

**Manual**

# **Building Information Modelling (BIM) for Road Furniture**

**May 2026**

## Copyright

© The State of Queensland (Department of Transport and Main Roads) 2026.

## Licence



This work is licensed by the State of Queensland (Department of Transport and Main Roads) under a Creative Commons Attribution (CC BY) 4.0 International licence.

## CC BY licence summary statement

In essence, you are free to copy, communicate and adapt this work, as long as you attribute the work to the State of Queensland (Department of Transport and Main Roads). To view a copy of this licence, visit: <https://creativecommons.org/licenses/by/4.0/>

## Translating and interpreting assistance



The Queensland Government is committed to providing accessible services to Queenslanders from all cultural and linguistic backgrounds. If you have difficulty understanding this publication and need a translator, please call the Translating and Interpreting Service (TIS National) on 13 14 50 and ask them to telephone the Queensland Department of Transport and Main Roads on 13 74 68.

## Disclaimer

While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained within. To the best of our knowledge, the content was correct at the time of publishing.

## Feedback

Please send your feedback regarding this document to: [tmr.techdocs@tmr.qld.gov.au](mailto:tmr.techdocs@tmr.qld.gov.au)

# Contents

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>Introduction</b>  | <b>1</b>  |
| 1.1      | Purpose of this manual   | 1         |
| 1.2      | Principles and objectives for Operations and Maintenance                           | 2         |
| 1.3      | Definition of terms  | 2         |
| <b>2</b> | <b>Referenced documents</b>  | <b>4</b>  |
| <b>3</b> | <b>How to use this manual</b>  | <b>4</b>  |
| <b>4</b> | <b>Road Furniture model preparation</b>  | <b>5</b>  |
| 4.1      | Transport and Main Roads file naming convention                                    | 5         |
| 4.2      | Model geographical location  | 5         |
| <b>5</b> | <b>Road Furniture model objects</b>  | <b>6</b>  |
| 5.1      | Unique object code   | 6         |
| 5.1.1    | <i>Road Furniture property sets</i>  | 7         |
| 5.2      | Road Edge Guide Posts  | 7         |
| 5.3      | Fencing and Gates  | 8         |
| 5.4      | Road Sign  | 9         |
| 5.5      | Grids  | 10        |
| 5.5.1    | <i>Fencing adjoining a grid</i>  | 11        |
| 5.6      | Roadside Safety Barrier  | 11        |
| 5.6.1    | <i>Road Safety Barriers on structures</i>  | 12        |
| 5.7      | Tactile Ground Surface Indicators (TGSI)   | 12        |
| 5.8      | Noise Barriers   | 13        |
| <b>6</b> | <b>Road Furniture BIM model interface with Asset Information Management System</b> | <b>14</b> |
| <b>7</b> | <b>Road Furniture BIM model level of information need</b>                          | <b>15</b> |
| <b>8</b> | <b>Road Furniture model attributes</b>   | <b>16</b> |
| 8.1      | Transport and Main Roads Road Furniture object property sets                       | 16        |
| <b>9</b> | <b>Appendix A: Unique code breakdown</b>   | <b>18</b> |

## Tables

|           |  |    |
|-----------|--|----|
| Table 1.3 | – Definition of terms  | 2  |
| Table 2   | – Referenced documents   | 4  |
| Table 6   | – Road furniture model object Industry Foundation Classes assignment | 15 |

# Figures

Figure 5.1 – Example of the Transport and Main Roads unique object coding for civil infrastructure ..... 6

Figure 5.2 – Object naming convention for Road Edge Guide Posts along gazettal..... 8

Figure 5.3 – Object naming convention for Chainwire fence with steel posts along gazettal ..... 9

Figure 5.4 – Object naming convention for Road sign model along gazettal with corresponding sign numbering (example sign type Queensland MUTCD)..... 10

Figure 5.5.1 – Object naming convention for Grid in roadway with cast insitu base slab.... 11

Figure 5.6.1 – Object naming convention for concrete road safety barrier ..... 12

Figure 5.7 – Object naming convention for TGSI on a pedestrian crossing..... 13

Figure 5.8 – Object naming convention for transparent and plywood noise barriers along gazettal ..... 14

Figure 6 – Noise Barrier data entered into Asset Information Management System ..... 15

Figure 8.1 – Example property set tabs in a Road Furniture road sign model ..... 17

# 1 Introduction

## 1.1 Purpose of this manual

The Department of Transport and Main Roads (the department) has implemented Digital Engineering processes specifically relating to Building Information Modelling (BIM) methodologies. This manual complements the existing suite of BIM documents published by the department and outlines the typical asset dataset for the department's Road Furniture. This document is intended to be integral in the Building Information Modelling (BIM) activities that complement the *Building Information Modelling (BIM) Exchange Information Requirements (EIR)* document for asset description and information collected for major projects across Queensland. To ensure compliance, download the latest version of the EIR and associated templates and manuals.

The purpose of this manual is to ensure a standard process, representation, and level of detail is established and executed for all asset types within the context of this manual's discipline or category (Road Furniture). This manual is one of a series of manuals covering multiple disciplines or categories. If your project includes works outside of Road Furniture, you should also use the relevant guides for those disciplines or categories.

The purpose of the Road Furniture BIM models is to provide an asset model containing relevant information and data captured throughout the delivery stages and post-construction, allowing the department to manage the asset efficiently and effectively. The preparation of the Road Furniture BIM models will also assist the department in construction planning, design verification, and coordination throughout delivery of the project. The Road Furniture BIM models assist in the collaboration and interface management between the road design and other technical disciplines.

The Road Furniture BIM models shall encompass the design of the asset in complete 3-dimensional (3D) electronic models, which are progressively developed through the design stages, inclusive of project attributes, and are suitable for construction coordination and field set out.

This manual applies to the design development, construction, and presentation of As Constructed information of departmental Road Furniture elements following the completion of the project.

This document must be read in conjunction with the *Building Information Modelling (BIM) for Transport and Main Roads Guideline* and the *Building Information Modelling Exchange Information Requirements (EIR)* included in the contract documentation suite.

## Technical Support

The content of this manual has been developed by the Transport and Main Roads BIM team. Technical support is available for application of the content of this manual at: [TMR\\_BIM\\_Team@tmr.qld.gov.au](mailto:TMR_BIM_Team@tmr.qld.gov.au).

### 1.2 Principles and objectives for Operations and Maintenance

The data collected throughout any project serves an additional purpose after the project is completed, supporting financial administration and the management of the assets in the areas of Operations and Maintenance (O&M) across the department.

### 1.3 Definition of terms

The following is a glossary of terms used in this manual.

**Table 1.3 – Definition of terms**

| Term      | Definition  |
|-----------|---|
| AIMS      | Asset Information Management System (AIMS).   |
| Attribute | Data or information associated to an object, such as its name, unique identifier or material.   |
| BEP       | <i>BIM Execution Plan (BEP)</i> . A document that outlines how a design or construction project will use Building Information Modelling. It includes the project's goals, team roles, data management strategies, standards, schedules, and technology requirements.  |
| BIM       | Building Information Modelling (BIM). BIM is a process for creating and managing information of a built asset throughout its whole life cycle from planning, design, construction, operations, maintenance through to demolition. Information containers may take the form of 2D, 3D, or other structured or unstructured data sources. The effective and efficient use of BIM for decision support and achievement of desired project outcomes is impacted by "when" and "why" information is used and shared. |
| BIM model | A 3-dimensional digital model made of surfaces, solids, and/or features representing project objects carrying attribute data.   |
| Component | The physical, tangible object that is a part of the Road Furniture object, such as sign face, safety barrier rail, or fence post.   |

| Term                 | Definition   |
|----------------------|--|
| GIS                  | Geographic Information System (GIS). A system that integrates hardware, software, and data for capturing, managing, analysing, and displaying all forms of geographically-referenced information.  |
| IFC                  | Industry Foundation Classes (.ifc). 3D file export, which is a platform-neutral, open format specification.  |
| iMaps                | Transport and Main Roads <i>Interactive Mapping Solution</i> (iMaps) – A Transport and Main Roads-facing, browser-based interactive mapping solution which integrates spatial and non-spatial data from both internal and external suppliers.  |
| PTU                  | Permission to Use (PTU) model. This can be granted pending or granted unconditional.   |
| Reference Point (RP) | A Reference Point (RP) provides a convenient way of referencing or locating points on a road section. Reference points are commonly located at identifiable features, such as an intersection or bridge abutment. They are given a code that is usually allocated sequentially in the direction of the road. Reference points provide convenient points of known location, from which to locate other features or information (by measuring distance from the reference point).  |
| Road section         | A road is divided into road sections over its length. A road comprises one or a series of continuous road sections.<br>For example, the Bruce Highway is made up of continuous road sections from 10A (Brisbane to Gympie) through to 10P (Innisfail to Cairns).   |
| Tdist                | The Tdist is the through distance or cumulative distance from the start of the road section. It is reported in kilometres.   |
| Unique object code   | The unique object code provides a mechanism for identifying every instance of an asset created during the design and construction stages of a project that can be uniquely identified and captured for translation of attribute data to the departments asset management systems.<br>This object string, comprising fields that include a project ID, a control line, a discipline code, an object code, and a unique number, can be used to display and share important information about the asset throughout the asset’s lifecycle. |

## 2 Referenced documents

The following is a list of documents referenced in this manual.

**Table 2 – Referenced documents**

| Reference                      | Title   |
|--------------------------------|---|
| AS/NZS 1428.4.1                | <i>AS/NZS 1428.4.1: Design for access and mobility – Part 4.1: Means to assist the orientation of people with vision impairment – Tactile ground surface indicators</i> |
| BIM for TMR Guideline          | <i>Building Information Modelling (BIM) for Transport and Main Roads Guideline – A guide to enabling BIM on Road Infrastructure Projects</i>                            |
| DDPSM                          | <i>Drafting and Design Presentation Standards Manual</i>  |
| EIR                            | <i>Building Information Modelling (BIM) Exchange Information Requirements (EIR)</i>   |
| ISO 19650 suite of documents   | International Organization for Standardization – ISO 19650 – <i>Part 1 to Part 6</i>  |
| ISO 7817                       | International Organization for Standardization – ISO 7817-1 <i>Building information modelling – Level of information need</i>   |
| MRTS14                         | <i>Road Furniture</i>   |
| MRTS15                         | <i>Noise Fences</i>   |
| MRTS50                         | <i>Specific Quality System Requirements</i>   |
| MRTS56                         | <i>Construction Surveying</i>   |
| <i>TMR Surveying Standards</i> | <i>TMR Surveying Standards</i>  |

## 3 How to use this manual

This manual serves as a resource to manage the Road Furniture elements within a project. It provides an overview of the required Road Furniture infrastructure assets along with their respective attributes, which will make up the final project completion documentation. The creation of the 3D model is a fundamental element of the project design process. The data behind the 3D model is equal to if not more important than the model itself. This manual outlines the information requirements at each stage of the project throughout the project life.

## 4 Road Furniture model preparation

The major deliverable is a complete detailed component-based 3D digital model which is appropriately attributed and outlines the final design geometry. The design consultant shall progressively develop the BIM model throughout the design development and shall submit the model for the department's review. The corresponding design drawings are to be included at each of the specific submission gates in the project as outlined and agreed to in the BIM Execution Plan (BEP).

The concept of a Road Furniture model is that it is an overarching term used to group discipline specific IFC models of elements covered under MRTS14 *Road Furniture* and MRTS15 *Noise Fences* and includes:

- Road Edge Guide Posts
- Fencing
- Gates
- Road Signs, Project Signs
- Grids
- Road Safety Barrier Systems
- Steel Beam guardrail and end treatments
- Tactile Ground Surface Indicators, and
- Noise Fences.

It is expected that each of the components will be delivered as individual discipline-specific IFC files that can be federated into a complete Road Furniture model.

### 4.1 Transport and Main Roads file naming convention

The department has developed a system for naming and organising information. For more information on this system, refer to *Building Information Modelling (BIM) for Transport and Main Roads Guideline*, Section 6.3.

### 4.2 Model geographical location

Geographic location is to conform to the requirements for Survey Datum as outlined in the *TMR Surveying Standards – Part 1*.

## 5 Road Furniture model objects

The Road Furniture models shall encompass all elements necessary to outline the complete design and functionality of the system, interface with other technical disciplines that make up the road design and facilitate the implementation of the project works. The components to be included in the Road Furniture models are outlined in Appendix A.

The department will integrate the Road Furniture models with Geographic Information System (GIS) project systems, cost estimating, scheduling, component tracking, and asset management systems. To achieve this integration with a wide range of departmental systems, the objects within the Road Furniture models shall be developed and modelled as closed surfaces and solids. Each object shall be uniquely identified and organised into a logical system representing the Road Furniture components.

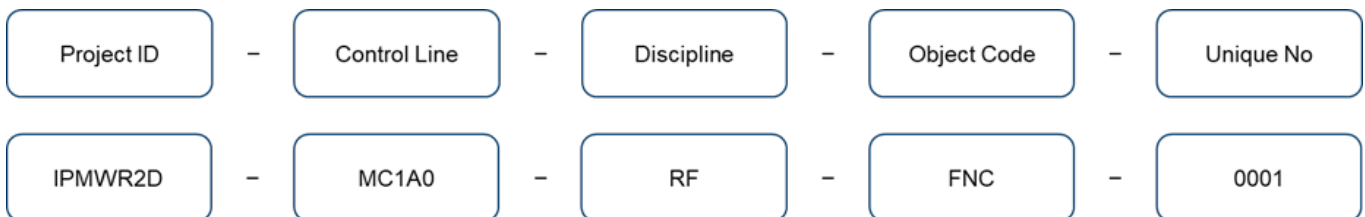
It is expected that for asset management purposes, all asset attribute data (refer to *Transport and Main Roads Object Attributes for Road Furniture*) is included within the model for each asset element and able to be extracted for upload to the department’s Asset Management Systems.

### 5.1 Unique object code

As outlined in the *Building Information Modelling (BIM) for Transport and Main Roads Guideline* Section 6.4, asset object attributes within specific discipline model files should be clearly identified by the use of a unique object code as shown in Figure 5 1.

Refer to Appendix A for a detailed breakdown and example of Road Furniture unique object codes.

**Figure 5.1 – Example of the Transport and Main Roads unique object coding for civil infrastructure**



**Project ID** = Ipswich Motorway Rocklea 2 Darra (IPMWR2D)

**Control Line** = MC1A0

**Discipline** = RF (Road Furniture)

**Object Code** = FNC (Fence – Chainwire)

**Unique Number** = 0001

## Notes and string part definitions

1. The unique object code shall be a continuous string with no spaces.
2. The unique object code parts shall be combined using hyphens (-) to form the continuous string.

### 5.1.1 Road Furniture property sets

All Road Furniture assets modelled shall include custom TMR IFC property sets which can be displayed in the properties window within an IFC model file viewer. The attributes to be contained within the property set are defined for each object in the *Transport and Main Roads object attributes for Road Furniture*, published on the department's website. The *Transport and Main Roads object attributes for Road Furniture* outlines the data requirements throughout the design, construction, and asset management phases. It is preferred that all the construction attributes be included as placeholders through the design submissions and that all the design attributes are carried over into the As Constructed model.

Each object will have varying asset data requirements as per the *Transport and Main Roads object attributes for Road Furniture*. Any deviation or variation of this process would need to be clearly outlined in the BEP so that it can be assessed by the department.

The objects in the BIM model shall be orientated such that the first instance of an object along the gazettal is identified as unique number 0001.

The same type of object shall be numbered sequentially along the gazettal. For example, the first instance of a chainwire fence along the gazettal will have the unique object code: IPMWR2D-MC1A0-RF-FNC-0001, the second instance IPMWR2D-MC1A0-RF-FNC-0002, and so on, continuing in this sequential manner (see Figure 5 3).

It is recognised that where composite elements make up the object, each element may carry the same unique object code depending on the authoring tool, e.g. a fence and its posts will carry the same code if they cannot be modelled as a single object.

Preference is for only one element to carry the attribution in composite elements or for the element to be modelled as a continuous solid rather than its individual parts.

## 5.2 Road Edge Guide Posts

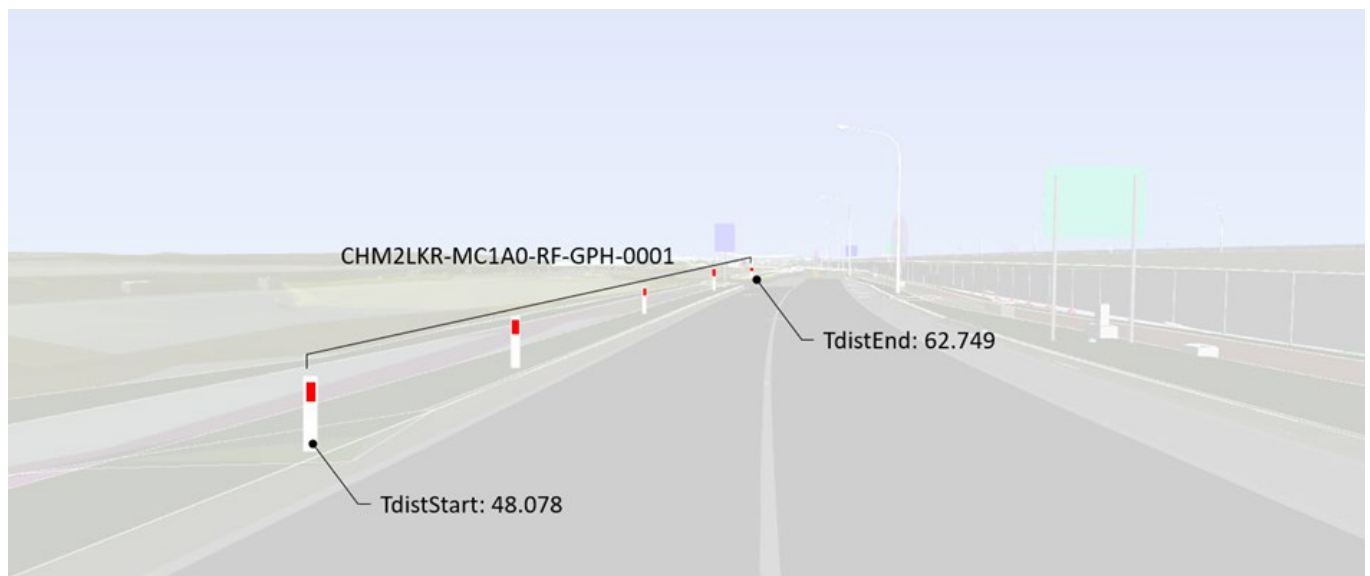
Figure 5.2 shows the naming convention for Road Edge Guide Posts in a Road Furniture BIM model.

Reference should be made to Standard Drawing SD1356 *Road Edge Guide Posts – Post and Installation Details*.

The naming convention adopts the following methodology:

- Road Edge Guide Posts modelled at the respective location, and
- Identify the start and end location (TdistStart, TdistEnd) of the Road Edge Guide Posts sequence along the control line, marking the initial and final location of the posts. Spacing shall conform to the requirements of the Queensland *Manual of Uniform Traffic Control Devices* (Queensland MUTCD), Part 2 and MRTS14 *Road Furniture*.

**Figure 5.2 – Object naming convention for Road Edge Guide Posts along gazettal**



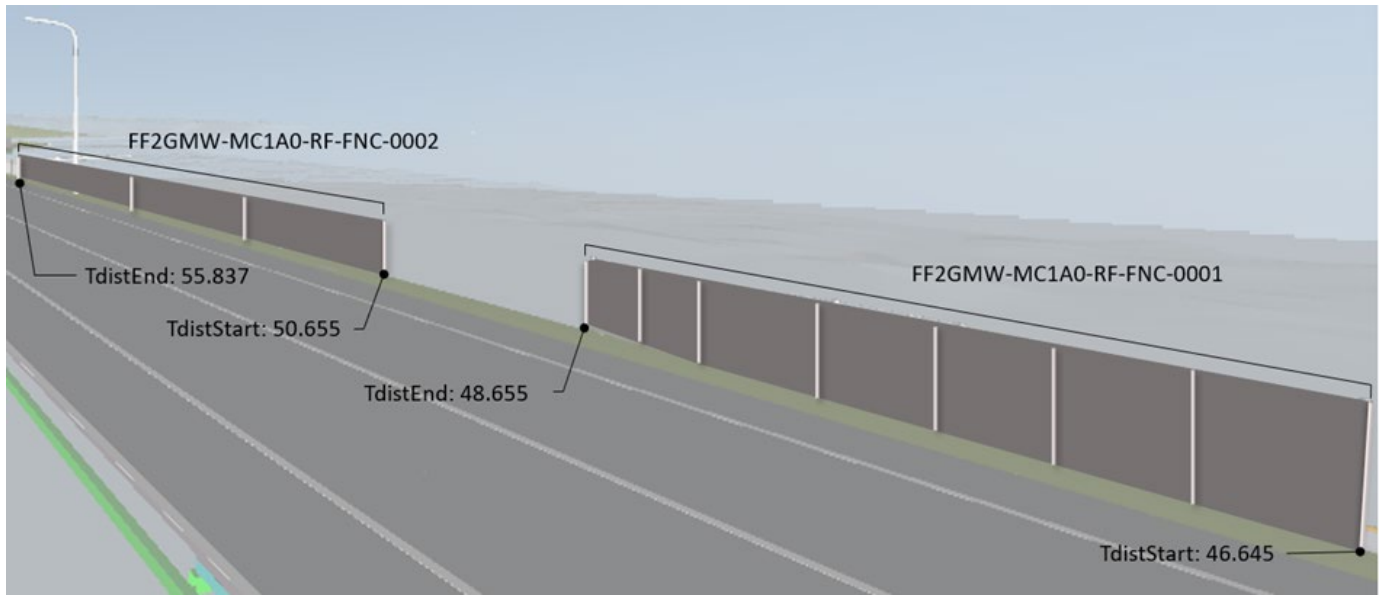
### 5.3 Fencing and Gates

Figure 5.3 shows the naming convention for fencing in a Road Furniture BIM model.

Reference should be made to Standard Drawings found in the Fencing and noise barriers combined set of drawings for various fence and gate examples.

The naming convention adopts the following methodology:

- Fencing posts and panels modelled at the respective location.
- Identify the start and end location (TdistStart, TdistEnd) of the fence along the control line, marking the initial and final location of the fence. Post spacing shall conform to manufacturers specifications and MRTS14 *Road Furniture*, and
- Gates identified at a single location (Tdist), approximate centre of gate.

**Figure 5.3 – Object naming convention for Chainwire fence with steel posts along gazettal**

## 5.4 Road Sign

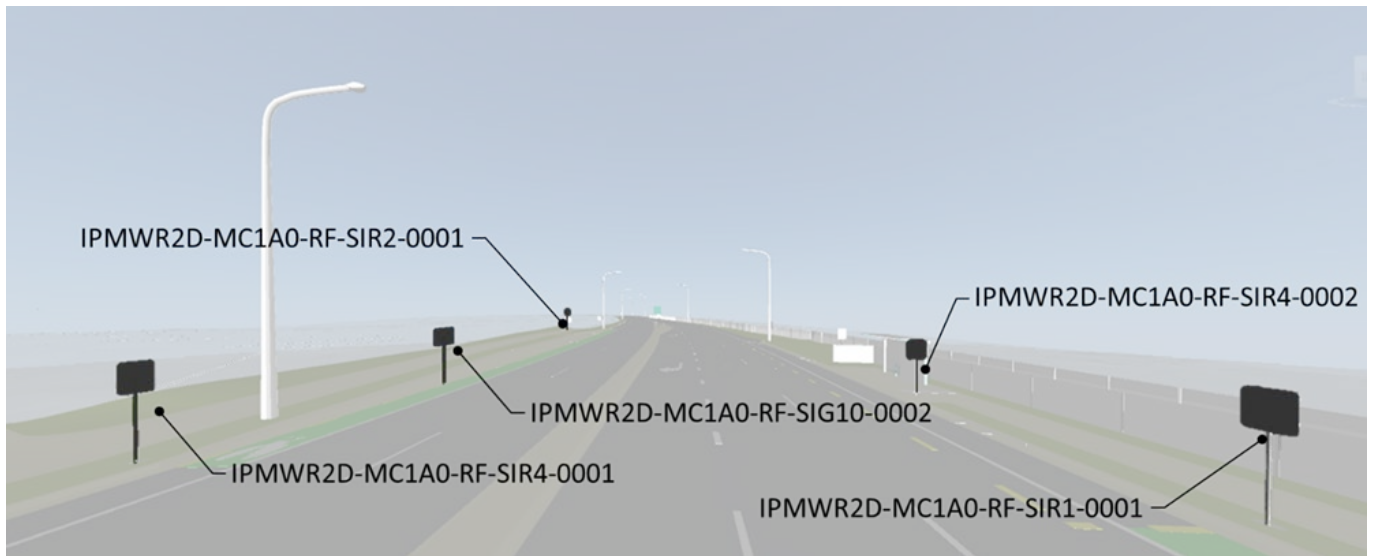
Figure 5 4 shows the naming convention for Road signs in a Road Furniture BIM model. Reference should be made to Standard Drawings found in the Signs and guide posts combined set of drawings for various sign types and details examples.

The naming convention adopts the following methodology:

- road signs identified and numbered at the respective location, and
- road signs are numbered in direction of gazettal.

For composite elements such as signs and sign posts, the attribution only needs to be applied to one element but must carry all attribution applicable to the composite element, e.g. MUTCDSignID, NumberOfPosts, PostType and so on.

**Figure 5.4 – Object naming convention for Road sign model along gazettal with corresponding sign numbering (example sign type Queensland MUTCD)**



**Regulatory Signs R1 = Movement series (R1-2)**



**Regulatory Signs R4 = Speed series (R4-1)**



**Regulatory Signs R2 = Movement series (R2-19)**



**Guide Signs G10 = Kilometre posts (G10-3)**



### 5.5 Grids

Figure 5.5.1 shows the naming convention for a Grid in a Road Furniture BIM model.

The naming convention adopts the following methodology:

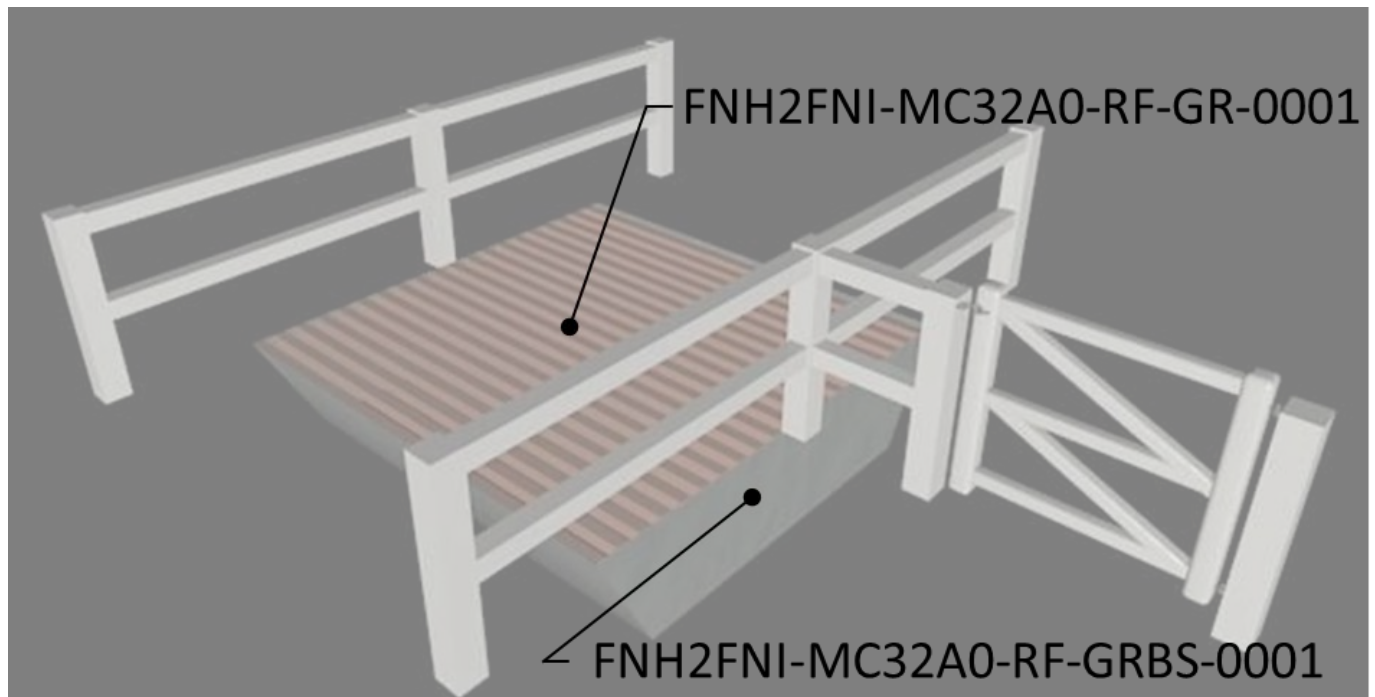
- grid identified and numbered at the respective location
- base slab identified and numbered at the respective location, and
- grids are numbered sequentially in direction of gazettal.

Refer to Standard Drawings for Grids to determine the base slab type when assigning the attributes for the base slabs within the models.

### 5.5.1 Fencing adjoining a grid

For naming convention for Fencing adjoining a grid, refer to Section 5.3.

**Figure 5.5.1 – Object naming convention for Grid in roadway with cast insitu base slab**



## 5.6 Roadside Safety Barrier

Figure 5.6.1 shows the naming convention for a Road Safety Barrier in a Road Furniture BIM model.

Reference should be made to Standard Drawings found in the concrete barriers and guardrails combined set of drawings for various concrete barriers and guardrails examples.

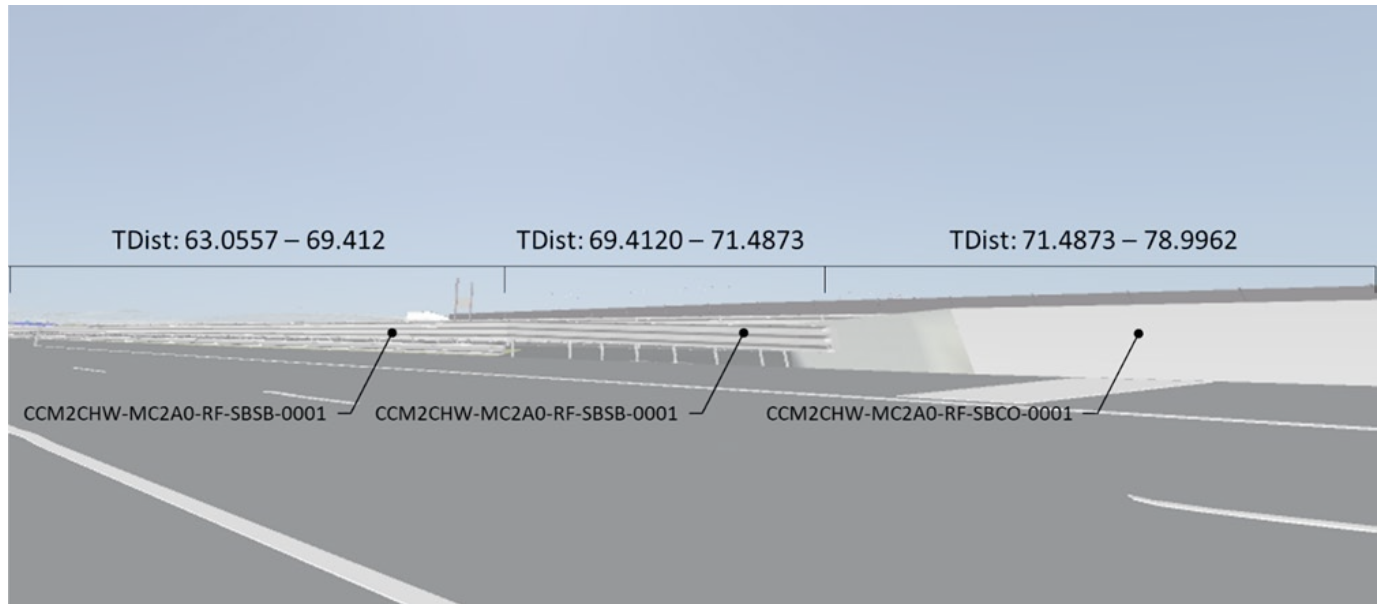
The naming convention adopts the following methodology:

- Roadside safety barriers to be modelled at the respective location.
- Identify the start and end location (TdistStart, TdistEnd) of the barrier including end treatment along the control line, marking the initial and final location of the barrier including end treatment. Barrier posts and lengths shall conform to manufacturers specifications.
- Start and End treatments to be modelled at the respective location.
- Roadside safety barrier transitions to be modelled and numbered sequentially along a section looking 'up chainage' (increasing chainage), and
- Motorcycle protection devices to be modelled and numbered sequentially left-to-right along a section looking 'up chainage' (increasing chainage).

### 5.6.1 Road Safety Barriers on structures

For naming convention for Road Safety Barriers on bridges and structures, refer to *Building Information Modelling (BIM) for Bridges Manual*.

**Figure 5.6.1 – Object naming convention for concrete road safety barrier**

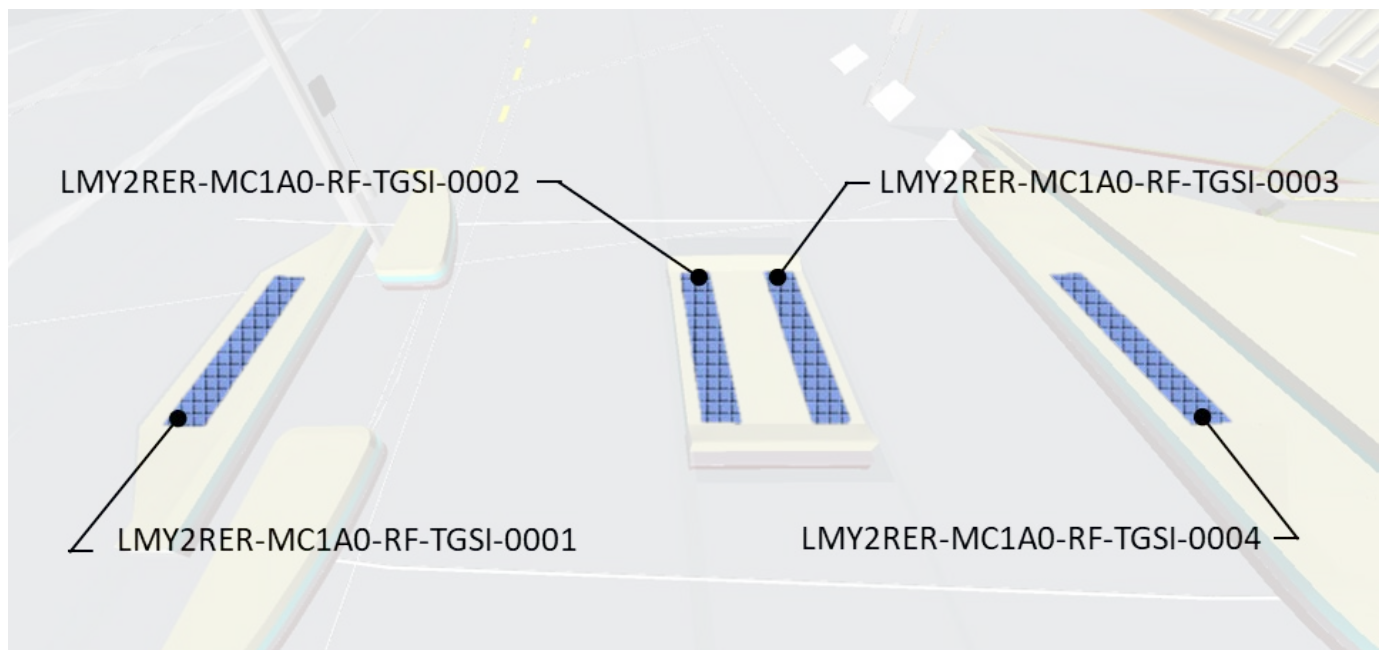


### 5.7 Tactile Ground Surface Indicators (TGSIs)

Figure 5.7 shows the naming convention for Tactile Ground Surface Indicators (TGSIs) in a Road Furniture BIM model.

The naming convention adopts the following methodology:

- TGSIs are identified and numbered at the respective location and are numbered sequentially left-to-right along a section looking 'up chainage' (increasing chainage) in direction of gazettal, and
- TGSIs location to be identified by Tdist from project start Reference Point.

**Figure 5.7 – Object naming convention for TGSI on a pedestrian crossing**

Requirements of compliant kerb ramps and TGSI installation are set out in the drawings within the Transport and Main Roads Standard Drawings – Roadworks, drainage, culverts and geotechnical.

## 5.8 Noise Barriers

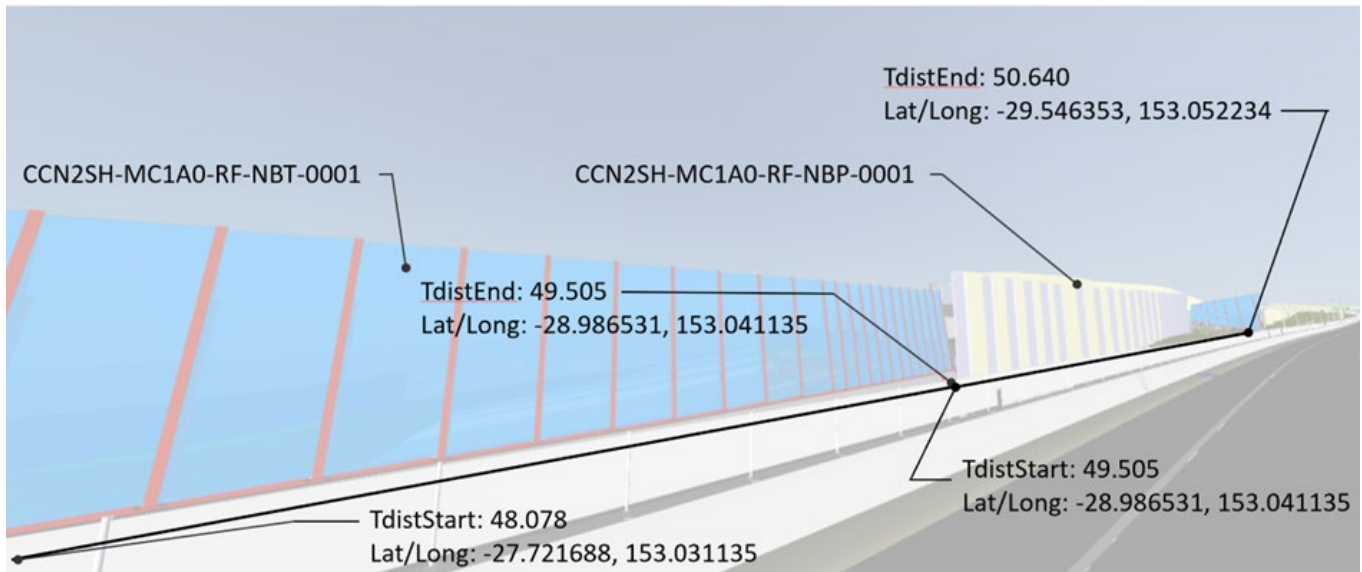
Figure 5.8 in a Road Furniture BIM model.

Reference should be made to Standard Drawings SD1606 *Noise Barriers – Structural Detail RHS and SHS Steel Posts Plywood Panels*, SD1607 *Noise Barriers – Structural Detail Universal Beam Posts Plywood Panels*, and SD1608 *Noise Barriers – Structural Detail Universal Beam Posts Concrete Panels Steel Panels* for Noise Barrier examples.

The naming convention adopts the following methodology:

- Noise Barriers to be modelled at the respective location, and
- Identify the start and end location (TdistStart, TdistEnd) of the Noise Barrier along the control line, marking the initial and final location of the Noise Barrier. Barrier panel lengths shall conform to manufacturers' specifications and MRTS15 *Noise Fences*.

**Figure 5.8 – Object naming convention for transparent and plywood noise barriers along gazettal**



Given that the asset identifier numbers for an asset are created for noise barrier AIMS after the completion of the project, use the unique object code to fill in all ID fields, such as 'ASSET ID', throughout the design stages.

Any deviation or variation of this process would need to be clearly outlined in the BEP so that it can be assessed by the department.

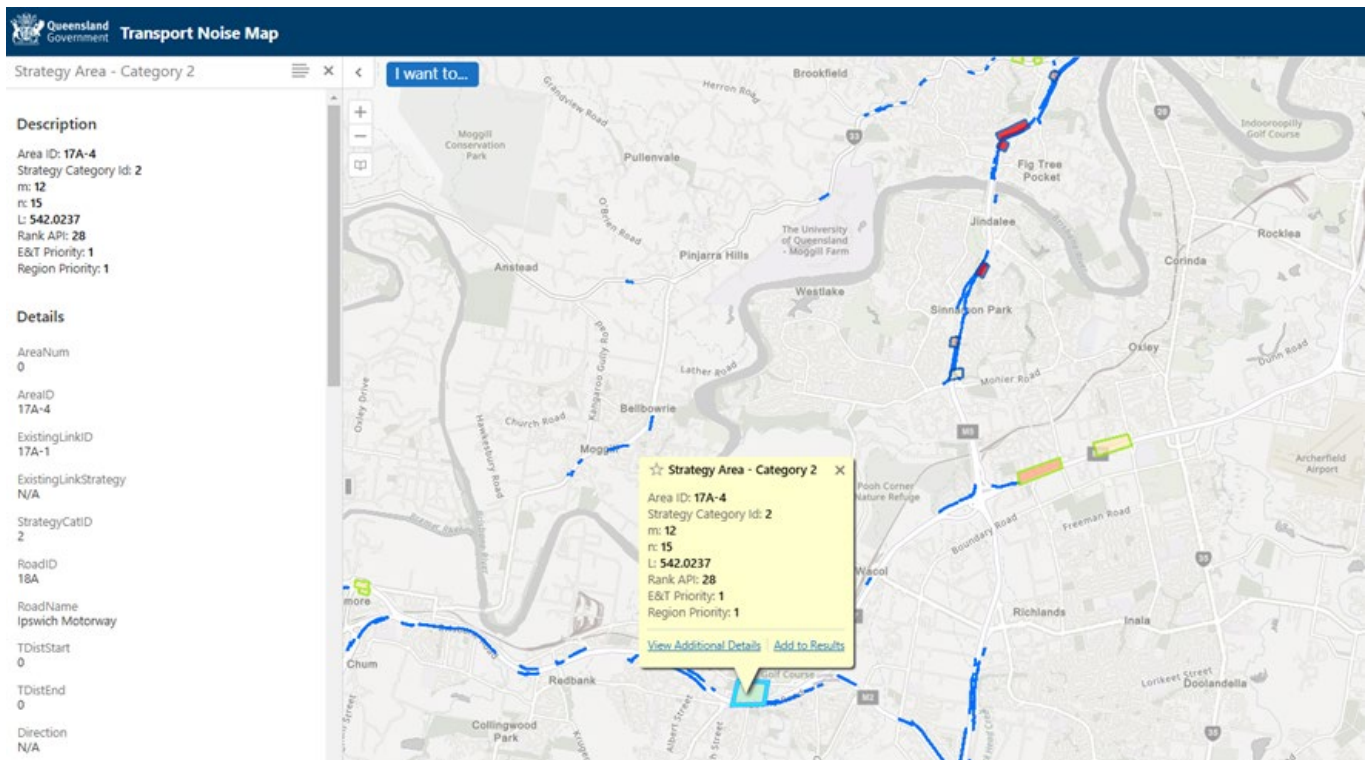
It is recognised that Noise Barriers are a composite element and, where possible, there is no requirement to model every panel in a span with all of the attribution assigned to every panel.

Modellers need to give consideration on how composite elements can be modelled as continuous objects with all attributes assigned to the single element.

## 6 Road Furniture BIM model interface with Asset Information Management System

The department intends to utilise the Road Furniture BIM model data to improve the efficiency of managing the state's assets. Road Furniture objects in the BIM models shall contain asset management data that aligns with the Transport and Main Roads object attributes for Road Furniture. This data will be extracted from the As Constructed models and drawings and uploaded into the AIMS. This data can be shown in one of the Department's AIMS in Figure 6.

**Figure 6 – Noise Barrier data entered into Asset Information Management System**



In order to facilitate the integration with the department's Asset Information Management Systems, objects of the Road Furniture BIM models shall be assigned to the following IFC class as shown in Table 6.

**Table 6 – Road furniture model object Industry Foundation Classes assignment**

| Object group   | IFC class           | IFC type                |
|----------------|---------------------|-------------------------|
| Road Furniture | IfcTransportElement | IfcTransportElementType |

## 7 Road Furniture BIM model level of information need

The required level of information need for the Road Furniture BIM models follows the process as defined in the department's *Building Information Modelling (BIM) Exchange Information Requirements (EIR)* Section 9.4, which outlines how the level of geometric detail and level of attribute information increases at each submission gate.

The following is a guide for the level of geometrical detail and information at project submission gates:

- Initial Design submission – 3D linear string, 3D object, or point geometrical information with a BIM object code as a minimum
- Developed Design submission – 3D object or point geometrical information with demonstrated application of attribute codes or attribute placeholders for the major disciplines of the project

- Certified Design submission – 3D objects with accurate geometrical information carrying all element attributes, and
- As Constructed submission – 3D objects with field verified geometrical information and all element attributes.

## **8 Road Furniture model attributes**

The Road Furniture BIM models shall be developed to allow the incorporation and attachment of Project, Design, Construction, and Asset Management information and records to each Road Furniture object. The minimum information required to be attributed to a Road Furniture object is outlined within this section. The design consultant shall outline procedures that demonstrate the capability to attach the relevant design and asset management information to the Road Furniture BIM models in the consultant's BIM execution plan.

The Contractor shall outline procedures that demonstrate the capability to attach the relevant Construction information to the Road Furniture BIM models in the Contractor's BIM execution plan.

### ***8.1 Transport and Main Roads Road Furniture object property sets***

Objects within the Road Furniture BIM models shall be developed to have the following property sets:

- project attributes
- design attributes
- construction attributes, and
- asset management attributes.

The property sets shall be created and displayed as separate tabs in the properties window within an IFC model file viewer for Road Furniture objects (see Figure 8 1). The property sets are defined in the *Transport and Main Roads object attributes for Road Furniture*, published on the departmental website. For objects not listed in the *Transport and Main Roads object attributes for Road Furniture*, the design consultant or Contractor shall prepare and submit attribute schedules for these objects to suit the needs of the project, as part of their BIM execution plan.

**Figure 8.1 – Example property set tabs in a Road Furniture road sign model**

The screenshot shows a 'Properties' window with five tabs: 'Design', 'IFC Data', 'Project Level', 'Construction', and 'Asset Management'. The 'Design' tab is active, displaying a table of properties and values.

| Property                  | Value                      |
|---------------------------|----------------------------|
| UNIQUE OBJECT CODE        | CHMYD2T-MC1A0-RF-SIGN-0057 |
| SIGN FACE (MUTCD Sign ID) | G1-2                       |
| NUMBER OF POSTS           | 2                          |
| POST TYPE                 | Slip Base                  |
| POST HEIGHT (mm)          | 1500                       |
| LATITUDE                  | -16.9781033                |
| LONGITUDE                 | 145.5322645                |
| DRAWING NUMBER            | 825748                     |
| DESIGN VERIFIED BY        | JANE CITIZEN               |
| DESIGN VERIFIED DATE      | 07-JAN-2024                |
| MODEL IS CERTIFIED ISSUED | JANE CITIZEN - 12345       |

## 9 Appendix A: Unique code breakdown

| Object category            | Design object   | Discipline | Object code  | Unique object code example                               |
|----------------------------|---|------------|--------------|--|
| Road edge guide post<br>GP | Rigid timber posts – Hardwood                           | RF         | GPH          | IPMWR2D-MC1A0-RF-GPH-0001                                |
|                            | Rigid timber posts – Softwood                           | RF         | GPS          | IPMWR2D-MC1A0-RF-GPS-0001                                |
|                            | Rigid posts other than timber                           | RF         | GPO          | IPMWR2D-MC1A0-RF-GPO-0001                                |
|                            | Flexible posts  | RF         | GPF          | IPMWR2D-MC1A0-RF-GPF-0001                                |
|                            | Delineators   | RF         | GPD          | IPMWR2D-MC1A0-RF-GPD-0001                                |
| Fencing<br>FN              | Timber posts – Hardwood                                 | RF         | FNPH         | IPMWR2D-MC1A0-RF-FNPH-0001                               |
|                            | Timber posts – Softwood                                 | RF         | FNPS         | IPMWR2D-MC1A0-RF-FNSH-0001                               |
|                            | Steel posts, stays, and rails                           | RF         | FNPST        | IPMWR2D-MC1A0-RF-FNPST-0001                              |
|                            | Fencing wire – Galvanised (plain and barbed)            | RF         | FNW          | IPMWR2D-MC1A0-RF-FNW-0001                                |
|                            | Chainwire – Galvanised                                  | RF         | FNC          | IPMWR2D-MC1A0-RF-FNC-0001                                |
|                            | Welded mesh   | RF         | FNWM         | IPMWR2D-MC1A0-RF-FNWM-0001                               |
|                            | Gates   | RF         | FNG          | IPMWR2D-MC1A0-RF-FNG-0001                                |
| Road sign<br>SI            | Sign face<br>Include sign code in object code – Sign R3 | RF         | SI**<br>SIR3 | IPMWR2D-MC1A0-RF-SI**-0001<br>IPMWR2D-MC1A0-RF-SIR3-0001 |
|                            | Sign post   | RF         | SIP          | IPMWR2D-MC1A0-RF-SIP-0001                                |
|                            | Regulatory signs  |            |              |  |
|                            | R1 = Movement series                                    | RF         | SIR1         | IPMWR2D-MC1A0-RF-SIR1-0001                               |
|                            | R2 = Direction series                                   | RF         | SIR2         | IPMWR2D-MC1A0-RF-SIR2-0001                               |
|                            | R3 = Pedestrian series                                  | RF         | SIR3         | IPMWR2D-MC1A0-RF-SIR3-0001                               |
|                            | R4 = Speed series                                       | RF         | SIR4         | IPMWR2D-MC1A0-RF-SIR4-0001                               |
|                            | R5 = Parking series                                     | RF         | SIR5         | IPMWR2D-MC1A0-RF-SIR5-0001                               |
|                            | R6 = Miscellaneous series                               | RF         | SIR6         | IPMWR2D-MC1A0-RF-SIR6-0001                               |

| Object category | Design object  | Discipline | Object code | Unique object code example  |
|-----------------|--|------------|-------------|-----------------------------|
|                 | R9 = Supplementary plates for general use                    | RF         | SIR9        | IPMWR2D-MC1A0-RF-SIR9-0001  |
|                 | RX = Railway crossing flashing signal assembly               | RF         | SIRX        | IPMWR2D-MC1A0-RF-SIRX-0001  |
| Warning signs   | W1 = Intersection series                                     | RF         | SIW1        | IPMWR2D-MC1A0-RF-SIW1-0001  |
|                 | W2 = Intersection series                                     | RF         | SIW2        | IPMWR2D-MC1A0-RF-SIW2-0001  |
|                 | W3 = Advance warning of traffic control device series        | RF         | SIW3        | IPMWR2D-MC1A0-RF-SIW3-0001  |
|                 | W5 = Road Obstacle series                                    | RF         | SIW5        | IPMWR2D-MC1A0-RF-SIW5-0001  |
|                 | W6 = Pedestrian, bicycle and school series                   | RF         | SIW6        | IPMWR2D-MC1A0-RF-SIW6-0001  |
|                 | W7 = Railway crossing series                                 | RF         | SIW7        | IPMWR2D-MC1A0-RF-SIW7-0001  |
|                 | W8 = Supplementary plate series                              | RF         | SIW8        | IPMWR2D-MC1A0-RF-SIW8-0001  |
| Guide signs     | G1 = Advanced direction series                               | RF         | SIG1        | IPMWR2D-MC1A0-RF-SIG1-0001  |
|                 | G2 = Major intersection direction (Type 1) series            | RF         | SIG2        | IPMWR2D-MC1A0-RF-SIG2-0001  |
|                 | G3 = Minor intersection direction (Type 2 and Type 3) series | RF         | SIG3        | IPMWR2D-MC1A0-RF-SIG3-0001  |
|                 | G4 = Reassurance direction series                            | RF         | SIG4        | IPMWR2D-MC1A0-RF-SIG4-0001  |
|                 | G5 = Street name and pedestrian direction series             | RF         | SIG5        | IPMWR2D-MC1A0-RF-SIG5-0001  |
|                 | G6 = Geographical feature series                             | RF         | SIG6        | IPMWR2D-MC1A0-RF-SIG6-0001  |
|                 | G7 = Service series  | RF         | SIG7        | IPMWR2D-MC1A0-RF-SIG7-0001  |
|                 | G8 = Route marker series                                     | RF         | SIG8        | IPMWR2D-MC1A0-RF-SIG8-0001  |
|                 | G9 = Traffic instruction series                              | RF         | SIG9        | IPMWR2D-MC1A0-RF-SIG9-0001  |
|                 | G10 = Kilometre posts  | RF         | SIG10       | IPMWR2D-MC1A0-RF-SIG10-0001 |

| Object category      | Design object   | Discipline | Object code | Unique object code example   |
|----------------------|---|------------|-------------|------------------------------|
|                      | G11 = Tourist series  | RF         | SIG11       | IPMWR2D-MC1A0-RF-SIG11-0001  |
|                      | GE1 = Expressway advanced direction series                                    | RF         | SIGE1       | IPMWR2D-MC1A0-RF-SIGE1-0001  |
|                      | GE2 = Expressway exit direction series  | RF         | SIGE2       | IPMWR2D-MC1A0-RF-SIGE2-0001  |
|                      | GE4 = Expressway reassurance direction series                                 | RF         | SIGE3       | IPMWR2D-MC1A0-RF-SIGE3-0001  |
|                      | GE6 = Expressway information series   | RF         | SIGE6       | IPMWR2D-MC1A0-RF-SIGE6-0001  |
|                      | GE7 = Expressway service series   | RF         | SIGE7       | IPMWR2D-MC1A0-RF-SIGE7-0001  |
|                      | GE9 = Expressway traffic instruction series                                   | RF         | SIGE9       | IPMWR2D-MC1A0-RF-SIGE9-0001  |
|                      | GE11 = Expressway tourist series  | RF         | SIGE11      | IPMWR2D-MC1A0-RF-SIGE11-0001 |
| Temporary signs      | T1 = Advance series - Index of signs for works on roads and temporary hazards | RF         | SIT1        | IPMWR2D-MC1A0-RF-SIT1-0001   |
|                      | T2 = Position series  | RF         | SIT2        | IPMWR2D-MC1A0-RF-SIT2-0001   |
|                      | T3 = Road condition series  | RF         | SIT3        | IPMWR2D-MC1A0-RF-SIT3-0001   |
|                      | T4 = Special hazard series  | RF         | SIT4        | IPMWR2D-MC1A0-RF-SIT4-0001   |
|                      | T5 = Traffic diversion series   | RF         | SIT5        | IPMWR2D-MC1A0-RF-SIT5-0001   |
|                      | T6 = Vehicle mounted series   | RF         | SIT6        | IPMWR2D-MC1A0-RF-SIT6-0001   |
|                      | T7 = Hand banner series   | RF         | SIT7        | IPMWR2D-MC1A0-RF-SIT7-0001   |
|                      | T8 = Pedestrian series  | RF         | SIT8        | IPMWR2D-MC1A0-RF-SIT8-0001   |
| Electronic series    |   |            |             |                              |
| Multi-message series | TM1 = Advance signs   | RF         | SITM1       | IPMWR2D-MC1A0-RF-SITM1-0001  |
|                      | TM2 = Position signs  | RF         | SITM2       | IPMWR2D-MC1A0-RF-SITM2-0001  |
|                      | TM3 = Road condition signs  | RF         | SITM3       | IPMWR2D-MC1A0-RF-SITM3-0001  |
| Hazard markers       | TM4 = Special hazard signs  | RF         | SITM4       | IPMWR2D-MC1A0-RF-SITM4-0001  |

| Object category                           | Design object                             | Discipline | Object code | Unique object code example   |
|---|---|------------|-------------|------------------------------|
|   | TM5 = Traffic diversion signs             | RF         | SITM5       | IPMWR2D-MC1A0-RF-SITM5-0001  |
|   | TM8 = Pedestrian and cyclist signs        | RF         | SITM8       | IPMWR2D-MC1A0-RF-SITM8-0001  |
|   | TM9 = Event signs                         | RF         | SITM9       | IPMWR2D-MC1A0-RF-SITM9-0001  |
|   | TM10 = Lane status signs                  | RF         | SITM10      | IPMWR2D-MC1A0-RF-SITM10-0001 |
|   | RM = Temporary regulatory signs           | RF         | SIRM        | IPMWR2D-MC1A0-RF-SIRM-0001   |
|   | WM = Temporary warning signs              | RF         | SIWM        | IPMWR2D-MC1A0-RF-SIWM-0001   |
|   | GM = Temporary direction signs            | RF         | SIGM        | IPMWR2D-MC1A0-RF-SIGM-0001   |
| Grids<br>GR                               | Grid                                      | RF         | GR          | IPMWR2D-MC1A0-RF-GR-0001     |
|   | Base slab                                 | RF         | GRBS        | IPMWR2D-MC1A0-RF-GRBS-0001   |
| Roadside safety barrier<br>SB             | Roadside barrier – Concrete               | RF         | SBCO        | IPMWR2D-MC1A0-RF-SBCO-0001   |
|   | Roadside barrier – Steel beam             | RF         | SBSB        | IPMWR2D-MC1A0-RF-SBSB-0001   |
|   | Roadside barrier – Wire rope              | RF         | SBWR        | IPMWR2D-MC1A0-RF-SBWR-0001   |
|   | Roadside barrier – Steel strap            | RF         | SBSS        | IPMWR2D-MC1A0-RF-SBSS-0001   |
|   | End treatment – Gating                    | RF         | SBET        | IPMWR2D-MC1A0-RF-SBET-0001   |
|   | End treatment – Extruded head cover       | RF         | SBET        | IPMWR2D-MC1A0-RF-SBET-0001   |
|   | End treatment – Redirective crash cushion | RF         | SBET        | IPMWR2D-MC1A0-RF-SBET-0001   |
|   | Motorcycle protection                     | RF         | SBMP        | IPMWR2D-MC1A0-RF-SBET-0001   |
|   | Transition                                | RF         | SBTR        | IPMWR2D-MC1A0-RF-SBTR-0001   |
| Tactile ground surface indicators<br>TGSI | Tactile ground surface indicators         | RF         | TGSI        | IPMWR2D-MC1A0-RF-MTSPOL-0001 |

| <b>Object category</b> | <b>Design object</b>        | <b>Discipline</b> | <b>Object code</b> | <b>Unique object code example</b> |
|------------------------|-----------------------------|-------------------|--------------------|-----------------------------------|
| Noise barrier<br>NB    | Barrier panel – Plywood     | RF                | NBP                | IPMWR2D-MC1A0-RF- NBP-0001        |
|                        | Barrier panel – Concrete    | RF                | NBCON              | IPMWR2D-MC1A0-RF- NBCON-0001      |
|                        | Barrier panel – Composite   | RF                | NBCO               | IPMWR2D-MC1A0-RF- NBCO-0001       |
|                        | Barrier panel – Steel       | RF                | BPS                | IPMWR2D-MC1A0-RF- BPS-0001        |
|                        | Barrier panel – Aluminium   | RF                | NBA                | IPMWR2D-MC1A0-RF-NBA-0001         |
|                        | Barrier panel – Transparent | RF                | NBT                | IPMWR2D-MC1A0-RF-NBT-0001         |
|                        | Posts – Steel               | RF                | NBPO               | IPMWR2D-MC1A0-RF-NBPO-0001        |

