wansey Cottage in relation to the Stripping Stalls group to the south west of the building and the eastern edge of the racecourse. (Source: Google Earth Pro with GML overlay)

Historical Outline

Primary historical research has not been undertaken to inform this analysis, however, the draft Conservation Management Plan (CMP) for the site (Godden Mackay Logan, 2006) provides the following outline history for the Wansey Cottage:

Federation brick cottage (c1910s) which functions as a residence for AJC staff.

Wansey Cottage demonstrates the extensive development and introduction of specific facilities and services that occurred at the racecourse site during the early 1900s.

The building is historically associated with the continuing provision of on-site staff accommodation by the AJC since the 1910s.

Description

An inspection of the exterior of the building was undertaken on 21 August by Steven Barry, Senior Heritage Consultant of GML, facilitated by Acciona. Wansey Cottage is a Federation brick cottage located within the Stripping Stalls precinct (Figure 2). The roof form is hipped with a gable end to the west elevation (Figures 3 and 4). A series of skillion roof extensions extends the cottage to the east. Wansey Cottage is predominantly as-built, with the exception of a c1960s extension to its original front verandah (northwest). Its garden, enclosed with a wire mesh fence, has a number of small shed structures and private access steps to Alison Road (Figure 5). For the purposes of this assessment the curtilage of Wansey Cottage is defined by the boundary brick wall along Alison and Wansey Roads (north and east), and the wire mesh fence along the south and west.



Figure 2 General view of Wansey Cottage (left) in the context of the Stripping Stalls (right) looking east. (Source: GML 2015)



Figure 3 South elevation of Wansey Cottage featuring distinctive Federation style detailing including brickwork, terracotta tiled roof, timber joinery and exposed rafters. (Source: GML 2015)



Figure 4 View of Wansey Cottage from Alison Road showing the c1960s verandah addition. (Source: GML 2015)



Figure 5 View along the northern side of Wansey Cottage and the access stairs to Alison Road. (Source: GML 2015)

Heritage Significance

Wansey Cottage is located within the Royal Randwick Racecourse Heritage Conservation Area listed on the Randwick Local Environmental Plan 2012, item no. C13.

Existing Assessments

The 2006 Draft CMP for Royal Randwick Racecourse assigned relative levels of significance to the individual components of the racecourse site, including Wansey Cottage. The rankings of significance are carried over in the site specific Randwick Council Development Control Plan for the site (Randwick Council DCP 2013, Section E3). The relevant components and their identified level of significance are identified in the table below.

Table 1 Existing assessments of the Royal Randwick Racecourse and Wansey Cottage.

Zone or Element	Level of Significance
Royal Randwick Racecourse	Exceptional Significance (State level)
Stripping Stalls precinct	High Significance
Wansey Cottage	Moderate significance

Discussion of Significance

Wansey Cottage is part of the highly significant Royal Randwick Racecourse and within the Stripping Stalls precinct. The significance of Wansey Cottage is related to the extensive development that occurred at the racecourse during the early 1900s. Historically the building is associated with the provision of staff accommodation by the Australian Jockey Club since the early twentieth century.

Other Considerations

There are a number of additional considerations, not directly related to heritage, but that are relevant to this analysis including current development approvals for the general area and specific project agreements.

Development Agreement—Sydney Light Rail Project, Australian Turf Club Limited—2015

Section 7.10 of the Sydney Light Rail Project Development Agreement between Transport for NSW and the Australian Turf Club Limited, titled 'Stripping Stalls Cottage', refers specifically to Wansey Cottage and its potential demolition. The subsection sets out a procedure for the demolition of Wansey Cottage if required for the project. The subsection states that TfNSW do not need additional authorisation to demolish the building. However the heritage impact of demolition has not been assessed previously to determine the extent of heritage impact. This will need to be done as part of the design phase supplementary heritage impact statement if demolition is required.

Redevelopment of the Stables Precinct, Major Project (MP 10_0098)—2011

In February 2011 development consent was granted to the Australian Jockey Club Limited (now Australian Turf Club Limited) for the redevelopment of the Stables Precinct in the north-eastern corner of the racecourse site (ie the site of the current Stripping Stalls precinct).

The project is summarised as follows in the project approval:

- *Six two-storey stable buildings, each housing 100 horses, sand rolls, wash-bays and accommodation for 10 strappers / stable-hands.*
- *12 two-storey mechanical horse walkers (24 machines in total).*
- *Tie-up Stalls for 50 visiting horses for Barrier Trials.*
- *Pony Enclosure for 20 to 25 ponies.*
- *Exercising facilities including a 'Bull Ring', Parade Rings, and Equine Pool.*
- *Parking for some 110 vehicles, comprising 80 permanent and 30 over-flow parking spaces.*
- *Modifications to the existing vehicle access from Wansey Road, relocating it further north of the existing Wansey Road access.*

The project included the demolition of the majority of the historic structures within the Stripping Stalls precinct, however Wansey Cottage was proposed to be retained. A Statement of Heritage Impact (Graham Brookes and Associates, September 2010) was prepared for the project which concluded that the impacts and loss of original fabric was acceptable. If the major project approval is implemented the context of the Wansey Cottage will be severely impacted, and it is interpretation as part of that precinct will be limited. Despite no functional connection between the residence and the Stripping Stalls they are part of one defined precinct, and the proposed demolition as part of this project would isolate Wansey

Cottage, physically and historically. The likely loss of the majority of the extant stripping stalls is relevant in understanding the potential future context of Wansey Cottage.

Consideration of Design Alternatives

During the detail design process the track alignment has been further refined to accommodate the traffic performance requirements on Alison and Wansey Roads which will result in physical impacts and impacts to the curtilage of the building. The intersection on the corner of Alison and Wansey Roads is highly constrained owing to the very limited availability of land to undertake construction and operation of the light rail.

Acciona has prepared a detailed 'Options Assessment' analysing all of the available options in order to understand the options for compliance with Condition B59 of the MCoA. The Options Assessment, along with complimentary drawings of the options is included as an appendix to this report. The appendix should be referred to in detail when reviewing this report.

In summary eight different options have been explored, five of which have been deemed feasible, with the remaining three not feasible owing to project requirements (minimum lanes during construction and operations, minimum footpath and shared path widths etc). Of the five feasible options, all will result in demolition, partial demolition, or impacts to the curtilage of the property.

Heritage Review of Options Assessment

Based on the identified significance of Wansey Cottage as part of Royal Randwick Racecourse a number of options should be considered in determining the future of the building in the context of the CSELR project. The heritage review of the Options Assessment (prepared by Acciona) is set out in the table below.

Table 2 Heritage Review of Options Assessment. Columns 1 and 6 are based on information provided by Acciona and summarised for the purpose of this report. Column 7, Heritage Comment, is provided by GML.

Option	Option Description	Impact to Curtilage (Yes/No)	Impact to Cottage (Yes/No)	SPR Compliance* (Yes/No)	Feasible (Yes/No)	Heritage Review
1.	Maintain current proposed alignment of track.	YES	YES	NO	YES	This option will result in the demolition of the Wansey Cottage to facilitate construction and operation. Demolition would result in a heritage impact.
Piled Retaining Wall Option						
2a.	Move proposed retaining wall north with cantilevered shared path.	YES	YES—partial demolition.	NO	NO	This option will result in the partial demolition of the Wansey Cottage to facilitate construction and operation. Wansey Cottage is a relatively small building and even partial demolition would have a similar level of impact to complete demolition. The significance of the buildings is related to its intactness and partial demolition would greatly reduce its level of significance, to the point where partial retention is not a desirable heritage outcome.

2b.	Move proposed retaining wall north with reduced cantilevered shared path to avoid partial demolition of cottage.	YES	NO	NO	YES	This option will result in impacts to the curtilage of Wansey Cottage and impacts on the visual setting of the building. The proposal includes a cantilevered shared path in close proximity to the eaves line of Wansey Cottage. The cantilevered shared path would be a new and prominent built feature in views of the cottage and would have a substantial impact on the curtilage and visual setting of Wansey Cottage.
2c.	Move proposed retaining wall north with further reduced cantilevered shared path to avoid partial demolition of cottage.	YES	NO	NO	NO	This option will result in impacts to the curtilage of Wansey Cottage and impacts on the visual setting of the building. The proposal includes a cantilevered shared path near to the eaves line of Wansey Cottage (but not as close as Option 2b). The impacts on the visual setting of the building would be similar to that of Option 2b.

In-situ Wall Option

3a.	Move proposed retaining wall north with cantilevered shared path.	YES	YES—partial demolition.	NO	YES	This option will result in the partial demolition of the Wansey Cottage to facilitate construction and operation. Wansey Cottage is a relatively small building and even partial demolition would have a similar level of impact to complete demolition. The significance of the buildings is related to its intactness and partial demolition would greatly reduce its level of significance, to the point where partial retention is not a desirable heritage outcome.
3b.	Move proposed retaining wall north with reduced cantilevered shared path to avoid partial demolition of cottage.	YES	NO	NO	YES	This option will result in impacts to the curtilage of Wansey Cottage and impacts on the visual setting of the building. The proposal includes a cantilevered shared path in close proximity to the eaves line of Wansey Cottage. The cantilevered shared path would be a new and prominent built feature in views of the cottage and would have a substantial impact on the curtilage and visual setting of Wansey Cottage.

3c.	Move proposed retaining wall north with further reduced cantilevered shared path to avoid partial demolition of cottage.	YES	NO	NO	NO	This option will result in impacts to the curtilage of Wansey Cottage and impacts on the visual setting of the building. The proposal includes a cantilevered shared path near to the eaves line of Wansey Cottage (but not as close as Option 3b). The impacts on the visual setting of the building would be similar to that of Option 3b.
4	Move proposed retaining wall north on the existing alignment of the racecourse boundary wall.	NO	NO	NO	NO	This option will result in no impacts to the curtilage or physical fabric of Wansey Cottage to facilitate construction and operation. Whilst it would be the preferred heritage option, it results in severe non-compliances for other aspects of the project.

*SPR refers to the Scope and Performance Requirements for the project as set out in the 'Project Deed' Part E.

Discussion

Having regard to the above analysis and Options Assessment prepared by Acciona, GML is satisfied that sufficient investigation of alternatives has been undertaken in an attempt to retain Wansey Cottage and minimise impacts on the curtilage. Based on the Options Assessment reviewed, and GMLs understanding of the performance requirements for the construction and operation of the CSELR in this area, an option that retains Wansey Cottage and meets the project requirements with regard to traffic and pedestrian egress is not available without substantial re-design (ie a different route for the CSELR to Randwick).

Options explored which result in partial retention of the cottage, or with severe impacts on the visual setting of the building are not desirable outcomes in heritage terms. The function of the cottage as a residence is a major contributor to the heritage significance of the building. Partial demolition and the operation of the light rail in close proximity to the cottage would most likely render the building incompatible for residential use. Furthermore, the implementation of the development approval for the Stables Precinct would severely impact the setting of Wansey Cottage and it is interpretation as part of the precinct.

Heritage Impact Assessment

Demolition of Wansey Cottage would result in the loss of a building of moderate significance within the Royal Randwick Racecourse. Historically the building represents the expansion of the racecourse in the early twentieth century and the provision of staff accommodation by the Australian Jockey Club. It makes some contribution to the significance of the Royal Randwick Racecourse Heritage Conservation Area and its demolition would be a moderate adverse heritage impact. This assessment of heritage impact is consistent with that of other elements within the Royal Randwick Racecourse that have been previously approved for demolition. The overall impact on the Royal Randwick Racecourse Heritage Conservation Area has been previously assessed as being a major adverse heritage impact (CSELR HIA, GML 2013). The demolition of Wansey Cottage adds to the cumulative impact on the Royal Randwick Racecourse Heritage Conservation Area.

Recommendations

If demolition of Wansey Cottage is pursued appropriate adjustments to the project approval may be required. The Heritage Impact Assessment (HIA) contained in this report should be reflected in a supplementary HIA for this project precinct (yet to be prepared). The mitigation measures below should be implemented in order to offset the cumulative impacts of the project on the Royal Randwick Racecourse Heritage Conservation Area.

Mitigation Measures

A series of additional mitigation measures to those previously approved should be implemented::

1. During demolition of Wansey Cottage, where practical, salvage and recycle building elements of heritage significance suitable for the repair of other heritage items, including roof tiles, joinery (windows, doors, architraves, skirting) and any other fabric.
2. Undertake an archival recording of the building consistent with the requirements of the project prior to work being undertaken. This archival recording will need to include the interiors of the residence once it is vacated.
3. The Wansey Cottage should be included in the next phase of interpretation planning for the project. Information on the former cottage should be incorporated into the Wansey Road CSELR stop.

Attachments

- Wansey Cottage Options Assessment, Acciona—September 2015

Memorandum

Project Title	Sydney Light Rail project
Ref. Number	
Date	16 September 2015
To	Steven Barry – Heritage Consultant GML Heritage
CC	
From	Paul Bourke
SUBJECT	Wansey Cottage Options Assessment

Message

Steven,

The assessment detailed attached has been undertaken to investigate the impacts to surrounding infrastructure to demonstrate compliance with Planning condition B59 and the relevant sections of the Project Deed Part E Scope and Performance Requirements;

- “The Proponent shall design and construct the SSI to avoid any direct impact to.....the curtilage of the cottage located near the corner of Alison and Wansey Roads.....within the Racecourse Conservation Area.”

Can you please review the assessment and provide heritage advice for compliance with the project requirements.

Regards,

Paul Bourke

Design Manager – Randwick and Kingsford

Sydney Light Rail

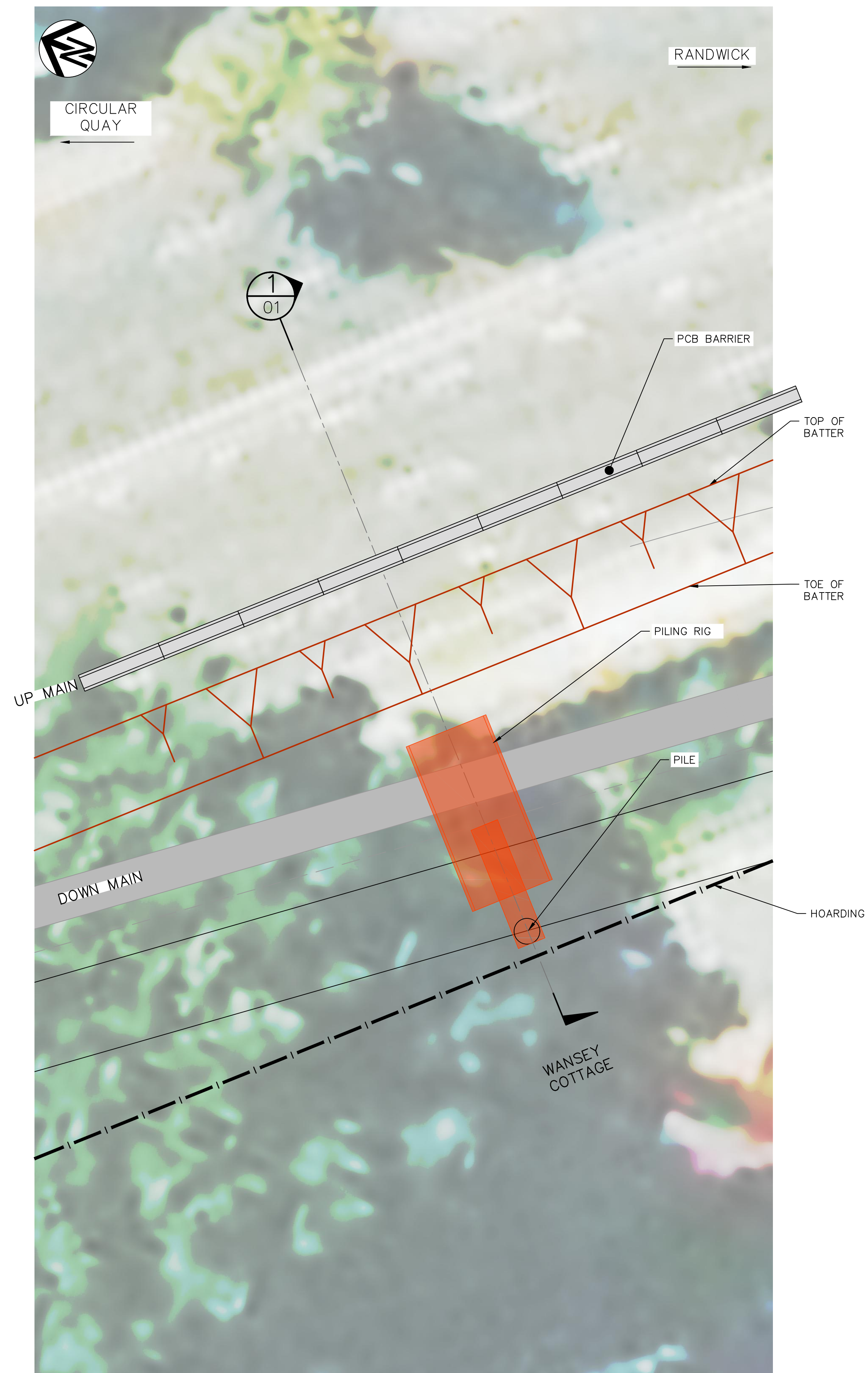
ACCIONA Infrastructure Australia Pty Ltd



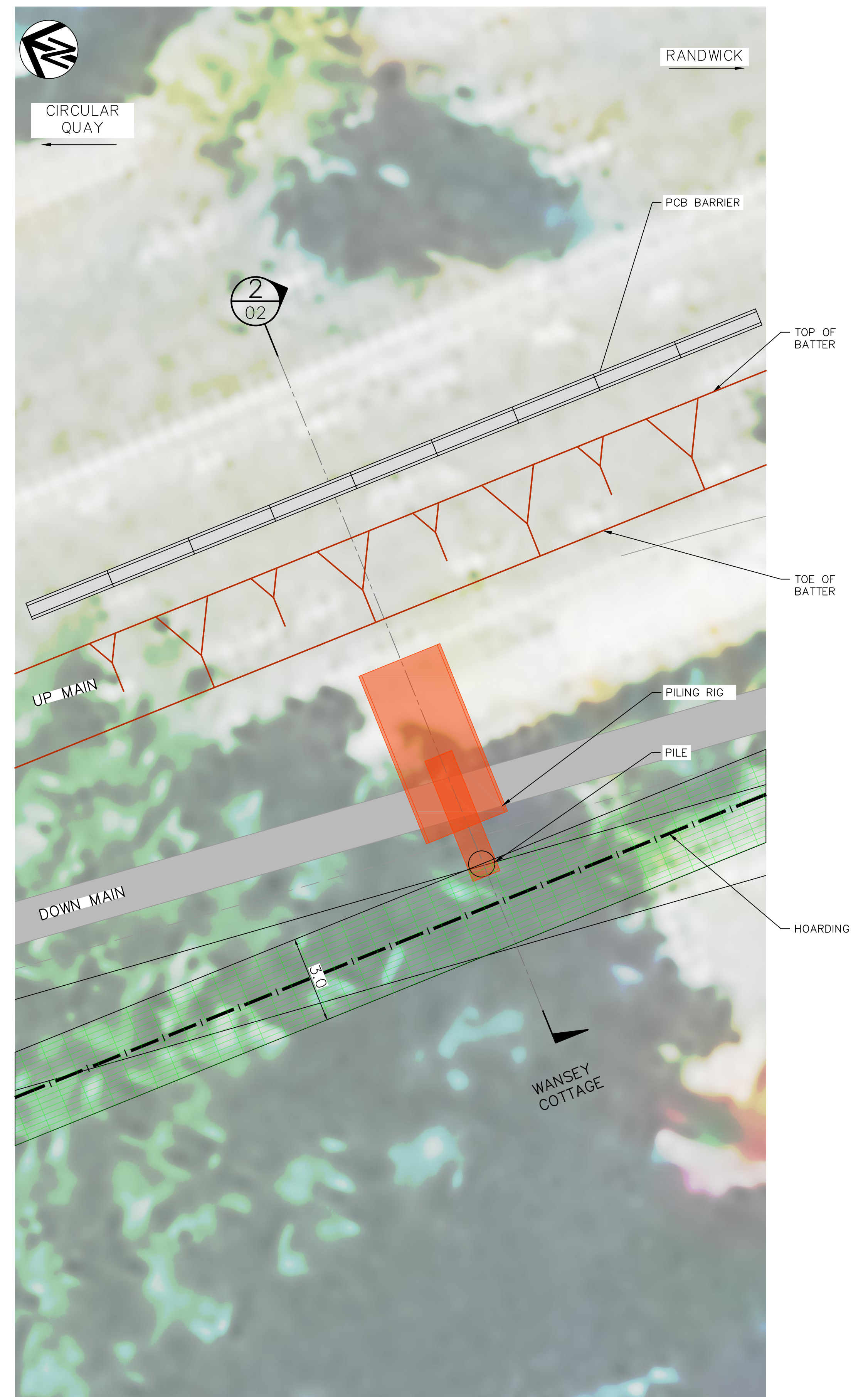
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Wansey Cottage – Options Assessment

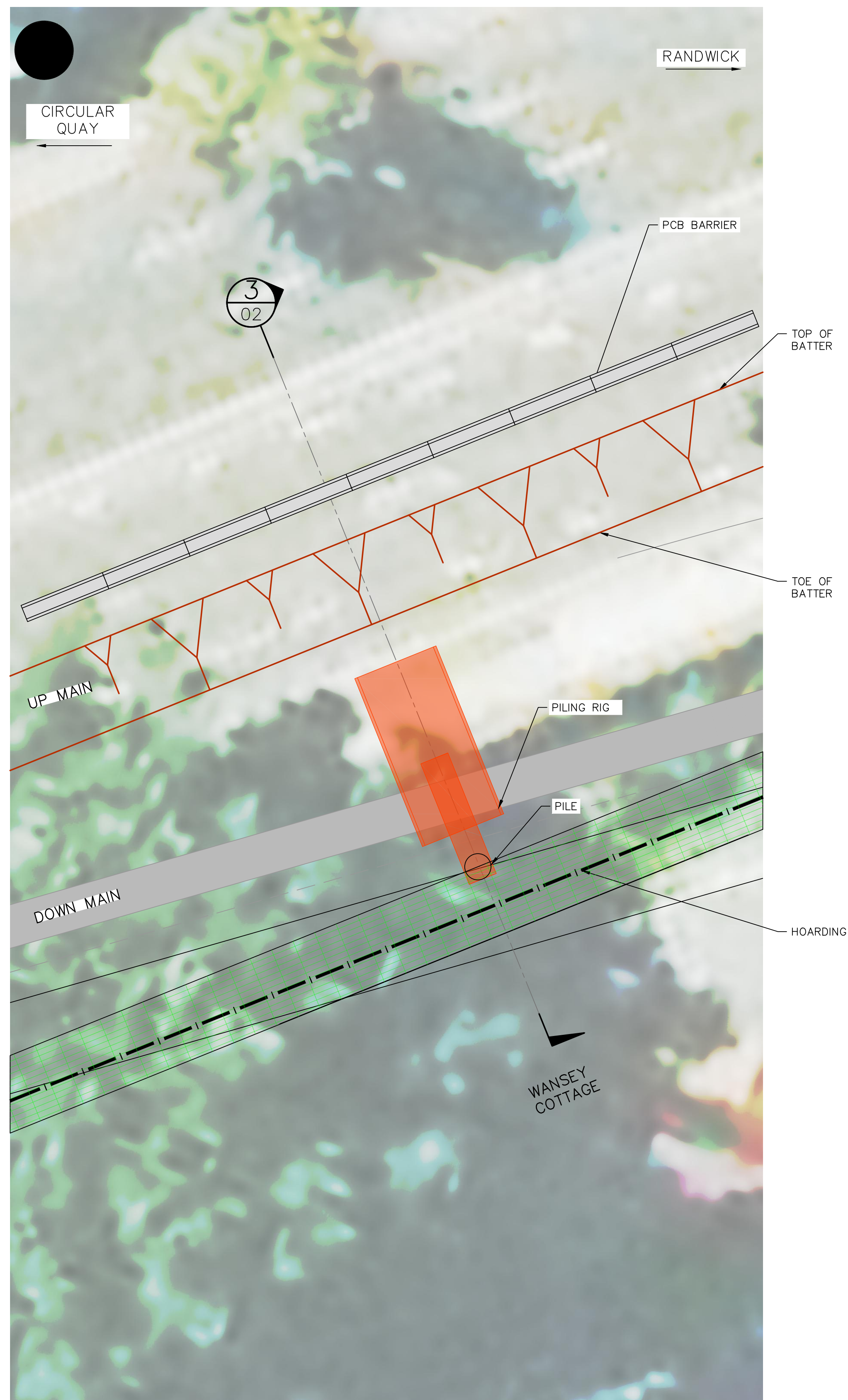
Option	Option Description	Impact to Curtilage of Cottage	Impact to Cottage Structure	Planning Approval Compliance	SPR Compliance	Discussion / Recommendation
1	Retaining wall is maintained in the current alignment as shown in the current design submission. Wansey Cottage would require demolition to enable the construction of the retaining wall.	Impacts the Curtilage of the Cottage	Impacts the cottage	Does not comply with Condition B59 as the curtilage of the Cottage is impacted by the retaining wall. The cottage also requires demolition in this option.	- Complies with the requirements of the SPR as the retaining wall can be constructed within the construction site boundary within ATC land. - Compliant shared path widths can be accommodated.	- Does not comply with the Planning Approval requirements and amendment to planning approval may be required. - Construction impacts to Alison Rd minimised as works can be constructed within ATC land. FEASIBLE if Planning requirement relaxed and Cottage is demolished
2a	Move the retaining wall north so as not to impact the building structure. Shared path is cantilevered so as to minimise impact to Wansey Cottage, partial demolition of Cottage required to accommodate shared path. Piled retaining wall option.	Impacts the curtilage of the Cottage	The partial demolition of the cottage is required in this option to enable the construction of a compliant 3.0m shared path.	Does not comply with Condition B59 as the curtilage of the Cottage is impacted.	- Does not comply with the requirements of SPR Appendix 12, Table 12 to maintain a minimum of two lanes in each direction during construction. - Complies with SPR Appendix 16 for final configuration of Alison Rd. - Complies with SPR Appendix 14 for Shared path widths.	- Curtilage of the cottage is impacted and partial demolition is required. - Impact to Alison Rd during construction by reducing to 3 lanes in total. FEASIBLE if Planning requirement relaxed and Cottage partially demolished to accommodate compliant shared path
2b	Move the retaining wall north so as not to impact the building structure. Shared path is cantilevered so as to minimise impact to Wansey Cottage. Shared path width reduced to 2.5m to removed need to partially demolish cottage. Piled retaining wall option.	Impacts the curtilage of the Cottage	Does not impact the cottage.	Does not comply with Condition B59 as the curtilage of the Cottage is impacted.	- Does not comply with the requirements of SPR Appendix 12, Table 12 to maintain a minimum of two lanes in each direction during construction. - Complies with SPR Appendix 16 for final configuration of Alison Rd. - Does not comply with SPR Appendix 14 for Shared path widths.	- Curtilage of the cottage is impacted by the works. - Impact to Alison Rd during construction by reducing to 3 lanes in total. - Does not comply with SPR requirements for shared path widths FEASIBLE if Planning and SPR requirements for lanes widths during construction and shared path widths relaxed
2c	Move the retaining wall north so as not to impact the building structure. Shared path is cantilevered so as to minimise impact to Wansey Cottage. Piled retaining wall option.	Impacts the curtilage of the Cottage	Does not impact the Cottage	Does not comply with Condition B59 as the curtilage of the Cottage is impacted.	- Does not comply with the requirements of SPR Appendix 12, Table 12 to maintain a minimum of two lanes in each direction.	- Curtilage of the cottage is impacted however building is not impacted. - Alison Rd will be required to be realigned to ensure no impact to the cottage. Impacts to footpath widths on the north side of Alison Rd, footpath reduced to min 1.1m. - Impact to existing driveways and garages off Alison Rd - Impact to Alison Rd during construction by reducing Alison Rd to 3 lanes in total. NOT FEASIBLE as this would result in reduced footpath widths on the northern side of Alison Rd.
3a	Move the retaining wall north so as not to impact the building structure. Shared path is cantilevered so as to minimise impact to Wansey Cottage. In –situ wall option.	Impacts the curtilage of the Cottage	Impacts the Cottage	Does not comply with Condition B59 as the curtilage of the Cottage is impacted by the shared path. The cottage also requires partial demolition in this option.	- Does not comply with the requirements of SPR Appendix 12, Table 12 to maintain a minimum of two lanes in each direction during construction. - Complies with SPR Appendix 16 for final configuration of Alison Rd. - Complies with SPR Appendix 14 for Shared path widths.	- Curtilage of the cottage is impacted and partial demolition is required. - Additional cost and time to construct large in-situ retaining structure. - Impact to Alison Rd during construction by reducing Alison Rd to 3 lanes in total FEASIBLE if planning requirement relaxed and Cottage partially demolished to accommodate shared path
3b	Move the retaining wall north so as not to impact the building structure. Shared path is cantilevered so as to minimise impact to Wansey Cottage. In –situ wall option.	Impacts the curtilage of the Cottage	Impacts the Cottage	Does not comply with Condition B59 as the curtilage of the Cottage is impacted by the shared path. The cottage also requires partial demolition in this option.	- Does not comply with the requirements of SPR Appendix 12, Table 12 to maintain a minimum of two lanes in each direction during construction. - Complies with SPR Appendix 16 for final configuration of Alison Rd. - Does not comply with SPR Appendix 14 for Shared path widths.	- Curtilage of the cottage is impacted by the works. - Additional cost and time to construct large in-situ retaining structure. - Impact to Alison Rd during construction by reducing Alison Rd to 3 lanes in total - Does not comply with SPR requirements for shared path widths FEASIBLE if Planning and SPR requirements for lanes widths during construction and shared path widths relaxed
3c	Move the retaining wall north so as not to impact the building structure. Shared path is cantilevered so as to minimise impact to Wansey Cottage. In –situ wall option.	Impacts the curtilage of the Cottage	Does not impact the Cottage	Does not comply with Condition B59 as the curtilage of the Cottage is impacted by the retaining wall	- Does not comply with the requirements of SPR Appendix 12, Table 12 to maintain a minimum of two lanes in each direction.	- Curtilage of the cottage is impacted however building is not impacted. - Alison Rd will be required to be realigned to ensure no impact to the cottage. Impacts to footpath widths on the north side of Alison Rd, footpath reduced to min 1.1m. - Impact to existing driveways and garages off Alison Rd - Impact to Alison Rd during construction by reducing Alison Rd to 3 lanes in total. NOT FEASIBLE as this would result in reduced footpath widths on the northern side of Alison Rd.
4	Move the retaining wall north so as not to impact the curtilage of the cottage, i.e. existing brick retaining wall along Alison Rd.	Does not impact the curtilage of the cottage as the retaining wall will be built on the existing curtilage.	Does not impact the cottage.	Complies with requirement B59. Curtilage of cottage is not impacted.	- Does not comply with the requirements of SPR Appendix 12, Table 12 to maintain a minimum of two lanes in each direction. - Does not comply with SPR Appendix 16 for final configuration of Alison Rd.	- This option would result in realigning Alison Rd approx. 5m to the north and remove the footpath on the northern side. - Impact to Alison Rd during construction by reducing Alison Rd to 3 lanes in total. - Impact to existing driveways and garages off Alison Rd NOT FEASIBLE as this would result in reduced number of lanes in Alison Rd during construction and in the final state.



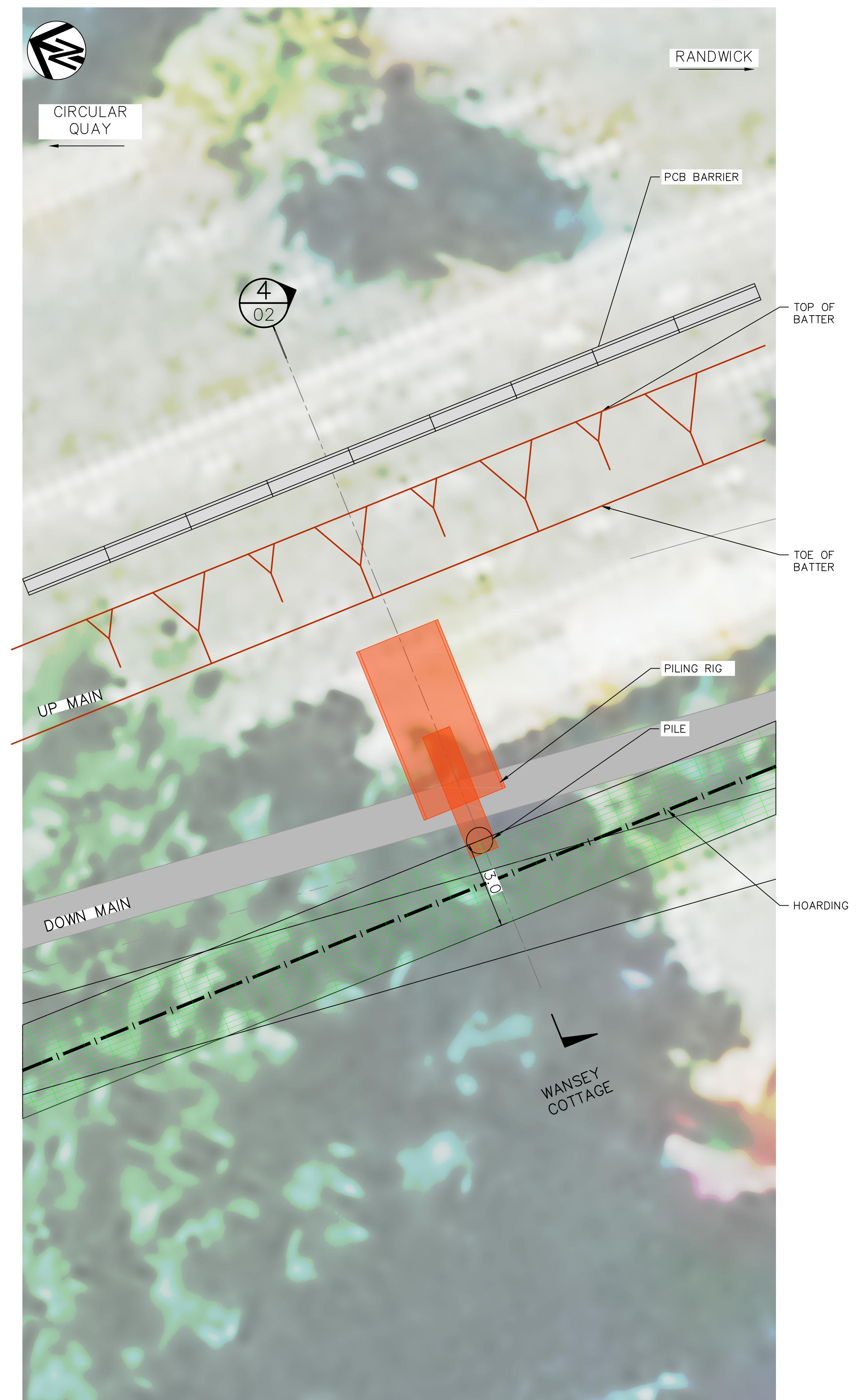
OPTION 1 POST & PANEL WALL IN
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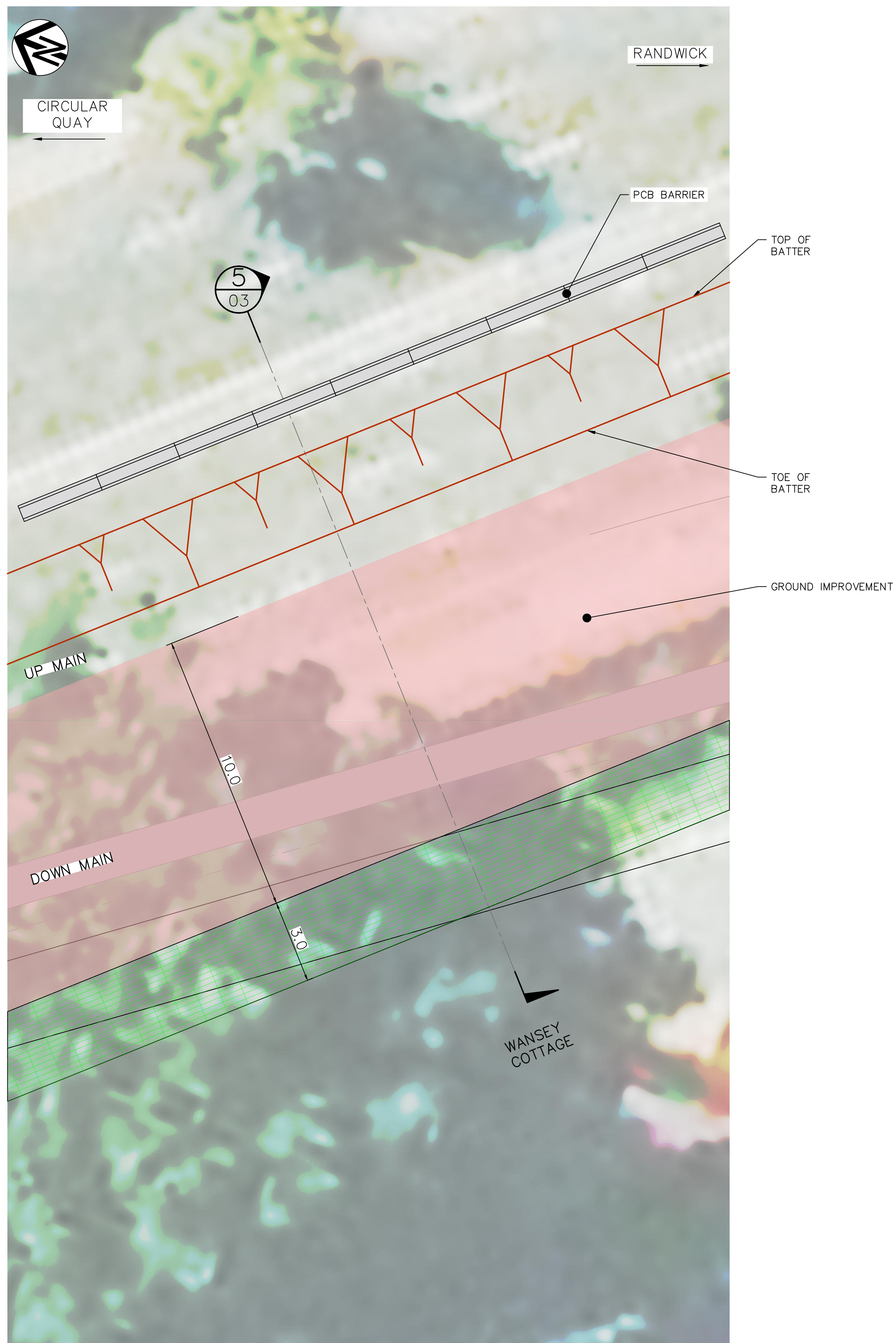
OPTION 2A POST & PANEL WITH
CANTILEVER SHARED PATH



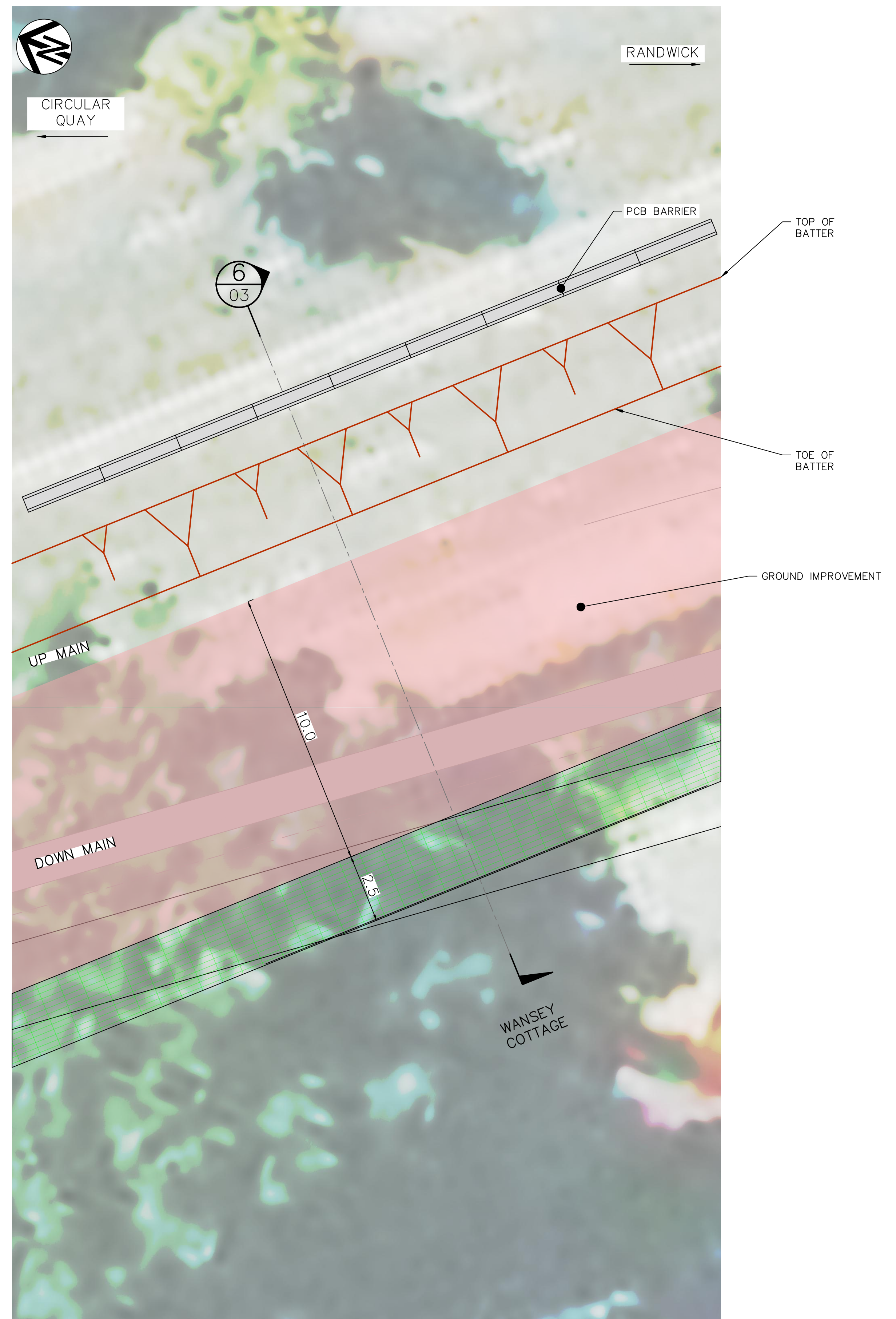
OPTION 2B POST & PANEL WITH
CANTILEVER SHARED PATH



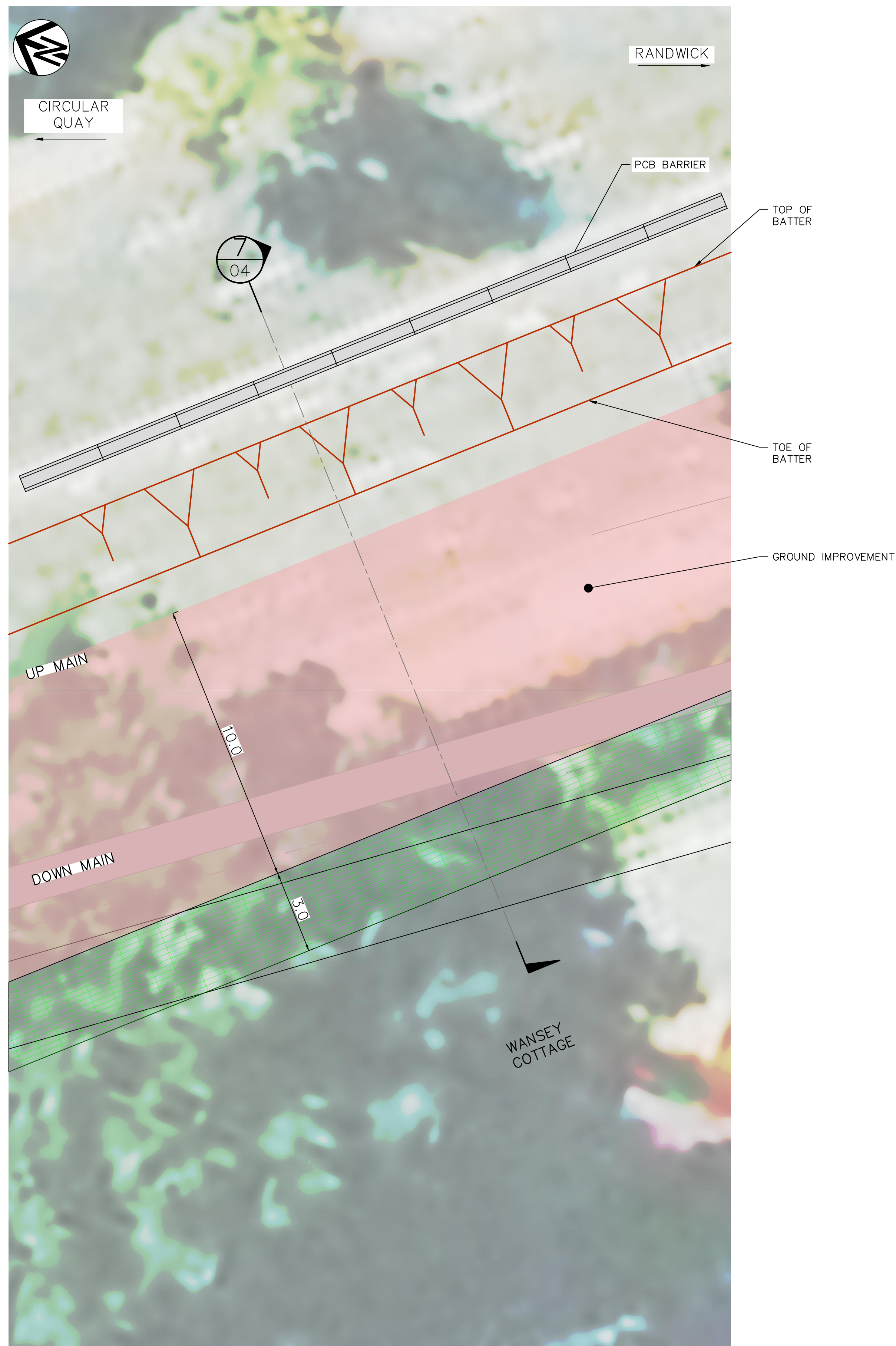
OPTION 2C POST & PANEL WITH
CANTILEVER SHARED PATH



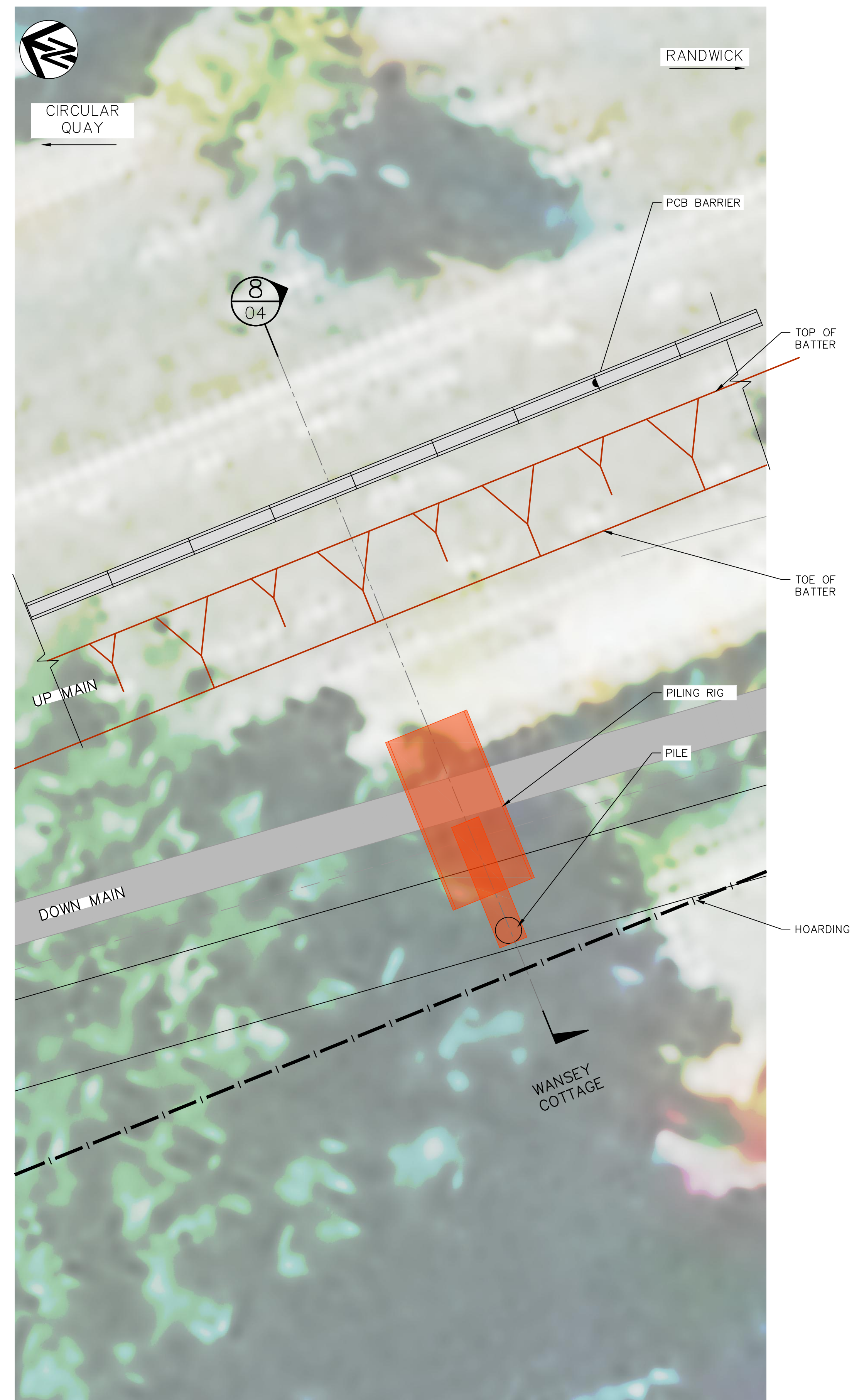
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CANTILEVER SHARED PATH



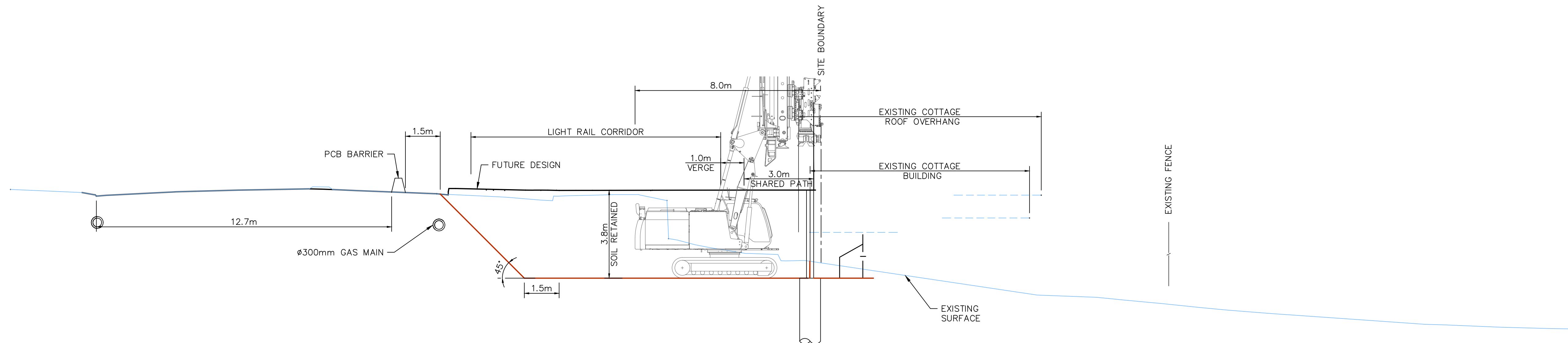
OPTION 3B POST & PANEL WITH
CANTILEVER SHARED PATH



OPTION 3C POST & PANEL WITH
CANTILEVER SHARED PATH



OPTION 4 POST & PANEL WALL IN
EXISTING RW LOCATION

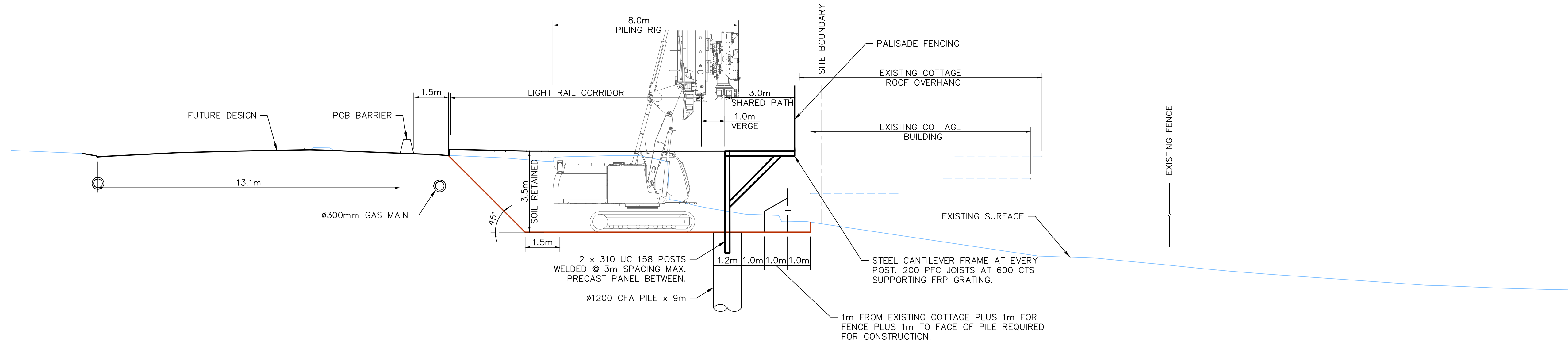


TYPICAL CROSS SECTION AT COTTAGE
 OPTION 1 – POST & PANEL WALL IN STAGE 1 SUBMISSION LOCATION

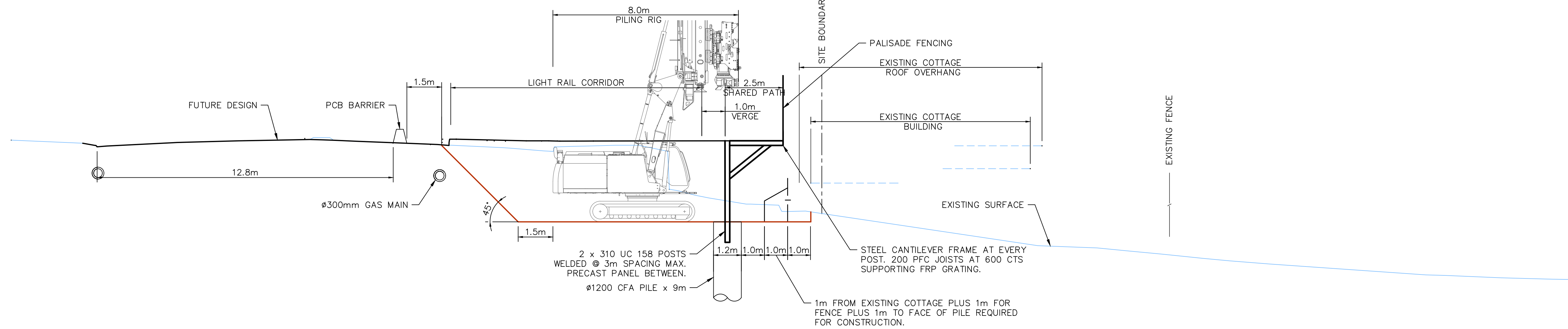
SECTION 1
A

NOTE

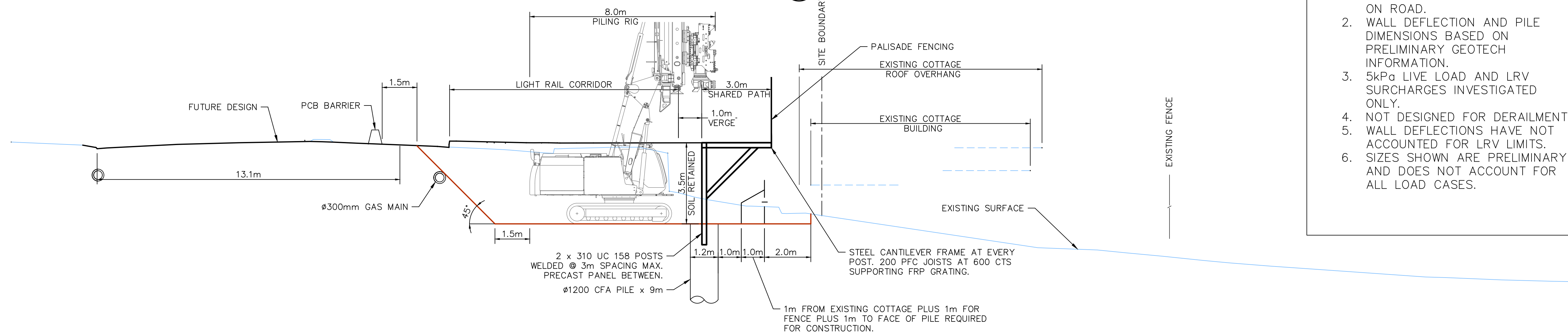
1. SIZE OF RETAINING WALL SYSTEM DOES NOT CONSIDER EMERGENCY VEHICLE LOADING WITHIN 2m FROM EDGE OF RETAINING WALL. EMERGENCY VEHICLES TO REMAIN ON ROAD.
2. WALL DEFLECTION AND PILE DIMENSIONS BASED ON PRELIMINARY GEOTECH INFORMATION.
3. 5kPa LIVE LOAD AND LRV SURCHARGES INVESTIGATED ONLY.
4. NOT DESIGNED FOR DERAILMENT.
5. WALL DEFLECTIONS HAVE NOT ACCOUNTED FOR LRV LIMITS.
6. SIZES SHOWN ARE PRELIMINARY AND DOES NOT ACCOUNT FOR ALL LOAD CASES.



TYPICAL CROSS SECTION AT COTTAGE
OPTION 2A POST & PANEL WITH
CANTILEVER SHARED PATH
SECTION 2



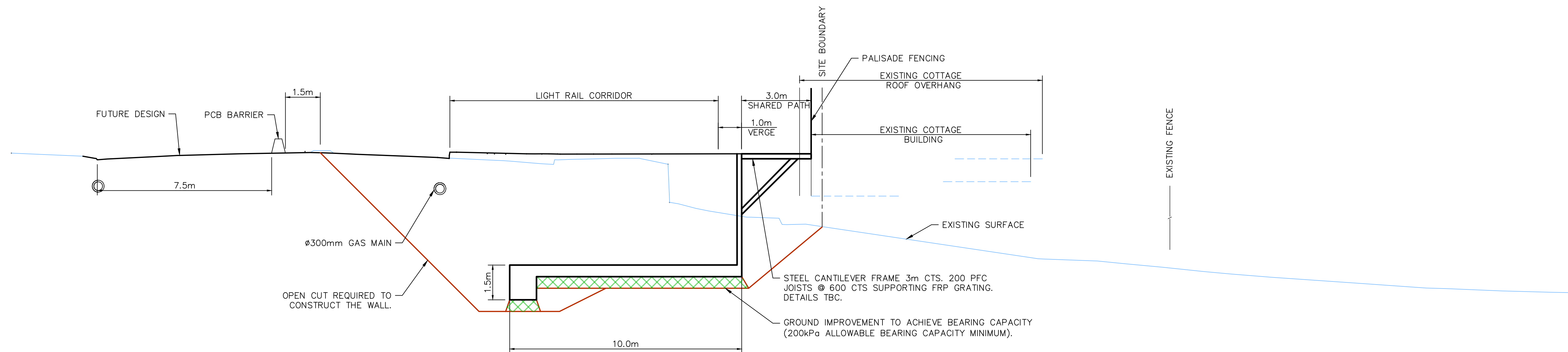
TYPICAL CROSS SECTION AT COTTAGE
OPTION 2B POST & PANEL WITH
CANTILEVER SHARED PATH
SECTION 3



TYPICAL CROSS SECTION AT COTTAGE
OPTION 2C POST & PANEL WITH
CANTILEVER SHARED PATH
SECTION 4

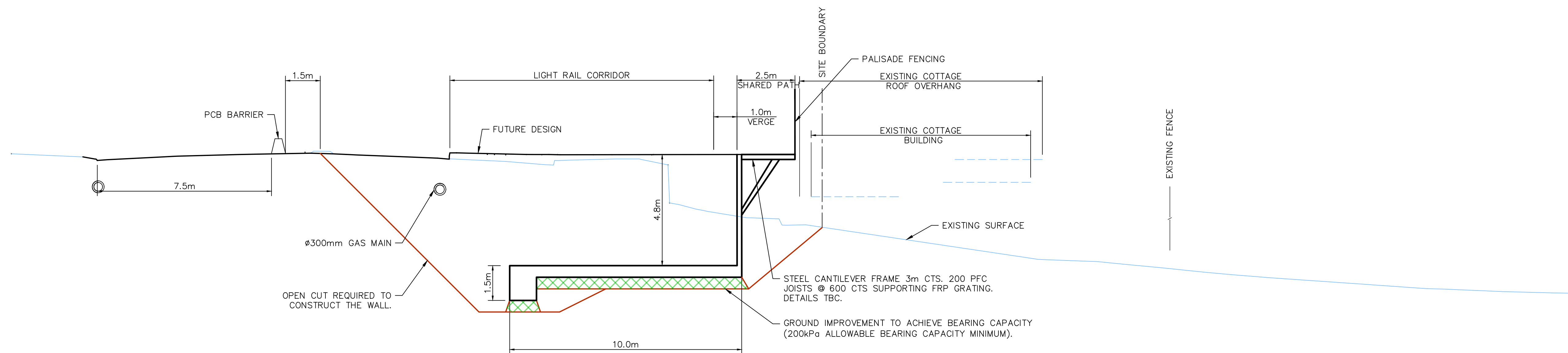
NOTE

1. SIZE OF RETAINING WALL SYSTEM DOES NOT CONSIDER EMERGENCY VEHICLE LOADING WITHIN 2m FROM EDGE OF RETAINING WALL. EMERGENCY VEHICLES TO REMAIN ON ROAD.
2. WALL DEFLECTION AND PILE DIMENSIONS BASED ON PRELIMINARY GEOTECH INFORMATION.
3. 5kPa LIVE LOAD AND LRV SURCHARGES INVESTIGATED ONLY.
4. NOT DESIGNED FOR DERAILMENT.
5. WALL DEFLECTIONS HAVE NOT ACCOUNTED FOR LRV LIMITS.
6. SIZES SHOWN ARE PRELIMINARY AND DOES NOT ACCOUNT FOR ALL LOAD CASES.



TYPICAL CROSS SECTION AT COTTAGE
OPTION 3A – L SHAPE CONCRETE RW

SECTION 5
C

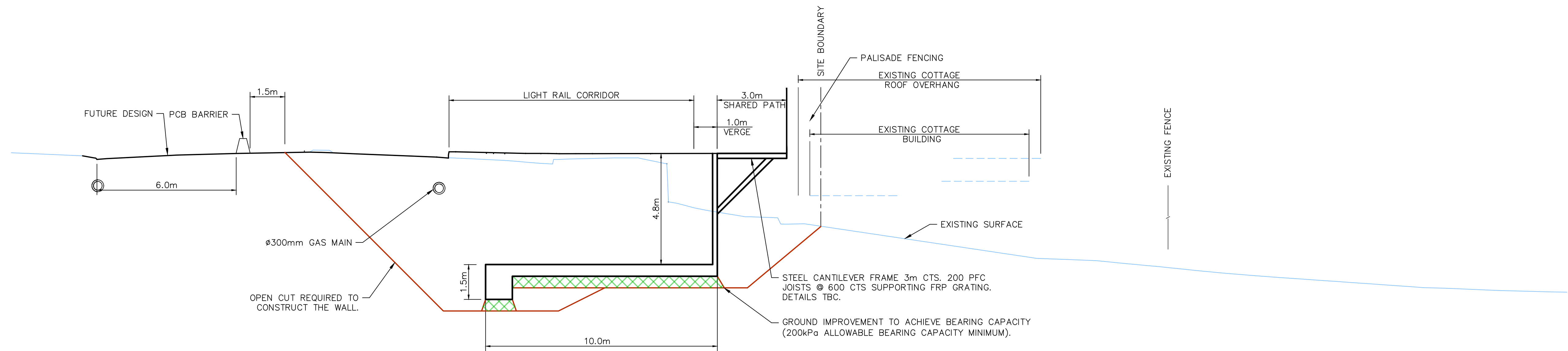


TYPICAL CROSS SECTION AT COTTAGE
OPTION 3B – L SHAPE CONCRETE RW

SECTION 6
C

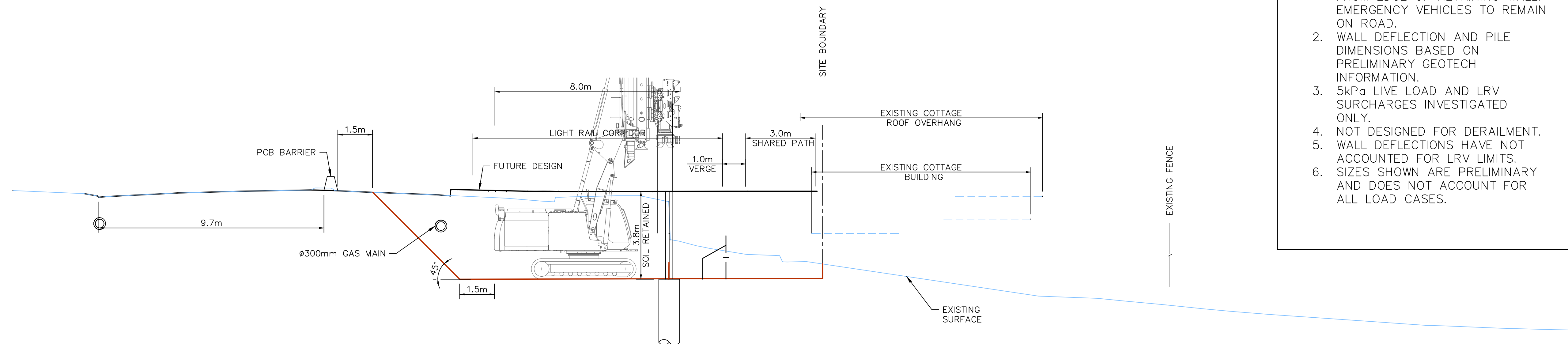
NOTE

1. SIZE OF RETAINING WALL SYSTEM DOES NOT CONSIDER EMERGENCY VEHICLE LOADING WITHIN 2m FROM EDGE OF RETAINING WALL. EMERGENCY VEHICLES TO REMAIN ON ROAD.
2. WALL DEFLECTION AND PILE DIMENSIONS BASED ON PRELIMINARY GEOTECH INFORMATION.
3. 5kPa LIVE LOAD AND LRV SURCHARGES INVESTIGATED ONLY.
4. NOT DESIGNED FOR DERAILMENT.
5. WALL DEFLECTIONS HAVE NOT ACCOUNTED FOR LRV LIMITS.
6. SIZES SHOWN ARE PRELIMINARY AND DOES NOT ACCOUNT FOR ALL LOAD CASES.



TYPICAL CROSS SECTION AT COTTAGE
OPTION 3C – L SHAPE CONCRETE RW

SECTION 7
D



TYPICAL CROSS SECTION AT COTTAGE
OPTION 4 – POST & PANEL WALL IN EXISTING RW LOCATION

SECTION 8
D

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