

Appendix H

Carlow & Wexford Bridges Rehabilitation Contract - Preliminary Safety & Health Plan



Eirspan Bridge Management System



Carlow & Wexford Bridges Rehabilitation Contract



Preliminary Safety & Health Plan

CARLOW
COUNTY COUNCIL
COMHAIRLE CHONTAE CHEATHARLOCHA



**Tender Issue
July 2016**

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Kildare County Council
Aras Chill Dara
Devoy Park
Naas
Co Kildare

Employer's Representative
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Eirspan Bridge Management System

Carlow & Wexford Bridges Rehabilitation Contract

Preliminary Safety & Health Plan

[Prepared in Accordance with the Safety, Health and Welfare at Work (Construction) Regulations
2013]

Eirspan Bridge Management System

Carlow & Wexford Bridges Rehabilitation Contract Preliminary Safety & Health Plan

Document No: 15.135/11 CD-PSHP

Made: Marc Jones

Checked:..... Peter King

Approved:..... Marc Jones

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Eirspan Bridge Management System
Carlow & Wexford Bridges Rehabilitation Contract
Preliminary Safety & Health Plan

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- Str6 – Ballintrane Bridge (CW-N80-006.00)
- Str7 – Boggan Bridge (CW-N80-004.00)
- Str8 – Closh Bridge (CW-N81-001.00)

1. GENERAL

1.1 Project Supervisor for the Design Process

Roughan & O'Donovan Consulting Engineers (ROD) have been appointed by Kildare County Council to act as Project Supervisor for the Design Process [PSDP] for this project.

The contact within ROD is Marc Jones (Tel: 01 294 0800, Fax: 01 294 0820).

1.2 Scope and Purpose of Preliminary Safety and Health Plan

For the purposes Carlow & Wexford Bridges Rehabilitation Contract this document shall constitute the Preliminary Safety and Health Plan as required by regulation 12 of the Safety, Health and Welfare at Work (Construction) Regulations, 2013 (hereinafter referred to as the Construction Regulations)

This document has been prepared for the purpose of providing information to the Project Supervisor for the Construction Stage [PSCS] who will further develop it for the Safety and Health Plan for the construction site, as required by Regulation 16 of the Construction Regulations.

1.3 Client

The Client for this project is
Kildare County Council
Áras Chill Dara, Devoy Park, Naas, Co. Kildare

The contact within the Client organisation is Mr Eddie Murphy:
Phone: 045 988900
Email: emurphy@kildarenrdo.com
Fax: 045 875845

1.4 Designers

The Designers for the project are:

Roughan & Donovan – Aecom Alliance
Arena House, Arena Road, Sandyford, Dublin 18
Tel: +353 1 294 0800
Fax: +353 1 294 0820

The contact within the Designer's organisation are as follows:
Project Director: Marc Jones
Project Engineer: Peter King

1.5 Requirement for Notification by the PSCS

The project is of such a scale and duration that written notice (Form AF2) is to be sent to the HSA by the PSCS before work begins as required by Regulation 22 of the Construction Regulations.

1.6 Related Documents

This Preliminary Safety and Health Plan should be read in conjunction with the following documents:

- i) Volume A: Works Requirements
- ii) Safety, Health and Welfare at Work Act 2005;
- iii) S.I. No. 291 Safety, Health and Welfare at Work (Construction) Regulations, 2013;
- iv) S.I. No. 299 Safety, Health and Welfare at Work (General Application) Regulations 2007;
- v) Guidelines and Codes of Practice as published from time to time by the HSA.

2. DESCRIPTION OF THE PROJECT

Roughan & O'Donovan (ROD) have been appointed by Kildare County Council to undertake the design of remedial works to, Str1 MacMurrough Island Bridge 1, Str2 MacMurrough Island Bridge 2, Str3 MacMurrough Island Farm Pass, Str5 Glebe Bridge, Str6 Ballinrane Bridge, Str7 Boggan Bridge, Str8 Closh Bridge and to provide a replacement of Str4 Ballybing Culvert. At Str2 the existing access to the south west of the bridge also requires realignment.

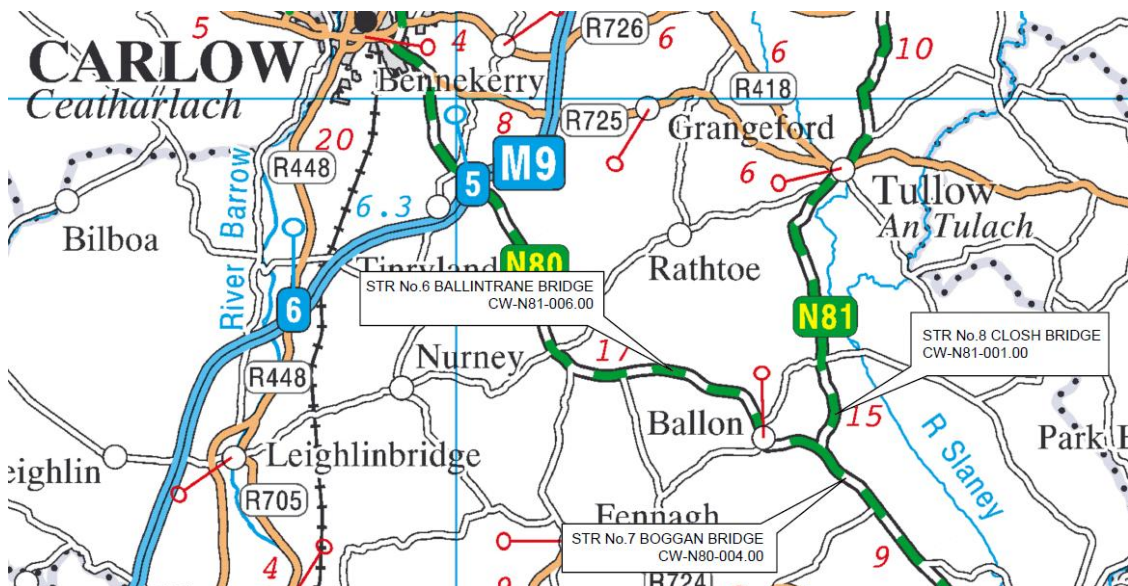
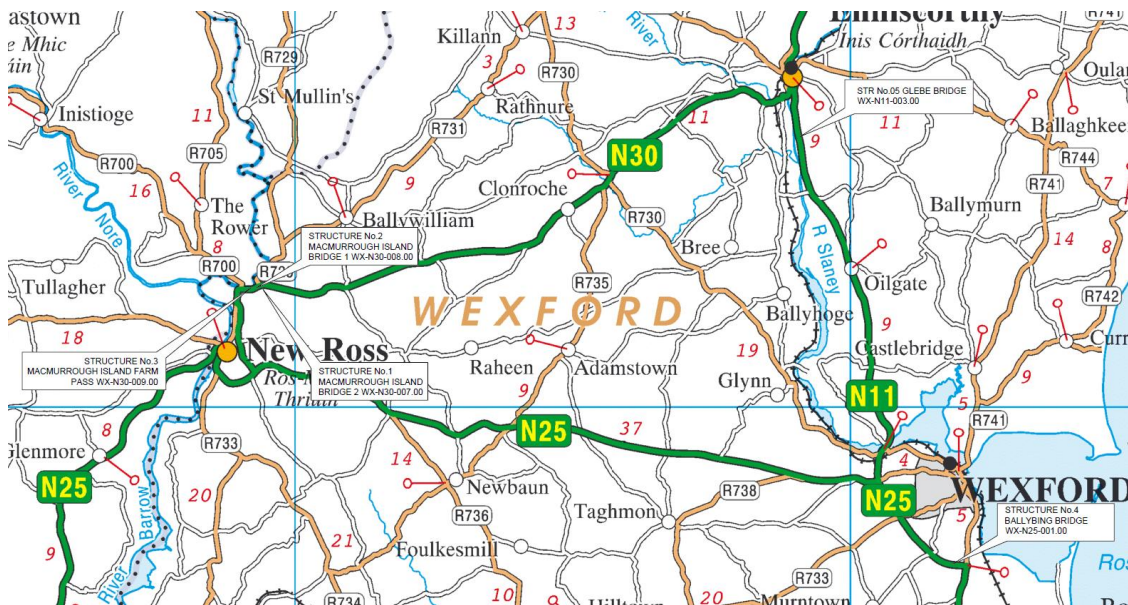
2.1 Location of the Works

The MacMurrough Island Bridges as shown below are in a close proximity of each other and are located on the N30 to New Ross in a rural environment.

Str No.4 Ballybing Culvert carries the N25 National Primary Road and is located to the west of Rosslare Harbour. In a semi-urban environment.

Str No.5 Glebe Bridge is located south of Enniscorthy which carries the N11 towards Weford.

Str No.6 Ballinrane Bridge, Str No.7 Boggan Bridge and Str No.8 Closh Bridge are all located to the southeast of Carlow town on the N80 and N81 respectively.



2.2 The Existing Environment

MacMurrough Island Bridge 1 is a single span masonry arch bridge with a square span of 7.8m and an out-to-out width of 19.0m. The arch is circular in shape. The surrounding areas consist of agricultural land and wooded area.

MacMurrough Island Bridge 2 is a single span masonry arch bridge with a span of 8.68m and an out-to-out width of 22.1m. The surrounding areas consist of agricultural land and wooded area.

MacMurrough Island Farm Pass is a single span in-situ concrete underpass structure which is portal frame or box construction. The structure carries the N30 carriageway over a farm pass northeast of New Ross. The structure has a span of 5m and an out-to-out width of 15.3m. As with the above bridges the surrounding areas consist of agricultural land and wooded area.

The MacMurrough Island Bridges support the N30 which has an AADT of approximately 12,000.

Ballybing Culvert comprises a pair of pipes. Each pipe is 900mm in diameter with an out to out dimension of 23.05m. The immediate surroundings of the bridge consist of agricultural land with adjacent residential properties and farms. There are houses located directly adjacent to the existing structure at the northeast and southeast corners. The bridge carries the N25 national primary road which has an AADT of approximately 6,000 but this structure is located on the N25 immediately adjacent to Rosslare Harbour and as such is subject to traffic surges corresponding to incoming and outgoing ferries.

Glebe Bridge comprises a 3.69m single span masonry arch bridge extended to the east with an in-situ concrete culvert with a span of 3.05m. The masonry arch and concrete culvert components of the bridge are 11.66m and 27.36m long respectively giving an overall length (elevation to elevation) of 39.02m. The in-situ concrete culvert section of the structure carries the N11 only with an approximate AADT of 13,000. The surrounding areas consist of agricultural land and wooded area.

Ballintrane Bridge comprises 26 no. precast beams, considered to be inverted T3 beams, and an in-situ concrete in-fill slab. The bridge has a span (abutment wall to abutment wall measured square) of 10.0m. The out-to-out width of the bridge is 14m. There is an access to an adjacent property located to the northeast of the structure. Ballintrane bridge carries the N80 between Ballon and Kildavin and has an approximate AADT of 6,500.

Boggan Bridge comprises a 3.70m single span masonry arch structure widened on the east side with a 3.77m span in-situ reinforced concrete slab cast on concrete abutments. The arch is 7.50m wide and the slab is 9.73m wide. The bridge carries the N80 National Secondary Road in a north-south direction east of the village of Ballon with an approximate AADT of 6,500.

Closh Bridge comprises a 2.9m single span masonry arch structure extended with a reinforced concrete slab to the west, carrying the N81 over the River Douglas at high skew (31 degrees). The masonry arch component is 8.6m long and the concrete slab widening is 14.5m long. The structure is surrounded by agricultural landscape with some heavy shrubbery to the west. Closh Bridge carries an approximate AADT of 2,200.

2.3 Description of the Works

Str1 MacMurrough Island Bridge 1

Works will entail replacement of bridge parapets and transition with a compliant vehicle containment system, including support slab strengthening, replacement of Safety Barrier and repairs to the existing masonry arch

The scope of works required is summarised briefly as follows:

- Site set-up;

- Site clearance and security;
- Traffic management;
- Saw cut existing surfacing / verges;
- Diversion / protection of all services;
- Removal and replacement of the in-situ parapet support slab.
- Installation of parapets and transition;
- Pavement construction;
- Safety barriers;
- Masonry repairs;
- Replacement of soft verges with concrete paving;
- Landscaping.

Str2 MacMurrough Island Bridge 2

Work will entail replacement of bridge parapets and transition with a compliant vehicle containment system, including possible support slab strengthening. Replacement of safety barriers and repairs to the masonry arch. Accommodation works and realignment of the existing access to the south west of the bridge are also required.

The scope of works required is summarised briefly as follows:

- Site set-up;
- Site clearance and security;
- Traffic management;
- Saw cut out existing surfacing / verges;
- Diversion / protection of all services;
- Removal and replacement of the in-situ parapet support slab;
- Construction of earthworks / retaining structures to facilitate road realignment;
- Installation of parapets;
- Pavement construction;
- Safety barriers;
- Masonry repairs;
- Replacement of soft verges with concrete paving;
- Access roadworks drainage and pavement;
- Accommodation works;
- Landscaping.

Str3 MacMurrough Island Farm Pass

Work will entail replacement of bridge parapets and transition with a compliant vehicle containment system, including edge beam strengthening. Replacement of safety barriers and waterproofing to deck slab.

The scope of works required is summarised briefly as follows and will need to be implemented for each traffic management phase:

- Site set-up;
- Site clearance and security;
- Traffic management;
- Saw cut existing surfacing / verges;
- Diversion / protection of all services;
- Excavation to box roof and sides
- Removal of existing waterproofing and installation of new waterproofing system;

- Reinstatement of fill and pavement;
- Strengthening of existing parapet edge beam;
- Installation of vehicle parapets;
- Safety barriers;
- Landscaping.

Str4 Ballybing Culvert

Work will entail closing the westbound hardshoulder and lane 1 of the N25 and uncover the existing twin pipes between the inlet and a point past the centreline of the road, taking all necessary temporary measures to support and protect existing services. Take down the inlet headwall and over-pump the river through temporary pipes running alongside the existing which will tie back into the existing culvert near the centre of the carriageway. Remove the existing twin concrete pipes and replace with a precast concrete box culvert over the exposed length, and construct a new reinforced concrete inlet headwall. Diverting the flow back along its original alignment through the new box culvert. Backfill and reinstate the carriageway surfacing.

These steps will be repeated for the eastbound carriageway

The scope of works required is summarised briefly as follows and will need to be implemented for each traffic management plan:

- Site set-up;
- Site clearance and security;
- Traffic management;
- Earthworks;
- Demolition of existing headwalls / removal of existing piped culvert;
- Diversion / protection of all services;
- Stream diversions;
- Transportation and installation of precast concrete culvert units;
- Construction of headwalls and wing walls;
- Construction of road pavement;
- Safety barriers and boundary treatment;
- Accommodation works;
- Landscaping.

Str5 Glebe Bridge

Works will entail the installation of ground anchors on the western spandrel wall to prevent further separation between the spandrel wall and the masonry arch. Grouting and injection of cracks are required to a number of cracks in the masonry and in-situ sections. Minor realignment of the river bank on the western inlet through the use of gabion baskets is required to prevent further scouring.

The scope of works required is summarised briefly as follows:

- Site set-up;
- Site clearance and security;
- Traffic management for construction vehicles;
- Diversion / protection of all services;
- Stream Diversion;
- Excavation of river bank;
- Set up of ground anchor plant;
- Installation of ground anchors;
- Grouting and masonry repairs;

- Installation of gabion baskets;
- Fill, Top-soiling and seeding;
- Landscaping.

Str6 Ballintrane Bridge

Works will entail replacement of bridge parapets and transition with a compliant vehicle containment system, including edge beam and wingwalls strengthening, installation of restraining slabs, replacement of bridge deck waterproofing and paving, replacement of Safety Barrier.

The scope of works required is summarised briefly as follows:

- Site set-up;
- Site clearance and security;
- Traffic management;
- Saw cut existing surfacing / verges;
- Diversion / protection of all services;
- Cold Milling pavement;
- Excavation and installation of restraining slabs;
- Removal of parapets and transition;
- Edge beam and wingwall strengthening;
- Installation of Parapets;
- Waterproofing;
- Pavement construction;
- Safety barriers, Transitions and Terminals;
- Landscaping.

Str7 Boggan Bridge

Works will entail construction of masonry parapet walls, installation of gabion baskets along river bank, replacement of bridge deck waterproofing and paving and installation of safety barriers/terminals.

The scope of works required is summarised briefly as follows:

- Site set-up;
- Site clearance and security;
- Traffic management;
- Saw cut existing surfacing / verges;
- Break out of eastern raised verge;
- Diversion / protection of all services;
- Cold Milling pavement;
- Excavation and installation of gabion baskets;
- Waterproofing deck;
- Construction of masonry parapet wall;
- Pavement construction;
- Raised verge;
- Safety barriers, Transitions and Terminals;
- Landscaping.

Str8 Cloch Bridge

Works will entail construction of masonry parapet walls, installation of gabion baskets along river bank, replacement of bridge deck waterproofing and paving and installation of safety barriers/terminals.

The scope of works required is summarised briefly as follows:

- Site set-up;
- Site clearance and security;
- Traffic management;
- Saw cut existing surfacing / verges;
- Break out of eastern raised verge;
- Diversion / protection of all services;
- Cold Milling pavement;
- Excavation and installation of gabion baskets;
- Waterproofing deck;
- Construction of masonry parapet wall;
- Pavement construction;
- Raised verge;
- Safety barriers, Transitions and Terminals;
- Landscaping.

2.4 Time for Completion of Project

The estimated period of time for completion of the whole of the works is approximately 20 weeks.

3. OTHER WORK ACTIVITIES ON SITE

3.1 Statutory and Other Bodies on the Site

The following is a non-exhaustive list of Utility companies affected by the works that will require advance notification:

- Carlow County Council Watermains / Road Drainage
- Wexford County Council Watermains / Road Drainage
- Eircom
- ESB

3.2 Other Work Activities

There may be ongoing road and watercourse maintenance works taking place on or in the vicinity of the sites at the same time as this Contract.

4. WORK INVOLVING PARTICULAR RISKS

4.1 Risks to Safety, Health and Welfare

The following is a list summarising those particular risks referred to in schedule 1 of the Construction Regulations which are considered relevant to the proposed works and are deemed to be reasonably foreseeable to the PSDP.

1. Work which puts persons at work at risk of -
 - a. falling from a height,

- b. burial under earthfalls
where the risk is particularly aggravated by the nature of the work or processes used or by the environment at the place of work or construction site.
2. Work near high voltage power lines.
3. Work exposing persons at work to the risk of drowning.
4. Work involving the assembly or dismantling of heavy prefabricated components.
5. Works with ionising radiation requiring the designation of controlled or supervised areas as defined in Directive 96/259 Eurocode.

The following is a non-exhaustive list of the work related to the project which will involve risks to the safety, health and welfare of persons in the construction of the works:

- i) Working adjacent to live traffic;
- ii) Working adjacent to existing utilities; includes buried utilities including electrical cables, gas pipes, water pipes and telecoms ducts;
- iii) Work in excavations for cable ducting, watermains, and drainage, which are in or adjacent to unstable ground or hazardous underground services;
- iv) Work involving maintenance of the scheme;
- v) Work involving the use of cutting tools;
- vi) Work involving exposure of workers to dust from cutting of either natural or artificial materials and the consequent effects on health, e.g., sensitisation of the respiratory system and other respiratory illnesses, irritation and injury to eyes, dermatitis and other skin complaints;
- vii) Work involving temporary diversions of traffic and provision of traffic management adjacent to the works;
- viii) Working with heavy precast and prefabricated elements i.e. precast culvert sections, reinforcement cages, parapets, formwork;
- ix) Work involving the use of heavy machinery, particularly paving machines and asphalt delivery machines;
- x) Work involving the use of materials-handling machinery and other plant adjacent to traffic, pedestrians and cyclists;
- xi) Work involving exposure of workers to excessive noise and the consequent effects on health;
- xii) Working with hot materials;
- xiii) Risk of electrocution from electrical cables;
- xiv) Work involving the use of substances which must be labelled with the risk phrases R45 "may cause cancer", or R49 "may cause cancer by inhalation" and where a risk assessment in accordance with regulation 4(b) of the Safety, Health and Welfare at Work (Carcinogens) Regulations, 2001 reveals a risk to safety or health. Substances classified as carcinogens include zinc chromate and certain classes of bituminous substances which are used in caulking or sealants;
- xv) Work involving the use of substances or preparations which must be labelled with the risk phrase R42 "may cause sensitisation by inhalation" and where a risk assessment in accordance with Regulation 4 of the Safety, Health and Welfare at Work (Chemical Agents) Regulations, 2001 reveals a risk to health. Substances classified as respiratory sensitisers include isocyanates. These are a component of many coatings, sealants and foams, particularly "two pack" coatings or urethanes;
- xvi) Any other work activity involving the use of any chemical or biological agent where a risk assessment in accordance with Regulations 4 of the above mentioned 1994 Chemical Agents Regulations or Regulations 4 and 10 of the Safety, Health and Welfare at Work (Biological Agents) Regulations, 1994 reveals a risk to safety or health.
- xvii) Work involving exposure of workers to dust from cutting of either natural or artificial materials and the consequent effects on health, e.g., sensitisation of the respiratory

system and other respiratory illnesses, irritation and injury to eyes, dermatitis and other skin complaints;

- xviii) Works involving exposure to noise and vibration;
- xix) Works involving manual handling;
- xx) Works involving plant and machinery;
- xxi) Working hoists and lifting appliances adjacent to live traffic;

4.2 Specific Measures for Reducing Risks

It is envisaged at the commencement of the Construction Stage that the following non-exhaustive list of specific measures for reducing particular risks will be addressed by the PSCS in the Construction Stage Safety and Health Plan.

- i) The use of transport vehicles, and materials-handling shall be planned to conform with the following conditions:
 - a) The stability of any temporary works shall be secured;
 - b) Provision of adequate lateral clearance for live traffic adjacent to works areas;
 - c) Sufficient clearances both laterally and vertically to achieve adequate working space shall be ensured for vehicles and machinery, especially in proximity to live traffic lanes, pedestrians and cyclists, so as not to trap or crush persons or cause damage or collapse of temporary platforms, trenches and the like;
 - d) Detailed traffic management plans with high visibility signs and temporary road markings, banksman/lookouts to be used for site traffic with full PPE worn by all staff.
- ii) Measures will be required for the safe operation with clearance zones for plant adjacent to vehicular traffic;
- iii) Measures will be required for the safe operation of plant working including adequate protection to live traffic;
- iv) Securing of the site and compound against unauthorised access and vandalism;
- v) Measures will be required for the safe provision of temporary diversions of traffic, buses, cyclists, pedestrians and emergency services;
- vi) Measures will be required to locate the exact position of all public and private service utilities prior to excavation work commencing with continued liaison with service providers;
- vii) Measures will be required in the planning and delivery of concrete and other materials to site, particularly given the confined nature of the site;
- viii) Measures will be required in the demolition/removal of all road materials and reinforced concrete elements;
- ix) Measures will be required in the cleaning, demolition and storage of materials on site;
- x) Equipment and clothing to protect against noise, hazardous materials etc to be provided.

5. LOCATION OF EXISTING SERVICES TO FACILITATE ADEQUATE WELFARE FACILITIES

5.1 Electricity

There is no overhead or buried electricity supply currently available near any of the sites which could be used for the provision of welfare facilities. A connection will need to be negotiated with a Local Supplier.

5.2 Foul Sewer

A foul sewer connection to public sewer may not be available for welfare facilities. Discussions will need to be held with the relevant Local Authority.

5.3 Water

A connection may not be available discussions will need to be held with the relevant Local Authority.

6. COORDINATION OF DESIGN

6.1 Project Review Meetings

Project Review Meetings for the design have been held with the Client and shall continue for the duration of the scheme.

6.2 Continuing Liaison

Procedures will be required for liaison between the PSCS, the PSDP, the Contractor and the Designer for considering the following:

- (a) safety and health implication of design elements;
- (b) unforeseen eventualities during project execution resulting in substantial design change and which might affect particular risks, time for completion, or have other safety and health implications;
- (c) the provision of information for the Safety File.

6.3 Safety File

Pursuant to regulation 13 of the Construction Regulations, the Project Supervisor for the Design Process is required to:

'prepare a written safety file appropriate to the characteristics of the project, containing relevant safety and health information, including any information provided under regulation 21, to be taken into account during any subsequent construction work following completion of the project and promptly deliver the safety file to the client on completion of the project.'

In order to prepare the safety file, the PSDP must receive the appropriate information from designers, the PSCS and other duty-holders.

Regulation 21 requires the PSCS to

'co-ordinate arrangements among contractors to ensure the provision of relevant information, in writing, necessary for the project supervisor for the design process to complete the safety file referred to in regulation 13, monitor the implementation of the arrangements and take any necessary corrective action, as set out in regulation 20, and provide in writing to the project supervisor for the design process all relevant information necessary for that project supervisor to complete the safety file referred to in regulation 13.'

The following is a non-exhaustive list of contents that are required to be included in the safety file. It is not intended to be a complete list and in no way relieves the PSCS of his obligations under the regulations.

- Safety and Health Plan for the construction site prepared by the PSCS;
- As Built Drawings;
- Maintenance Procedures and Manuals;
- Relevant Certificates from Suppliers / Manufacturers / Specialist Contractors etc;
- SI information;
- Details of Location and Nature of Utilities and Services and details of relevant procedures and precautions to be followed.

- Information required by NRA BD02 [Technical Approval of Road Structures on Motorways and Other National Roads'.

6.4 Design Assumptions

The Designer has made assumptions in the design as to the methods of construction of the Works. Any variation in these methods proposed by the Contractor, which would require substantial change in the design or have safety and health implications, will require to be considered in the Safety and Health Plan to be prepared by the PSCS.

Any design changes arising from unforeseen eventualities during construction which might affect particular risks, the time for completion or have other safety and health implications must be notified to the PSDP.

APPENDIX A:

Designer's Assessment Records

Str1 – MacMurrough Island Bridge 1 (WX-N30-007.00)

Str2 – MacMurrough Island Bridge 2 (WX-N30-008.00)

Str3 – MacMurrough Island Farm Pass (WX-N30-009.00)

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Str5 – Glebe Bridge (WX-N11-003.00)

Str6 – Ballintrane Bridge (CW-N80-006.00)

Str7 – Boggan Bridge (CW-N80-004.00)

Str8 – Closh Bridge (CW-N81-001.00)

Designer's Assessment of Safety and Health Hazards/Risks

Made (Design/Project Engineer):		MN	Scheme Name:		Project Number:
Checked (PSDP Co-ordinator):		PK	Carlow & Wexford Bridges Rehabilitation Contract Structure 1 MacMurrough Island Bridge 1 WX-N30-007.00		15.135
Date:	18/05/2015				
Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations	Contractor	Public	Maintainer	<i>Description of risk or hazardous activity</i> <i>Describe the design decisions, assumed construction methods and / or alternative actions</i>	
Work which puts persons at work at risk of falling from a height (P)	✓	✓	✓	<i>The design requires Works on an underbridge located on a National Road.</i> <i>All site operatives/visitors are to be provided with a site safety induction prior to entering the site. It is assumed that the Contractor will maintain a tidy site, free from trip hazards and obstructions. The Contractor shall secure the site against unauthorised access. The Contractor should ensure that safe means of access and egress are provided and that suitable fall arrest PPP, edge protection and or mobile platforms are provided where required. The project requires the removal and replacement of the existing parapets and transitions and works to the existing soft verges and masonry arch. It is assumed that the Contractor will install suitable pedestrian protection and vehicle safety barriers along with required traffic management to allow removal and replacement of the parapets and transitions on the bridge and for the verge and masonry rehabilitation works.</i>	Yes
Work which puts persons at work at risk of burial under earthfalls (P)	✓	✓		<i>Burial from Trench Collapse</i> <i>Excavation will be required for works to the concrete slab under the parapet. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time.</i>	Yes
Work which puts persons at work at risk of engulfment in swampland (P)				N/A	N/A

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work which puts persons at work at risk from chemical or biological substances (P)	✓		✓	<i>Excavation of Hazardous Material</i> The presence of hazardous materials may be located on site. Where asbestos or other hazardous materials are identified these shall be removed by a suitably qualified specialist Contractor before any demolition work/site clearance takes place. The proposed parapets, safety barriers and transitions are of steel construction and are required to be galvanised. It is assumed that all galvanising will be carried out in a controlled fabrication facility. The parapet edge beams require waterproofing to satisfy durability requirements of BD57 and to match the existing bridge structure. It is assumed that proprietary materials will be used for waterproofing and risk assessments carried out by the Contractor on their use. Application should be by experienced and trained personnel and the Contractor should provide screening between the works area and public area.	Yes
Work with ionising radiation (P)	✓			<i>Exposure to Ionising Radiation</i> Nuclear density meters are required for testing compaction of earthworks. Accredited laboratory and equipment to be specified.	No
Work near high voltage power lines (P) and services	✓			<i>Electrocution</i> Desktop services tracking has been carried out and it is not expected that there will be any overhead or underground ESB cables located at the site. However the Contractor shall be required to liaise with service providers and take appropriate measures to mitigate the risk of exposure to existing services. The Contractor's measures are expected to include; exclusion zones, crossing zones for lifting, completion of an on site Electrical Hazard Risk Assessment (EHRA). It is noted that there are Eircom fibre optic below ground services present.	Yes
Work exposing persons at work to the risk of drowning (P)	✓	✓	✓	<i>Drowning</i> Excavation may be required for the rehabilitation of the edge beam and verge works. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time.	Yes
Work involving the use of explosives (P)				N/A	N/A

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work involving the assembly or dismantling of heavy prefabricated components (P)	✓		✓	<i>The works involve the removal and installation of a new parapet system across the bridge and also the installation of vehicle safety barriers and transitions on both approach and departures.</i> It is envisaged that the contractor will use machinery for lifting purposes limiting unnecessary manual handling of prefabricated components. It is expected that operatives will receive appropriate tool box talks informing them of the risk of moving/ assembling heavy components adjacent to the live carriageway. The existing arrangement does not meet requirements making it necessary to replace.	Yes
Confined Spaces				N/A	N/A
Construction Traffic	✓	✓		<i>Construction traffic will require temporary traffic safety and management to ensure safe access to the site and for the transport of large fabricated elements. Construction traffic will require to be segregated from public mainline traffic via containment barriers.</i> The use of transport vehicles, machinery and materials handling plant should be planned. The Contractor is anticipated to provide traffic management and routeing of vehicles and personnel to reduce risk. The Contractor is to have clearly signed access and exit points to the site.	Yes
Demolition	✓	✓		<i>Partial Demolition to allow parapet installation.</i> Works are required to the existing parapet support slabs requiring partial demolition adjacent to and over existing live carriageway. Temporary safety barriers, traffic management and edge protection will be required. It is assumed that the Contractor will provide safe methods of working agreed with the Local Authority and TII.	Yes
Dust	✓	✓		<i>Large amounts of dust will be generated by the rehabilitation works</i> There will be dust generation over the duration of the works, preventative measures should be taken. This issue is of particular concern due to proximity of the site to the live carriageway. It is anticipated that preventative action will be taken by the contractor. Preventative measures may include dampening of the site in dry weather conditions, provision of screening, equipment that can collect deleterious material and the provision of PPE.	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Excavations	✓			<i>Excavation</i> Excavation will be required to allow works on the parapet support slab. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time. Traffic management and clear zones to be provided with safety barriers to segregate the public.	Yes
Flooding				N/A	N/A
Live Traffic	✓	✓	✓	<i>Live traffic will need to be maintained on the mainline carriageway during the works</i> Detailed temporary traffic management and safety plans shall be developed by the Contractor and agreed with the National Roads Authority/Local Authority prior to commencement of the works on site. The Temporary Traffic Management Plan should be designed and implemented in accordance with Chapter 8 of the Traffic Signs Manual. A construction stage traffic management plan is envisaged to manage the interface between the site and construction traffic with the live traffic on the mainline and those using the existing access. The Contractor should ensure traffic is moving at an appropriate speed when carrying out any lane closures or moving live traffic from one lane to another before any change to the traffic management layout is carried out. Additional lighting will be required when carrying out works at night. The works include replacement of the existing parapet and realignment of existing access road. It is assumed that the Contractor will provide temporary edge protection and safety barriers to separate live traffic from the works area and provide safety to pedestrians and operatives.	Yes
Presence of Asbestos				N/A	N/A
Slips, Trips	✓	✓		<i>Slips, trips and falls are a risk on uneven ground or where the construction works require an existing public route to be diverted.</i> All site operatives are expected to receive safety induction training. Furthermore, appropriate signage should be erected to make site personnel and the public aware of potential trip/slip hazards. Footway diversions should be well sign posted and follow routes that do not put the general public at risk of slips, trips or falls.	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Vibration	✓			<i>White Finger or other occupational hazards associated with pneumatic tools</i> Appropriate safety equipment and PPE should be provided to site staff using or affected by vibrating machinery. Assumed that the Contractor will take measures such as rotating operatives to reduce exposure.	No
Welfare	✓			<i>No water, electrical or foul services are readily available on the site</i> The Contractor will need to provide independent welfare facilities.	No
Site clearance of areas with trees present a risk during felling				N/A	N/A
Unauthorised Access by members of the public	✓	✓		<i>The site is located in a rural area with some residences in close proximity.</i> The Contractor should ensure that appropriate measures are undertaken to manage the flow of pedestrians away from any works and sufficient barriers, fencing, demarcation and signage are provided. It is assumed that the Contractor will implement adequate site security.	Yes
Weils Disease and other mammal borne diseases	✓		✓	<i>The rural nature of the site provides the environment for vermin to be present.</i> It is assumed that the Contractor will take appropriate precautions such as provision of hygiene information and the ensuring suitable welfare facilities are provided for workers and that they have recieved appropriate training and have the appropriate PPE.	No
Work involving exposure of workers to excessive noise	✓	✓		<i>Machinery will be required for the works.</i> Use of quieter machinery and silencers or alternative construction methods to be considered where applicable. Contractor may consider the use of quieter machinery and silencers/mufflers or alternative construction methods to be considered. Personal protective equipment to protect against hearing damage should be provided. Contract documents to specify noise/vibration limits.	No
Contamination of watercourses or groundwater	✓	✓		<i>Drilling, Cutting concrete and waterproofing materials give risk to risk of contamination.</i> It is assumed that the Contractor will carry out works in accordance with an approved environmental operating plan and will put in place appropriate safeguards. Specification to identify requirements for the protection of water quality.	Yes

Other parties please take note: These are designer's risk evaluations of design options carried out in-house for the purpose of our complying with designers' duties under the Safety, Health and Welfare at Work (Construction) Regulations 2013. The evaluations relate only to those aspects/elements of the project which we are responsible for designing under the terms of our appointment by our client. Other parties should not rely on these evaluations for their own purposes; in particular, contractors, who must deal with and control all risks arising during construction, must carry out their own definitive risk assessments *ab initio* for that purpose.

Designer's Assessment of Safety and Health Hazards/Risks

Made (Design/Project Engineer):	MN			Scheme Name:	Project Number:
Checked (PSDP Co-ordinator):	PK			Carlow & Wexford Bridges Rehabilitation Contract Structure 2 MacMurrough Island Bridge 2 WX-N30-008.00	15.135
Date:	18/05/2015				
Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations	Contractor	Public	Maintainer	<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work which puts persons at work at risk of falling from a height (P)	✓	✓	✓	<i>The design requires Works on an underbridge located on a National Road.</i> All site operatives/visitors are to be provided with a site safety induction prior to entering the site. It is assumed that the Contractor will maintain a tidy site, free from trip hazards and obstructions. The Contractor shall secure the site against unauthorised access. The Contractor should ensure that safe means of access and egress are provided and that suitable fall arrest PPP, edge protection and or mobile platforms are provided where required. The project requires the removal and replacement of the existing parapets and transitions, works to the existing soft verges and masonry arch and excavation and retaining works through the existing embankment to the west of the access road to provide a realigned access road. Retaining walls may be used at the entrance to minimise the required land take. It is assumed that the Contractor will install suitable pedestrian protection and vehicle safety barriers along with required traffic management to allow removal and replacement of the parapets and transitions on the bridge, for the verge and masonry rehabilitation works and for road works associated with the access road.	Yes
Work which puts persons at work at risk of burial under earthfalls (P)	✓	✓		<i>Burial from Trench Collapse</i> Excavation will be required for works to the concrete slab under the parapet and for the the realignment to the access road. This will involve excavation to form a cutting through the existing embankment to the west of the access road. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time.	Yes
Work which puts persons at work at risk of engulfment in swampland (P)				N/A	N/A

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work which puts persons at work at risk from chemical or biological substances (P)	✓		✓	<i>Excavation of Hazardous Material</i> The presence of hazardous materials may be located on site. Where asbestos or other hazardous materials are identified these shall be removed by a suitably qualified specialist Contractor before any demolition work/site clearance takes place. The proposed parapets, safety barriers and transitions are of steel construction and are required to be galvanised. It is assumed that all galvanising will be carried out in a controlled fabrication facility. The parapet edge beams require waterproofing to satisfy durability requirements of BD57 and to match the existing bridge structure. It is assumed that proprietary materials will be used and risk assessments carried out by the Contractor on their use. Application should be by experienced and trained personnel and the Contractor should provide screening between the works area and public area.	Yes
Work with ionising radiation (P)	✓			<i>Exposure to Ionising Radiation</i> Nuclear density meters are required for testing compaction of earthworks. Accredited laboratory and equipment to be specified.	No
Work near high voltage power lines (P) and services	✓			<i>Electrocution</i> Desktop services tracking has been carried out and it is not expected that there will be any overhead or underground ESB cables located at the site. However the Contractor shall be required to liaise with service providers and take appropriate measures to mitigate the risk of exposure to existing services. The Contractor's measures are expected to include; exclusion zones, crossing zones for lifting, completion of an on site Electrical Hazard Risk Assessment (EHRA). It is noted that there are Eircom fibre optic below ground services present.	Yes
Work exposing persons at work to the risk of drowning (P)	✓	✓	✓	<i>Drowning</i> Excavation may be required for the rehabilitation of the edge beam, verge works and realignment of the access road to allow the safety barriers to be installed. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time.	Yes
Work involving the use of explosives (P)				N/A	N/A

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work involving the assembly or dismantling of heavy prefabricated components (P)	✓		✓	<i>The works involve the removal and installation of a new parapet system across the bridge and also the installation of vehicle safety barriers on the access road.</i> It is envisaged that the contractor will use machinery for lifting purposes limiting unnecessary manual handling of prefabricated components. It is expected that operatives will receive appropriate tool box talks informing them of the risk of moving/ assembling heavy components adjacent to the live carriageway. The existing arrangement does not meet requirements making it necessary to replace.	Yes
Confined Spaces				N/A	N/A
Construction Traffic	✓	✓		<i>Construction traffic will require temporary traffic safety and management to ensure safe access to the site and for the transport of large fabricated elements. Construction traffic will require to be segregated from public mainline traffic via containment barriers.</i> The use of transport vehicles, machinery and materials handling plant should be planned and particular attention is drawn to the fact that the works include realignment of a private access with multiple users. The Contractor is anticipated to provide traffic management and routeing of vehicles and personnel to reduce risk. The Contractor is to have clearly signed access and exit points to the site.	Yes
Demolition	✓	✓		<i>Partial Demolition to allow parapet installation.</i> Works are required to the existing parapet support slabs requiring partial demolition adjacent to and over existing live carriageway. Removal of existing safety barriers will take place to allow a new safety barrier system to be provided to tie in with the ends of the parapets on approaches to the bridge. Temporary safety barriers, traffic management and edge protection will be required. It is assumed that the Contractor will provide safe methods of working agreed with the Local Authority and NRA.	Yes
Dust	✓	✓		<i>Large amounts of dust will be generated by the rehabilitation works</i> There will be dust generation over the duration of the works, preventative measures should be taken. This issue is of particular concern due to proximity of the site to the live carriageway and existing residential properties. It is anticipated that preventative action will be taken by the contractor. Preventative measures may include damping of the site in dry weather conditions, provision of screening, equipment that can collect deleterious material and the provision of PPE.	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Excavations	✓			<i>Excavation</i> To the southwest of the bridge excavation will be required to allow for realignment of the existing access road and to accommodate change of safety barriers. Safety barriers currently do not comply with the requirements of I.S. EN 1317. Retaining structures and earthworks are used to minimise land take. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time. Traffic management and clear zones to be provided with safety barriers to segregate the public.	Yes
Flooding				N/A	N/A
Live Traffic	✓	✓	✓	<i>Live traffic will need to be maintained on the mainline carriageway below during the works</i> Detailed temporary traffic management and safety plans shall be developed by the Contractor and agreed with the National Roads Authority/Local Authority prior to commencement of the works on site. The Temporary Traffic Management Plan should be designed and implemented in accordance with Chapter 8 of the Traffic Signs Manual. A construction stage traffic management plan is envisaged to manage the interface between the site and construction traffic with the live traffic on the mainline and those using the existing access. The Contractor should ensure traffic is moving at an appropriate speed when carrying out any lane closures or moving live traffic from one lane to another before any change to the traffic management layout is carried out. Additional lighting will be required when carrying out works at night. The works include replacement of the existing parapet and realignment of existing access road. It is assumed that the Contractor will provide temporary edge protection and safety barriers to separate live traffic from the works area and provide safety to pedestrians and operatives.	Yes
Presence of Asbestos				N/A	N/A
Slips, Trips	✓	✓		<i>Slips, trips and falls are a risk on uneven ground or where the construction works require an existing public route to be diverted.</i> All site operatives are expected to receive safety induction training. Furthermore, appropriate signage should be erected to make site personnel and the public aware of potential trip/slip hazards. Footway diversions should be well sign posted and follow routes that do not put the general public at risk of slips, trips or falls.	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Vibration	✓			<i>White Finger or other occupational hazards associated with pneumatic tools</i> Appropriate safety equipment and PPE should be provided to site staff using or affected by vibrating machinery. Assumed that the Contractor will take measures such as rotating operatives to reduce exposure.	No
Welfare	✓			<i>No water, electrical or foul services are readily available on the site</i> The Contractor will need to provide independent welfare facilities.	No
Site clearance of areas with trees present a risk during felling	✓	✓		<i>Site Clearance</i> Site clearance is required to allow realignment of the existing access track. It is assumed that the Contractor will implement an agreed traffic and pedestrian management system to allow safe access and egress to the existing properties and keep landowners informed of planned works.	Yes
Unauthorised Access by members of the public	✓	✓		<i>The site is located in a rural area with some residences in close proximity.</i> The Contractor should ensure that appropriate measures are undertaken to manage the flow of pedestrians away from any works and sufficient barriers, fencing, demarcation and signage are provided. It is assumed that the Contractor will implement adequate site security.	Yes
Weils Disease and other mammal borne diseases	✓		✓	<i>The rural nature of the site provides the environment for vermin to be present.</i> It is assumed that the Contractor will take appropriate precautions such as provision of hygiene information and the ensuring suitable welfare facilities are provided for workers and that they have recieved appropriate training and have the appropriate PPE.	No
Work involving exposure of workers to excessive noise	✓	✓		<i>Machinery will be required for the works.</i> Use of quieter machinery and silencers or alternative construction methods to be considered where applicable. Contractor may consider the use of quieter machinery and silencers/mufflers or alternative construction methods to be considered. Personal protective equipment to protect against hearing damage should be provided. Contract documents to specify noise/vibration limits.	No
Contamination of watercourses or groundwater	✓	✓		<i>Drilling, Cutting concrete and waterproofing materials give risk to risk of contamination.</i> It is assumed that the Contractor will carry out works in accordance with an approved environmental operating plan and will put in place appropriate safeguards. Specification to identify requirements for the protection of water quality.	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations	Contractor	Public	Maintainer	<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	

Other parties please take note: These are designer's risk evaluations of design options carried out in-house for the purpose of our complying with designers' duties under the Safety, Health and Welfare at Work (Construction) Regulations 2013. The evaluations relate only to those aspects/elements of the project which we are responsible for designing under the terms of our appointment by our client. Other parties should not rely on these evaluations for their own purposes; in particular, contractors, who must deal with and control all risks arising during construction, must carry out their own definitive risk assessments *ab initio* for that purpose.

Designer's Assessment of Safety and Health Hazards/Risks

Made (Design/Project Engineer):		MN		Scheme Name:	Project Number:
Checked (PSDP Co-ordinator):		PK		Carlow & Wexford Bridges Rehabilitation Contract Structure 3 MacMurrough Island Farm Pass WX-N30-009.00	15.135
Date:		18/05/2015			
Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations	Contractor	Public	Maintainer	<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work which puts persons at work at risk of falling from a height (P)	✓	✓	✓	<i>The design requires Works on an underbridge located on a National Road.</i> All site operatives/visitors are to be provided with a site safety induction prior to entering the site. It is assumed that the Contractor will maintain a tidy site, free from trip hazards and obstructions. The Contractor shall secure the site against unauthorised access. The Contractor should ensure that safe means of access and egress are provided and that suitable fall arrest PPP, edge protection and or mobile platforms are provided where required. The project requires the removal and replacement of the existing parapets and transitions and the removal of the existing waterproofing and reinstatement of waterproofing to the deck slab. It is assumed that the Contractor will install suitable pedestrian protection and vehicle safety barriers along with required traffic management to allow removal and replacement of the parapets and transitions on the bridge and for the verge and masonry rehabilitation works.	Yes
Work which puts persons at work at risk of burial under earthfalls (P)	✓	✓		<i>Burial from Trench Collapse</i> Excavation will be required for works to the bridge surface to allow the deck slab waterproofing to be removed and replaced with a spray applied system. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time.	Yes
Work which puts persons at work at risk of engulfment in swampland (P)				N/A	N/A

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work which puts persons at work at risk from chemical or biological substances (P)	✓		✓	<i>Excavation of Hazardous Material</i> The presence of hazardous materials may be located on site. Where asbestos or other hazardous materials are identified these shall be removed by a suitably qualified specialist Contractor before any demolition work/site clearance takes place. The proposed parapets, safety barriers and transitions are of steel construction and are required to be galvanised. It is assumed that all galvanising will be carried out in a controlled fabrication facility. It is assumed that proprietary materials will be used for waterproofing and risk assessments carried out by the Contractor on their use. Application should be by experienced and trained personnel and the Contractor should provide screening between the works area and public area.	Yes
Work with ionising radiation (P)	✓			<i>Exposure to Ionising Radiation</i> Nuclear density meters are required for testing compaction of earthworks. Accredited laboratory and equipment to be specified.	No
Work near high voltage power lines (P) and services	✓			<i>Electrocution</i> Desktop services tracking has been carried out and it is not expected that there will be any overhead or underground ESB cables located at the site. However the Contractor shall be required to liaise with service providers and take appropriate measures to mitigate the risk of exposure to existing services. The Contractor's measures are expected to include; exclusion zones, crossing zones for lifting, completion of an on site Electrical Hazard Risk Assessment (EHRA). It is noted that there are Eircom fibre optic ground services present.	Yes
Work exposing persons at work to the risk of drowning (P)	✓	✓	✓	<i>Drowning</i> Excavation may be required for the rehabilitation of the edge beam and to allow the removal of waterproofing and subsequent waterproofing to the deck slab. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time.	Yes
Work involving the use of explosives (P)				N/A	N/A

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work involving the assembly or dismantling of heavy prefabricated components (P)	✓		✓	<i>The works involve the removal and installation of a new parapet system across the bridge and also the installation of vehicle safety barriers and transitions on both approach and departures.</i> It is envisaged that the contractor will use machinery for lifting purposes limiting unnecessary manual handling of prefabricated components. It is expected that operatives will receive appropriate tool box talks informing them of the risk of moving/ assembling heavy components adjacent to the live carriageway. The existing arrangement does not meet requirements making it necessary to replace.	Yes
Confined Spaces				N/A	N/A
Construction Traffic	✓	✓		<i>Construction traffic will require temporary traffic safety and management to ensure safe access to the site and for the transport of large fabricated elements. Construction traffic will require to be segregated from public mainline traffic via containment barriers.</i> The use of transport vehicles, machinery and materials handling plant should be planned. The Contractor is anticipated to provide traffic management and routeing of vehicles and personnel to reduce risk. The Authority prefer to maintain 2 lanes running with minimal reduction to single lane running to achieve waterproofing replacement which requires traffic management phases and working in the carriageway median. The Contractor is to have clearly signed access and exit points to the site. It is assumed that the Contractor will erect safe systems of work and traffic management to allow provision of required machinery and flagmen.	Yes
Demolition	✓	✓		<i>Demolition to road surface to allow waterproofing.</i> Works are required to the existing road surface and to allow waterproofing of the deck slab and strengthening work to the existing parapet edge beam. Temporary safety barriers, traffic management and edge protection will be required. It is assumed that the Contractor will provide safe methods of working agreed with the Local Authority and NRA.	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Dust	✓	✓		<i>Large amounts of dust will be generated by the rehabilitation works</i> There will be dust generation over the duration of the works, preventative measures should be taken. This issue is of particular concern due to proximity of the site to the live carriageway. It is anticipated that preventative action will be taken by the contractor. Preventative measures may include damping of the site in dry weather conditions, provision of screening, equipment that can collect deleterious material and the provision of PPE.	Yes
Excavations	✓			<i>Excavation</i> Excavation will be required to allow waterproofing on the deck slab. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time. Traffic management and clear zones to be provided with safety barriers to segregate the public.	Yes
Flooding				N/A	N/A
Live Traffic	✓	✓	✓	<i>Live traffic will need to be maintained on the mainline carriageway below during the works</i> Detailed temporary traffic management and safety plans shall be developed by the Contractor and agreed with the National Roads Authority/Local Authority prior to commencement of the works on site. The Temporary Traffic Management Plan should be designed and implemented in accordance with Chapter 8 of the Traffic Signs Manual. A construction stage traffic management plan is envisaged to manage the interface between the site and construction traffic with the live traffic. The Contractor should ensure traffic is moving at an appropriate speed when carrying out any lane closures or moving live traffic from one lane to another before any change to the traffic management layout is carried out. Additional lighting will be required when carrying out works at night. The works include replacement of the existing parapet and removal and reinstatement of the deck waterproofing over the full width of the mainline. It is assumed that the Contractor will provide temporary edge protection and safety barriers to separate live traffic from the works area and provide safety to pedestrians and operatives.	Yes
Presence of Asbestos				N/A	N/A

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Slips, Trips	✓	✓		<i>Slips, trips and falls are a risk on uneven ground or where the construction works require an existing public route to be diverted.</i> All site operatives are expected to receive safety induction training. Furthermore, appropriate signage should be erected to make site personnel and the public aware of potential trip/slip hazards. Footway diversions should be well sign posted and follow routes that do not put the general public at risk of slips, trips or falls.	Yes
Vibration	✓			<i>White Finger or other occupational hazards associated with pneumatic tools</i> Appropriate safety equipment and PPE should be provided to site staff using or affected by vibrating machinery. Assumed that the Contractor will take measures such as rotating operatives to reduce exposure.	No
Welfare	✓			<i>No water, electrical or foul services are readily available on the site</i> The Contractor will need to provide independent welfare facilities.	No
Site clearance of areas with trees present a risk during felling				N/A	N/A
Unauthorised Access by members of the public	✓	✓		<i>The site is located in a rural area with some residences in close proximity.</i> The Contractor should ensure that appropriate measures are undertaken to manage the flow of pedestrians away from any works and sufficient barriers, fencing, demarcation and signage are provided. It is assumed that the Contractor will implement adequate site security.	Yes
Weils Disease and other mammal borne diseases	✓		✓	<i>The rural nature of the site provides the environment for vermin to be present.</i> It is assumed that the Contractor will take appropriate precautions such as provision of hygiene information and the ensuring suitable welfare facilities are provided for workers and that they have received appropriate training and have the appropriate PPE.	No
Work involving exposure of workers to excessive noise	✓	✓		<i>Machinery will be required for the works.</i> Use of quieter machinery and silencers or alternative construction methods to be considered where applicable. Contractor may consider the use of quieter machinery and silencers/mufflers or alternative construction methods to be considered. Personal protective equipment to protect against hearing damage should be provided. Contract documents to specify noise/vibration limits.	No

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Contamination of watercourses or groundwater	✓	✓		<i>Drilling, Cutting concrete and waterproofing materials give risk to risk of contamination.</i> It is assumed that the Contractor will carry out works in accordance with an approved environmental operating plan and will put in place appropriate safeguards. Specification to identify requirements for the protection of water quality.	Yes
Invasive Species	✓	✓		<i>Exposure to Japanese Knotweed.</i> There is evidence of Japanese Knotweed to the west of the proposed works in the verges. The Contractor shall not enter areas contaminated with Japanese Knotweed.	Yes

Other parties please take note: These are designer's risk evaluations of design options carried out in-house for the purpose of our complying with designers' duties under the Safety, Health and Welfare at Work (Construction) Regulations 2013. The evaluations relate only to those aspects/elements of the project which we are responsible for designing under the terms of our appointment by our client. Other parties should not rely on these evaluations for their own purposes; in particular, contractors, who must deal with and control all risks arising during construction, must carry out their own definitive risk assessments *ab initio* for that purpose.

Designer's Assessment of Safety and Health Hazards/Risks

Made (Design/Project Engineer):		MN	Scheme Name:		Project Number:
Checked (PSDP Co-ordinator):		PK	Carlow & Wexford Bridges Rehabilitation Contract Structure 4 Ballybing Culvert WX-N25-001.00		15.135
Date:	18/05/2015				
Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations	Contractor	Public	Maintainer	<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work which puts persons at work at risk of falling from a height (P)	✓	✓	✓	<i>The design requires replacement of an existing culvert located on a national road.(N25)</i> All site operatives/visitors are to be provided with a site safety induction prior to entering the site. It is assumed that the Contractor will maintain a tidy site, free from trip hazards and obstructions. The Contractor shall secure the site against unauthorised access. The Contractor should ensure that safe means of access and egress are provided and that suitable fall arrest PPP and edge protection are provided where required. The project requires the removal and replacement of the existing twin 900Ø culverts and it is assumed that the Contractor will install suitable pedestrian and vehicle safety barriers along with required traffic management to allow removal and replacement of the culverts.	Yes
Work which puts persons at work at risk of burial under earthfalls (P)	✓	✓		<i>Burial from Trench Collapse</i> Excavation will be required for the removal of the concrete culvert and temporary diversion of the existing stream. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time.	Yes
Work which puts persons at work at risk of engulfment in swampland (P)				N/A	N/A

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work which puts persons at work at risk from chemical or biological substances (P)	✓	✓	✓	<i>Excavation of Hazardous Material</i> The presence of asbestos has been noted at this site location, 12" asbestos pipe is currently used as water mains. Where asbestos or other hazardous materials are identified these shall be removed by a suitably qualified Contractor in accordance with HSA requirements before any demolition work/site clearance takes place. Removal of the pipes should be by experienced and trained personnel and the Contractor should provide screening between the works area and public area. Concrete elements require waterproofing in accordance with NRA Specification, hydrophobic pore liner for exposed elements of wingwalls and epoxy resin for buried surfaces. It is assumed that the contractor shall establish safe system of works and provide screening to segregate the public from areas. Application of epoxy resin to precast units can be carried out at the fabrication facility.	Yes
Work with ionising radiation (P)	✓			<i>Exposure to Ionising Radiation</i> Nuclear density meters are required for testing compaction of earthworks. Accredited laboratory and equipment to be specified.	No
Work near high voltage power lines (P) and services	✓			<i>Electrocution</i> Desktop services tracking has been carried out and there are overhead and underground cables located at the site. The Contractor shall be required to liaise with service providers and take appropriate measures to mitigate the risk of exposure to existing services. The Contractor's measures are expected to include; exclusion zones, crossing zones for lifting, completion of an on site Electrical Hazard Risk Assessment (EHRA). It is noted that there are below ground Eircom and watermain services including provision of a 300mm dia asbestos cement watermain that requires replacement as part of the works.	Yes
Work exposing persons at work to the risk of drowning (P)	✓	✓	✓	<i>Drowning during removal and replacement of the existing culverts</i> The structure is located on an existing watercourse. The twin 900 diameter culverts which the watercourse runs through need to be replaced. There is a possibility of flooding within the river channel. Method Statements for Safe Systems of work will be required to be submitted by the Contractor as there is potential risk of drowning. It is assumed that appropriate methods of working will be implemented to reduce the risk of flooding impacting on the works. Contractor to secure the site appropriately to prevent the risk of persons falling into the water and drowning. Section 50 application to be included in the information pack.	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work involving the use of explosives (P)				N/A	N/A
Work involving the assembly or dismantling of heavy prefabricated components (P)	✓		✓	<i>The works involve the removal and installation of a new concrete culvert and construction of associated headwalls and wingwalls.</i> Reinforced cages, formwork and precast elements for the culvert are required and they can be fabricated in a controlled environment and lifted by cranes. This minimises both construction time and traffic management. The Contractor will be required to prepare detailed method statements of how he will transport and erect the precast elements. The precast elements will be fitted with appropriate lifting eyes to facilitate safe and controlled erection. The specification requires independent check certificates for key elements of temporary works. It is assumed that the contractor will provide an adequate lay down area for the crane and precast fabricated elements.	Yes
Confined Spaces				<i>No access to the existing culverts</i>	N/A
Construction Traffic	✓	✓		<i>Construction traffic will require temporary traffic safety and management to ensure safe access to the site and for the transport of large precast and prefabricated elements.</i> The use of transport vehicles, machinery and materials handling plant should be planned. The Contractor is anticipated to provide traffic management and routing of vehicles and personnel to reduce risk. The Contractor is to have clearly signed access and exit points to the site.	Yes
Demolition	✓	✓		The demolition of the existing twin pipe culvert and headwalls are required to allow construction of the permanent works. Demolition works will require a temporary stream diversion and removal of the existing twin pipes and headwalls. The Contractor shall be required to provide a detailed risk assessment and method statement for agreement in advance of the works proceeding to ensure their safe removal. It is anticipated that the Contractor will implement a safe system of works plan to reduce risk.	Yes
Dust	✓	✓		<i>Dust will be generated by removal and installation of the culverts.</i> There will be dust generation over the duration of the works, preventative measures should be taken. This issue is of particular concern due to proximity of the site to the live carriageway and adjacent properties. It is anticipated that preventative action will be taken by the contractor. Preventative measures may include damping of the site in dry weather conditions, provision of screening, equipment that can collect deleterious material and the provision of PPE.	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Excavations	✓	✓		<i>Excavation</i> Excavation will be required for the removal of the twin concrete culverts under the road surface and adjacent headwalls. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time. Traffic management and clear zone to provided with safety barriers to segregate the public.	Yes
Flooding	✓	✓		<i>Drowning and damage to the works during flood event.</i> The work requires replacement of the existing culvert and temporary diversion of the watercourse. There is history of flooding and the Section 50 application is provided in the information pack. It is assumed that the contractor shall monitor weather patterns and review flood risks and make provision for protection of the works accordingly.	Yes
Live Traffic	✓	✓	✓	<i>Live traffic will need to be maintained on the carriageway during the works.</i> Detailed temporary traffic management and safety plans shall be developed by the Contractor and agreed with the National Roads Authority/Local Authority prior to the commencement of works. The Temporary Traffic Management Plan should be designed and implemented in accordance with Chapter 8 of the Traffic Signs Manual. It is noted that there are traffic surges at the site due to its location close to an active port, if a single lane closure is implemented the Contractor will need to provide a flagman to manage flow. A construction stage traffic management plan is envisaged to manage the interface between the site and construction traffic with the live traffic. The Contractor should ensure traffic is moving at an appropriate speed when carrying out any lane closures or moving live traffic from one lane to another before any change to the traffic management layout is carried out. Additional lighting will be required when carrying out works at night. As the majority of the works are to be carried out on the removal of the existing culvert a temporary pedestrian guardrail and vehicle safety barrier to separate live traffic from the works area and provide safety to pedestrians and operatives is envisaged.	Yes
Presence of Asbestos	✓		✓	<i>Asbestos</i> It has been confirmed that a 12" asbestos pipe is located on the N25 at the location of the culvert. The Contractor will be required to take safety precautions to allow temporary diversions and construction of a new section of watermain in accordance with the recommendations of the HSA.	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Slips, Trips	✓	✓		<i>Slips, trips and falls are a risk on uneven ground or where the construction works require an existing public route to be diverted.</i> All site operatives are expected to receive safety induction training. Furthermore, appropriate signage should be erected to make site personnel and the public aware of potential trip/slip hazards and the presence of adjacent properties is noted. Footway diversions should be well sign posted and follow routes that do not put the general public at risk of slips, trips or falls.	Yes
Vibration	✓			<i>White Finger or other occupational hazards associated with pneumatic tools.</i> Appropriate safety equipment and PPE should be provided to site staff using or affected by vibrating machinery. Assumed that the Contractor will take measures such as rotating operatives to reduce exposure.	No
Welfare	✓			<i>No water, electrical or foul services are readily available on the site</i> The Contractor will need to provide independent welfare facilities.	No
Site clearance of areas with trees present a risk during felling	✓	✓		<i>Site clearance risk to operation during tree fells.</i> Tree felling is required immediately adjacent to the headwalls. It is anticipated that the contractor will implement safe systems of work with agreed method statements, traffic management in place. Operatives to be trained and appropriate PPE provided and used.	Yes
Unauthorised Access by members of the public	✓	✓		<i>The site is located in a semi urban area close to several residences.</i> The Contractor should ensure that appropriate measures are undertaken to manage the flow of pedestrians away from any works and sufficient barriers, fencing, demarcation and signage are provided. It is assumed that the Contractor will implement adequate site security.	Yes
Weils Disease and other mammal borne diseases	✓		✓	<i>The semi urban/rural nature of the site provides the environment for vermin to be present.</i> It is assumed that the Contractor will take appropriate precautions such as provision of hygiene information and the ensuring suitable welfare facilities are provided for workers and that they have received appropriate training.	No
Work involving exposure of workers to excessive noise	✓	✓		<i>Machinery will be required for the works.</i> Use of quieter machinery and silencers or alternative construction methods to be considered where applicable. Contractor may consider the use of quieter machinery and silencers/mufflers or alternative construction methods to be considered. Personal protective equipment to protect against hearing damage should be provided. Contract documents to specify noise/vibration limits.	No

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Contamination of watercourses or groundwater	✓	✓		<i>Drilling, Cutting concrete and waterproofing materials give risk to risk of contamination.</i> It is assumed that the Contractor will carry out works in accordance with an approved environmental operating plan and will put in place appropriate safeguards. Specification to identify requirements for the protection of water quality.	Yes

Other parties please take note: These are designer's risk evaluations of design options carried out in-house for the purpose of our complying with designers' duties under the Safety, Health and Welfare at Work (Construction) Regulations 2013. The evaluations relate only to those aspects/elements of the project which we are responsible for designing under the terms of our appointment by our client. Other parties should not rely on these evaluations for their own purposes; in particular, contractors, who must deal with and control all risks arising during construction, must carry out their own definitive risk assessments *ab initio* for that purpose.

Designer's Assessment of Safety and Health Hazards/Risks

Made (Design/Project Engineer):		MN	Scheme Name:		Project Number:
Checked (PSDP Co-ordinator):		PK	Carlow & Wexford Bridges Rehabilitation Contract Structure 5 Glebe Bridge WX-N11-003.00		15.135
Date:	15/06/2016				
Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations	Contractor	Public	Maintainer	Description of risk or hazardous activity Describe the design decisions, assumed construction methods and / or alternative actions	
Work which puts persons at work at risk of falling from a height (P)	✓	✓	✓	The design requires Works on an underbridge located on a National Road. All site operatives/visitors are to be provided with a site safety induction prior to entering the site. It is assumed that the Contractor will maintain a tidy site, free from trip hazards and obstructions. The Contractor shall secure the site against unauthorised access. The Contractor should ensure that safe means of access and egress are provided and that suitable fall arrest PPP, edge protection and or mobile platforms are provided where required. The project requires the installation of ground anchors at height. It is assumed that the Contractor will install suitable pedestrian protection and vehicle safety barriers along with required traffic management to allow removal and replacement of the parapets and transitions on the bridge and for the verge and masonry rehabilitation works.	Yes
Work which puts persons at work at risk of burial under earthfalls (P)	✓	✓		Burial from Trench Collapse Excavation will be required for works to the bridge embankments to allow the installation of gabion baskets. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time.	Yes
Work which puts persons at work at risk of engulfment in swampland (P)				N/A	N/A
Work which puts persons at work at risk from chemical or biological substances (P)	✓		✓	Excavation of Hazardous Material The presence of hazardous materials may be located on site. Where asbestos or other hazardous materials are identified these shall be removed by a suitably qualified specialist Contractor before any demolition work/site clearance takes place.	Yes
Work with ionising radiation (P)	✓			Exposure to Ionising Radiation Nuclear density meters are required for testing compaction of earthworks. Accredited laboratory and equipment to be specified.	No

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work near high voltage power lines (P) and services	✓			<i>Electrocution</i> Desktop services tracking has been carried out and it is not expected that there will be any overhead or underground ESB cables located at the site. However the Contractor shall be required to liaise with service providers and take appropriate measures to mitigate the risk of exposure to existing services. The Contractor's measures are expected to include; exclusion zones, crossing zones for lifting, completion of an on site Electrical Hazard Risk Assessment (EHRA). It is noted that there are Eir fibre optic ground services present.	Yes
Work exposing persons at work to the risk of drowning (P)	✓	✓	✓	<i>Drowning</i> Excavation will be required for the installation of gabion baskets along the river bank. It is assumed that the Contractor shall provide stream diversion to prevent flooding of excavation and open for the minimum period of time.	Yes
Work involving the use of explosives (P)				N/A	N/A
Work involving the assembly or dismantling of heavy prefabricated components (P)	✓		✓	<i>The works involve the installation of ground anchors into the western spandrel wall.</i> It is envisaged that the contractor will use machinery for lifting purposes limiting unnecessary manual handling of prefabricated components. It is expected that operatives will receive appropriate tool box talks informing them of the risk of moving/ assembling heavy components adjacent to the live carriageway.	Yes
Confined Spaces				N/A	N/A
Construction Traffic	✓	✓		<i>Construction traffic will require temporary traffic safety and management to ensure safe access to the site and for the transport of large fabricated elements. Construction traffic will require to be segregated from public mainline traffic via containment barriers.</i> The use of transport vehicles, machinery and materials handling plant should be planned. The Contractor is anticipated to provide traffic management and routing of vehicles and personnel to reduce risk. The Contractor is to have clearly signed access and exit points to the site. It is assumed that the Contractor will erect safe systems of work and traffic management to allow provision of required machinery and flagmen.	Yes
Demolition	✓	✓		N/A	N/A

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Dust	✓	✓		<i>Dust will be generated by the rehabilitation works</i> There will be dust generation over the duration of the works, preventative measures should be taken. This issue is of particular concern due to proximity of the site to the live carriageway. It is anticipated that preventative action will be taken by the contractor. Preventative measures may include damping of the site in dry weather conditions, provision of screening, equipment that can collect deleterious material and the provision of PPE.	Yes
Excavations	✓			<i>Excavation</i> Excavation will be required for the installation of gabion baskets along the river bank. It is assumed that the Contractor shall provide stream diversion to prevent flooding of excavation and open for the minimum period of time.	Yes
Flooding				<i>Flooding</i> Glebe bridge carries the N11 above a stream which flows into the river slaney and the risk of flooding is high.	N/A
Live Traffic	✓	✓	✓	<i>Live traffic will need to be maintained on the mainline carriageway below during the works</i> Detailed temporary traffic management and safety plans shall be developed by the Contractor and agreed with TII/Local Authority prior to commencement of the works on site. The Temporary Traffic Management Plan should be designed and implemented in accordance with Chapter 8 of the Traffic Signs Manual. A construction stage traffic management plan is envisaged to manage the interface between the site and construction traffic with the live traffic. The Contractor should ensure traffic is moving at an appropriate speed when carrying out any lane closures or moving live traffic from one lane to another before any change to the traffic management layout is carried out. Additional lighting will be required when carrying out works at night. The works include replacement of the existing parapet and removal and reinstatement of the deck waterproofing over the full width of the mainline. It is assumed that the Contractor will provide temporary edge protection and safety barriers to separate live traffic from the works area and provide safety to pedestrians and operatives.	Yes
Presence of Asbestos				N/A	N/A

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Slips, Trips	✓	✓		<i>Slips, trips and falls are a risk on uneven ground or where the construction works require an existing public route to be diverted.</i> All site operatives are expected to receive safety induction training. Furthermore, appropriate signage should be erected to make site personnel and the public aware of potential trip/slip hazards.	Yes
Vibration	✓			<i>White Finger or other occupational hazards associated with pneumatic tools</i> Appropriate safety equipment and PPE should be provided to site staff using or affected by vibrating machinery. Assumed that the Contractor will take measures such as rotating operatives to reduce exposure.	No
Welfare	✓			<i>No water, electrical or foul services are readily available on the site</i> The Contractor will need to provide independent welfare facilities.	No
Site clearance of areas with trees present a risk during felling				<i>Tree Felling will be required on western and easter embankments.</i> The Contractor should ensure that appropriate measures are undertaken to provide safe zones during felling. Felling should be carried out by a specialist Contractor.	N/A
Unauthorised Access by members of the public	✓	✓		<i>The site is located in a rural area with the risk of public access considered low</i> The Contractor should ensure that appropriate measures are undertaken to manage the flow of pedestrians away from any works and sufficient barriers, fencing, demarcation and signage are provided. It is assumed that the Contractor will implement adequate site security.	Yes
Weills Disease and other mammal borne diseases	✓		✓	<i>The rural nature of the site provides the environment for vermin to be present.</i> It is assumed that the Contractor will take appropriate precautions such as provision of hygiene information and the ensuring suitable welfare facilities are provided for workers and that they have received appropriate training and have the appropriate PPE.	No
Work involving exposure of workers to excessive noise	✓	✓		<i>Machinery will be required for the works.</i> Use of quieter machinery and silencers or alternative construction methods to be considered where applicable. Contractor may consider the use of quieter machinery and silencers/mufflers or alternative construction methods to be considered. Personal protective equipment to protect against hearing damage should be provided. Contract documents to specify noise/vibration limits.	No
Contamination of watercourses or groundwater	✓	✓		<i>Drilling, Cutting concrete and waterproofing materials give risk to risk of contamination.</i> It is assumed that the Contractor will carry out works in accordance with an approved environmental operating plan and will put in place appropriate safeguards. Specification to identify requirements for the protection of water quality.	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Invasive Species	✓	✓		<i>Exposure to Japanese Knotweed.</i> There is evidence of Japanese Knotweed to the west of the structure in the wooded area. The Contractor shall not enter areas contaminated with Japanese Knotweed.	Yes

Other parties please take note: These are designer's risk evaluations of design options carried out in-house for the purpose of our complying with designers' duties under the Safety, Health and Welfare at Work (Construction) Regulations 2013. The evaluations relate only to those aspects/elements of the project which we are responsible for designing under the terms of our appointment by our client. Other parties should not rely on these evaluations for their own purposes; in particular, contractors, who must deal with and control all risks arising during construction, must carry out their own definitive risk assessments *ab initio* for that purpose.

Designer's Assessment of Safety and Health Hazards/Risks

Made (Design/Project Engineer):		MN	Scheme Name:		Project Number:
Checked (PSDP Co-ordinator):		PK	Carlow & Wexford Bridges Rehabilitation Contract Structure 6 Ballinrane Bridge CW-N80-006.00		15.135
Date:	15/06/2016				
Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations	Contractor	Public	Maintainer	<i>Description of risk or hazardous activity</i> <i>Describe the design decisions, assumed construction methods and / or alternative actions</i>	
Work which puts persons at work at risk of falling from a height (P)	✓	✓	✓	<i>The design requires Works on an underbridge located on a National Road.</i> <i>All site operatives/visitors are to be provided with a site safety induction prior to entering the site. It is assumed that the Contractor will maintain a tidy site, free from trip hazards and obstructions. The Contractor shall secure the site against unauthorised access. The Contractor should ensure that safe means of access and egress are provided and that suitable fall arrest PPP, edge protection and or mobile platforms are provided where required. The project requires the removal and replacement of the existing parapets and transitions, replacement of existing waterproofing on the bridge deck, installation of restraining slabs and upgrading of existing edge beams to allow for higher containment parapets. It is assumed that the Contractor will install suitable pedestrian protection and vehicle safety barriers along with required traffic management to allow removal and replacement of the parapets and transitions on the bridge.</i>	Yes
Work which puts persons at work at risk of burial under earthfalls (P)	✓	✓		<i>Burial from Trench Collapse</i> <i>Excavation will be required for installation of restraining slabs and waterproofing of bridge deck. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time.</i>	Yes
Work which puts persons at work at risk of engulfment in swampland (P)				N/A	N/A

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work which puts persons at work at risk from chemical or biological substances (P)	✓		✓	<i>Excavation of Hazardous Material</i> The presence of hazardous materials may be located on site. Where asbestos or other hazardous materials are identified these shall be removed by a suitably qualified specialist Contractor before any demolition work/site clearance takes place. The proposed parapets, safety barriers and transitions may be of steel construction and may be required to be galvanised. It is assumed that all galvanising required will be carried out in a controlled fabrication facility. The parapet edge beams and restraining slabs require waterproofing to satisfy durability requirements of BD57 and to match the existing bridge structure. It is assumed that proprietary materials will be used and risk assessments carried out by the Contractor on their use. Application should be by experienced and trained personnel and the Contractor should provide screening between the works area and public area.	Yes
Work with ionising radiation (P)	✓			<i>Exposure to Ionising Radiation</i> Nuclear density meters are required for testing compaction of earthworks. Accredited laboratory and equipment to be specified.	No
Work near high voltage power lines (P) and services	✓			<i>Electrocution</i> Desktop services tracking has been carried out and it is not expected that there will be any overhead or underground ESB cables located at the site. However the Contractor shall be required to liaise with service providers and take appropriate measures to mitigate the risk of exposure to existing services. The Contractor's measures are expected to include; exclusion zones, crossing zones for lifting, completion of an on site Electrical Hazard Risk Assessment (EHRA). It is noted that there are Eir fibre optic below ground services present.	Yes
Work exposing persons at work to the risk of drowning (P)	✓	✓	✓	<i>Drowning</i> The existing bridge is located above the river burren increasing the risk of drowning. It is assumed edge protection will be provided during edge beam works. Excavation will be required for the rehabilitation of the edge beam, installation of restraining slabs and waterproofing of bridge deck. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time.	Yes
Work involving the use of explosives (P)				N/A	N/A

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work involving the assembly or dismantling of heavy prefabricated components (P)	✓		✓	<i>The works involve the removal and installation of a new parapet system across the bridge and also the installation of vehicle safety barriers on the access road.</i> It is envisaged that the contractor will use machinery for lifting purposes limiting unnecessary manual handling of prefabricated components. It is expected that operatives will receive appropriate tool box talks informing them of the risk of moving/ assembling heavy components adjacent to the live carriageway. The existing arrangement does not meet requirements making it necessary to replace.	Yes
Confined Spaces				N/A	N/A
Construction Traffic	✓	✓		<i>Construction traffic will require temporary traffic safety and management to ensure safe access to the site and for the transport of large fabricated elements. Construction traffic will require to be segregated from public mainline traffic via containment barriers.</i> The use of transport vehicles, machinery and materials handling plant should be planned and particular attention is drawn to the fact that the works include realignment of a private access with multiple users. The Contractor is anticipated to provide traffic management and routeing of vehicles and personnel to reduce risk. The Contractor is to have clearly signed access and exit points to the site.	Yes
Demolition	✓	✓		<i>Partial Demolition to allow parapet installation.</i> Works are required to the existing edge beam requiring partial demolition adjacent to and over existing live carriageway. Removal of existing safety barriers will take place to allow a new safety barrier system to be provided to tie in with the ends of the parapets on approaches to the bridge. Temporary safety barriers, traffic management and edge protection will be required. It is assumed that the Contractor will provide safe methods of working agreed with the Local Authority and TII.	Yes
Dust	✓	✓		<i>Large amounts of dust will be generated by the rehabilitation works</i> There will be dust generation over the duration of the works, preventative measures should be taken. This issue is of particular concern due to proximity of the site to the live carriageway. It is anticipated that preventative action will be taken by the contractor. Preventative measures may include damping of the site in dry weather conditions, provision of screening, equipment that can collect deleterious material and the provision of PPE.	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Excavations	✓			<i>Excavation</i> Excavation will be required for the rehabilitation of the edge beam, installation of restraining slabs and waterproofing of bridge deck. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time. Traffic management and clear zones to be provided with safety barriers to segregate the public.	Yes
Flooding				N/A	N/A
Live Traffic	✓	✓	✓	<i>Live traffic will need to be maintained on the mainline carriageway below during the works</i> Detailed temporary traffic management and safety plans shall be developed by the Contractor and agreed with TII/Local Authority prior to commencement of the works on site. The Temporary Traffic Management Plan should be designed and implemented in accordance with Chapter 8 of the Traffic Signs Manual. A construction stage traffic management plan is envisaged to manage the interface between the site and construction traffic with the live traffic on the mainline. The Contractor should ensure traffic is moving at an appropriate speed when carrying out any lane closures or moving live traffic from one lane to another before any change to the traffic management layout is carried out. Additional lighting will be required when carrying out works at night. The works include replacement of the existing parapet. It is assumed that the Contractor will provide temporary edge protection and safety barriers to separate live traffic from the works area and provide safety to pedestrians and operatives.	Yes
Presence of Asbestos				N/A	N/A
Slips, Trips	✓	✓		<i>Slips, trips and falls are a risk on uneven ground or where the construction works require an existing public route to be diverted.</i> All site operatives are expected to receive safety induction training. Furthermore, appropriate signage should be erected to make site personnel and the public aware of potential trip/slip hazards. Footway diversions should be well sign posted and follow routes that do not put the general public at risk of slips, trips or falls.	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Vibration	✓			<i>White Finger or other occupational hazards associated with pneumatic tools</i> Appropriate safety equipment and PPE should be provided to site staff using or affected by vibrating machinery. Assumed that the Contractor will take measures such as rotating operatives to reduce exposure.	No
Welfare	✓			<i>No water, electrical or foul services are readily available on the site</i> The Contractor will need to provide independent welfare facilities.	No
Site clearance of areas with trees present a risk during felling				N/A	N/A
Unauthorised Access by members of the public	✓	✓		<i>The site is located in a rural area with some residences in close proximity.</i> The Contractor should ensure that appropriate measures are undertaken to manage the flow of pedestrians away from any works and sufficient barriers, fencing, demarcation and signage are provided. It is assumed that the Contractor will implement adequate site security.	Yes
Weils Disease and other mammal borne diseases	✓		✓	<i>The rural nature of the site provides the environment for vermin to be present.</i> It is assumed that the Contractor will take appropriate precautions such as provision of hygiene information and the ensuring suitable welfare facilities are provided for workers and that they have recieved appropriate training and have the appropriate PPE.	No
Work involving exposure of workers to excessive noise	✓	✓		<i>Machinery will be required for the works.</i> Use of quieter machinery and silencers or alternative construction methods to be considered where applicable. Contractor may consider the use of quieter machinery and silencers/mufflers or alternative construction methods to be considered. Personal protective equipment to protect against hearing damage should be provided. Contract documents to specify noise/vibration limits.	No
Contamination of watercourses or groundwater	✓	✓		<i>Drilling, Cutting concrete and waterproofing materials give risk to risk of contamination.</i> It is assumed that the Contractor will carry out works in accordance with an approved environmental operating plan and will put in place appropriate safeguards. Specification to identify requirements for the protection of water quality.	Yes

Other parties please take note: These are designer's risk evaluations of design options carried out in-house for the purpose of our complying with designers' duties under the Safety, Health and Welfare at Work (Construction) Regulations 2013. The evaluations relate only to those aspects/elements of the project which we are responsible for designing under the terms of our appointment by our client. Other parties should not rely on these evaluations for their own purposes; in particular, contractors, who must deal with and control all risks arising during construction, must carry out their own definitive risk assessments *ab initio* for that purpose.

Designer's Assessment of Safety and Health Hazards/Risks

Made (Design/Project Engineer):	MN			Scheme Name:	Project Number:
Checked (PSDP Co-ordinator):	PK			Carlow & Wexford Bridges Rehabilitation Contract Structure 7 Boggan Bridge CW-N80-004.00	15.135
Date:	15/06/2016				
Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations	Contractor	Public	Maintainer	<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work which puts persons at work at risk of falling from a height (P)	✓	✓	✓	The design requires Works on an underbridge located on a National Road. All site operatives/visitors are to be provided with a site safety induction prior to entering the site. It is assumed that the Contractor will maintain a tidy site, free from trip hazards and obstructions. The Contractor shall secure the site against unauthorised access. The Contractor should ensure that safe means of access and egress are provided and that suitable fall arrest PPP, edge protection and or mobile platforms are provided where required. The project requires the construction of a masonry parapet on the northeast and raising the existing masonry parapet of the southwest. It is assumed that the Contractor will install suitable pedestrian protection and vehicle safety barriers along with required traffic management to allow removal and replacement of the parapets and transitions on the bridge.	Yes
Work which puts persons at work at risk of burial under earthfalls (P)	✓	✓		<i>Burial from Trench Collapse</i> Excavation will be required for installation of gabion baskets and waterproofing of the bridge deck. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time.	Yes
Work which puts persons at work at risk of engulfment in swampland (P)				N/A	N/A
Work which puts persons at work at risk from chemical or biological substances (P)	✓		✓	<i>Excavation of Hazardous Material</i> The presence of hazardous materials may be located on site. Where asbestos or other hazardous materials are identified these shall be removed by a suitably qualified specialist Contractor before any demolition work/site clearance takes place.	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work with ionising radiation (P)	✓			<i>Exposure to Ionising Radiation</i> Nuclear density meters are required for testing compaction of earthworks. Accredited laboratory and equipment to be specified.	No
Work near high voltage power lines (P) and services	✓			<i>Electrocution</i> Desktop services tracking has been carried out and it is not expected that there will be any overhead or underground ESB cables located at the site. However the Contractor shall be required to liaise with service providers and take appropriate measures to mitigate the risk of exposure to existing services. The Contractor's measures are expected to include; exclusion zones, crossing zones for lifting, completion of an on site Electrical Hazard Risk Assessment (EHRA). It is noted that there are Eir fibre optic below ground services present.	Yes
Work exposing persons at work to the risk of drowning (P)	✓	✓	✓	<i>Drowning</i> The existing bridge is located above an existing stream increasing the risk of drowning. It is assumed edge protection will be provided during masonry parapet construction. Excavation will be required for the the installation of gabion baskets on western river banks. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time.	Yes
Work involving the use of explosives (P)				N/A	N/A
Work involving the assembly or dismantling of heavy prefabricated components (P)	✓		✓	<i>The works involve the installation of vehicle safety barriers across the bridge.</i> It is envisaged that the contractor will use machinery for lifting purposes limiting unnecessary manual handling of prefabricated components. It is expected that operatives will receive appropriate tool box talks informing them of the risk of moving/ assembling heavy components adjacent to the live carriageway.	Yes
Confined Spaces				N/A	N/A
Construction Traffic	✓	✓		<i>Construction traffic will require temporary traffic safety and management to ensure safe access to the site and for the transport of fabricated elements. Construction traffic will require to be segregated from public mainline traffic via containment barriers.</i> The use of transport vehicles, machinery and materials handling plant should be planned and particular attention is drawn to the fact that the works include realignment of a private access with multiple users. The Contractor is anticipated to provide traffic management and routeing of vehicles and personnel to reduce risk. The Contractor is to have clearly signed access and exit points to the site.	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Demolition	✓	✓		<i>Demolition to allow bridge deck waterproofing.</i> Works are required to the western raised verge requiring complete demolition adjacent to the existing live carriageway. Demolition works are required to allow access to the bridge deck to be waterproofed. Temporary safety barriers, traffic management and edge protection will be required. It is assumed that the Contractor will provide safe methods of working agreed with the Local Authority and TII.	Yes
Dust	✓	✓		<i>Large amounts of dust will be generated by the rehabilitation works</i> There will be dust generation over the duration of the works, preventative measures should be taken. This issue is of particular concern due to proximity of the site to the live carriageway. It is anticipated that preventative action will be taken by the contractor. Preventative measures may include damping of the site in dry weather conditions, provision of screening, equipment that can collect deleterious material and the provision of PPE.	Yes
Excavations	✓			<i>Excavation</i> Excavation will be required for installation of gabion baskets and waterproofing of the bridge deck. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time. Traffic management and clear zones to be provided with safety barriers to segregate the public.	Yes
Flooding				N/A	N/A

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<p><i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions</p>	
Live Traffic	✓	✓	✓	<p><i>Live traffic will need to be maintained on the mainline carriageway below during the works</i> Detailed temporary traffic management and safety plans shall be developed by the Contractor and agreed with TII/Local Authority prior to commencement of the works on site. The Temporary Traffic Management Plan should be designed and implemented in accordance with Chapter 8 of the Traffic Signs Manual. A construction stage traffic management plan is envisaged to manage the interface between the site and construction traffic with the live traffic on the mainline. The Contractor should ensure traffic is moving at an appropriate speed when carrying out any lane closures or moving live traffic from one lane to another before any change to the traffic management layout is carried out. Additional lighting will be required when carrying out works at night. The works include replacement of the existing parapet. It is assumed that the Contractor will provide temporary edge protection and safety barriers to separate live traffic from the works area and provide safety to pedestrians and operatives.</p>	Yes
Presence of Asbestos				N/A	N/A
Slips, Trips	✓	✓		<p><i>Slips, trips and falls are a risk on uneven ground or where the construction works require an existing public route to be diverted.</i> All site operatives are expected to receive safety induction training. Furthermore, appropriate signage should be erected to make site personnel and the public aware of potential trip/slip hazards. Footway diversions should be well sign posted and follow routes that do not put the general public at risk of slips, trips or falls.</p>	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Vibration	✓			<i>White Finger or other occupational hazards associated with pneumatic tools</i> Appropriate safety equipment and PPE should be provided to site staff using or affected by vibrating machinery. Assumed that the Contractor will take measures such as rotating operatives to reduce exposure.	No
Welfare	✓			<i>No water, electrical or foul services are readily available on the site</i> The Contractor will need to provide independent welfare facilities.	No
Site clearance of areas with trees present a risk during felling				N/A	N/A
Unauthorised Access by members of the public	✓	✓		<i>The site is located in a rural area with some residences in close proximity.</i> The Contractor should ensure that appropriate measures are undertaken to manage the flow of pedestrians away from any works and sufficient barriers, fencing, demarcation and signage are provided. It is assumed that the Contractor will implement adequate site security.	Yes
Weils Disease and other mammal borne diseases	✓		✓	<i>The rural nature of the site provides the environment for vermin to be present.</i> It is assumed that the Contractor will take appropriate precautions such as provision of hygiene information and the ensuring suitable welfare facilities are provided for workers and that they have recieved appropriate training and have the appropriate PPE.	No
Work involving exposure of workers to excessive noise	✓	✓		<i>Machinery will be required for the works.</i> Use of quieter machinery and silencers or alternative construction methods to be considered where applicable. Contractor may consider the use of quieter machinery and silencers/mufflers or alternative construction methods to be considered. Personal protective equipment to protect against hearing damage should be provided. Contract documents to specify noise/vibration limits.	No
Contamination of watercourses or groundwater	✓	✓		<i>Drilling, Cutting concrete and waterproofing materials give risk to risk of contamination.</i> It is assumed that the Contractor will carry out works in accordance with an approved environmental operating plan and will put in place appropriate safeguards. Specification to identify requirements for the protection of water quality.	Yes

Other parties please take note: These are designer's risk evaluations of design options carried out in-house for the purpose of our complying with designers' duties under the Safety, Health and Welfare at Work (Construction) Regulations 2013. The evaluations relate only to those aspects/elements of the project which we are responsible for designing under the terms of our appointment by our client. Other parties should not rely on these evaluations for their own purposes; in particular, contractors, who must deal with and control all risks arising during construction, must carry out their own definitive risk assessments *ab initio* for that purpose.

Designer's Assessment of Safety and Health Hazards/Risks

Made (Design/Project Engineer):	MN			Scheme Name:	Project Number:
Checked (PSDP Co-ordinator):	PK			Carlow & Wexford Bridges Rehabilitation Contract Structure 8 Cloch Bridge CW-N81-001.00	15.135
Date:	15/06/2016				
Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations	Contractor	Public	Maintainer	Description of risk or hazardous activity Describe the design decisions, assumed construction methods and / or alternative actions	
Work which puts persons at work at risk of falling from a height (P)	✓	✓	✓	The design requires Works on an underbridge located on a National Road. All site operatives/visitors are to be provided with a site safety induction prior to entering the site. It is assumed that the Contractor will maintain a tidy site, free from trip hazards and obstructions. The Contractor shall secure the site against unauthorised access. The Contractor should ensure that safe means of access and egress are provided and that suitable fall arrest PPP, edge protection and or mobile platforms are provided where required. The project requires the construction of a masonry parapet on the eastern slab. It is assumed that the Contractor will install suitable pedestrian protection and vehicle safety barriers along with required traffic management to allow removal and replacement of the parapets and transitions on the bridge.	Yes
Work which puts persons at work at risk of burial under earthfalls (P)	✓	✓		Burial from Trench Collapse Excavation will be required for installation of gabion baskets and waterproofing of the bridge deck. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time.	Yes
Work which puts persons at work at risk of engulfment in swampland (P)				N/A	N/A
Work which puts persons at work at risk from chemical or biological substances (P)	✓		✓	Excavation of Hazardous Material The presence of hazardous materials may be located on site. Where asbestos or other hazardous materials are identified these shall be removed by a suitably qualified specialist Contractor before any demolition work/site clearance takes place.	Yes
Work with ionising radiation (P)	✓			Exposure to Ionising Radiation Nuclear density meters are required for testing compaction of earthworks. Accredited laboratory and equipment to be specified.	No

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Work near high voltage power lines (P) and services	✓			<i>Electrocution</i> Desktop services tracking has been carried out and it is not expected that there will be any overhead or underground ESB cables located at the site. However the Contractor shall be required to liaise with service providers and take appropriate measures to mitigate the risk of exposure to existing services. The Contractor's measures are expected to include; exclusion zones, crossing zones for lifting, completion of an on site Electrical Hazard Risk Assessment (EHRA). It is noted that there are Eir fibre optic below ground and overhead services present.	Yes
Work exposing persons at work to the risk of drowning (P)	✓	✓	✓	<i>Drowning</i> The existing bridge is located above an existing stream increasing the risk of drowning. It is assumed edge protection will be provided during masonry parapet construction. Excavation will be required for the the installation of gabion baskets on western river banks. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time.	Yes
Work involving the use of explosives (P)				N/A	N/A
Work involving the assembly or dismantling of heavy prefabricated components (P)	✓		✓	<i>The works involve the installation of vehicle safety barriers across the bridge.</i> It is envisaged that the contractor will use machinery for lifting purposes limiting unnecessary manual handling of prefabricated components. It is expected that operatives will receive appropriate tool box talks informing them of the risk of moving/ assembling heavy components adjacent to the live carriageway.	Yes
Confined Spaces				N/A	N/A
Construction Traffic	✓	✓		<i>Construction traffic will require temporary traffic safety and management to ensure safe access to the site and for the transport of fabricated elements. Construction traffic will require to be segregated from public mainline traffic via containment barriers.</i> The use of transport vehicles, machinery and materials handling plant should be planned and particular attention is drawn to the fact that the works include realignment of a private access with multiple users. The Contractor is anticipated to provide traffic management and routeing of vehicles and personnel to reduce risk. The Contractor is to have clearly signed access and exit points to the site.	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Demolition	✓	✓		<i>Demolition to allow bridge deck waterproofing.</i> Works are required below the western raised verge requiring complete demolition adjacent to the existing live carriageway. Demolition works are required to allow installation of the bridge deck to be waterproofed. Temporary safety barriers, traffic management and edge protection will be required. It is assumed that the Contractor will provide safe methods of working agreed with the Local Authority and TII.	Yes
Dust	✓	✓		<i>Large amounts of dust will be generated by the rehabilitation works</i> There will be dust generation over the duration of the works, preventative measures should be taken. This issue is of particular concern due to proximity of the site to the live carriageway. It is anticipated that preventative action will be taken by the contractor. Preventative measures may include damping of the site in dry weather conditions, provision of screening, equipment that can collect deleterious material and the provision of PPE.	Yes
Excavations	✓			<i>Excavation</i> Excavation will be required for installation of gabion baskets and waterproofing of the bridge deck. It is assumed that the Contractor shall provide edge protection and means to keep any excavation dry and open for the minimum period of time. Traffic management and clear zones to be provided with safety barriers to segregate the public.	Yes
Flooding				N/A	N/A

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<p><i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions</p>	
Live Traffic	✓	✓	✓	<p><i>Live traffic will need to be maintained on the mainline carriageway below during the works</i> Detailed temporary traffic management and safety plans shall be developed by the Contractor and agreed with TII/Local Authority prior to commencement of the works on site. The Temporary Traffic Management Plan should be designed and implemented in accordance with Chapter 8 of the Traffic Signs Manual. A construction stage traffic management plan is envisaged to manage the interface between the site and construction traffic with the live traffic on the mainline. The Contractor should ensure traffic is moving at an appropriate speed when carrying out any lane closures or moving live traffic from one lane to another before any change to the traffic management layout is carried out. Additional lighting will be required when carrying out works at night. The works include replacement of the existing parapet. It is assumed that the Contractor will provide temporary edge protection and safety barriers to separate live traffic from the works area and provide safety to pedestrians and operatives.</p>	Yes
Presence of Asbestos				N/A	N/A
Slips, Trips	✓	✓		<p><i>Slips, trips and falls are a risk on uneven ground or where the construction works require an existing public route to be diverted.</i> All site operatives are expected to receive safety induction training. Furthermore, appropriate signage should be erected to make site personnel and the public aware of potential trip/slip hazards. Footway diversions should be well sign posted and follow routes that do not put the general public at risk of slips, trips or falls.</p>	Yes

Designer's Assessment of Safety and Health Hazards/Risks

Identified Hazard or Risk	Exposed Party			Evaluation, Design Decisions and / or Alternative Actions	Is the risk of a substantial or unusual nature such that information should be provided to the PSDP?
	Contractor	Public	Maintainer		
(P) indicates a Particular Risk listed in Schedule 1 of the Regulations				<i>Description of risk or hazardous activity</i> Describe the design decisions, assumed construction methods and / or alternative actions	
Vibration	✓			<i>White Finger or other occupational hazards associated with pneumatic tools</i> Appropriate safety equipment and PPE should be provided to site staff using or affected by vibrating machinery. Assumed that the Contractor will take measures such as rotating operatives to reduce exposure.	No
Welfare	✓			<i>No water, electrical or foul services are readily available on the site</i> The Contractor will need to provide independent welfare facilities.	No
Site clearance of areas with trees present a risk during felling				N/A	N/A
Unauthorised Access by members of the public	✓	✓		<i>The site is located in a rural area with some residences in close proximity.</i> The Contractor should ensure that appropriate measures are undertaken to manage the flow of pedestrians away from any works and sufficient barriers, fencing, demarcation and signage are provided. It is assumed that the Contractor will implement adequate site security.	Yes
Weils Disease and other mammal borne diseases	✓		✓	<i>The rural nature of the site provides the environment for vermin to be present.</i> It is assumed that the Contractor will take appropriate precautions such as provision of hygiene information and the ensuring suitable welfare facilities are provided for workers and that they have recieved appropriate training and have the appropriate PPE.	No
Work involving exposure of workers to excessive noise	✓	✓		<i>Machinery will be required for the works.</i> Use of quieter machinery and silencers or alternative construction methods to be considered where applicable. Contractor may consider the use of quieter machinery and silencers/mufflers or alternative construction methods to be considered. Personal protective equipment to protect against hearing damage should be provided. Contract documents to specify noise/vibration limits.	No
Contamination of watercourses or groundwater	✓	✓		<i>Drilling, Cutting concrete and waterproofing materials give risk to risk of contamination.</i> It is assumed that the Contractor will carry out works in accordance with an approved environmental operating plan and will put in place appropriate safeguards. Specification to identify requirements for the protection of water quality.	Yes

Other parties please take note: These are designer's risk evaluations of design options carried out in-house for the purpose of our complying with designers' duties under the Safety, Health and Welfare at Work (Construction) Regulations 2013. The evaluations relate only to those aspects/elements of the project which we are responsible for designing under the terms of our appointment by our client. Other parties should not rely on these evaluations for their own purposes; in particular, contractors, who must deal with and control all risks arising during construction, must carry out their own definitive risk assessments *ab initio* for that purpose.