

M5 Junction 10 Improvements Scheme

Engineering Drawings and Sections

Part 3 of 3

TR010063 – APP 2.10

Regulation 5(2)(p) and 6(2)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

Volume 2

December 2023



Gloucestershire
COUNTY COUNCIL

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**Infrastructure Planning
Planning Act 2008**

**The Infrastructure Planning
(Applications: Prescribed Forms and
Procedure) Regulations 2009**

**M5 Junction 10 Improvements Scheme
Development Consent Order 202[x]**

**2.10 Engineering Drawings and Sections
Part 3 of 3**

Regulation Number:	Regulation 5(2)(p) and 6(2)
Planning Inspectorate Scheme Reference	TR010063
Application Document Reference	TR010063 – APP 2.10
Author:	M5 Junction 10 Improvements Scheme Project Team

Version	Date	Status of Version
Rev 0	December 2023	DCO Application

Table of contents

Chapter	Page
1. Schedule of Plans included in this application document	5
1.1. List of drawings in Part 1	5
1.2. List of drawings in Part 2	7
1.3. List of drawings in Part 3	8

1. Schedule of Plans included in this application document

1.1. List of drawings in Part 1

Document title	Document number	Version
Engineering Drawings and Sections (Plan and Profiles) Regulation 5(2)(o) and 6(2) Key Plan	TR010063 – APP 2.10	C01
Engineering Drawings and Sections (Plan and Profiles) Regulation 5(2)(o) and 6(2) Sheet 01 of 07	TR010063 – APP 2.10	C01
Engineering Drawings and Sections (Plan and Profiles) Regulation 5(2)(o) and 6(2) Sheet 02 of 07	TR010063 – APP 2.10	C01
Engineering Drawings and Sections (Plan and Profiles) Regulation (2)(o) and 6(2) Sheet 03 and 07	TR010063 – APP 2.10	C01
Engineering Drawings and Sections (Plan and Profiles) Regulation 5(2)(o) and 6(2) Sheet 04 and 07	TR010063 – APP 2.10	C01
Engineering Drawings and Sections (Plan and Profiles) Regulation 5(2)(o) and 6(2) Sheet 05 and 07	TR010063 – APP 2.10	C01
Engineering Drawings and Sections (Plan and Profiles) Regulation 5(2)(o) and 6(2) Sheet 06 and 07	TR010063 – APP 2.10	C01
Engineering Drawings and Sections (Plan and Profiles) Regulation 5(2)(o) and 6(2) Sheet 07 of 07	TR010063 – APP 2.10	C01
Engineering Drawings and Sections (Cross Sections) Regulation 5(2)(o) and 6(2) Key Plan	TR010063 – APP 2.10	C01
Engineering Drawings and Sections (Cross Sections) Regulation 5(2)(o) and 6(2) Sheet 01 of 08	TR010063 – APP 2.10	C01

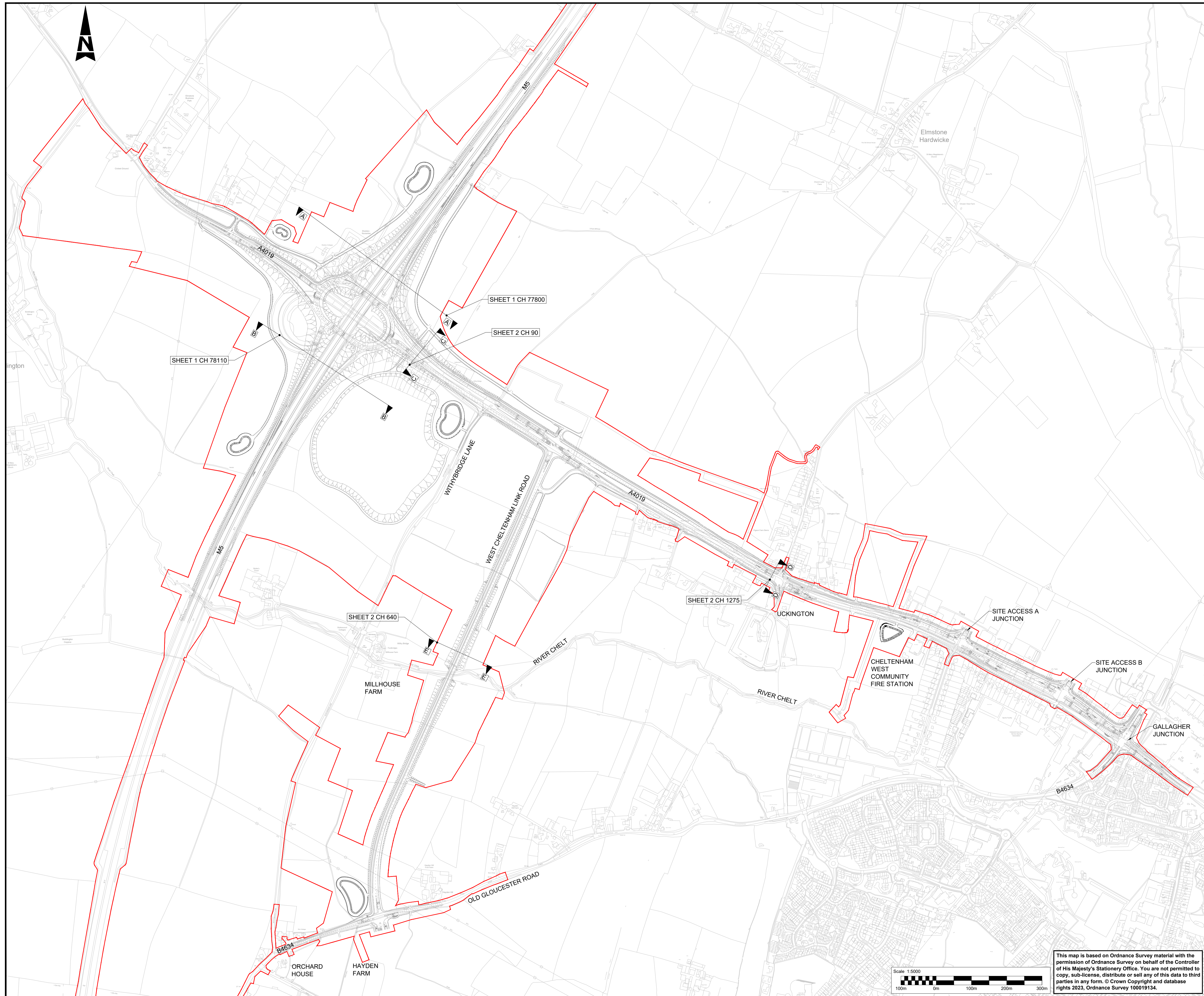
Document title	Document number	Version
Engineering Drawings and Sections (Cross Sections) Regulation 5(2)(o) and 6(2) Sheet 02 of 08	TR010063 – APP 2.10	C01
Engineering Drawings and Sections (Cross Sections) Regulation 5(2)(o) and 6(2) Sheet 03 of 08	TR010063 – APP 2.10	C01
Engineering Drawings and Sections (Cross Sections) Regulation 5(2)(o) and 6(2) Sheet 04 of 08	TR010063 – APP 2.10	C01
Engineering Drawings and Sections (Cross Sections) Regulation 5(2)(o) and 6(2) Sheet 05 of 08	TR010063 – APP 2.10	C01
Engineering Drawings and Sections (Cross Sections) Regulation 5(2)(o) and 6(2) Sheet 06 of 08	TR010063 – APP 2.10	C01
Engineering Drawings and Sections (Cross Sections) Regulation 5(2)(o) and 6(2) Sheet 07 of 08	TR010063 – APP 2.10	C01
Engineering Drawings and Sections (Cross Sections) Regulation 5(2)(o) and 6(2) Sheet 08 of 08	TR010063 – APP 2.10	C01

1.2. List of drawings in Part 2

Document title	Document number	Version
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Structural Details Sheet 1 of 12	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Structural Details Sheet 2 of 12	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Structural Details Sheet 3 of 12	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Structural Details Sheet 4 of 12	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Structural Details Sheet 5 of 12	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Structural Details Sheet 6 of 12	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Structural Details Sheet 7 of 12	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Structural Details Sheet 8 of 12	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Structural Details Sheet 9 of 12	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Structural Details Sheet 10 of 12	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Structural Details Sheet 11 of 12	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Structural Details Sheet 12 of 12	TR010063 – APP 2.10	C01

1.3. List of drawings in Part 3




Document title	Document number	Version
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Landscape Section Drawings - Key Plan	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Landscape Section Drawings – Sheet 1 of 2	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Landscape Section Drawings – Sheet 2 of 2	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Typical Detail Environmental Barrier Sheet 1 of 1	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Typical Detail Road Restraint System Sheet 1 of 1	TR010063 – APP 2.10	C01
Engineering Drawings and Sections Regulation 5(2)(o) and 6(2) Typical Detail Lighting Column and Foundation Sheet 1 of 1	TR010063 – APP 2.10	C01



NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH TR010063/APP/2.10 LANDSCAPE SECTION DRAWINGS (CROSS SECTIONS) SHEET 01 TO 02.
2. THESE PLANS SHOULD BE READ IN CONJUNCTION WITH THE DEVELOPMENT CONSENT ORDER AND OTHER APPLICATION PLANS.

KEY:

-  EXISTING ORDNANCE SURVEY DATA
-  DEVELOPMENT CONSENT ORDER (DCO) LIMITS
-  SECTION MARKER

Description							
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date	
Description							
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date	
Description							
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date	
Description							
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date	
Description							
REVISION 0							
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date	
A1	C01	AC	SS	PT	BM	11/12/23	
Drawing Suitability							Status
APPROVED - PUBLISHED							A1

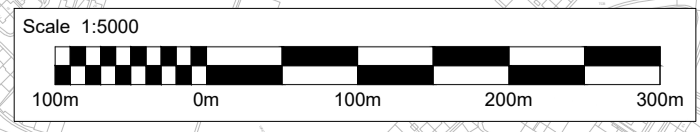
Project Title
M5 Junction 10 Improvements Scheme

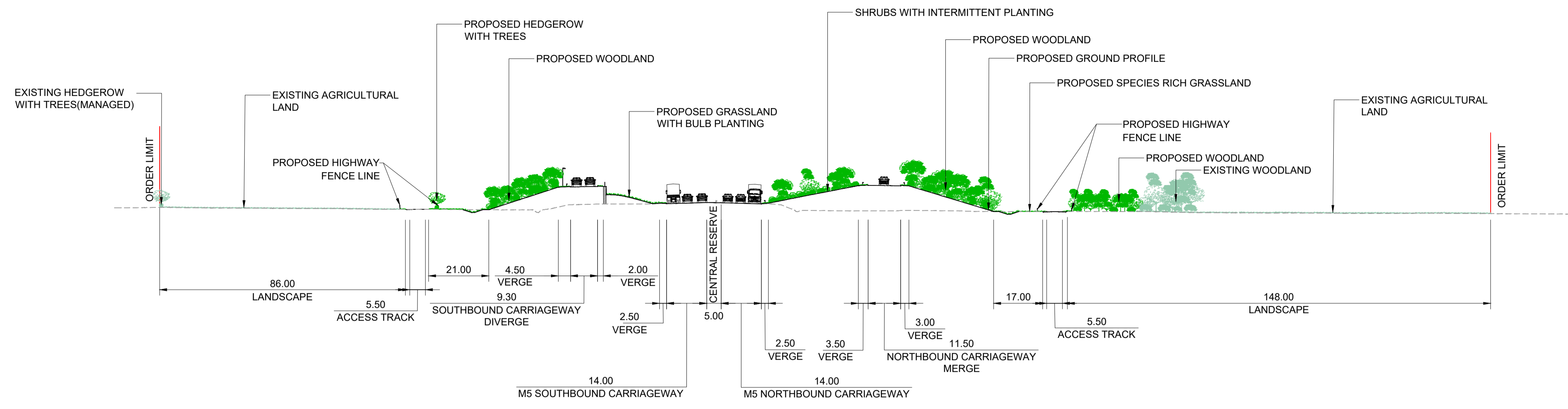
Drawing Title
LANDSCAPE SECTION DRAWINGS (CROSS SECTIONS) REGULATION 5(2)(o) & 6(2) KEY PLAN

Drawing Number
TR010063/APP/2.10

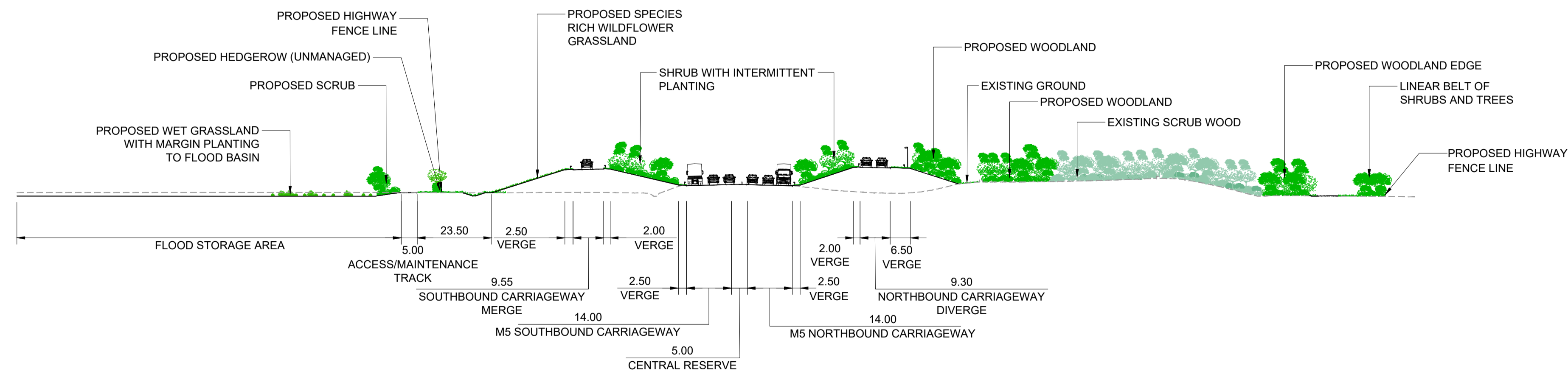
Original Size: **A1** Scale: 1:5000 Project Ref. No.: 5197035 Sheet: 1 of 1 Rev: **C01**

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SECTION A-A M5 MAINLINE - CH 77800
SCALE - 1:1000



SECTION B-B M5 MAINLINE - CH 78110
SCALE - 1:1000

NOTES

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH TR010063/APP/2.10
- THESE PLANS SHOULD BE READ IN CONJUNCTION WITH THE DEVELOPMENT CONSENT ORDER AND OTHER APPLICATION PLANS.

KEY

- PROPOSED LANDSCAPE PLANTING AT YEAR 15 AFTER OPENING
- EXISTING VEGETATION
- EXISTING GROUND LEVEL

Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date

Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date

Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date

Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date

Description

REVISION 0						
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A1	C01	AC	SS	PT	BM	11/12/23

Drawing Suitability

APPROVED - PUBLISHED	A1
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Project Title

M5 Junction 10 Improvements Scheme

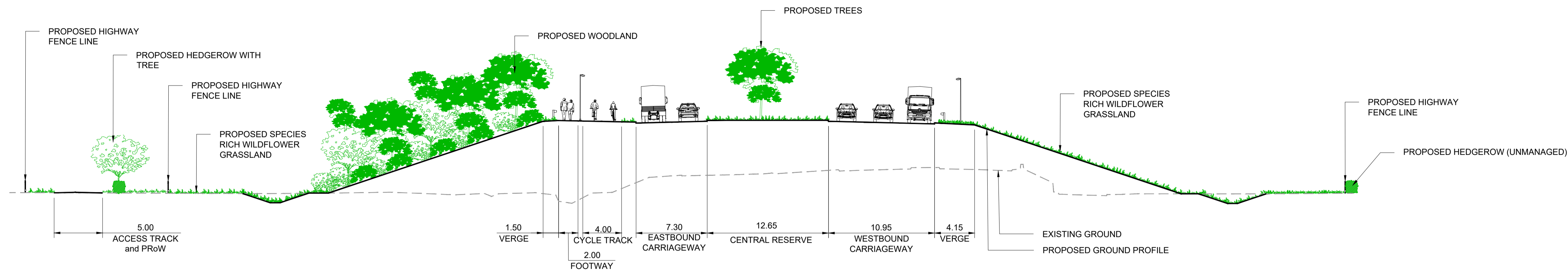
Drawing Title

LANDSCAPE SECTION DRAWINGS
(CROSS SECTIONS)
REGULATION 5(2)(o) & 6(2)
SHEET 01 OF 02

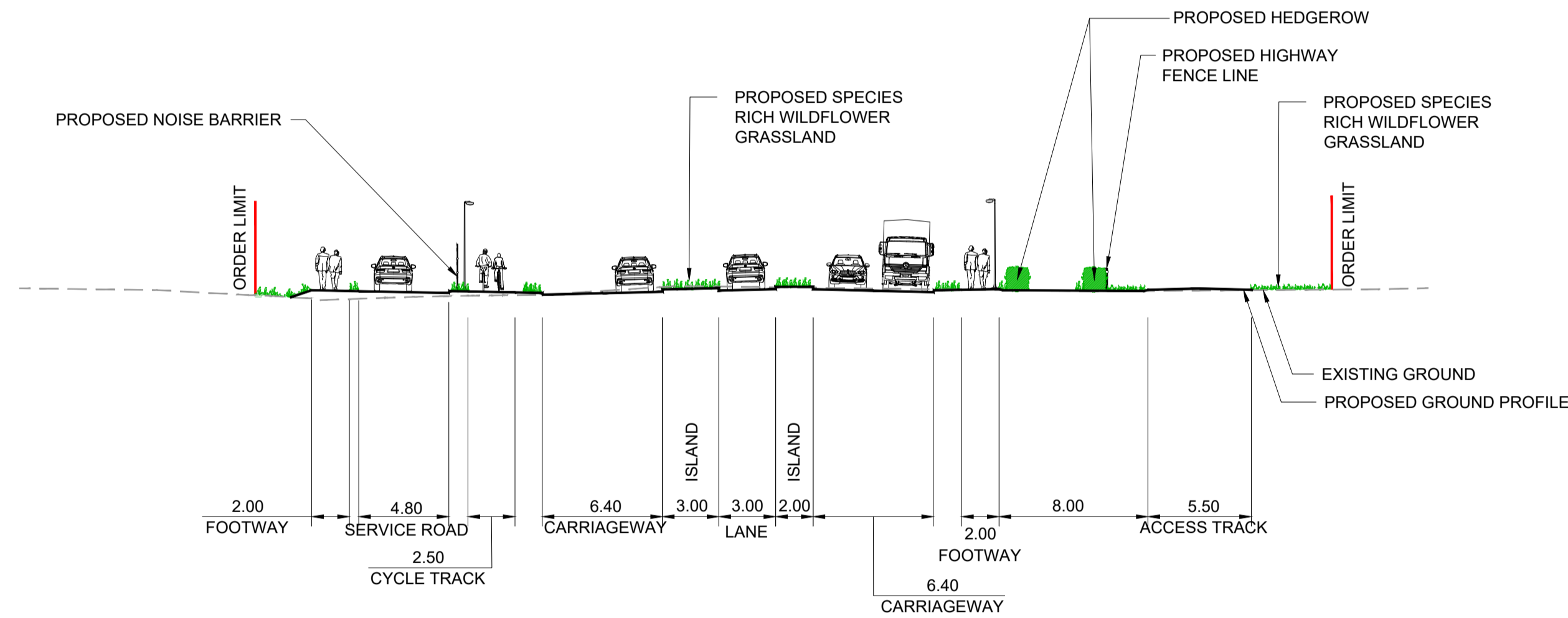
Drawing Number

TR010063/APP/2.10

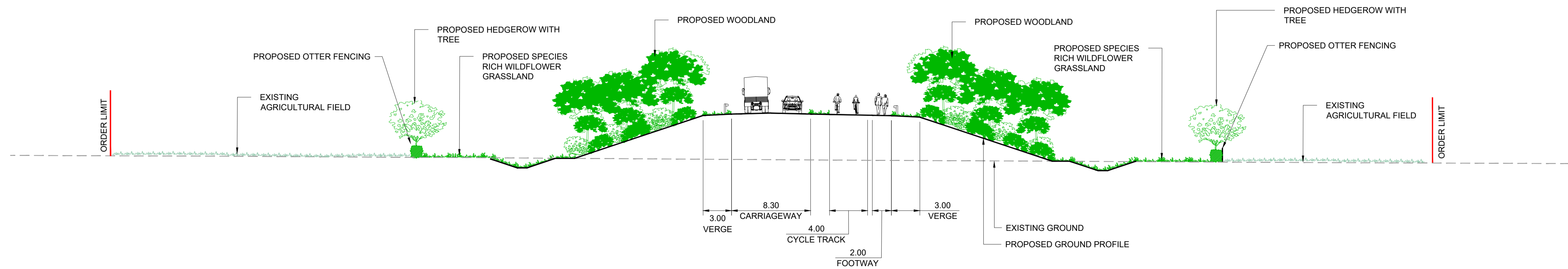
Original Size: A1	Scale: 1:1000	Project Ref. No: 5197035	Sheet: 1 of 2	Rev: C01
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SECTION C-C A4019 M5 MAINLINE - CH 90
SCALE - 1:250



SECTION D-D A4019 M5 MAINLINE - CH 1275
SCALE - 1:250



SECTION E-E WEST CHELTENHAM LINK ROAD - CH 640
SCALE - 1:250

NOTES

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH TR010063/APP/2.10
- THESE PLANS SHOULD BE READ IN CONJUNCTION WITH THE DEVELOPMENT CONSENT ORDER AND OTHER APPLICATION PLANS.

KEY

- PROPOSED LANDSCAPE PLANTING AT YEAR 15 AFTER OPENING
- EXISTING VEGETATION
- EXISTING GROUND LEVEL

Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
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Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
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Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
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Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
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REVISION 0

A1	C01	AC	SS	PT	BM	11/12/23
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Drawing Suitability

APPROVED - PUBLISHED	A1
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Project Title

M5 Junction 10 Improvements Scheme

Drawing Title

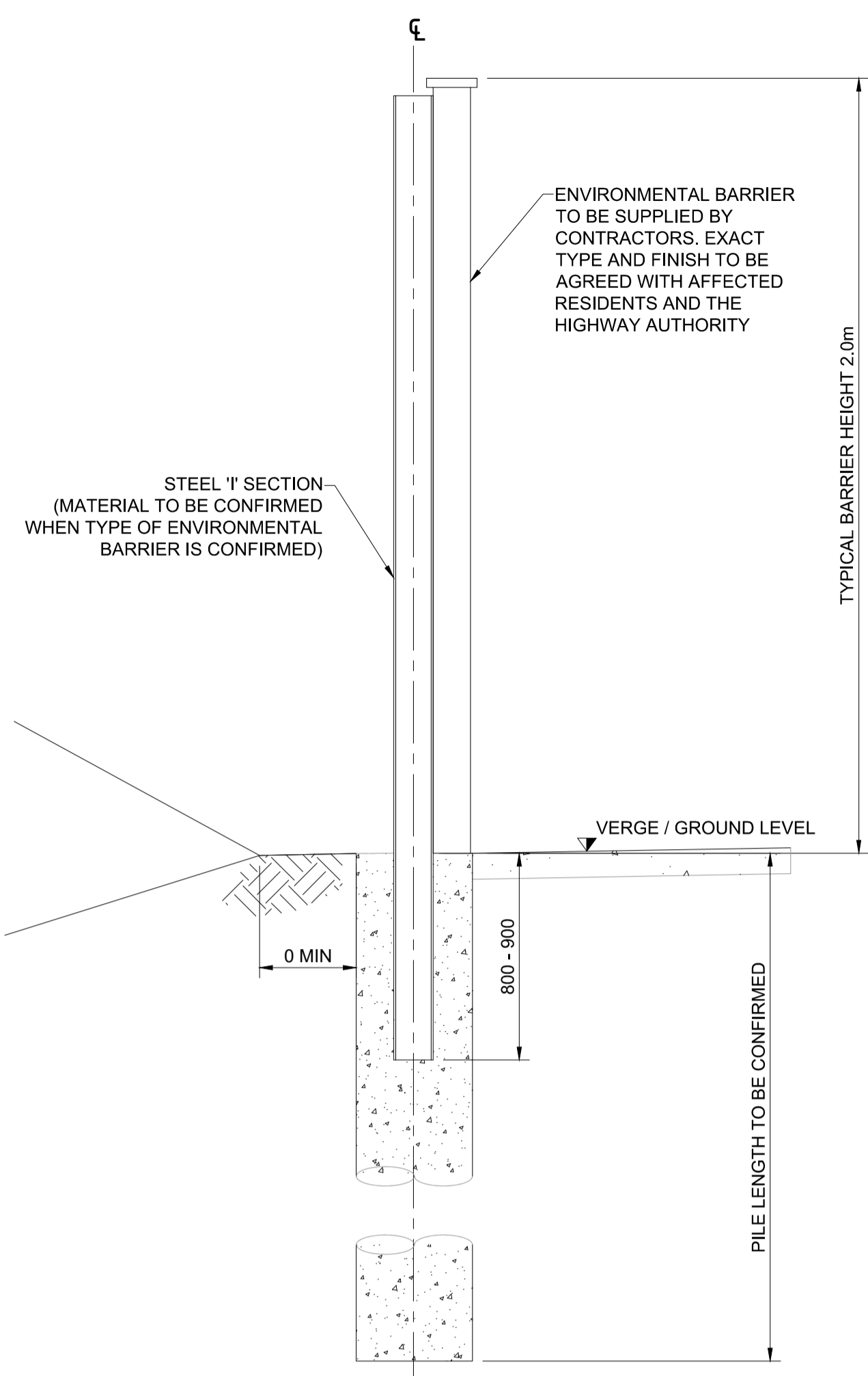
LANDSCAPE SECTION DRAWINGS
(CROSS SECTIONS)
REGULATION 5(2)(o) & 6(2)
SHEET 02 OF 02

Drawing Number

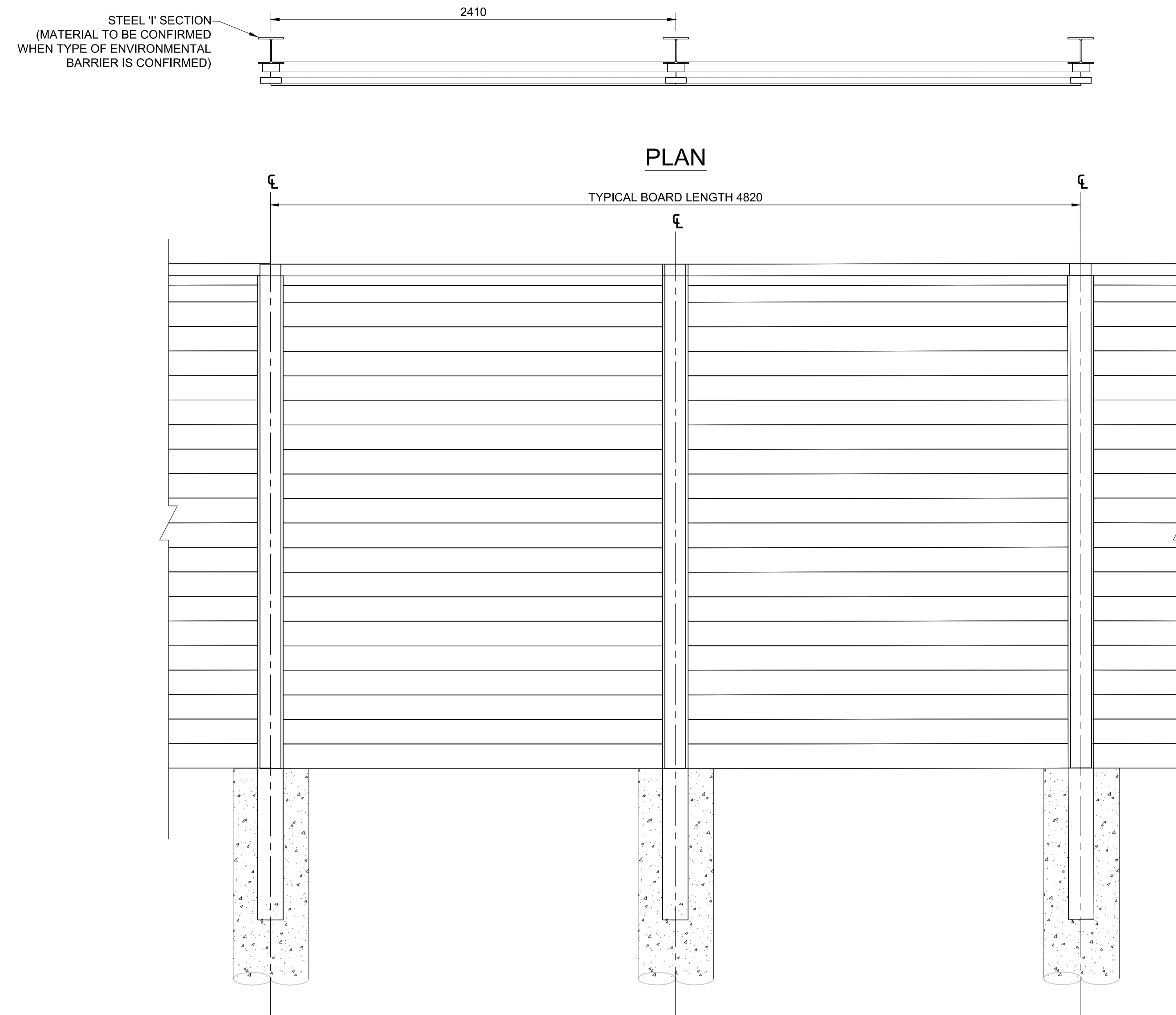
TR010063/APP/2.10

Original Size

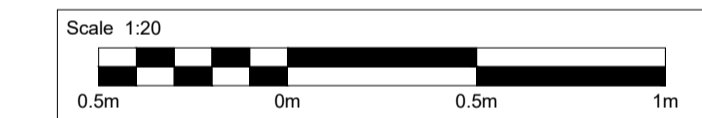
A1	Scale: 1:250	Project Ref. No: 5197035	Sheet: 2 of 2	Rev: C01
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SECTION ON ENVIRONMENTAL BARRIER PILE FOUNDATION



ELEVATION



- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
 - CONCRETE CLASSES SHALL COMPLY WITH BS 8500:2006, AND THE REQUIREMENTS OF MCHW, VOLUME 1 SPECIFICATION FOR HIGHWAY WORKS - SERIES 1700.
 - BLINDING AND MASS CONCRETE GRADE SHALL BE ST1.
 - STEEL POSTS TO BE STEEL GRADE S355, HOT DIP GALVANISED TO BS1461:1999
 - CLASS OF CONCRETE FINISH:
EXPOSED UNFORMED SURFACES TO RECEIVE U3 FINISH REFER TO APPENDIX 17/1 FOR FURTHER DETAILS.
 - ALL STEEL REINFORCEMENT WILL BE GRADE B500B OR B500C AND SHALL COMPLY WITH BS4449:2005.
 - CONCRETE PILE TO BE STRENGTH C32/40.
 - DESIGN OF ENVIRONMENTAL BARRIER SHALL COMPLY WITH SPECIFICATION FOR HIGHWAY WORKS SERIES 2504.
 - ALL BURIED SURFACES OF CONCRETE SHALL BE PAINTED WITH TWO COATS OF BITUMEN PAINT IN ACCORDANCE WITH CLAUSE 2004 OF THE SPECIFICATION FOR HIGHWAY WORKS, TO A LEVEL OF 150mm BELOW GROUND LEVEL.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

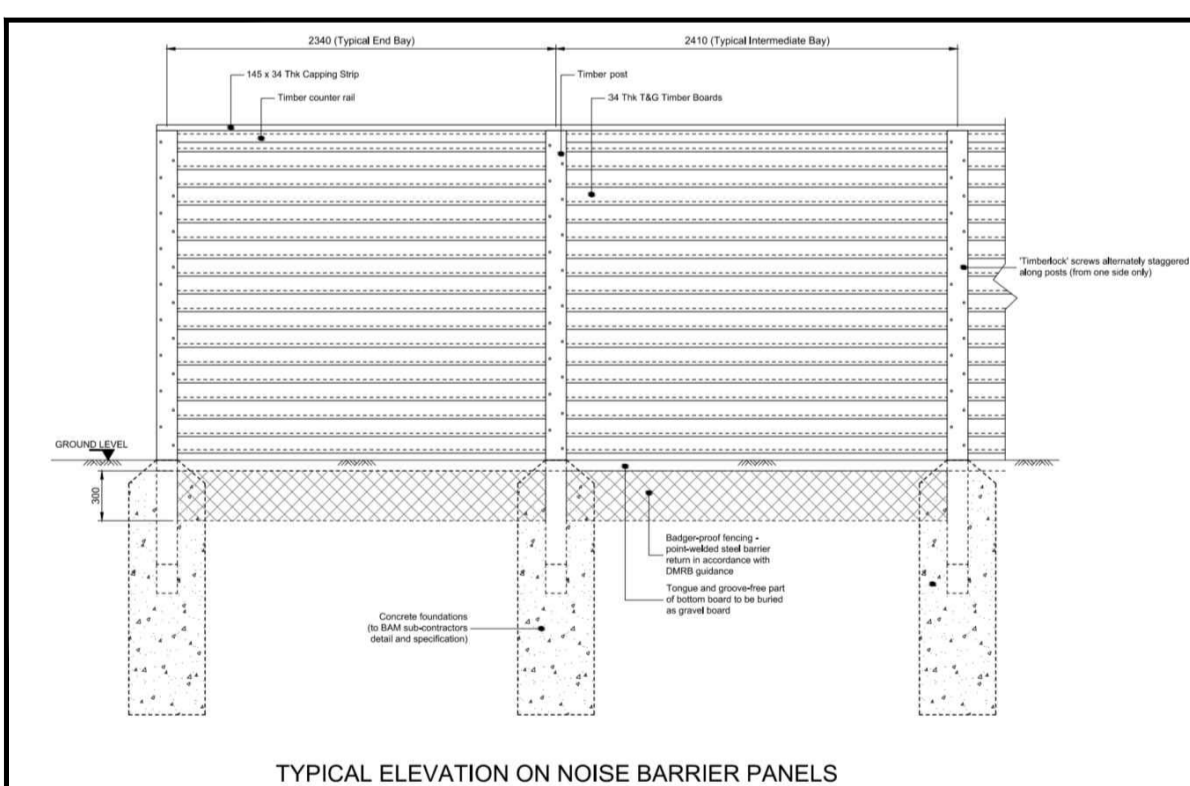
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made to the design hazard log).

Construction
NONE

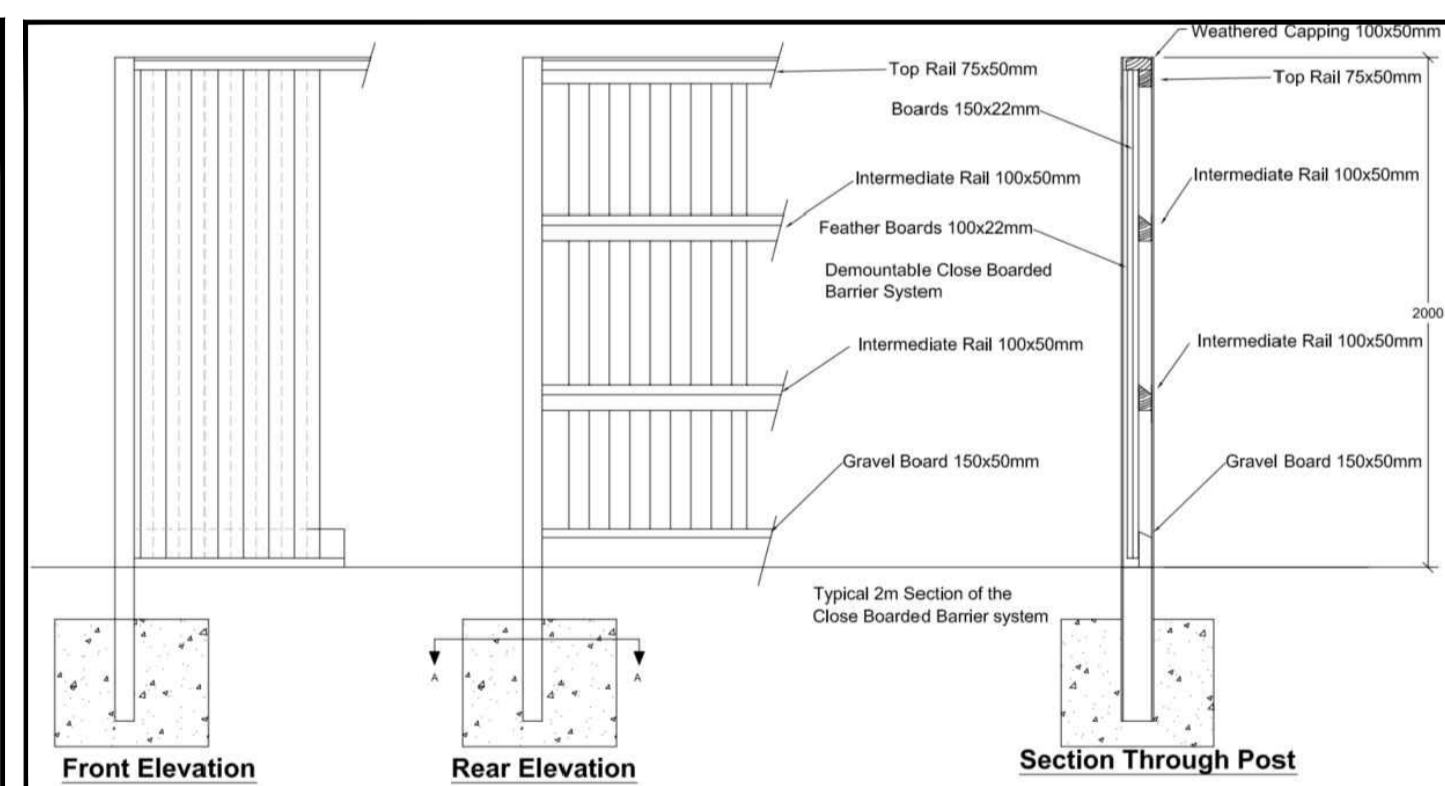
Maintenance / Cleaning
NONE

Use
NONE

Decommissioning / Demolition
NONE



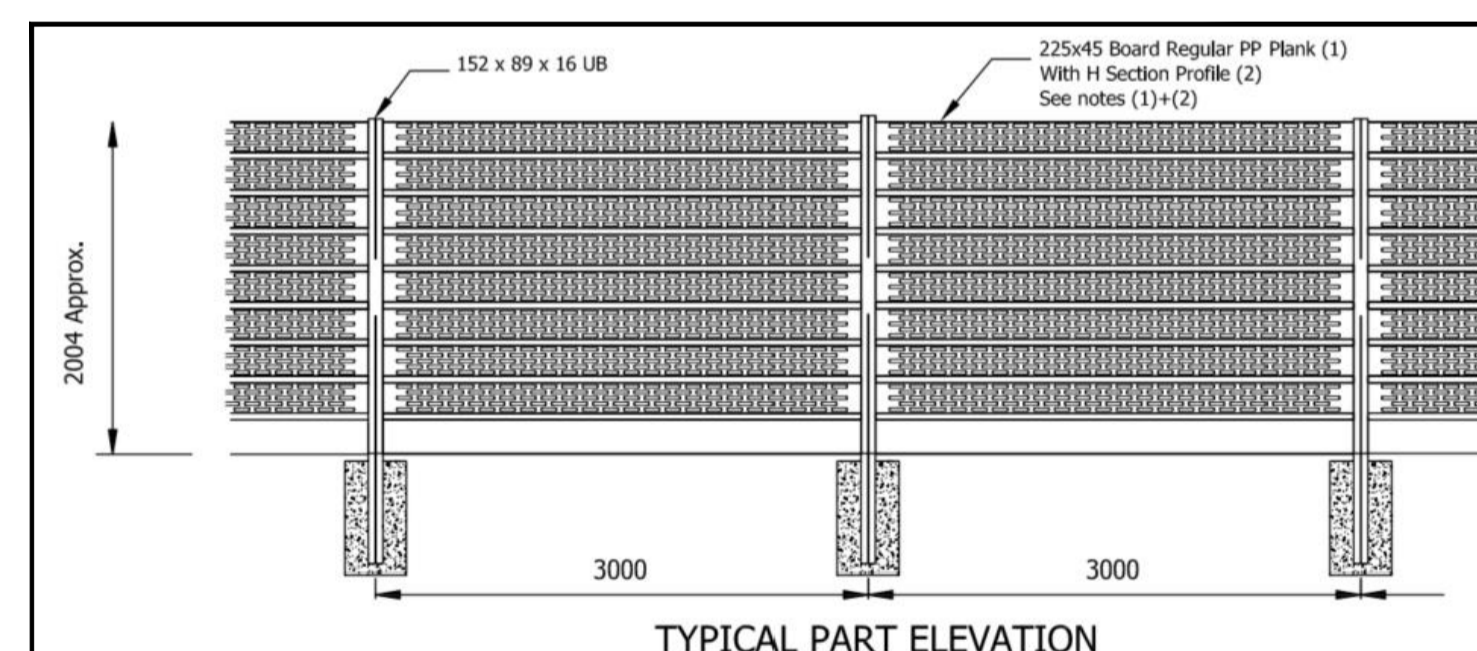
TYPICAL ELEVATION ON NOISE BARRIER PANELS



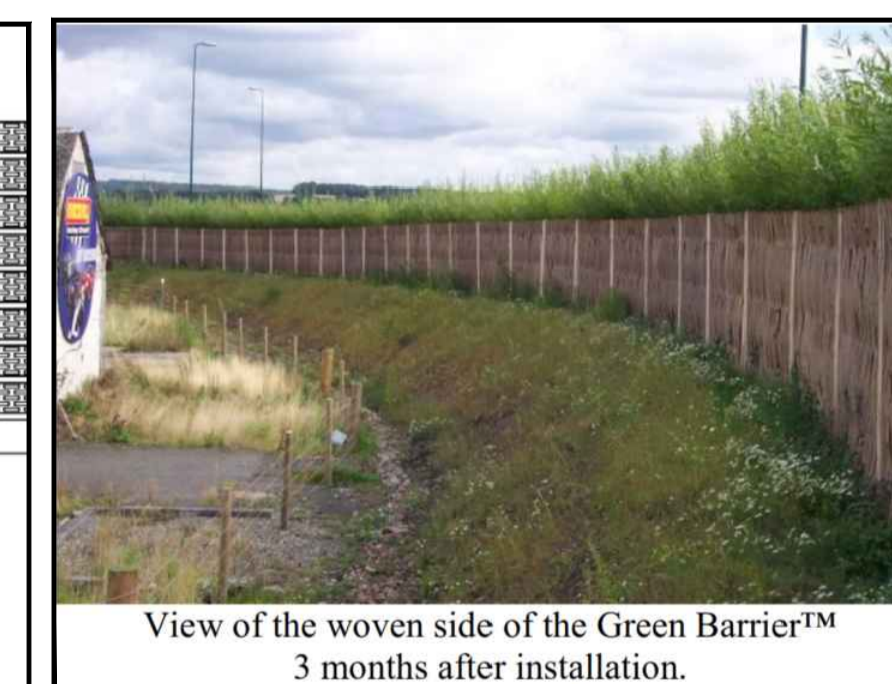
Front Elevation

Rear Elevation

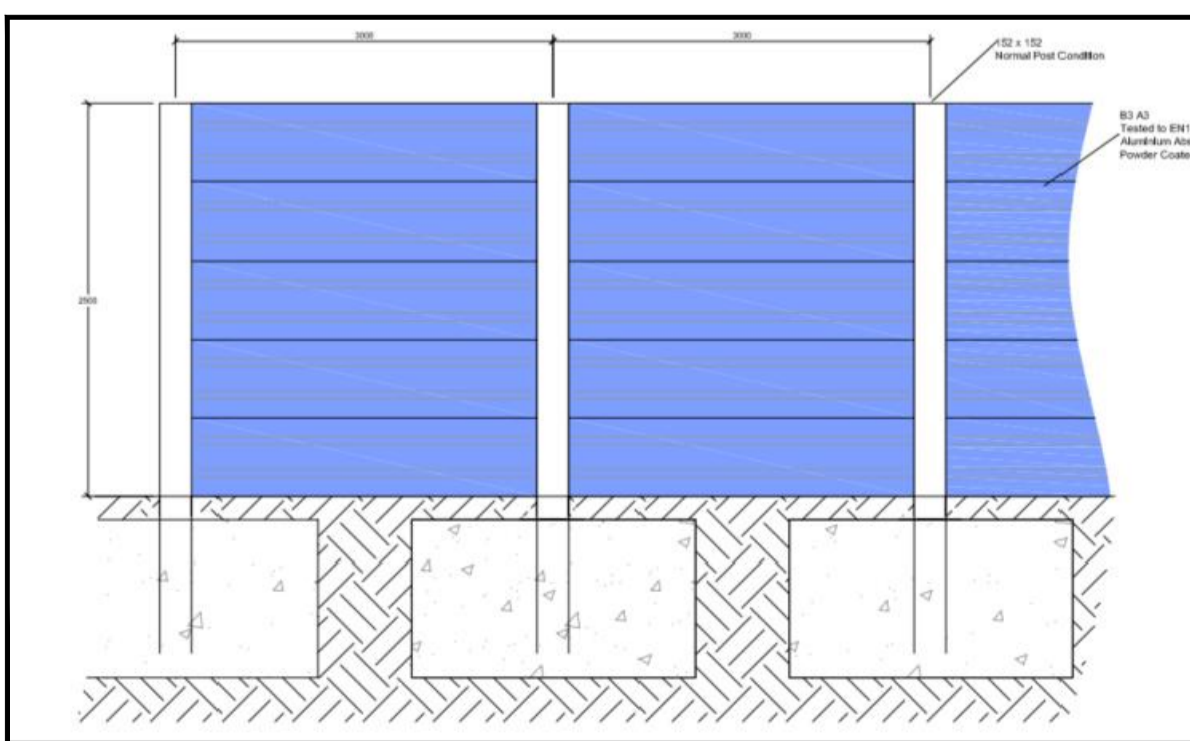
Section Through Post



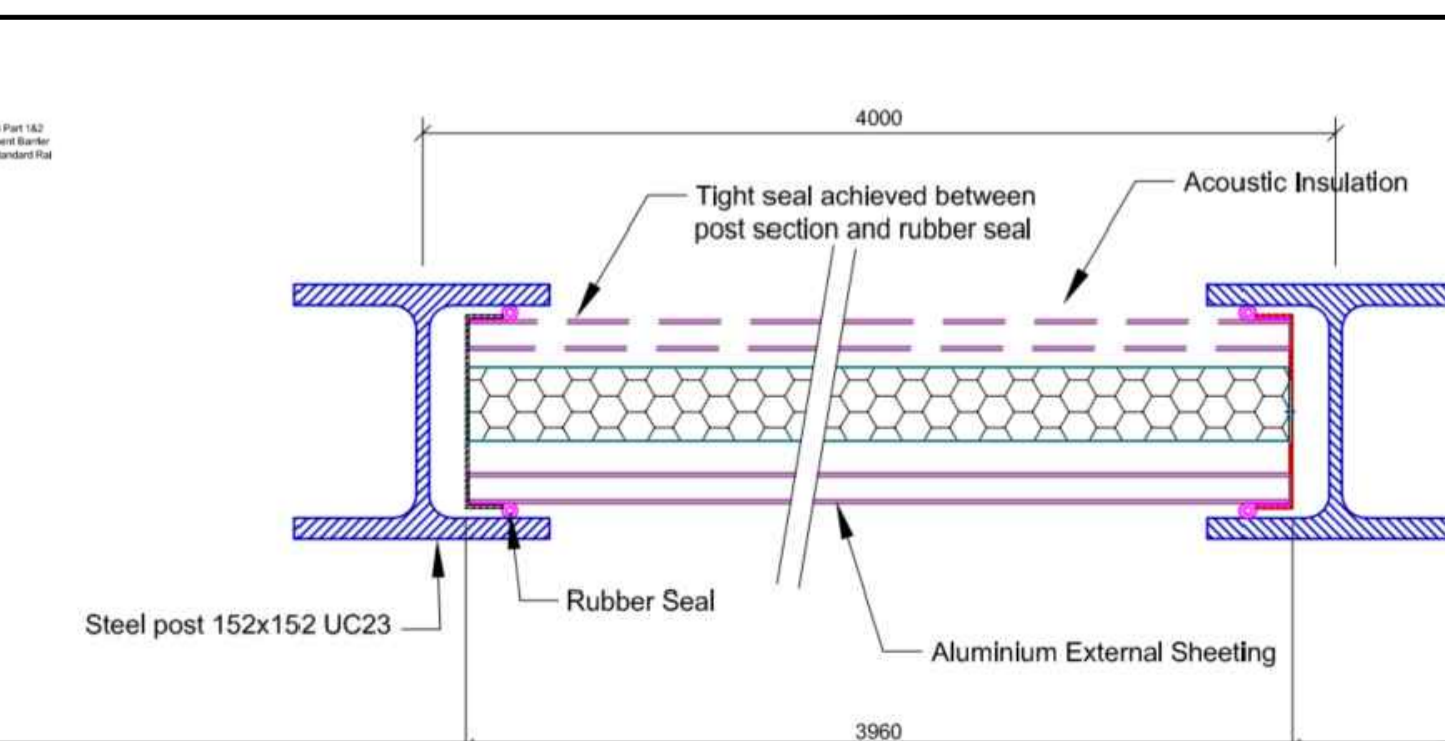
TYPICAL PART ELEVATION



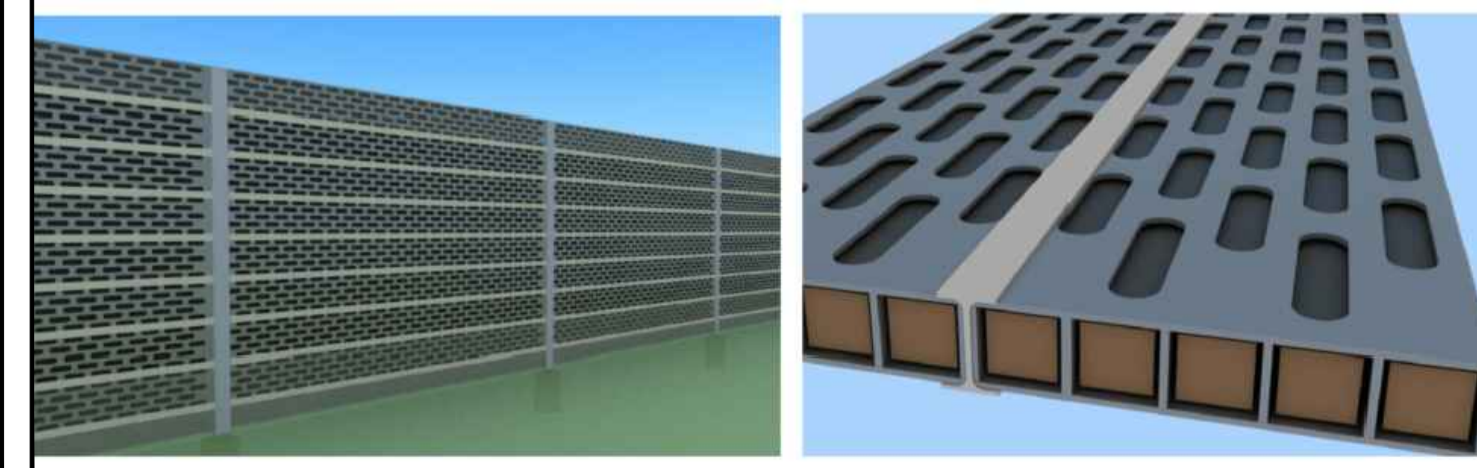
View of the woven side of the Green Barrier™ 3 months after installation.



TYPICAL ELEVATION



SOME EXAMPLES OF ALTERNATIVE ENVIRONMENTAL BARRIER FINISHES SCALE - NTS



Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
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Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
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Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
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Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
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DESCRIPTION
FIRST SUBMISSION

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A1	C01	NKRP	CJ	CCR	BM	14/12/23

Drawing Suitability
APPROVED - PUBLISHED

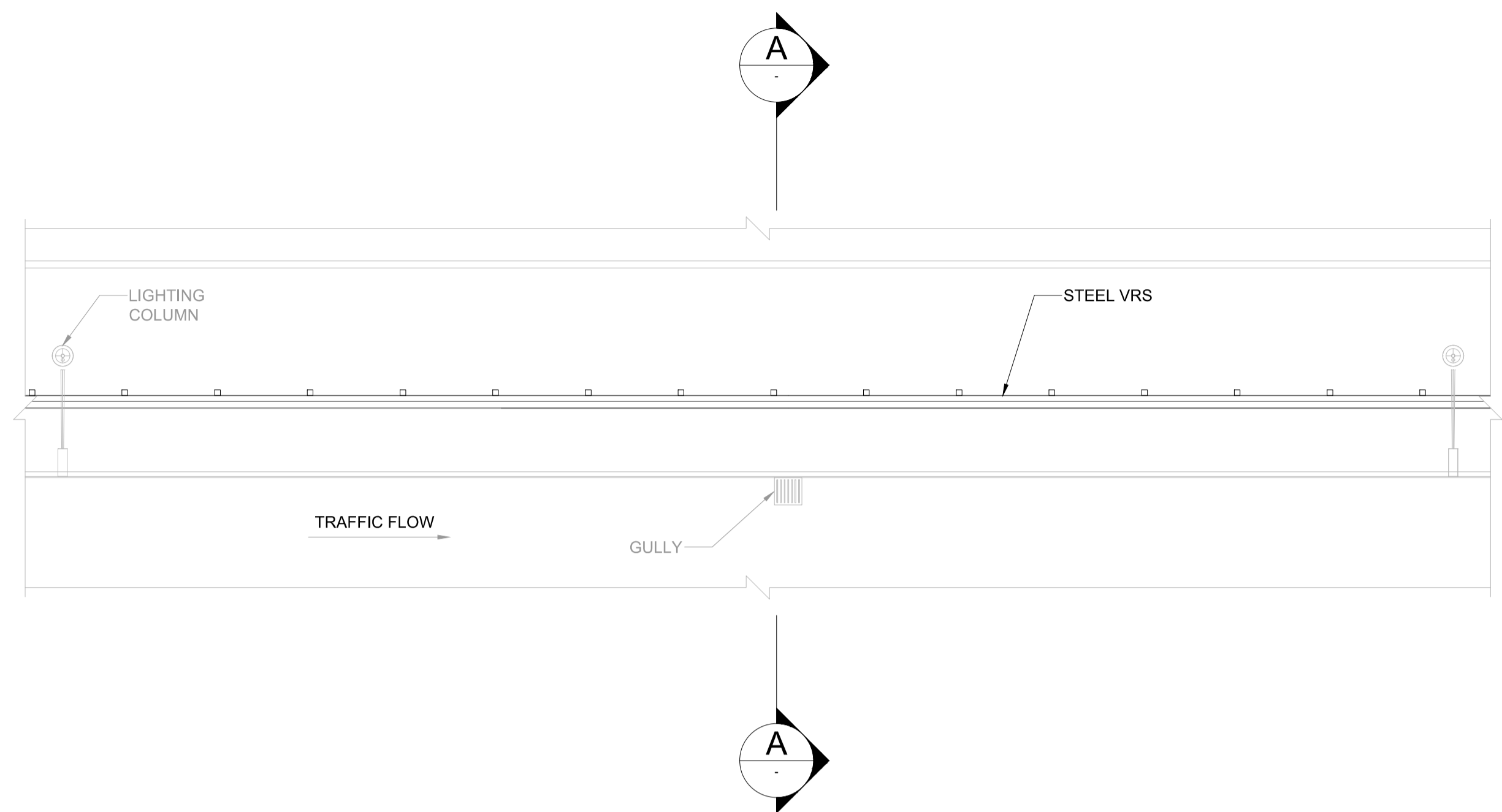
Status
A1

Project Title
M5 Junction 10 Improvements Scheme

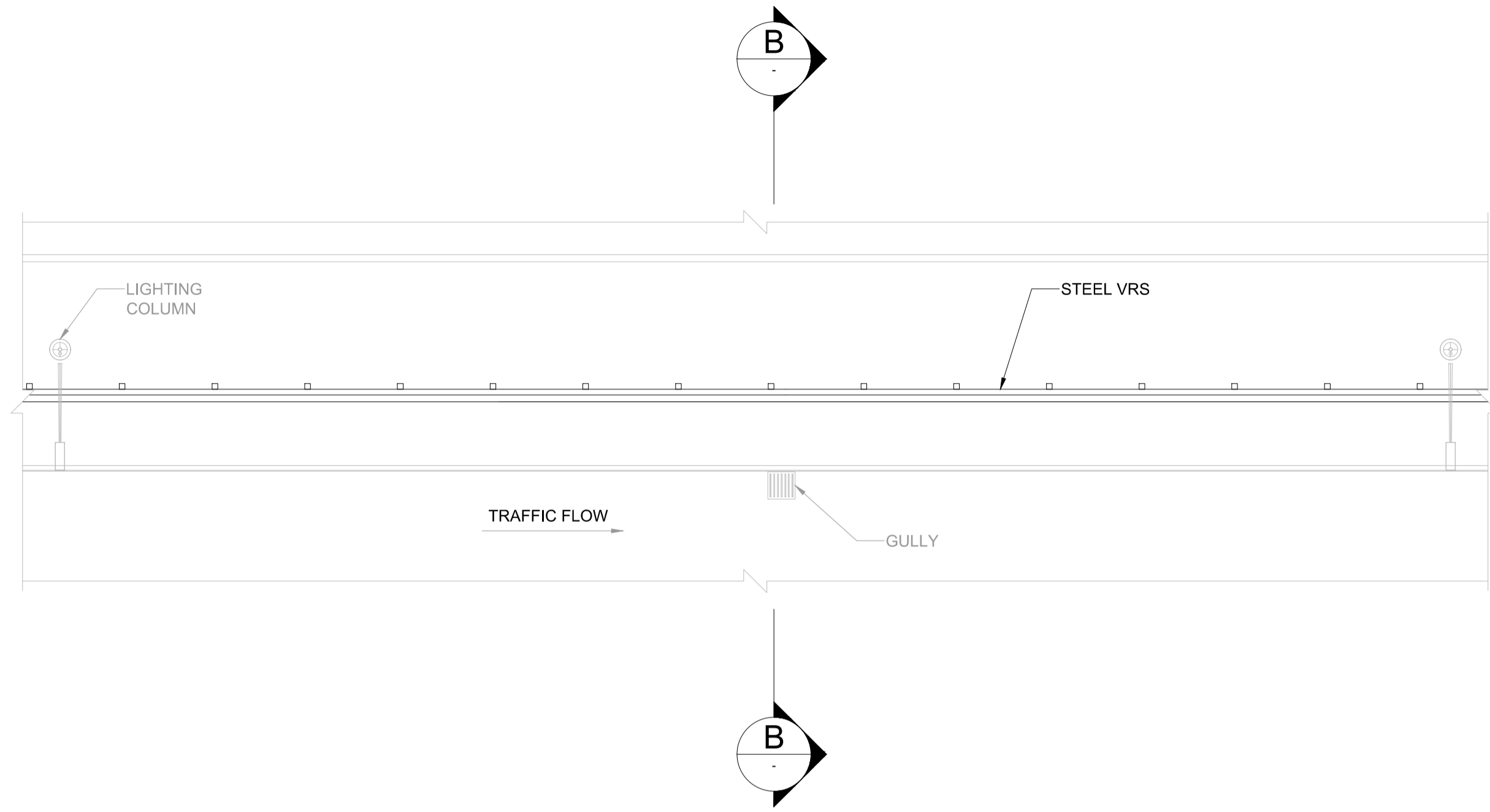
Drawing Title
TYPICAL DETAIL ENVIRONMENTAL BARRIER REGULATION 5(2)(o) & 6(2) SHEET 01 OF 01

Drawing Number
TR010063/APP/2.10

Original Size: A1 Scale: 1:20 Project Ref. No.: 5197035 Sheet: 1 of 1 Rev: C01



PLAN ON VERGE STEEL BOX BEAM
SCALE 1:100



PLAN ON VERGE CORRUGATED BEAM
SCALE 1:100

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. FOR SETBACK DETAILS AND WORKING WIDTH, REFER TO DMRB CD127 VOLUME 6, SECTION 1 PART 2 AND BS EN 1317-2:2010.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made to the design hazard log).

Construction
NONE

Maintenance / Cleaning
NONE

Use
NONE

Decommissioning / Demolition
NONE

Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date

Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date

Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date

Description

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date

FIRST SUBMISSION

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A1	C01	NKRP	CJ	CCR	BM	14/12/23

Drawing Suitability

APPROVED - PUBLISHED

Status

A1

Project Title

M5 Junction 10 Improvements Scheme

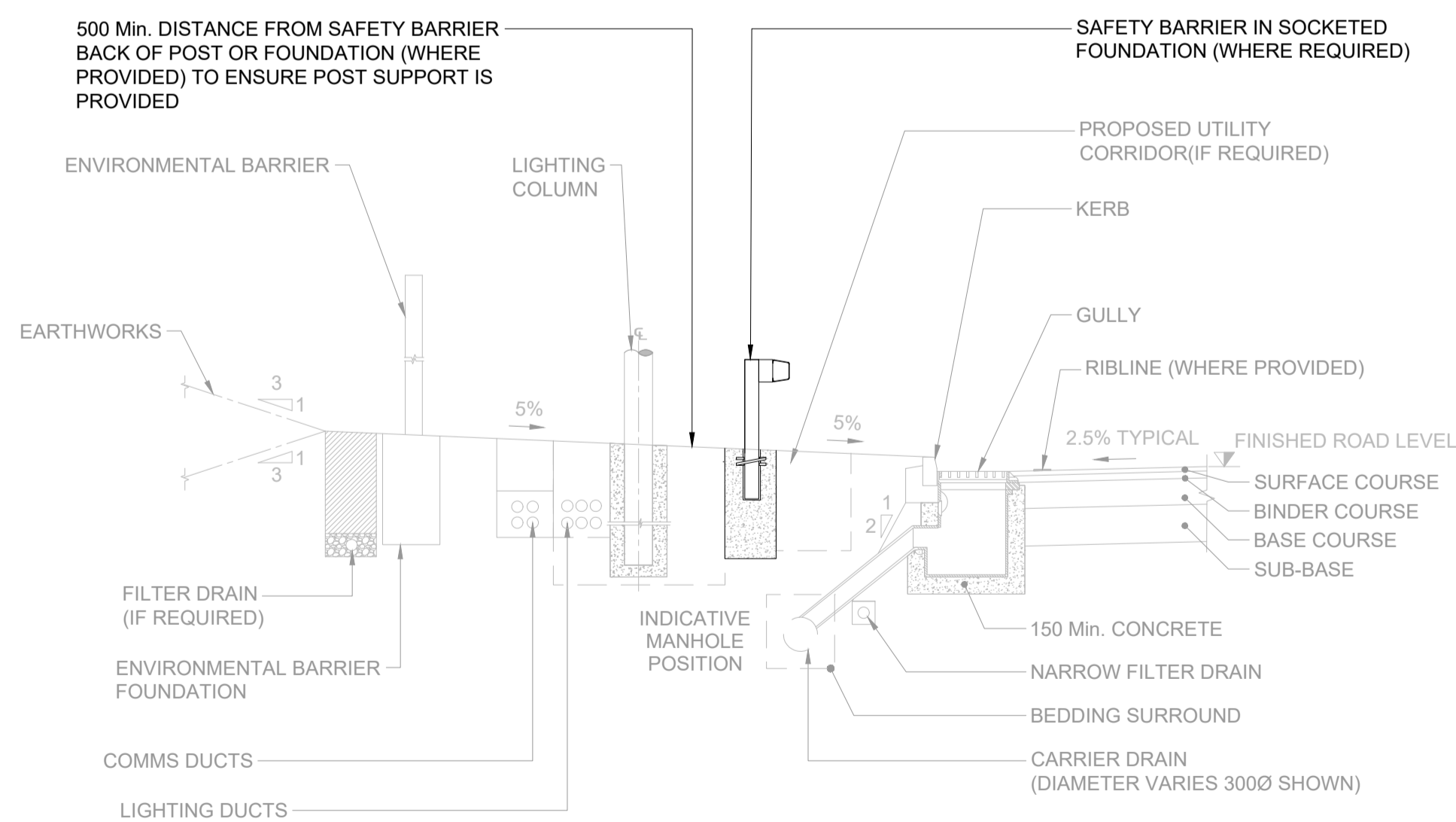
Drawing Title

**TYPICAL DETAIL
ROAD RESTRAINT SYSTEM
REGULATION 5(2)(o) & 6(2)
SHEET 01 OF 01**

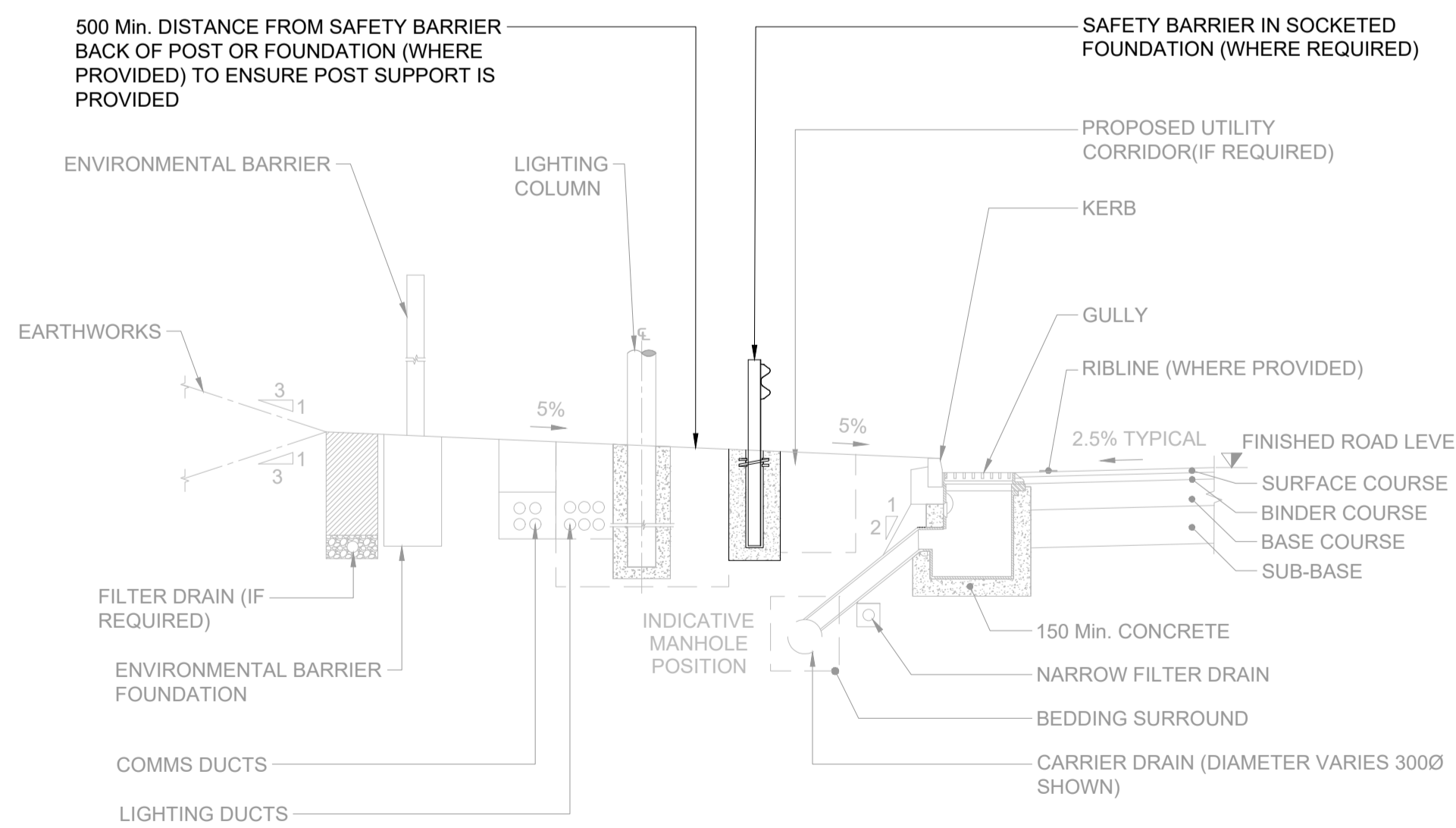
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TR010063/APP/2.10

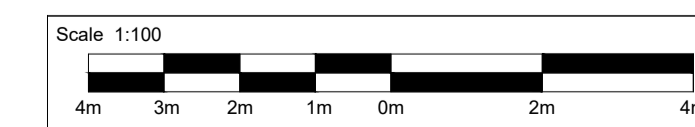
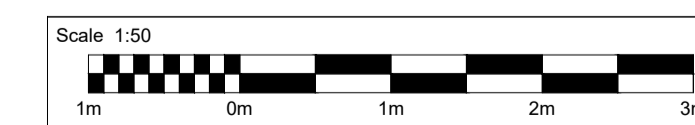
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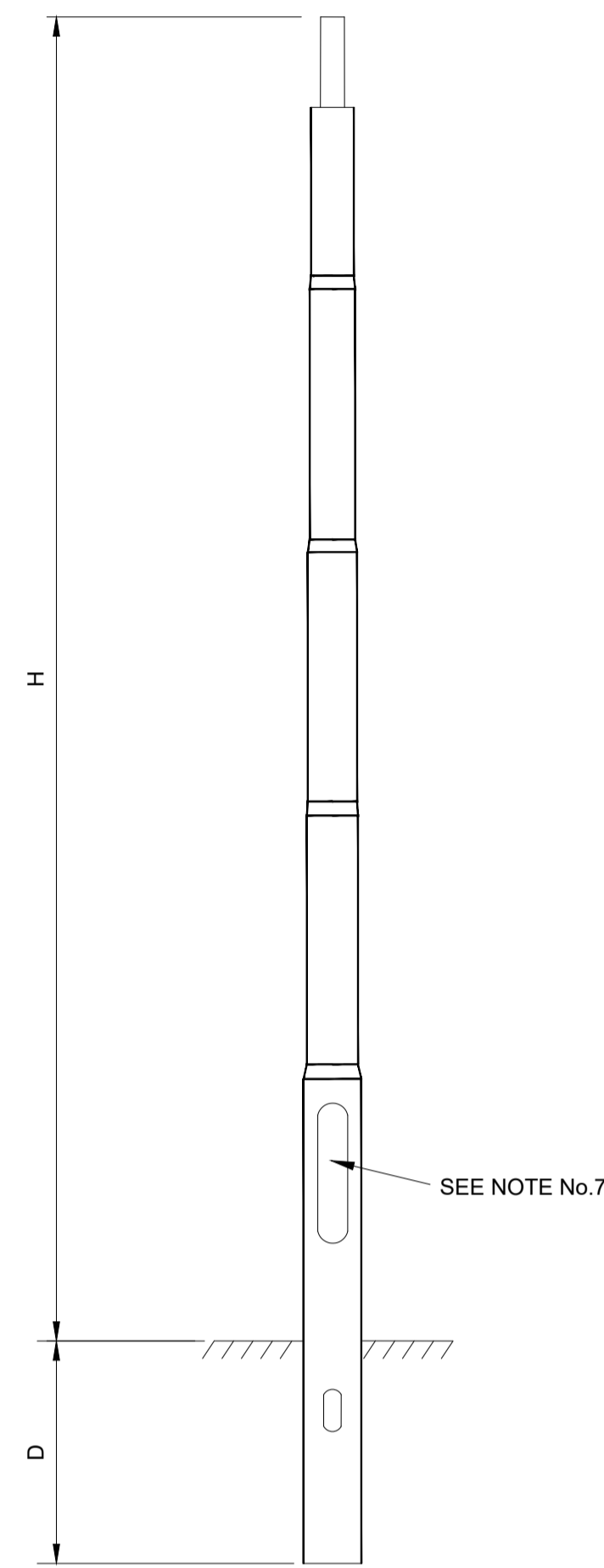
SECTION A-A VERGE DETAILS WITH STEEL BOX BEAM
SCALE 1:50



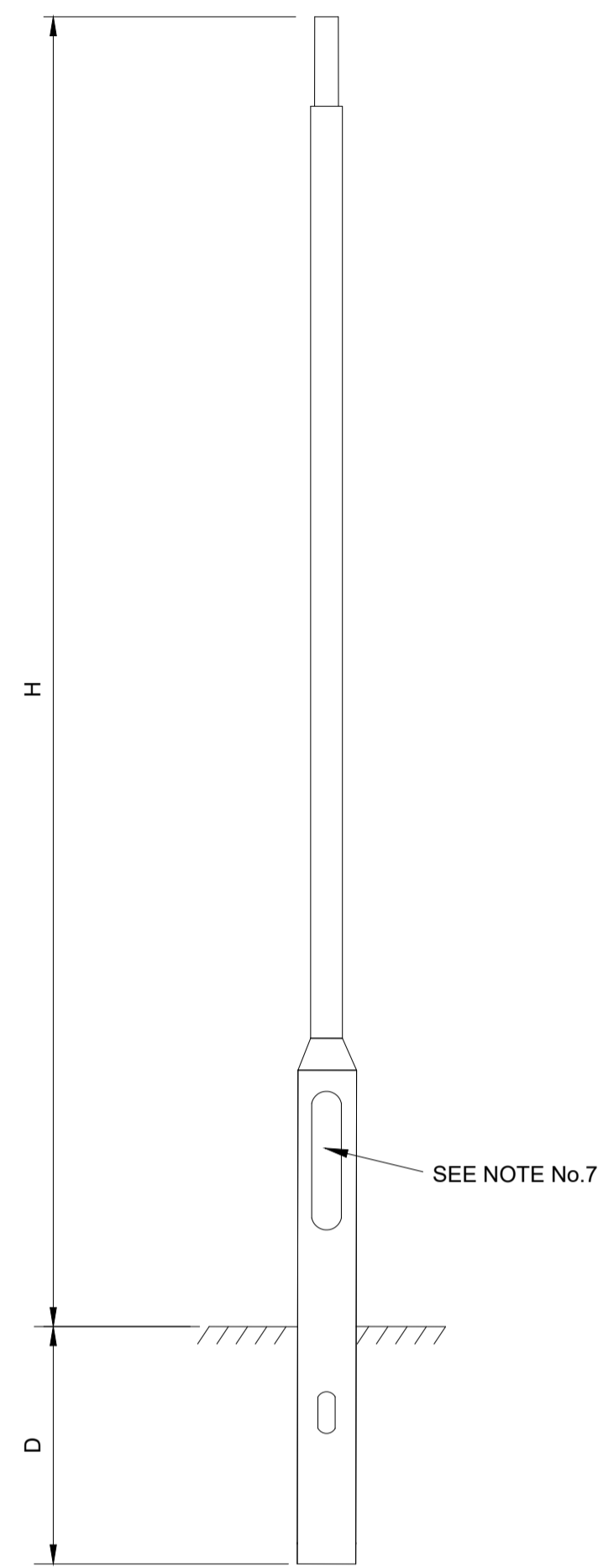
SECTION B-B VERGE DETAILS CORRUGATED BEAM
SCALE 1:50



CYLINDRICAL ALUMINUM PASSIVELY SAFE COLUMN



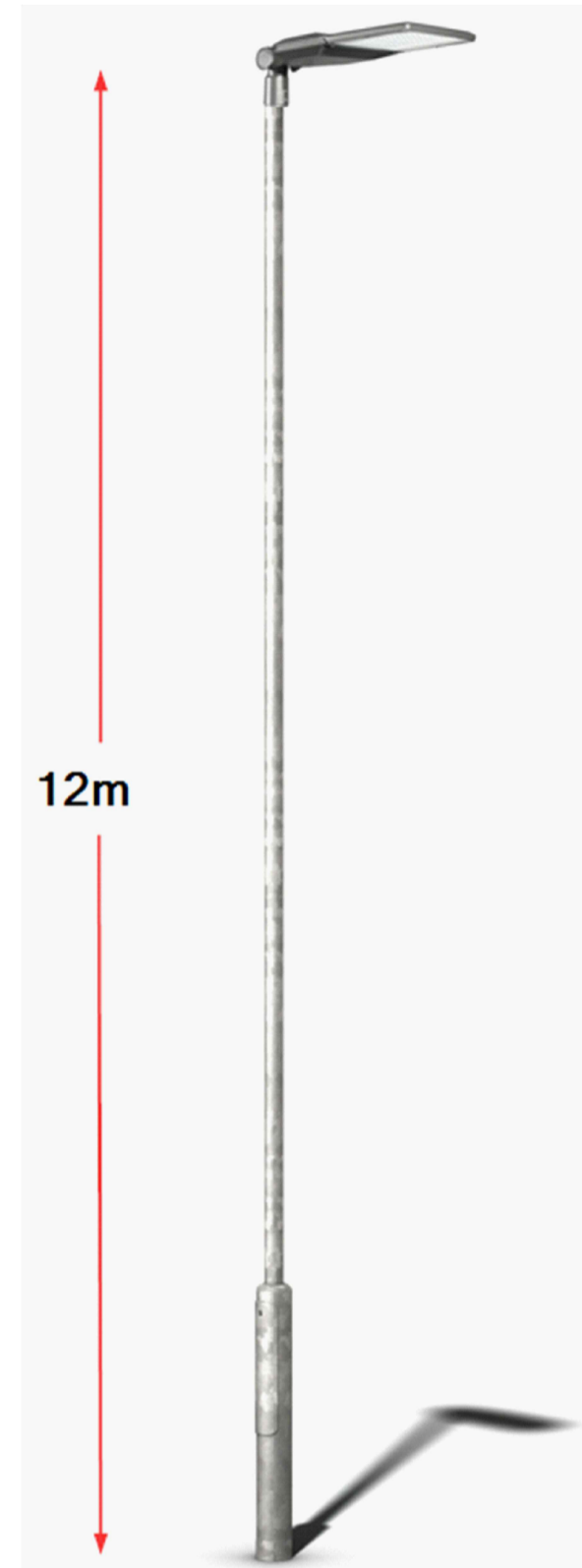
STANDARD STEEL COLUMN



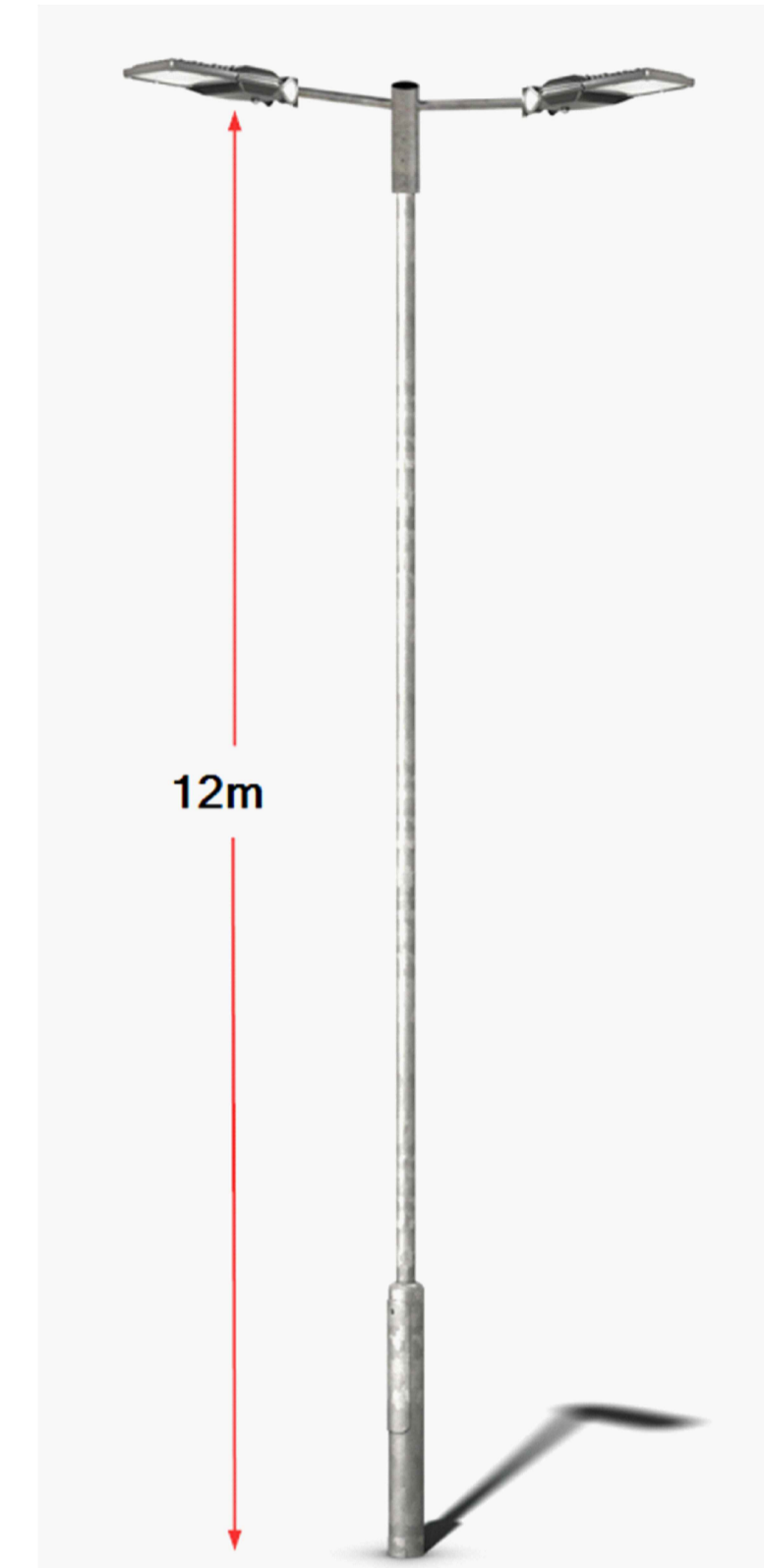
INSTALLATION DIMENSIONS			
COLUMN HEIGHT (H) METRES	COLUMN DEPTH (D) METRES	ALTERNATIVE FOR (B) METRES	
		BRACKET ARM	POST TOP
10	1.5	0.5	0.0
12	1.7	0.5	0.0

ILLUSTRATIONS OF STEEL COLUMNS WITH IZYLUM LUMINAIRES

POST TOP MOUNTED



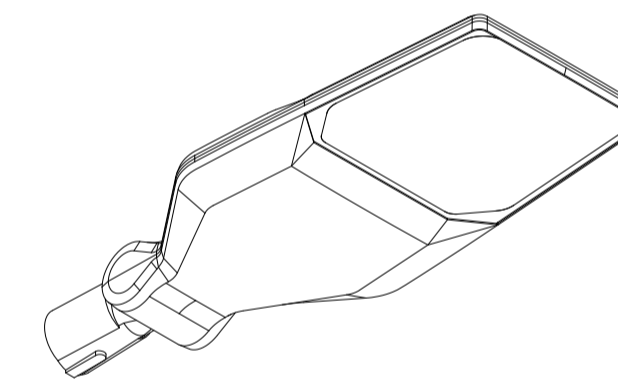
SIDE ENTRY MOUNTED



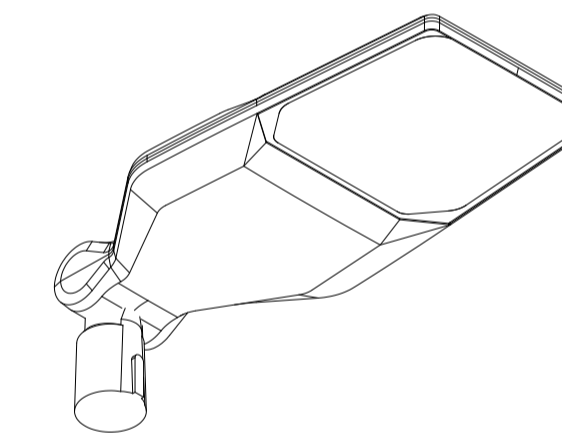
SCHREDER IZYLUM LUMINAIRE



SIDE ENTRY MOUNTED (USED WITH BRACKET)



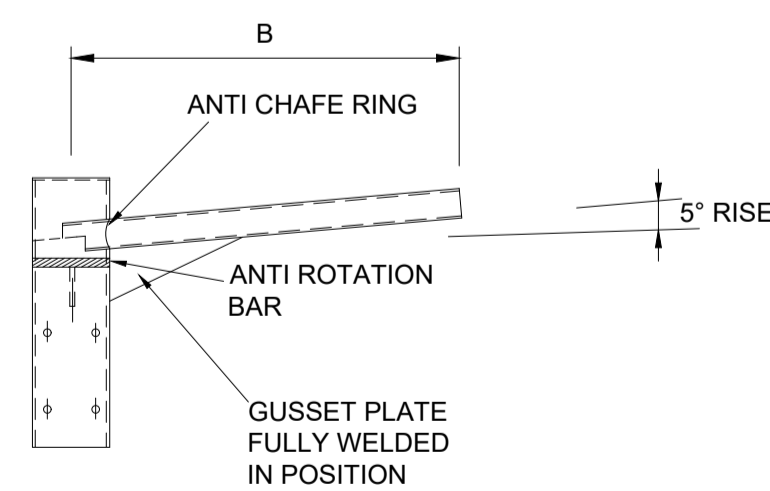
POST TOP MOUNTED



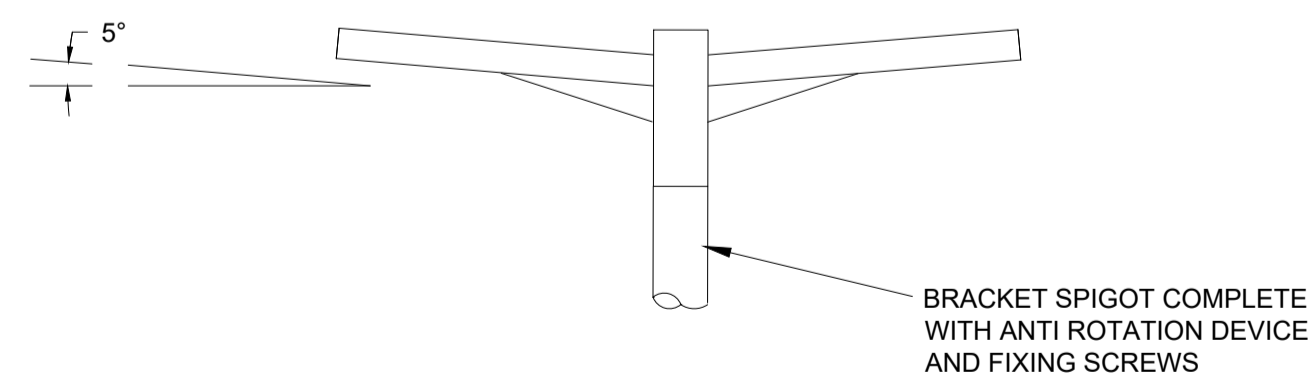
NOTES:

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
- CONCRETE MIX TO BE CONFIRMED IN DETAILED DESIGN STAGE.
- DRAWINGS FOR REFERENCE ONLY. CONTRACTOR TO SUBMIT PROPOSALS FOR APPROVAL.
- THE SPECIFICATION FOR HIGHWAY WORKS (CURRENT VERSION, OR INDICATED IN THE CONTRACT) APPLIES, TOGETHER WITH ANY GLOUCESTERSHIRE COUNTY COUNCIL ADDITIONAL OR SUBSTITUTE CLAUSES.
- GALVANISED STEEL COLUMNS SHALL BE FACTORY PAINTED AND SHALL COMPLY WITH CLAUSE 1301 AND THE SPECIFIC REQUIREMENTS OF APPENDIX 13/1, 13/2 AND 19/2.
- COLUMNS SHALL BE INSTALLED IN ACCORDANCE WITH CLAUSE 1305 AND SHALL PRESENT A UNIFORM ALIGNMENT WHEN ERECTED. INSTALLATION TOLERANCE SHALL BE +/- 50mm.
- FOR COLUMNS WITH TWIN PROJECTION BRACKET ARMS THE COLUMN SHAFTS SHALL BE FITTED WITH TWIN DOORS.
- COLUMNS SHALL BE ERECTED VERTICALLY. LUMINAIRES SHALL BE FITTED SEPARATELY.
- POST TOP LUMINAIRES MAY REQUIRE A SPIGOT FOR FIXING.

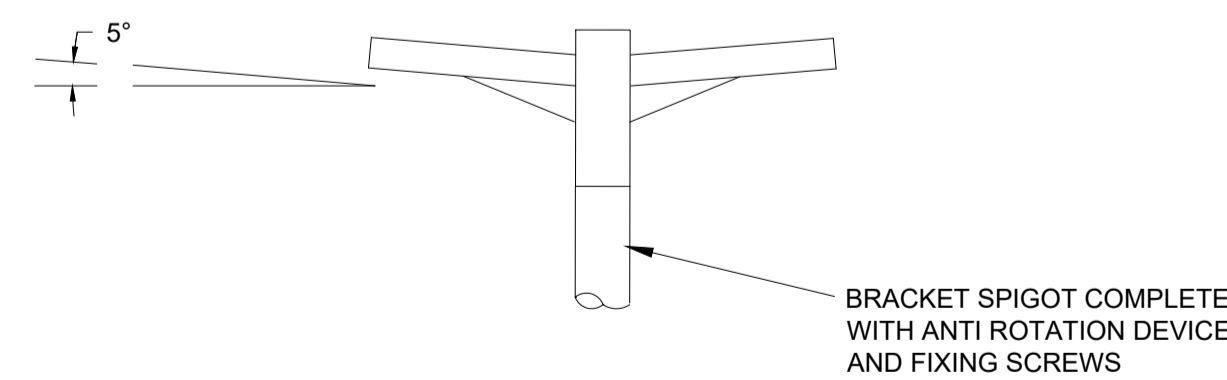
BRACKET DETAIL



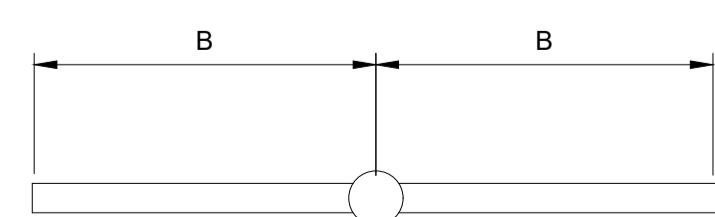
180° STRAIGHT ARM TWIN BRACKET



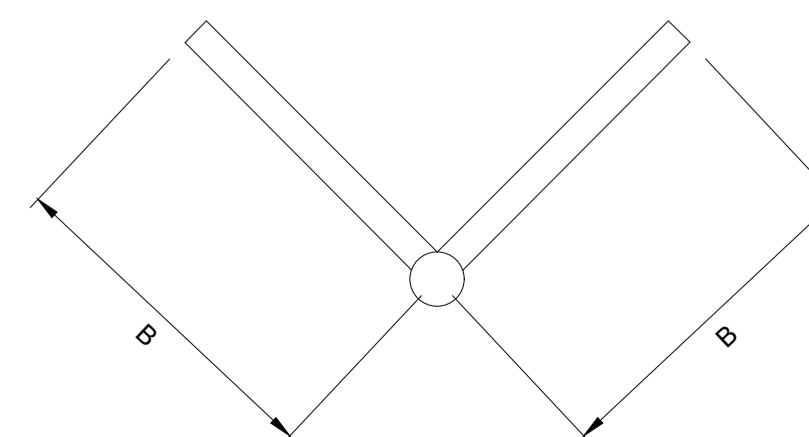
90° TWIN ARM BRACKET



PLAN VIEW



PLAN VIEW



Description						
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
Description						
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
Description						
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
Description						
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
Description						
FIRST SUBMISSION						
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A1	C01	JB	IW	RB	BM	14/12/23
Drawing Suitability						Status
APPROVED - PUBLISHED						A1

Project Title
M5 Junction 10 Improvements Scheme

Drawing Title
TYPICAL DETAIL LIGHTING COLUMN AND FOUNDATION REGULATION 5(2)(o) & 6(2) SHEET 01 OF 01

Drawing Number
TR010063/APP/2.10

Original Size: **A1** Scale: NTS Project Ref. No.: **5197035** Sheet: **1 of 1** Rev: **C01**

5th Floor, Block 5
Shire Hall
Bearland
Gloucester
GL1 2TH