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**Director of Engineering Memorandum****DEM 159/17****DEM TITLE: Allocation of Reference Numbers for Bridges, VRS Safety Barriers, Retaining Walls, Masts, Gantries and Slopes**

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**Classification**

<b>Level 1</b> (Title / Key Words) :	Structure Reference Number, Inventory, Inspection, Bridge, VRS Safety Barrier, Retaining Wall, Mast, Gantry, Slope
<b>Level 2 :</b> (Directorate/Owner):	Network Services
<b>Level 3:</b> (RSHQ or HoBU Managed Function):	Network Development Branch
<b>Level 4 :</b> (Work Areas)	Structures

**Purpose**

This DEM

- draws together past decisions on the allocation of bridge and VRS safety barrier reference numbers recorded in minutes of various meetings,
- alters the previously published numbering scheme for retaining walls and other structure types in DEM 146/13,
- reflects necessary changes made to address duplications where these have occurred through Divisional boundary changes, and
- extends the concept to cover high masts/gantries and slopes.

This will ensure that duplicate numbers are not allocated as the process of inventory proceeds and avoids conflicts in records arising from future boundary changes and problems when moving to centralised data in the proposed Structures Management System-Roads (SMS-R).

**Scope**

Allocation of structure reference numbers to bridges, VRS safety barriers, retaining walls, high masts, gantries and slopes. (BD 45/93 – Identification Marking of Highway Structures is not applicable in NI)

This DEM supersedes DEM 146/13 “Identification regime for retaining walls” paragraph 5.1 “Numbering convention”, Appendix 2 and Appendix 3

This DEM is aimed at:-

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## Director of Engineering Memorandum

DEM 159/17

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- a) *All TransportNI technical staff, Consultants and DBFO Companies* involved in the delivery of TransportNI projects where the defined types of structures are provided, altered and/or maintained.
- b) *All TransportNI technical staff, Consultants and DBFO Companies* involved in the inspection and management of the defined types of structures.

## Policy

### 1.0 Background

1.1 There has been no single point of co-ordination for the allocation of reference numbers for structures. Historically, bridges have had a recognised assignment of ranges of such numbers to Divisions who then allocated numbers in their respective areas and thus ensured no duplication. With the decision to assign reference numbers to VRS safety barriers and retaining walls a new numbering scheme for all structure types was proposed and published in DEM 146/13 "Identification Regime for Retaining Walls". Following District Council re-organisation in 2014, duplication was found to have occurred due to the co-terminus Divisional boundary changes that were made.

1.2 Until the proposed SMS-R can centrally assign structure reference numbers or check to prevent duplications arising from local Division assignments, it is necessary to set out number ranges which Divisional Offices may use and so avoid duplication. It is intended that the proposed SMS-R will use the structure reference numbering system described in this DEM. By doing so, eventual transition to the SMS-R from the Roads Service Bridge Management System (RSBMS) and other existing Divisional records will not require further re-numbering.

1.3 A more detailed history of the numbering systems to date is provided in **Appendix F** which illustrates some of the principles that have been applied in the past and are replicated in this system.

### 2.0 Number format

2.0.1 For each structure the reference number format comprises two letters followed by five digits, e.g BR12345, RW23456, SL98765.

2.0.2 This allows the existing bridge numbering scheme to be incorporated without requiring any changes to the five-digit part and so preserve consistency with existing records. The existing VRS safety barrier numbering scheme can also continue with some limited changes required to remove duplication giving reasonable continuity with existing records.

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**Director of Engineering Memorandum**

**DEM 159/17**

**DEM TITLE: Allocation of Reference Numbers for Bridges, VRS Safety Barriers, Retaining Walls, Masts, Gantries and Slopes**

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## **2.1 Two-Letter Prefix**

2.1.1 The two letters define the type of structure, and are:

<b>Prefix</b>	<b>Structure type</b>
BR	Bridge
VR	VRS Safety barrier
RW	Retaining wall
SL	Slope
MG	High masts and gantries

2.1.2 When a new structure reference number is required the relevant office selects the appropriate two-letter prefix part from the list above.

## **2.2 Five-Digit Number**

2.2.1 The five digit number for each structure is the unique identifier for any given structure within that category of structures. The ranges and sub-ranges allocated to each Division or DBFO company for each type of structure are specified in **Appendices A to E**. Consistency with existing practice and in particular allowing at least the final three digits of the number to remain unchanged, has been the primary concern in these allocations.

2.2.2 Ranges are allocated to Divisions. Sub-ranges within these reflect various aspects of the present operation of existing numbering schemes which vary between structure types. One of these aspects is the allocation of sub-ranges for VRS Safety Barriers (VR – **Appendix B**) and Retaining Walls (RW – **Appendix C**) to the DBFO Companies. Presently, the PPP/ DBFO Companies allocate numbers from these sub-ranges for these types. This approach has been maintained in the relevant Appendices. For the Masts (MG – **Appendix E**) DBFO Company sub-ranges are noted but allocation of new numbers is under the control of the relevant Division. For Bridges (BR – **Appendix A**) and Slopes (SL – **Appendix D**) there are no sub-ranges for DBFO Companies and allocation of new numbers is also under the control of the relevant Division.

2.2.3 When a new structure reference number is required, the relevant office selects a five-digit number from the appropriate range (and sub-range if appropriate) assigned to their control which for that type of structure is

- unique, and
- not previously assigned.

2.2.4 Where a structure is replaced with a new one with the same function, the existing number may be reused for the new structure and the records with that number updated accordingly. Typical scenarios where this may happen are:

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- A masonry arch bridge is replaced by a reinforced concrete box culvert carrying the same road over the same watercourse at the same location.
- Two VRS Safety Barriers close together are replaced by a single barrier and the number of one of the barriers is reused to refer to the new single barrier.

2.2.5 Divisions often have their own informal sub-ranges for any structure type, reflecting their management approach, inspection regime, council boundaries, road types, etc. These informal sub-ranges are not included in this DEM but, provided the structure reference numbers selected comply with the requirements of this DEM, there is no restriction on Divisional application of such informal sub-ranges.

### **3.0 Other Considerations**

3.1 The numbering scheme, by its nature, includes an implicit Divisional reference. Although this will not give rise to duplication in any future boundary changes, if such changes occur before data is centralised in the SMS-R then re-working of the ranges may be required. In using this numbering scheme, or any informal sub-range scheme, it is recommended that numbers are assigned sequentially from the lower end of any range as this leaves greatest scope for later changes that may be needed.

3.2 Some ranges have been left unallocated for future use. This covers scenarios such as exhaustion of an existing range or a need following on from boundary changes as described above.

3.3 It should be noted that Divisional informal sub-ranges are vulnerable to dilution with boundary changes.

3.4 Once functioning for any structure type, SMS-R will be able to operate without blocks because as a centralised system it can be written to avoid duplication and also has the potential to issue numbers directly. However issuing numbers in a simple sequence may not be desirable for Divisions who may prefer the mnemonic element of specified ranges and the degree to which SMS-R operates in ranges will need to be determined and provided to DfI Information Systems Branch (ISB) as part of the specification for SMS-R.

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**Director of Engineering Memorandum**

**DEM 159/17**

**DEM TITLE: Allocation of Reference Numbers for Bridges, VRS Safety Barriers, Retaining Walls, Masts, Gantries and Slopes**

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**Equality**

The Department has a statutory obligation under Section 75 of the NI Act 1998 to undertake an equality screening on all new policies/strategies and any policies that are revised or reviewed.

It has been concluded that an equality screening exercise is not required for this DEM, as it addresses an internal procedural matter covering the allocation of reference numbers to structures.

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**References**

BD 45/93 (DMRB 3.1.1) IDENTIFICATION MARKING OF HIGHWAY STRUCTURES (1.6 Not applicable in Scotland and NI, but allows only stencilled painted numbers and specifically prohibits fixing of number plates)