

Appendix 3.5

Gleensk Viaduct Principal Inspection Report





**GLEENSK VIADUCT,
GLEENSK,
CO. KERRY.**

**PRINCIPAL INSPECTION, INVENTORY REPORT
AND WORKS PROPOSAL**



Project & Document No	Revision	Prepared By	Checked By	Approved By	Status	Date
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1.0 INTRODUCTION

Malachy Walsh & Partners were commissioned by Kerry County Council to carry out a Principal Inspection of the Gleensk Viaduct to assess its condition and to quantify any repairs required for its future use as part of the proposed Glenbeigh to Cahersiveen walking route.

This report summarises the inspection and gives recommendations, along with costings for remedial work.

The future use of the bridge for pedestrian access only is taken into account in the inspection. Classifying the bridge as a railway bridge will lead to an unacceptably critical overall rating which does not reflect the structural requirements for its proposed use. The renovated bridge must provide an acceptable factor of safety for pedestrian use only. Any further loading increase thereafter would require further inspection.

2.0 PRINCIPAL INSPECTION FORMAT

The Principal Inspection follows the National Roads Authority Standard format. This format breaks the structure into 14 components. Each relevant component is assigned a condition rating between 0 and 5 as follows:

- 0 No or insignificant damage.
- 1 Minor damage but no need of repair.
- 2 Some damage, repair needed when convenient. Component is still functioning as originally designed. Observe the condition development.
- 3 Significant damage, repair needed very soon. i.e. within next financial year.
- 4 Damage is critical and it is necessary to execute repair works at once, or to carry out a detailed inspection to determine whether any rehabilitation works are required.
- 5 Ultimate damage. The component has failed or is in danger of total failure, possibly affecting the safety of traffic. It is necessary to implement emergency temporary repair work immediately or rehabilitation work without delay after the introduction of load limitation measures.

3.0 REPAIR WORKS

All repair works required for a rehabilitation of the bridge are included in the Principal Inspection section of this report. No major works are considered critical to allow the bridge in its present state to be used for its intended purpose. Some minor works are described hereunder.

4.0 SITE LOCATION



Location Plan (not to scale)

Structure Name:

Road Number:



Malachy Walsh and Partners
Consulting Engineers

Gleensk Viaduct

NA

7.0 WORKS PROPOSAL AND COST ESTIMATE

Works Proposal –

The remedial and upgrading works to allow safe pedestrian use of the bridge are very minor in nature. The existing soil/stone capping to the deck needs to be removed. Any serious corrosion of the deck should be repaired. A tar waterproofing exists on the deck at present and this should also be repaired with a hot-pour bitumen. A thin layer of gravel may be required to provide slip resistance. The existing CHS railing on top of the plate girders should be removed where significantly corroded and replaced with a galvanised and painted 50mm dia. CHS (25% replacement considered appropriate).

Costings –

Costs excl. VAT for the works are estimated as follows:

Element	Cost
Preliminaries	€5,000.00
Removal of capping material (300m ³)	€5,000.00
Waterproofing Repairs (10%)	€5,500.00
Steelwork Railing (25%)	€5,500.00
Deck Repairs	€18,000.00
TOTAL excl. VAT	€39,000.00

8.0 PHOTOGRAPHS



Figure 1 : General view along bridge from the east.



Figure 2 : General view along deck showing plate girders, build-up of stone/soil material and CHS handrailing.



Figure 3 : Plate girder and tar waterproofing on structural deck.



Figure 4 : Deck soffit showing minor corrosion to transverse beams.



Figure 5 : Piers showing signs staining due to water percolating through expansion joints.



Figure 6 : Abutment - note the lack of bearings.



Figure 7 : View of expansion joint.

5.0 INVENTORY REPORT:		Geometry of Structure:	
Name of Structure:	<i>GLEENSK VIADUCT</i>	Minimum Vertical Clearance (m):	<i>NA</i>
Date Collected:	<i>29.10.13</i>	Number of Spans:	<i>11</i>
Initials of Inspectors:	<i>BS</i>	Minimum Span Length (m):	<i>18.36</i>
ID & Name of Road:	<i>Railway</i>	Maximum Span Length (m):	<i>18.36</i>
Graphical Location of Bridge:	<i>X 58066 Y 88534</i>	Overall Length (m):	<i>201.96</i>
Altitude (m)	<i>80</i>	Width of Approach (m):	<i>5.50</i>
Direction of Primary Road:	<i>NA</i>	Skew (degrees):	<i>0</i>
Overpass/Underpass	<i>Underpass</i>	Width of Carriageway (m):	<i>4.0</i>
ID & Name of Crossing Passage:	<i>Gleensk River</i>	Width Kerb to Kerb (m):	<i>4.58</i>
Year of Construction/Reconstruction:	<i>1890 approx.</i>	Width Out to Out (m):	<i>5.50</i>
Access Equipment Required:	<i>None</i>	Bridge Curved Y/N:	<i>Y</i>
Additional Details:		Remarks:	
Load Capacity:	<i>Unknown</i>	<i>The deck consists of a flat steel plate overlying steel jack arches supported off the bottom flange of a probable I-beam hidden within the deck.</i>	
Consultant/Date:	<i>MWP/29.10.2013</i>		
Load Distribution Class:	<i>3</i>		

Technical Standards:	<i>NA</i>	
Technical Installations:	<i>None</i>	

6.0 Principal Inspection

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Client:		Kerry County Council				Road No:		Gleensk River		
Area:		Gleensk, Co. Kerry				Structure Name		Gleensk Viaduct		
Date of Inspection:		29/10/2013				Inspectors:		BS		
Weather:		Wet				Year of Next PI		2017		
Component No. & Name	Cond. Mark	Routine Maint.	Spec. Insp. Reqd.	Description of Damage	Photo No.	Type of Repair	Quantity of Repair	Year of Repair	Cost	
1	Bridge Surface	1	-	-	Surfacing to be removed as it is slippery in rain and not suitable for pedestrians or cyclists.	F2,F3	-	-	-	-
2	Expansion Joints	0	N	N	Expansion joints are working as was always intended. It was never expected that the joints would prevent water reaching the piers. Water on the piers does not appear to have caused any damage.	F7	-	-	-	-
3	Footway/ Median	-	-	-	-	-	-	-	-	-
4	Parapet/ Guardrail	3	Y	N	The CHS on top of the plate girders is missing in places and corroded in others. This needs to be replaced in some locations.	F2	Steelwork	See Section 7.	-	See Sec. 7
5	Embankment/ Slopes	-	-	-	-	-	-	-	-	-
6	Wing Walls/ Retaining Walls	-	-	-	-	-	-	-	-	-
7	Abutments	1	N	N	Abutments are in good condition nd no remedial work is required.	F6	-	-	-	-

