*HIGHWAYS & STREETSCENE*
*HIGHWAYS STRUCTURES*

**Civic Centre 1**
**High Street**
**Huddersfield**
**HD1 2NE**

# APPROVAL IN PRINCIPLE FOR DESIGN OF

## *PROPOSED PRIVATE MASONRY FACED MASS CONCRETE BURR WALL SUPPORTING UNADOPTED HIGHWAY OFF A629 PENISTONE ROAD, FENAY BRIDGE*

| | |
|---|---|
| **Structure reference:** | **K61196** |
| **Date:** | **18/03/2025** |
| **Revision:** | **01** |
| **Status:** | **Final** |
| **Prepared by:** | **D.P. Bass** |
| **Checked by:** | **A. Hawkin** |

## DOCUMENT CONTROL

**Structure title:** ***PROPOSED PRIVATE MASONRY FACED MASS CONCRETE BURR WALL SUPPORTING UNADOPTED HIGHWAY OFF PENISTONE ROAD, FENAY BRIDGE***

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**Document issue record**

| Issue | Status | Prepared | Date | Checked | Date | Approved | Date |
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| 0 | Draft | D.P. Bass | 14/01/25 | A Hawkin | 14/01/25 | | |
| 1 | Final | D.P. Bass | 18/03/25 | A Hawkin | 18/03/25 | | |
| | | | | | | | |
| | | | | | | | |

## PROJECT DETAILS

Name of project: Off A629 Penistone Road, Fenay Bridge

Name of Bridge or Structure: Proposed Mass Concrete private burr wall

Structure reference no: K61196

Summary:

AIP is to cover the proposed private burr wall supporting an unadopted highway.

## 1. HIGHWAY DETAILS

### 1.1. Type of highway

#### 1.1.1. Location and OS Map / Grid reference

| | |
|---|---|
| Location: | Residential Estate Road, Fenay Bridge |
| OS Map: | SE186147 |
| Grid Ref (X, Y): | (418618, 414785) |

### 1.2. Permitted traffic speed

30 mph

### 1.3. Existing restrictions

None.

## 2. SITE DETAILS

### 2.1. Obstacles crossed

N/A.

## 3. PROPOSED STRUCTURE

### 3.1. Description of structure and design working life

The proposed masonry faced mass concrete burr wall is required to support a new unadopted highway off A629 Penistone Road at Fenay Bridge.

Masonry faced mass concrete burr wall; to be designed to have a design working life category 5 (120 years) in accordance with CD 350 The design of highway structures-Table 7.1 The total mass of the new mass concrete burr wall will be designed to provide the necessary structural support to the proposed private highway.

### 3.2. Structural type

Mass concrete gravity burr wall

### 3.3. Foundation type

The mass concrete burr wall is to be designed with a spread concrete base bearing on to the firm gravelly sandy clay.

### 3.4. Span arrangements

Wall has a maximum retained height 3.0m measured from formation level to finished ground level on the high side. The wall is 37.6m in length

### 3.5. Articulation arrangements

It is proposed to provide movement joints every 10m.(max)

### 3.6. Classes and levels

#### 3.6.1. Consequence class

Consequence class to be CC2 (medium consequence for loss of human life, economic, social or environmental consequences considerable)

#### 3.6.2. Reliability class

Reliability class is to be associated with the consequence class detailed in 3.6.1. Reliability class to be RC2. Factor for actions to be used KFI = 1,0).

#### 3.6.3. Inspection level

Inspection Level 2 – Normal inspection (inspection in accordance with the procedures of the inspecting organisation)

### 3.7. Road restraint systems requirements

Provide an Unreinforced masonry parapet 1.2m high 330mm thick in natural stonework in designation (ii) mortar to provided N1 level of containment) in accordance with the DfT "Guidance on the Design, Assessment and Strengthening of Masonry Parapets on Highway Structures".

### 3.8. Proposals for Water Management

150mm diameter perforated longitudinal drain encased in free draining material (No fines concrete) and taken to a suitable outlet together with 100mm pvc weep pipes at 2m centres.

### 3.9. Proposed arrangements for future maintenance and inspection

#### 3.9.1. Traffic management

The proposed private burr wall can be viewed from the lower side of the wall, therefore no traffic management measures will be required.

#### 3.9.2. Arrangements for future maintenance and inspection of structure. Access arrangements to structure.

Partially buried structure, access to the structure will be from the lower side of the wall. Any maintenance works to the burr wall is likely to require a temporary closure of the public footpath.

### 3.10. Environment and sustainability

Mass concrete to be grade C25/30 to suit ground conditions. The wall facing and parapet will be constructed in Natural stone.

### 3.11. Durability. Materials and finishes

For structural elements specify material strengths, exposure classes, finishes etc., and list the relevant codes/standards.

| Item | Material | Finish / Location |
|---|---|---|
| Mass concrete burr Wall | Concrete to the wall to have a minimum strength of C25/30 in accordance with BS 8500-1 and BS EN 206-1. | The wall will be faced in natural stonework tied to the mass concrete using Ancon cast in channel type 21/18. Channel ties to be stainless steel Ancon type SP21 x 75 long spaced @ 450 c/c vertically and 900 c/c horizontally in a staggered pattern. Exposed concrete finishes will be class F1(formed) or class U2 (unformed). Facing stonework mortar designation (ii) |
| Masonry facework | 100mm thick stone work. | Natural stonework. Mortar to be stone coloured class (iii), finish to be flush. |
| Parapet | 330mm thick stone work. (Min density 2200kg/m³). | Natural stonework |
| Waterproofing | All concrete surfaces in contact with soil, backfill or bedding to be waterproofed in accordance with MCHW1 clauses 2004 & 2006. | N/A. |
| Backfill material | Engineering Class 6N, Selected granular fill to Specification for Highways | Backfill to structures. |
| Drainage (for burr wall) | 150mm diameter perforated longitudinal drain encased in free draining material (No fines concrete) and taken to a suitable outlet together with 100mm pvc weep pipes at 2m centres. | |
| Movement Joints | 25mm compressible filler board, bituminous putty or polysulphide colour sealant | At maximum 10m lengths |

### 3.12. Risks and hazards considered for design, execution, maintenance and demolition. Consultation with and/or agreement from Overseeing Organisation

The design services, for which ARP Associates were engaged, have been carried out in such a way which avoids, reduces or controls risks to Health and Safety as far as is reasonably practicable. These risks include (but not exhaustively):

- Maintenance of access for pedestrian using the footpath
- Temporary slope stability
- Permanent slope stability
- Working at height
- Deep Excavation
- Existing utility services
- Manual handling of heavy objects

Where work is undertaken close to third party land the contractor must ensure all risks associated with construction of the wall are taken into consideration in their risk assessments and method statements. Depth of excavations is dictated by the level of the competent bearing strata, as far as is reasonably practicable the depth of excavations has been minimised, the residual risk is to be managed on site by the contractor.

Activities involving working at height have been minimised where reasonably practicable, residual risk to be managed on site by the contractor.

### 3.13. Estimated cost of proposed structure together with other structural forms considered (including where appropriate proprietary manufactured structure), and the reasons for their rejection (including comparative whole life costs with dates of estimates)

QS to advise on estimated costs

### 3.14. Proposed arrangements for construction

3.14.1. **Construction of structure**

**PRIOR TO WORKS COMMENCING**

• Implement an appropriate form of traffic management, as approved by Highways Streetworks, in order to undertake the works safely.

• Ensure sufficient space is available to carry out the planned works, including lay-down areas / material storage etc.

• Ensure sufficient space available for excavation arisings.

• RAMS / Sketches will be prepared and working methods agreed prior to commencement.

**REDUCE LEVEL DIG / FORM BATTERS / STEPS / CONCRETE BLINDING**

• Undertake a CAT scan prior to the excavation of hand dug trial holes to establish the nature and the location of utility services in the footway.

• The engineer will set out the position of the dig and show exact location of the steps and batters, either profiles or rotating laser will be used to control the level.

• Commence exaction works, transfer of excavated material to the agreed location, forming batters as necessary.

• Ensure excavations are monitored for stability as required.

• Form any temp works as noted on the working drawing, steps / formwork etc.

• The works will be undertaken with the use of a 360-degree excavator loading into ADT or 9T dumpers and deposited on to the designated spoil heaps.

**MASS CONCRETE BURR WALL - BASE**

• The engineer will set out the burr wall position, marking out exact locations of corners and wall stem as required.

• Placement of suitable base formwork to ensure uniformity of the concrete base once poured.

• Excavation to be suitable cleared of all debris, ground water and / or surface water prior to commencement of the concrete pour.

• Concrete base pour to be completed with the use of a 360-degree excavator & 9T dumper operating in line with the designed temp works.

• Concrete to be suitably compacted to avoid voids being formed.

• Concrete to be tamped / floated finish as required.

• Following concrete base pour, allow to cure sufficiently (24hrs) prior to stripping any temp shutters.

• Backfill around foundation to remove any voids / trip hazards that may be present

**MASS CONCRETE BURR WALL - STEM**

• The engineer will set out the position of all wall faces to exact location, marking corners / change in directions as required.

• Wall formwork to be fabricated and placed in line with the temp works design / drawings, ensuring suitable props / ties are installed.

• Wall formwork to be lifted into place in line with the temp works design / drawings, ensuring suitable props / ties are installed.

• Placement of concrete to wall stem by 3rd party concrete pump.

• Concrete to be suitably compacted to avoid voids being formed.

• following concrete wall pour, allow to cure sufficiently prior to stripping shutters and removal of temp works.

• Use of suitable 360-degree excavator for lifting of steel / shutters as required.

**BACKFILLING**

• Prior to backfilling works, check concrete cube test results to ensure sufficient strength is achieved.

• Placement of land drain to the rear of the wall, including suitable granular bed & surround as per design.

• Backfill material, as per specification to be placed in layers as necessary

3.14.2. **Traffic management**

All traffic management is to be agreed with the Kirklees Council's Highways Streetworks section prior to the start of works, (where applicable).

3.14.3. **Service diversions**

No existing services are known to be present. However, utilities plans will be obtained and presence of private services (if any) will be confirmed prior to the commencement of works

3.14.4. **Interface with existing structures**

No existing structures are present

**3.15. Resilience and security**

Structure is mass concrete and so is resilient to any forms of deliberate damage.

# 4. DESIGN CRITERIA

## 4.1. Actions

### 4.1.1. Permanent actions

All permanent actions as outlined in BS EN 1991-1-1 and the national annex.

### 4.1.2. Snow, Wind and Thermal actions

Snow loading not considered (NA to BS EN 1991-1-3 NA.4.1.1).

Wind loading not considered.

Thermal actions considered in accordance with Section 6 of BS EN 1991-1-5 and NA to BS EN 1991-1-5.

### 4.1.3. Actions relating to normal traffic under AW regulations and C&U regulations

20.0kN/m² in accordance with BS 8002:2015. (Table 7).

### 4.1.4. Actions relating to General Order traffic under STGO regulations

BS EN 1991-2:2003, NA 2.34 (LM3 SV Models) or UDL=30kpa in accordance with BS 8002:-2015 Cl 4.5.1.5 (Table 7).

### 4.1.5. Footway or footbridge variable actions

5.0kN/m² in accordance with BS 8002:2015 (Table 7)

### 4.1.6. Actions relating to Special Order traffic, provision for exceptional abnormal indivisible loads including location of vehicle track on deck cross-section

30.0kN/m² in accordance with BS 8002:2015 (Table 7)

### 4.1.7. Accidental actions

Accidental actions to be in accordance with 4.7.3.1 of BS EN 1991-2 and NA to BS EN 1991-2.

Vehicular Impact Loading on Parapet to BS EN 1317-2:2010 (Normal Containment Level N1). A separate parapet risk assessment calculation in compliance with the DfT “Guidance on the Design, Assessment and Strengthening of Masonry Parapets on Highway Structures” must be provided.

4.1.8. **Action during construction**

The burr wall is to be backfilled in accordance with the MCHW and surcharge loadings are to be derived based on the requirements of PD 6694-1:2011. Therefore, compaction pressures imposed on the wall during construction do not need to be considered. (PD 6694-1:2011 CL 7.3.3).

4.1.9. **Any special action not covered above**

None.

**4.2. Heavy or high load route requirements and arrangements being made to preserve the route, including any provision for future heavier loads or future widening**

Not considered.

**4.3. Proposed minimum headroom provided**

N/A.

**4.4. Set out measures that will be incorporated into design to minimise maintenance**

Structure to be constructed in mass concrete.

**4.5. Authorities consulted and any special conditions required**

Kirklees Council.

**4.6. Standards and documents listed in the Technical Approval Schedule**

TAS dated 1 June 2024 - See appendix A.

Additional relevant DoT standards published since the above edition of the TAS including amendments, are listed as follows:

None.

**4.7. Proposed departures from standards listed in 4.5**

The proposed burr wall will be a private structure and as such will be maintained by a management company.

### 4.8. Proposed departures from standards concerning methods for dealing with aspects not covered by standards listed in 4.5

The proposed burr wall is located in a new residential area on a no-through unadopted road and as such it is highly unlikely that an abnormal loading would be routed through this road. Therefore, a departure from the approved standard BS 8002:2015 is proposed whereby the surcharge loading on the highway has been reduced to 20 kN/$m^2$.

### 4.9. Proposed safety critical fixings

None.

## 5. STRUCTURAL ANALYSIS

### 5.1. Methods of analysis proposed for superstructure, substructure and foundations

The mass concrete burr wall will be considered as a gravity structure analysed elastically with simple load distribution to EN1997-1:2004 incorporating Corrigendum dated February 2009 and UK National Annex incorporating Corrigendum No. 1.

The traffic loading and earth pressure coefficients are to be in accordance with BS 8002: 2015 and PD6694-1:2011.

### 5.2. Description and diagram of idealised structure to be used for analysis

The mass concrete retaining wall will be analysed as a gravity structure to resist lateral and vertical loads derived in accordance with section 4.1 above.

Hydrostatic pressure has been ignored from the calculations in this instance. This is because the structure will be backfilled with granular fill in addition to installing a longitudinal perforated drain which will allow the free flow of water behind the structure. This will prevent any significant build-up of hydrostatic pressure being applied to the wall

### 5.3. Assumptions intended for calculation of structural element stiffness

N/A

### 5.4. Proposed range of soil parameters to be used in the design of earth retaining elements

It is proposed to backfill against the burr wall structure with selected well-graded free draining granular fill 6N in accordance with the specification for highways works series 600. For the design of the burr walls, no objective test data is available for the 'wedge fill' therefore a representative effective stress value for Ø' internal friction of 30º is assumed This results in

| | | | |
|---|---|---|---|
| i) | Earth Pressure at rest coefficient (Ko) | = | 0.5 |
| ii) | Active Pressure coefficient (Ka) | = | 0.34 |

These values are based on level ground behind the Burr wall. For resistance to sliding, it is proposed to found on the GRAVEL. Coefficient of friction (μ= 0.75 tanØ') assumed Ø' 30º therefore μ = 0.433.

## 6. GEOTECHNICAL CONDITIONS

### 6.1. Acceptance of recommendations of the ground investigation report (references/dates) to be used in the design and reasons for any proposed changes

A ground investigation report has been commissioned for the site concerned and has been included in Appendix C of this document

The recommendations of the site investigation report have been accepted

### 6.2. Summary of design for highway structure in the ground investigation report

Foundations to the burr wall are to be mass concrete spread footings. They are to be founded on the firm slightly gravelly sandy clays, which it is anticipated will be competent in providing the support required for the structure with a minimum ground bearing pressure of 125kN/m². Any soft spots are to be removed and replaced with mass concrete. If suitable material is not detected at founding level, the excavation shall be deepened and the difference in level made up with mass concrete.

### 6.3. Differential settlement to be allowed for in the design of the structure

The wall is to be founded on the same strata along its full length, therefore significant differential settlements are not anticipated.

### 6.4. If the ground investigation report is not yet available, state when the results are expected and list the sources of information used to justify the preliminary choice of foundations

N/A

## 7. CHECK

### 7.1. Proposed Category and Design Supervision Level

Category 1.

Design supervision level. DSL2

### 7.2. If Category 3, name of proposed Independent Checker

N/A

### 7.3. Erection proposals or temporary works for which Types S and P Proposals will be required, listing structural parts of the permanent structure affected with reasons

N/A

## 8. DRAWINGS AND DOCUMENTS

### 8.1. List of drawings (including numbers) and documents accompanying the submission

8.1.1. **Drawings (See appendix B)**

| Reference | Title |
|---|---|
| 2079/22/1000A | Private burr wall details |
| | |
| | |
| | |
| | |
| | |
| | |

8.1.2. **Documents (See appendix C)**

| Reference | Title |
|---|---|
| MM/12358/190107/P1 | Summary Report on Previous Site Investigation |
| | |
| | |
| | |
| | |
| | |
| | |

## 9. THE ABOVE IS SUBMITTED FOR ACCEPTANCE

**Design Team Leader**

**Signed** _____

**Name** _____

**Engineering Qualification** _____

**Name of Organisation** _____

**Date** 18/03/2025

**Check Team Leader**

**Signed** _____

**Name** _____

**Engineering Qualification** _____

**Name of Organisation** _____

**Date** 18/03/2025

## 10. THE ABOVE IS REJECTED/AGREED SUBJECT TO THE AMENDMENTS AND CONDITIONS SHOWN BELOW

**Signed** _____

**Name** _____

**Position held** _____

**Engineering Qualifications** _____

**TAA** _____

**Date** _____

*For and on behalf of Kirklees Council*

# APPENDIX A

## *LIST OF RELEVANT DESIGN DOCUMENTS*

**Scheme title: Off A629 Penistone Road, Fenay Bridge** **Structure Ref: K6119**
**Structure title: Proposed Private Mass Concrete burr wall** **Rev 01 Mar 2025**

# TECHNICAL APPROVAL SCHEDULE (TAS)

**Schedule of Documents Relating to Design of Highway Bridges and Structures**

(All documents are taken to include revisions current as of 23 July 2024)

***Additional standards needed for a particular design should be added to the section at the bottom of the TAS.***

***The Designer is responsible for ensuring that the standards and references given in the schedule are correct and up to date.*** Tick all the documents used (✓)

| Eurocodes and associated UK National Annexes | | | | |
|---|---|---|---|---|
| **Used** | **Eurocode part** | **Title** | **Amendment/ Corrigenda** | ***Notes*** |
| | **Eurocode 0** | **Basis of structural design** | | |
| ✓ | BS EN 1990:2002 +A1:2005 | Eurocode 0: Basis of structural design | +A1:2005 Incorporating corrigenda December 2008 and April 2010 | See CD 350 section 7 for additional guidance.<br><br>This document is to be used until 30 March 2028. After which it will be superseded by BS EN 1990:2023 |
| ✓ | NA to BS EN 1990:2002 + A1:2005 | UK National Annex to Eurocode 0 Basis of structural design | National Amendment No.1 | See CD 350 section 7 for additional guidance. |
| | **Eurocode 1** | **Actions on structures** | | |
| ✓ | BS EN 1991-1-1:2002 | Eurocode 1: Actions on structures. General Actions. Densities, self-weight, imposed load for buildings | Corrigenda December 2004 and March 2009 | |

| Eurocodes and associated UK National Annexes | | | | |
|---|---|---|---|---|
| **Used** | **Eurocode part** | **Title** | **Amendment/ Corrigenda** | ***Notes*** |
| ✓ | NA to BS EN 1991-1-1:2002 | UK National Annex to Eurocode 1: Actions on structures. General Actions. Densities, self-weight, imposed load for buildings | Corrigenda July 2019 | |
| | BS EN 1991-1-3:2003 +A1:2015 | Eurocode 1: Actions on structures. General Actions. Snow loads | +A1:2015 Incorporating corrigenda December 2004 and March 2009 | |
| | NA + A2:18 to BS EN 1991-1-3:2003+A1:2015 | UK National Annex to Eurocode 1: Actions on structures. General Actions. Snow loads | +A2:2018 Incorporating corrigenda June 2007, December 2015 and October 2018 | |
| | BS EN 1991-1-4:2005 +A1:2010 | Eurocode 1: Actions on structures. General Actions. Wind actions | +A1:2010 Corrigenda July 2009 and January 2010 | |
| | NA to BS EN 1991-1-4:2005 + A1:2010 | UK National Annex to Eurocode 1: Actions on structures. General Actions. Wind actions | National Amendment No.1 | |
| | BS EN 1991-1-5:2003 | Eurocode 1: Actions on structures. General Actions. Thermal actions | Corrigenda December 2004 and March 2009 | |
| | NA to BS EN 1991-1-5:2003 | UK National Annex to Eurocode 1: Actions on structures. General Actions. Thermal actions | - | |
| | BS EN 1991-1-6:2005 | Eurocode 1: Actions on structures. General Actions. Actions during execution | Corrigenda July 2008, November 2012 and February 2013 | |

| Eurocodes and associated UK National Annexes | | | | |
|---|---|---|---|---|
| **Used** | **Eurocode part** | **Title** | **Amendment/ Corrigenda** | ***Notes*** |
| | NA to BS EN 1991-1-6:2005 | UK National Annex to Eurocode 1: Actions on structures. General Actions. Actions during execution | - | |
| | BS EN 1991-1-7:2006 +A1:2014 | Eurocode 1: Actions on structures. General Actions. Accidental actions | +A1: 2014 Corrigendum February 2010 | |
| | NA+A1 to BS EN 1991-1-7:2006+A1:2014 | UK National Annex to Eurocode 1: Actions on structures. Part 1-7 : Accidental actions | +A1:2014 Incorporating corrigenda August 2014 and November 2015 | See CD 350 for additional guidance. |
| ✓ | BS EN 1991-2:2003 | Eurocode 1: Actions on structures. Traffic loads on bridges | Corrigenda December 2004 and February 2010 | See CD 350 section 7 for additional guidance.<br><br>This document is to be used until 30 March 2028. After which it will be superseded by BS EN 1991-2:2023 |
| ✓ | NA +A1:2020 to BS EN 1991-2:2003 | UK National Annex to Eurocode 1: Actions on structures. Traffic loads on bridges | Corrigendum No.1 Amendment June 2020 | See CD 350 section 7 for additional guidance. |
| | **Eurocode 2** | **Design of concrete structures** | | |
| ✓ | BS EN 1992-1-1:2004 + A1:2014 | Eurocode 2: Design of concrete structures– Part 1-1: General rules and rules for buildings | Incorporating corrigendum January 2008, November 2010 and January 2014 | This document is to be used until 30 March 2028. After which it will be superseded by BS EN 1992-1-1:2023 |

| Eurocodes and associated UK National Annexes | | | | |
|---|---|---|---|---|
| **Used** | **Eurocode part** | **Title** | **Amendment/ Corrigenda** | ***Notes*** |
| ✓ | NA + A2:2014 to BS EN 1992-1-1:2004 + A1:2014 | UK National Annex to Eurocode 2: Design of concrete structures – Part 1-1: General rules and rules for buildings | | |
| ✓ | BS EN 1992-2:2005 | Eurocode 2: Design of concrete structures – Part 2: Concrete bridges – Design and detailing rules | Corrigendum July 2008 | This document is to be used until 30 March 2028. After which it will be superseded by BS EN 1992-1-1:2023 |
| ✓ | NA to BS EN 1992-2:2005 | UK National Annex to Eurocode 2: Design of concrete structure – Part 2: Concrete bridges – Design and detailing rules | - | |
| | BS EN 1992-3:2006 | Eurocode 2: Design of concrete structures – Part 3: Liquid retaining and containment structures | | This document is to be used until 30 March 2028. After which it will be superseded by BS EN 1992-1-1:2023 |
| | NA to BS EN 1992-3:2006 | UK National Annex to Eurocode 2: Design of concrete structures – Part 3: Liquid retaining and containment structures | - | |
| | BS EN 1992-4:2018 | Eurocode 2: Design of concrete structures – Part 4: Design of fastenings for use in concrete | | |

| Eurocodes and associated UK National Annexes | | | | |
|---|---|---|---|---|
| **Used** | **Eurocode part** | **Title** | **Amendment/ Corrigenda** | ***Notes*** |
| | NA to BS EN 1992-4:2018 | UK National Annex to Eurocode 2: Design of concrete structures – Part 4: Design of fastenings for use in concrete | | |
| | **Eurocode 3** | **Design of steel structures** | | |
| | BS EN 1993-1-1:2005 + A1:2014 | Eurocode 3: Design of steel structures – Part 1-1 General rules and rules for buildings | Corrigenda February 2006 and April 2009 | This document is to be used until 30 March 2028. After which it will be superseded by BS EN 1993-1-1:2022 |
| | NA + A1:2014 to BS EN 1993-1-1:2005 + A1:2014 | UK National Annex to Eurocode 3: Design of steel structures – Part 1-1 General rules and rules for buildings | - | |
| | BS EN 1993-1-3:2006 | Eurocode 3: Design of steel structures – Part 1-3 General rules – Supplementary rules for cold-formed members and sheeting | Corrigendum November 2009 | This document is to be used until 30 March 2028. After which it will be superseded by BS EN 1993-1-3:2024 |
| | NA to BS EN 1993-1-3:2006 | UK National Annex to Eurocode 3: Design of steel structures – Part 1-3 Supplementary rules for cold-formed members and sheeting | - | |
| | BS EN 1993-1-4:2006 + A2:2020 | Eurocode 3: Design of steel structures – Part 1-4 General rules – Supplementary rules for stainless steels | + A1:2015 Amendment No. 1 + A2:2020 Amendment No. 2 | Supersedes BS EN 1993-1-4:2006 + A1:2015 |

| Eurocodes and associated UK National Annexes | | | | |
|---|---|---|---|---|
| **Used** | **Eurocode part** | **Title** | **Amendment/ Corrigenda** | ***Notes*** |
| | NA+A1:15 to BS EN 1993-1-4:2006+A1:2015 | UK National Annex to Eurocode 3: Design of steel structures – Part 1-4 Supplementary rules for stainless steels | + A1:2015 Amendment No. 1 | |
| | BS EN 1993-1-5:2006+A2:2019 | Eurocode 3: Design of steel structures – Part 1-5 Plated structural elements | Corrigendum April 2009, +A1:2017 Amendment No. 2, +A2:2019 | This document is to be used until 30 March 2028. After which it will be superseded by BS EN 1993-1-5:2024 |
| | NA+A1:2016 to BS EN 1993-1-5:2006 | UK National Annex to Eurocode 3: Design of steel structures – Part 1-5 Plated structural elements | + A1:2016 Amendment No. 1 | |
| | BS EN 1993-1-6:2007+ A1:2017 | Eurocode 3: Design of steel structures – Part 1-6 Strength and stability of shell structures | + A1:2017 Amendment No. 1 | |
| | BS EN 1993-1-7:2007 | Eurocode 3: Design of steel structures – Part 1-7 Plated structures subject to out of plane loading | Corrigendum April 2009 | |
| | BS EN 1993-1-8:2005 | Eurocode 3: Design of steel structures – Part 1-8 Design of joints | Corrigenda December 2005, September 2006, July 2009 and August 2010 | This document is to be used until 30 March 2028. After which it will be superseded by BS EN 1993-1-8:2024 |

| Eurocodes and associated UK National Annexes | | | | |
|---|---|---|---|---|
| **Used** | **Eurocode part** | **Title** | **Amendment/ Corrigenda** | ***Notes*** |
| | NA to BS EN 1993-1-8:2005 | UK National Annex to Eurocode 3: Design of steel structures – Part 1-8 Design of joints | - | |
| | BS EN 1993-1-9:2005 | Eurocode 3: Design of steel structures – Part 1-9 Fatigue | Corrigenda December 2005, September 2006 and April 2009 | |
| | NA to BS EN 1993-1-9:2005 | UK National Annex to Eurocode 3: Design of steel structures – Part 1-9 Fatigue | - | |
| | BS EN 1993-1-10:2005 | Eurocode 3: Design of steel structures – Part 1-10 Material toughness and through-thickness properties | Corrigenda December 2005, September 2006 and March 2009 | |
| | NA to BS EN 1993-1-10:2005 | UK National Annex to Eurocode 3: Design of steel structures – Part 1-10 Material toughness and through thickness properties | - | |
| | BS EN 1993-1-11:2006 | Eurocode 3: Design of steel structures – Part 1-11 Design of structures with tension components | Corrigendum April 2009 | |
| | NA to BS EN 1993-1-11:2006 | UK National Annex to Eurocode 3: Design of steel structures – Part 1-11 Design of structures with tension components | - | |

| Eurocodes and associated UK National Annexes | | | | |
|---|---|---|---|---|
| **Used** | **Eurocode part** | **Title** | **Amendment/ Corrigenda** | ***Notes*** |
| | BS EN 1993-1-12:2007 | Eurocode 3: Design of steel structures – Part 1-12 Additional rules for the extension of EN 1993 up to steel grades S 700 | Corrigendum April 2009 | |
| | NA to BS EN 1993-1-12:2007 | UK National Annex to Eurocode 3: Design of steel structures – Part 1-12 Additional rules for the extension of EN 1993 up to steel grades S 700 | - | |
| | BS EN 1993-2:2006 | Eurocode 3: Design of steel structures – Part 2 Steel bridges | Corrigendum July 2009 | |
| | NA + A1:2012 to BS EN 1993-2:2006 | UK National Annex to Eurocode 3: Design of steel structures – Part 2 Steel bridges | + A1:2012 | |
| | BS EN 1993-5:2007 | Eurocode 3: Design of steel structures – Part 5 Piling | Corrigendum May 2009 | |
| | NA + A1:2012 to BS EN 1993-5:2007 | UK National Annex to Eurocode 3: Design of steel structures – Part 5 Piling | + A1:2012 | |
| | **Eurocode 4** | **Design of composite steel and concrete structures** | | |
| | BS EN 1994-1-1:2004 | Eurocode 4: Design of composite steel and concrete structures – Part 1-1 General rules and rules for buildings | Corrigendum April 2009 | |

| Eurocodes and associated UK National Annexes | | | | |
|---|---|---|---|---|
| **Used** | **Eurocode part** | **Title** | **Amendment/ Corrigenda** | ***Notes*** |
| | NA to BS EN 1994-1-1:2004 | UK National Annex to Eurocode 4: Design of composite steel and concrete structures – Part 1-1 General rules and rules for buildings | - | |
| | BS EN 1994-2:2005 | Eurocode 4: Design of composite steel and concrete structures – Part 2 General rules and rules for bridges | Corrigendum July 2008 | |
| | NA to BS EN 1994-2:2005 | UK National Annex to Eurocode 4: Design of composite steel and concrete structures – Part 2 General rules and rules for bridges | - | |
| | **Eurocode 5** | **Design of timber structures** | | |
| | BS EN 1995-1-1:2004 + A2:2014 | Eurocode 5: Design of timber structures – Part 1-1 General – common rules and rules for buildings | + A2:2014 Incorporating corrigendum June 2006 | |
| | NA to BS EN 1995-1-1:2004 + A2:2014 | UK National Annex to Eurocode 5: Design of timber structures – Part 1-1 General – common rules and rules for buildings | + A2:2014 | |
| | BS EN 1995-2:2004 | Eurocode 5: Design of timber structures – Part 2 Bridges | - | |
| | NA to BS EN 1995-2:2004 | UK National Annex to Eurocode 5: Design of timber structures – Part 2 Bridges | - | |

**Scheme title: Off A629 Penistone Road, Fenay Bridge** **Structure Ref: K6119**
**Structure title: Proposed Private Mass Concrete burr wall** **Rev 01 Mar 2025**

| Eurocodes and associated UK National Annexes | | | | |
|---|---|---|---|---|
| **Used** | **Eurocode part** | **Title** | **Amendment/ Corrigenda** | ***Notes*** |
| | **Eurocode 6** | **Design of masonry structures** | | |
| | BS EN 1996-1-1:2005+A1:2012 | Eurocode 6: Design of masonry structures – Part 1-1 General rules for reinforced and unreinforced masonry structures | +A1:2012 Corrigenda February 2006 and July 2009 | This document is to be used until 30 March 2028. After which it will be superseded by BS EN 1996-1-1:2022 |
| | NA to BS EN 1996-1-1:2005 +A1:2012 | UK National Annex to Eurocode 6: Design of masonry structures – Part 1-1 General rules for reinforced and unreinforced masonry structures | +A1:2012 | |
| | BS EN 1996-2:2006 | Eurocode 6: Design of masonry structures – Part 2 Design considerations, selection of materials and execution of masonry | Corrigendum September 2009 | |
| | NA to BS EN 1996-2:2006 | UK National Annex to Eurocode 6: Design of masonry structures – Part 2 Design considerations, selection of materials and execution of masonry | Corrigendum No.1 | |

| Eurocodes and associated UK National Annexes | | | | |
|---|---|---|---|---|
| **Used** | **Eurocode part** | **Title** | **Amendment/ Corrigenda** | ***Notes*** |
| | BS EN 1996-3:2006 | Eurocode 6: Design of masonry structures – Part 3 Simplified calculation methods for unreinforced masonry structures | Corrigendum October 2009 | This document is to be used until 30 March 2028. After which it will be superseded by BS EN 1996-3:2023 |
| | NA +A1:2014 to BS EN 1996-3:2006 | UK National Annex to Eurocode 6: Design of masonry structures – Part 3 Simplified calculation methods for unreinforced masonry structures | +A1:2014 | |
| | **Eurocode 7** | **Geotechnical design** | | |
| ✓ | BS EN 1997-1:2004+A1:2013 | Eurocode 7: Geotechnical design – Part 1 General rules | +A1:2013 Corrigendum February 2009 | This document is to be used until 30 March 2028. After which it will be superseded by BS EN 1990:2023 |
| ✓ | NA+A2:2022 to BS EN 1997-1:2004+A1:2013 | UK National Annex to Eurocode 7: Geotechnical design – Part 1 General rules | +A1:2013 Incorporating Corrigendum No.1, Amendment 1 – July 2014 and Amendment 2 - 2022 | Supersedes NA+A1:2014 to BS EN 1997-1:2004+A1:2013 |
| ✓ | BS EN 1997-2:2007 | Eurocode 7: Geotechnical design – Part 2 Ground investigation and testing | Corrigendum June 2010 | |

| Eurocodes and associated UK National Annexes | | | | |
|---|---|---|---|---|
| **Used** | **Eurocode part** | **Title** | **Amendment/ Corrigenda** | ***Notes*** |
| ✓ | NA to BS EN 1997-2:2007 | UK National Annex to Eurocode 7: Geotechnical design – Part 2 Ground investigation and testing | - | |
| | **Eurocode 8** | **Design of structures for earthquake resistance** | | |
| | BS EN 1998-1:2004 + A1:2013 | Eurocode 8: Design of structures for earthquake resistance – Part 1 General rules, seismic actions and rules for buildings | Corrigendum June 2009, January 2011 and March 2013 | |
| | NA to BS EN 1998-1:2004 | UK National Annex to Eurocode 8: Design of structures for earthquake resistance – Part 1 General rules, seismic actions and rules for buildings | - | |
| | BS EN 1998-2:2005+A2:2011 | Eurocode 8: Design of structures for earthquake resistance – Part 2 Bridges | Corrigenda February 2010 and February 2012 | |
| | NA to BS EN 1998-2:2005 | UK National Annex to Eurocode 8: Design of structures for earthquake resistance – Part 2 Bridges | - | |

| Eurocodes and associated UK National Annexes | | | | |
|---|---|---|---|---|
| **Used** | **Eurocode part** | **Title** | **Amendment/ Corrigenda** | ***Notes*** |
| | BS EN 1998-5:2004 | Eurocode 8: Design of structures for earthquake resistance – Part 5 Foundations, retaining structures and geotechnical aspects | - | |
| | NA to BS EN 1998-5:2004 | UK National Annex to Eurocode 8: Design of structures for earthquake resistance – Part 5 Foundations, retaining structures and geotechnical aspects | - | |
| | **Eurocode 9** | **Design of aluminium structures** | | |
| | BS EN 1999-1-1:2007 + A2:2013 | Eurocode 9: Design of aluminium structures– Part 1-1 General structural rules | + A2:2013 Incorporating corrigendum March 2014 | This document is to be used until 30 March 2028. After which it will be superseded by BS EN 1999-1-1:2023 |
| | NA to BS EN 1999-1-1:2007 + A1:2009 | UK National Annex to Eurocode 9: Design of aluminium structures – Part 1-1 General structural rules | National Amendment No.1 Corrigendum No.1 | |
| | BS EN 1999-1-3:2007 + A1:2011 | Eurocode 9: Design of aluminium structures – Part 1-3 Structures susceptible to fatigue | + A1:2011 | This document is to be used until 30 March 2028. After which it will be superseded by BS EN 1999-1-3:2023 |

**Scheme title: Off A629 Penistone Road, Fenay Bridge** **Structure Ref: K6119**
**Structure title: Proposed Private Mass Concrete burr wall** **Rev 01 Mar 2025**

| Eurocodes and associated UK National Annexes | | | | |
|---|---|---|---|---|
| **Used** | **Eurocode part** | **Title** | **Amendment/ Corrigenda** | ***Notes*** |
| | NA to BS EN 1999-1-3:2007 + A1:2011 | UK National Annex to Eurocode 9: Design of aluminium structures – Part 1-3 Structures susceptible to fatigue | + A1:2011 | |
| | BS EN 1999-1-4:2007 +A1:2011 | Eurocode 9: Design of aluminium structures – Part 1-4 Cold formed structural sheeting | + A1:2011 Corrigendum November 2009 | This document is to be used until 30 March 2028. After which it will be superseded by BS EN 1999-1-4:2023 |
| | NA to BS EN 1999-1-4:2007 | UK National Annex to Eurocode 9: Design of aluminium structures – Part 1-4 Cold formed structural sheeting | - | |

| Bsi Published Documents<br><br>For guidance only unless clauses are otherwise specified in CD 350 Appendix A. | | | |
|---|---|---|---|
| **Used** | **Published Document reference** | **Title** | **Notes** |
| | PD 6687-1:2020 | Background paper to the UK National Annexes to BS EN 1992-1 and BS EN 1992-3 | Supersedes PD 6687-1:2010<br><br>See CD 350 clauses 3.6, 4.1, 4.2 and Appendix A for additional guidance.<br><br>Clause 3.6 in CD 350 refers to clause 2.5 in PD 6687-1, this is now clause 4.5 in PD 6687-1<br>Clause 4.2 in CD 350 refers to clause 2.22 in PD 6687-1, this is now clause 4.21.4 in PD 6687-1 |
| | PD 6687-2:2008 | Recommendations for the design of structures to BS EN 1992-2:2005 | See CD 350 clauses 4.1, 4.2 and Appendix A for additional guidance. |
| ✓ | PD 6688-1-1:2011 | Recommendations for the design of structures to BS EN 1991-1-1 | See CD 350 Appendix A for additional guidance. |

**Bsi Published Documents**

**For guidance only unless clauses are otherwise specified in CD 350 Appendix A.**

| Used | Published Document reference | Title | Notes |
|---|---|---|---|
| | PD 6688-1-4:2015 | Background paper to the UK National Annex to BS EN 1991-1-4 | See CD 350 Appendix A for additional guidance. |
| | PD 6688-1-7:2009 +A1:2014 | Recommendations for the design of structures to BS EN 1991-1-7 | See CD350 clause 3.7 and Appendix B for additional guidance. |
| | PD 6688-2:2011 | Recommendations for the design of structures to BS EN 1991-2 | See CD 350 Appendix A for additional guidance. |
| | PD 6694-1:2011 + A1:2020 | Recommendations for the design of structures subject to traffic loading to BS EN 1997-1 | Incorporating Corrigendum 1 Jan 2022 & Corrigendum 2 Jul 2023<br><br>See CD 350 Appendix A for additional guidance. |
| | PD 6695-1-9:2008 | Recommendations for the design of structures to BS EN 1993-1-9 | See CD 350 Appendix A for additional guidance. |
| | PD 6695-1-10:2009 | Recommendations for the design of structures to BS EN 1993-1-10 | See CD 350 Appendix A for additional guidance. |
| | PD 6695-2:2008 + A1:2012 Incorporating Corrigendum No.1 | Recommendation for the design of bridges to BS EN 1993 | See CD 350 Appendix A for additional guidance. |
| | PD 6696-2:2007 + A1:2012 | Background paper to BS EN 1994-2 and the UK National Annex to BS EN 1994-2 | See CD 350 Appendix A for additional guidance. |
| | PD 6698:2009 | Recommendations for the design of structures for earthquake resistance to BS EN 1998 | See CD 350 section 7 for additional guidance. |
| | PD 6702-1:2009+A1:2019 | Structural use of aluminium. Recommendations for the design of aluminium structures to BS EN 1999 | Amended 31 May 2019 |
| | PD 6703:2009 | Structural bearings – Guidance on the use of structural bearings | |

| Bsi Published Documents<br><br>For guidance only unless clauses are otherwise specified in CD 350 Appendix A. | | | |
|---|---|---|---|
| **Used** | **Published Document reference** | **Title** | **Notes** |
| | PD 6705-2:2020 | Structural use of steel and aluminium. Execution of steel bridges conforming to BS EN 1090-2. Guide | Replaces PD 6705-2:2010 + A1:2013 |
| | PD 6705-3:2009 | Recommendations on the execution of aluminium structures to BS EN 1090-3 | |

| Execution Standards referenced in British Standards or Eurocodes | | | |
|---|---|---|---|
| **Used** | **Execution Standard reference** | **Title** | **Notes** |
| | BS EN 1090-1:2009+A1:2011 | Execution of steel structures and aluminium structures - Part 1: Requirements for conformity assessment of structural components | |
| | BS EN 1090-2:2018+A1:2024 | Execution of steel structures and aluminium structures. Technical requirements for the execution of steel structures | Supersedes BS EN 1090-2:2018 |
| | BS EN 1090-3:2019 | Execution of steel structures and aluminium structures – Part 3: Technical requirements for aluminium structures | Supersedes BS EN 1090-3:2008 |
| | BS EN 13670:2009 Incorporating corrigenda October 2015 and November 2015 | Execution of concrete structures | |

| Product Standards referenced in British Standards or Eurocodes | | | |
|---|---|---|---|
| **Used** | **Product Standard reference** | **Title** | **Notes** |
| | BS EN 206:2013+A2:2021 | Concrete – Specification, performance, production and conformity | Supersedes BS EN 206:2013+A1:2016 |

| Product Standards referenced in British Standards or Eurocodes | | | |
|---|---|---|---|
| **Used** | **Product Standard reference** | **Title** | **Notes** |
| | BS EN 1317-1:2010 | Road Restraint Systems – Part 1 – Terminology and general criteria for test methods | |
| | BS EN 1317-2:2010 | Road Restraint Systems – Part 2 – Performance classes, impact test acceptance criteria and test methods for safety barriers. | |
| | BS EN 1317-3:2010 | Road Restraint Systems – Part 3 – Performance classes, impact test acceptance criteria and test methods for crash cushions. | |
| | DD ENV 1317-4:2002 | Road Restraint Systems – Part 4 – Performance classes, impact test acceptance criteria and test methods for terminals and transitions of safety barriers. | *Draft BS EN 1317-4 for public comment published in June 2012* |
| | BS EN 1317-5:2007+A2:2012 | Road Restraint Systems – Part 5 - Product requirements and evaluation of conformity for vehicle restraint systems | Incorporating corrigendum August 2012<br>*Draft prEN 1317-5 for public comment published in December 2013* |
| | PD CEN/TR 16949:2016 | Road Restraint System – Pedestrian restraint system - Pedestrian parapets | *Bsi Published Document / CEN Technical Report published in July 2016*<br><br>*(This document should not be used. The requirements of BS 7818:1995 apply.)* |
| | PD CEN/TS 1317 7:2023 | Road restraint systems - Part 7: Performance characterisation and test methods for terminals of safety barriers | *Replaces Draft prEN 1317-7*<br><br>*(All terminals should be in accordance with this document or ENV1317-4.)* |
| | PD CEN/TS 17342:2019 | Road restraint systems - Motorcycle road restraint systems which reduce the impact severity of motorcyclist collisions with safety barriers | *Replaces* PD CEN/TS 1317-8:2012<br><br>*(This document should not be used.)* |
| | PD CEN/TR 17081:2018 | Design of fastenings for use in concrete – Plastic design of fastenings with headed and post-installed fasteners | |
| | BS EN 1337-1:2000 | Structural bearings – Part 1: General Design Rules | |
| | BS EN 1337-2:2004 | Structural bearings – Part 2: Sliding elements | |

| Product Standards referenced in British Standards or Eurocodes | | | |
|---|---|---|---|
| **Used** | **Product Standard reference** | **Title** | **Notes** |
| | BS EN 1337-3:2005 | Structural bearings – Part 3: Elastomeric bearings | |
| | BS EN 1337-4:2004 | Structural bearings – Part 4: Roller bearings | Corrigendum No.1 March 2007 |
| | BS EN 1337-5:2005 | Structural bearings – Part 5: Pot bearings | |
| | BS EN 1337-6:2004 | Structural bearings – Part 6: Rocker bearings | |
| | BS EN 1337-7:2004 | Structural bearings – Part 7: Spherical and cylindrical PTFE bearings | |
| | BS EN 1337-8:2007 | Structural bearings – Part 8: Guide bearings and restraint bearings | |
| | BS EN 1337-9:1998 | Structural bearings – Part 9: Protection | |
| | BS EN 1337-10:2003 | Structural bearings – Part 10: Inspection and maintenance | Corrigendum No.1 November 2003 |
| | BS EN 1337-11:1998 | Structural bearings – Part 11: Transport, Storage and Installation. | |
| | BS EN 10025-1:2004 | Hot rolled products of structural steels Part 1: General technical delivery conditions. | |
| | BS EN 10025-2:2019 | Hot rolled products of structural steels Part 2: Technical delivery conditions for non-alloy structural steels. | Supersedes BS EN 10025-1:2004 |
| | BS EN 10025-3:2019 | Hot rolled products of structural steels Part 3: Technical delivery conditions for normalized/normalized rolled weldable fine grain structural steels. | Supersedes BS EN 10025-3:2004 |
| | BS EN 10025-4:2019+A1:2022 | Hot rolled products of structural steels Part 4: Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels. | Supersedes BS EN 10025-4:2019 |
| | BS EN 10025-5:2019 | Hot rolled products of structural steels – Part 5: Technical delivery conditions for structural steels with improved atmospheric corrosion resistance | Supersedes BS EN 10025-5:2004 |

| Product Standards referenced in British Standards or Eurocodes | | | |
|---|---|---|---|
| **Used** | **Product Standard reference** | **Title** | **Notes** |
| | BS EN 10025-6:2019+A1:2022 | Hot rolled products of structural steels – Part 6: Technical delivery conditions for flat products of high yield strength structural steels in the quenched and tempered condition. | Supersedes BS EN 10025-6:2019 |
| | BS EN 10080:2005 | Steel for the reinforcement of concrete – Weldable reinforcing steel - General | |
| | BS EN 10210-1:2006 | Hot finished structural hollow sections of non-alloy and fine grain steels – Part 1: Technical delivery conditions | |
| | BS EN 10210-2:2019 | Hot finished structural hollow sections – Part 2: Tolerances, dimensions and sectional properties | Supersedes BS EN 10210-2:2006 |
| | BS EN 10248-1:2023 | Hot rolled sheet piling of non alloy steels. Technical delivery conditions | Supersedes BS EN 10248-1:1996 |
| | BS EN 10248-2:2024 | Hot rolled sheet piling of non alloy steels. Tolerances on shape and dimensions | Supersedes BS EN 10248-2:1996 |
| | BS EN 12063:2024 | Execution of special geotechnical work. Sheet pile walls. | Supersedes BS EN 12063:1999 |
| | BS EN 13369:2023 | Common rules for precast concrete products | Supersedes BS EN 13369:2018 |
| | BS EN 14388:2005 | Road traffic noise reducing devices | There is a 2015 version, however the 2015 version is not harmonised. |
| | BS EN 15050:2007 + A1:2012 | Precast concrete products – Bridge elements | See CD 350 clause 3.8.1 for additional guidance. |
| | BS EN 15258:2008 | Precast concrete products - Retaining wall elements | |

| British Standards | | | |
|---|---|---|---|
| **Used** | **British Standard reference** | **Title** | **Notes** |

| British Standards | | | |
|---|---|---|---|
| | BS 4449:2005+A3:2016 | Steel for the reinforcement of concrete | No longer covers plain round bar. (See BS4482 up to 12mm dia, see BS EN 10025-1 for larger sizes and dowels. See BS EN 13877-3 for dowel bars in concrete pavements.) |
| | BS 5896:2012 | Specification for high tensile steel wire and strand for the prestressing of concrete | |
| | BS 7818:1995 | Specification for pedestrian restraint systems in metal | Incorporating Corrigendum No.1 May 2004 and Corrigendum No.2 September 2006<br><br>Currently the requirements of BS 7818:1995 are to be used instead of PD CEN/TR 16949:2016 |
| | BS 8002:2015 | Code of practice for earth retaining structures | |
| | BS 8004:2015 +A1 2020 | Code of practice for foundations | Amendment +A1:2020 |
| | BS 8006-1:2010+A1:2016 | Code of practice for strengthened/reinforced soils and other fills | |
| | BS 8500-1:2023 | Concrete – Complementary British Standard to BS EN 206: Method of specifying and guidance for the specifier. | Supersedes BS 8500-1:2015+A2:2019 |
| | BS 8500-2:2023 | Concrete – Complementary British Standard to BS EN 206: Specification for constituent materials and concrete. | Supersedes BS 8500-2:2015+A2:2019 |

**Scheme title: Off A629 Penistone Road, Fenay Bridge** **Structure Ref: K6119**
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| British Standards | | | |
|---|---|---|---|
| | BS 8666:2020 | Scheduling, dimensioning, bending and cutting of steel reinforcement for concrete | Supersedes BS 8666:2005 |
| | | | |

| The Manual Contract Document for Highway Works (MCHW) | | | |
|---|---|---|---|
| **Used** | **MCHW reference** | **Title** | ***Notes*** |
| ✓ | MCHW Volume 1: October 2022 | Specification for Highway Works | *Specification compliant with the execution standards must be used. A Departure is necessary for the parts where a compliant revision has not been published. Amendments October 2022 Supersedes April 2022 version* |
| ✓ | MCHW Volume 2: October 2022 | Notes for guidance on the Specification for Highway Works | *Notes for guidance compliant with the execution standards must be used. A Departure is necessary for the parts where a compliant revision has not been published. Amendments October 2022 Supersedes November 2021 version* |
| ✓ | MCHW Volume 3: February 2017 | Highway Construction Details | |

**Scheme title: Off A629 Penistone Road, Fenay Bridge** **Structure Ref: K6119**
**Structure title: Proposed Private Mass Concrete burr wall** **Rev 01 Mar 2025**

| The Design Manual for Roads and Bridges (DMRB) | | | |
|---|---|---|---|
| **Used** | **DMRB reference** | **Title** | **Notes** |
| ✓ | GG 101<br>Revision 0.1.0 | Introduction to the Design Manual for Roads and Bridges | Replaces GG 101<br>Revision 0 |
| | GG 102<br>Revision 0 | Quality Management Systems for Highway Design | Replaces GD 02/16 |
| | GG 103<br>Revision 0 | Introduction and general requirements for sustainable development and design | |
| | GG 104<br>Revision 0 | Requirements for Safety Risk Assessment | Replaces GD04/12 and IAN 191/16 |
| | GG 184<br>Revision 0 | Specification for the use of Computer Aided Design | Replaces IAN 184/16 |
| ✓ | CG 300<br>Revision 0.1.0 | Technical approval of highway structures | Supersedes BD 2/12 |
| ✓ | CG 302<br>Revision 0 | As-built, operational and maintenance records for highway structures | Supersedes BD 62/07 |
| | CG 303<br>Revision 0 | Quality assurance scheme for paints and similar protective coatings | Supersedes BD 35/14 |
| | CG 305<br>Revision 0 | Identification marking of highway structures | Supersedes BD 45/93 |
| | CG 501<br>Revision 2 | Design of highway drainage systems | Supersedes HD 33/16, TA 80/99 |
| | CD 127<br>Revision 1.0.1 | Cross-sections and headrooms | Replaces TD 27/05 and TD 70/08 |
| ✓ | CD 350<br>Revision 0 | The design of highway structures | Supersedes BD 100/16, BA 57/01, BD 57/01 and IAN 124/11 |
| ✓ | CD 351<br>Revision 0 | The design and appearance of | Supersedes BA 41/98 |

| The Design Manual for Roads and Bridges (DMRB) | | | |
|---|---|---|---|
| **Used** | **DMRB reference** | **Title** | **Notes** |
| | | highway structures | |
| | CD 352 Revision 0 | Design of road tunnels | Supersedes BD 78/99 |
| | CD 353 Revision 0 | Design criteria for footbridges | Supersedes BD 29/17 |
| | CD 354 Revision 1.1.0 | Design of minor structures | Supersedes CD 354 Revision 1 |
| | CD 355 Revision 0 | Application of whole-life costs for design and maintenance of highway structures | Replaces BD 36/92 and BA 28/92 |
| | CD 356 Revision 1 | Design of highway structures for hydraulic action | Supersedes BA 59/94 |
| | CD 357 Revision 1 | Bridge expansion joints | Replaces BD 33/94, BA 26/94, IAN 168/12 and IAN 169/12 |
| | CD 358 Revision 2.4.0 | Waterproofing and surfacing of concrete bridge decks | Supersedes CD 358 Revision 2.3.0 |
| | CD 359 Revision 0 | Design requirements for permanent soffit formwork | Supersedes BA 36/90 and IAN 131/11 |
| | CD 360 Revision 2 | Use of compressive membrane action in bridge decks | Supersedes BD 81/02 |
| | CD 361 Revision 0 | Weathering steel for highway structures | Supersedes BD 7/01 |
| | CD 362 Revision 1 | Enclosure of bridges | Replaces BD 67/96 and BA 67/96 |
| | CD 363 Revision 0 | Design rules for aerodynamic effects on bridges | Replaces BD 49/01 |
| | CD 364 Revision 0 | Formation of continuity joints in bridge decks | Replaces BA 82/00 |
| | CD 365 Revision 1 | Portal and cantilever signs/signals gantries | Replaces BD 51/14, IAN 193/16, BE 7/04 |

**Scheme title: Off A629 Penistone Road, Fenay Bridge** **Structure Ref: K6119**
**Structure title: Proposed Private Mass Concrete burr wall** **Rev 01 Mar 2025**

| The Design Manual for Roads and Bridges (DMRB) | | | |
|---|---|---|---|
| **Used** | **DMRB reference** | **Title** | **Notes** |
| | CD 366<br>Revision 0 | Design criteria for collision protection beams | Replaces BD 65/14 |
| | CD 367<br>Revision 0 | Treatment of existing structures on highways widening schemes | Replaces BD 95/07 |
| | CD 368<br>Revision 0 | Design of fibre reinforced polymer bridges and highway structures | Replaces BD 90/05 |
| | CD 369<br>Revision 0 | Surface protection for concrete highway structures | Replaces BA 85/04 |
| | CD 371<br>Revision 0 | Strengthening highway structures using fibre-reinforced polymers and externally bonded steel plates | Replaces BD 85/08, BD 84/02 |
| | CD 372<br>Revision 0 | Design of post-installed anchors and reinforcing bar connections in concrete | Supersedes IAN 104/15 |
| | CD 373<br>Revision 0 | Impregnation of reinforced and prestressed concrete highway structures using hydrophobic pore-lining impregnants | Supersedes BD 43/03 |
| | CD 374<br>Revision 0 | The use of recycled aggregates in structural concrete | Supersedes BA 92/07 |
| | CD 375<br>Revision 1 | Design of corrugated steel buried structures | Supersedes BD 12/01 |
| | CD 376<br>Revision 0 | Unreinforced masonry arch bridges | Replaces BD 91/04 |
| | CD 377<br>Revision 4 | Requirements for road restraint systems | Supersedes TD 19/06 |

Kirklees COUNCIL

**APPROVAL IN PRINCIPLE FOR DESIGN**

**Scheme title: Off A629 Penistone Road, Fenay Bridge** **Structure Ref: K6119**
**Structure title: Proposed Private Mass Concrete burr wall** **Rev 01 Mar 2025**

| The Design Manual for Roads and Bridges (DMRB) | | | |
|---|---|---|---|
| **Used** | **DMRB reference** | **Title** | **Notes** |
| | CD 622<br>Revision 1 | Managing geotechnical risk | Replaces HD 22/08, BD 10/97 and HA 120/08 |
| | CS 461<br>Revision 0 | Assessment and upgrading of in-service parapets | Supersedes BA 37/92 and IAN 97/07 |
| | CS 462<br>Revision 0 | Repair and management of deteriorated concrete highway structures | Supersedes BA 35/90 and BA 52/94 |
| | GD 304<br>Revision 2 | Designing health and safety into maintenance | Replaces IAN 69/15 |
| | LA 104<br>Revision 1 | Environmental assessment and monitoring | Supersedes HA 205/08, HD 48/08, IAN 125/15, and IAN 133/10 |
| | LA 106<br>Revision 1 | Cultural heritage assessment | Supersedes HA 208/07, HA 60/92, HA 75/01 |
| | LA 110<br>Revision 0 | Material assets and waste | Supersedes IAN 153/11 |
| | LA 113<br>Revision 1 | Road drainage and the water environment | Supersedes HD 45/09 |
| | LD 119<br>Revision 0 | Roadside environmental mitigation and enhancement | Formerly LA 119, which superseded HA 65/94 and HA 66/95 |

| Interim Advice Notes | | | |
|---|---|---|---|
| **Used** | **IAN reference** | **Title** | **Notes** |
| | ~~IAN 105/08~~ | ~~Implementation of construction (design and management) 2007 and the withdrawal of SD 10 and SD 11~~ | This document has been withdrawn without replacement. |

## Miscellaneous

| Used | Standard reference | Title | Notes |
|---|---|---|---|
| | CIRIA C543 | Bridge Detailing Guide | |
| | CIRIA C686 | Safe Access for Maintenance and Repair | |
| | CIRIA C760 | Guidance on embedded retaining wall design | |
| | CIRIA C766 | Control of cracking caused by restrained deformation in concrete | Supersedes C660 |
| | CIRIA C777 | General fixings – guidance on selection and whole-life management | |
| | Department for Transport - Design & Maintenance Guidance for Local Authority Roads | Provision of Road Restraint Systems on Local Authority Road | Published October 2011 |
| | Department for Transport | Guidance on the Design, Assessment and Strengthening of Masonry Parapets on Highway Structures | Published 2012 |

**Commented [CR1]:** Check in previous (June 2024) AIP document.
Copy "Provision of Road Restraint on Local Authority Roads" and "Guidance on the Design, Assessment and Strengthening… etc etc" from this table in the June 2024 doc, and add here.

| **Additional Standards**<br><br>**Additional standards needed for a particular design should be listed here.** | | | |
|---|---|---|---|
| **Used** | **Reference** | **Title** | **Notes** |
| | | | |
| | | | |
| | | | |
| | | | |

# APPENDIX B

***DRAWINGS***

# APPENDIX C

## *ADDITIONAL INFORMATION*