GUIDANCE NOTES	**NetworkRail**
	Level 0 Assessment Tool **Version FBM 3.1**

List of Key Updates included in FBM 3.1 (19/07/19)

1) Fixed bug in Z-girder yield strength resulting in #N/A section property errors.

2) Removed "Rivets" from the list of possible fastener materials (Rivets can still be selected as a "Fastener Type").

3) Fixed bug resulting in occasional difficulties signing Form BA0(1) and BA0(2).

List of Key Updates included in FBM 3.0 (12/04/19)

1) Updated Tool to run in Microsoft Excel 2016.

2) Updated Tool to run in Windows 10 while also remaining compatible with Windows 7.

3) Assessed Category of section calculated in accordance with NR/L2/CIV/035 and reported in results tables.

4) Comments may now be included on the results sheets. Comments are compiled onto a new results comments sheet.

5) Comment, warning and error registers no longer limit entries to 5 lines of text.

6) The CRE must now select whether the Tracking Tables have been populated and checked, before Form BA0(1) can be signed.

7) 'Indeterminate' is now an option when selecting qualitative assessment result.

8) Amendments to Guidance Notes and Justification Reports to capture updates.

9) Combined bending and shear calculations have now been included in accordance with Section 9.9.3, BS 5400: Part 3.

10) Shear capacity of welded end connections may now be calculated, in accordance with NR/GN/CIV/025.

11) Pressed trough section input sheet has been amended to allow web inclines other than 2:1, further sophistication in geometry, non-standard dimensions and doubler plates.

12) Steel strengths post 1906 are now included in accordance with NR/GN/CIV/025.

13) Additional angles and plates can now be inputted for fabricated trough.

14) Applied pedestrian live loads are now based on the footbridge category A-C, and the nominal point load changed to 1.5kN, in accordance with NR/L3/CIV/023.

15) Historic compact sections are now checked using elastic section capacity, in accordance with NR/L3/CIV/023.

16) New formcode, DG-T*, incorporated into Tool to allow assessment of deck type structures with transverse troughing.

17) Bug fixes amended in Tool including:
• problem opening the Tool due to 'enables Add-in'
• compact/non-compact section selected for web splice bending capacity calculation

List of Key Updates included in FBM 2.3 (22/09/2017)

1) Assessment Scenario information is now exported to CSAMS XML file for populating the CSAMS database.

2) Added error checking to the CSAMS XML exporting procedure, to ensure all required fields have been correctly populated by the user.

List of Key Updates included in FBM 2.2 (23/05/2017)

1) Input added to qualitative assessment pages to allow the identification of the leading minor element with the most significant defects causing the qualitative assessment result. These entries are required for populating the CSAMS database.

List of Key Updates included in FBM 2.1 (30/03/2016)

1) Input added for footbridge loading requirement to NR/L3/CIV/006/01C

2) If the form code on the FormAA does not fully describe the deck, it is mandatory to provide the correct form code for the deck and the facility to do this has been added.

3) Additional fields provided to allow for correct BCMI references to be entered if an element is not correctly defined in sheets "Deck" and "Subdeck".

4) The terms used to describe the condition of a section have been changed, choices include "As-built Condition", "Current Condition" and "Section with Defect". If "Section with Defect" is selected a Defect ID should be provided. Imports will handle the condition of section change as shown below.

Old Input	New input (when imported)
Full section	As-built Condition
Corroded section	Section with Defect

5) Information sources have been split into a "Date" and "By" field. On import the information from older assessments will be placed in the "By" field, the assessor should manually split the information into the newly created "Date" and "By" fields.

6) Added pop-up window to display import/calculation progress.

7) New functionality has been added to produce an XML which can be uploaded to the CSAMS database.

List of Key Updates included in FBM 2.0 (14/08/15)

1)   Transfer from Excel 2003 to Excel 2010.

2)   A new Assessment Menu has been added to fit with Excel 2010.

3)   Guidance Notes have been removed from the Tool and are now provided as a stand alone PDF file.

4)   The Form AA0 and Form BA0 no longer contain an approved list of CREs. It is the responsibility of the Assessor to ensure each form is signed by a competent and approved person taking note that once signed the Form AA0 cannot be amended. Forms are signed using "Sign Forms" from the Assessment menu. The signatures will now be checked and approved by Network Rail Structures Managers.

5)   Name and Title are now mandatory inputs on the Form AA0 and Form BA0 to facilitate approval by Network Rail Structure Managers.

6)   During Data Transfer results from the original file are compared to the updated file with any changes being flagged within the Tool on an additional tab which will become visible if changes have occurred. If no changes occur the Form BA0 signatures will be carried forward.

7)   A log file will be produced during Bulk Data Transfer which will show for each file if they contained Errors, Changes to the Results or Transferred without Change. This file will be saved in the output folder.

8)   During signing of the Form BA0 forms the inputs will be automatically checked to ensure no changes have been made since the calculation was run. If changes have been made, the calculation must be re-run before signing the forms.

9)   Improvements to the efficiency of the Tool have been made throughout.

List of Key Updates included in FBM 1.2 (03/10/13)

11)   Correction of display error on Summary of Results sheet.

List of Key Updates included in FBM 1.1 (26/06/13)

1)   Provision of XML database file is included. The XML file will be created automatically when the Form BA0(2) is signed. This feature is for Network Rail Structure Managers only.

2)   Refinements have been made to the Guidance Notes for greater clarity.

List of Abbreviations used

CRE	Contractor's Responsible Engineer
Assmt	Assessment
Calcs	Calculations
AC	Assessed Category
U	Utilization factor
DL	Dead load
LL	Live load
SDL	Superimposed Dead Load
BM	Bending moment
SF	Shear force
SecProp	Section Properties
Prop	Properties
BCMI	Bridge Condition Marking Index (not applicable to footbridges, but the priciples used herein)
DK	Deck
SD	Subdeck
DCK	Decking/plate/slab/jack arches incl. transverse troughing
LSE	Secondary longitudinal beam/girder (exposed) e.g. parapet girders
LSI	Secondary longitudinal beam/girder (inner) e.g. railbearers or wheel timbers
MGE	Main longitudinal beam/girder (exposed)
MGI	Main longitudinal beam/girder (inner) incl. longitudinal troughing and filler beams
XGE	Transverse beam/girder (end)
XGI	Transverse beam/girder (inner)
TD	Timber decking
LT	Longitudinal troughing
FB	Filler beam
TG	Trough girder
MG	Main girder
XG	Cross girder
TT	Transverse troughing
Ed	End
Md	Midspan
CF	Curtailment to Flange
CW	Curtailment to Web
DF	Damaged Flange
DW	Damaged Web
SF	Strengthened Flange
SW	Strengthened Web
WS	Web Splice
c/c	Centre to centre
b/w	Between
CSAMS	Civils Strategic Asset Management Solution

No.	Topic	General note
1	Level 0 process	The Level 0 assessment process has been developed in order to give Network Rail more contemporary bridge strength information which can be readily updated as new information becomes available or if changes are proposed. The Level 0 Assessment Tool has been developed to deliver these assessment calculations and a brief report; this will provide assessments in a common and familiar format which will greatly improve Network Rail's ability to manage their bridge stock.
2	Level 0 process	The Level 0 Assessment Tool has been developed on the basis of NR/GN/CIV/025 Issue 3, BS 5400: Part 3, NR/L3/CIV/023 and NR/GN/CIV/015 (formerly RT/CE/C/015).
3	Level 0 process	The Level 0 assessments are prepared using an Assessment Tool that introduces various agreed simplifications to the assessment method in order to reduce the time required to collect and process assessment data into calculations which determine an assessed capacity based upon principal checks on key load carrying elements.
4	Level 0 process	The assessor must determine the most reliable source of information. Generally the hierarchy of reliability for dimensional information will be: 1) Data confirmed on site 2) Data from record drawings 3) Data from drawings provided in assessment report 4) Data from assessment calculations. The hierarchy of reliability for conditional information will be: 1) Data confirmed on site, 2) Data from Detailed examination.
5	Use of the Tool	The Level 0 assessment process and this Assessment Tool are designed for use by experienced railway assessment engineers and must only be undertaken by persons with suitable competency. Each assessing organisation must have at least one person of suitable experience to be the CRE to oversee the delivery of Level 0 Assessments.
6	Use of the Tool	The Assessment Tool is created for Level 0 assessment of half-through and deck type metallic footbridges, using Excel 2016.
7	Use of the Tool	The Level 0 Tool should always be saved to and run from the C: drive of the user's PC. Running the Tool from a network location may impair functionality of Excel and the Level 0 Tool.
8	Use of the Tool	The Tool will attempt to identify whether Excel 2016's Autosave function is active, and if so, disable it to avoid any inteference with its operation. Autosave will automatically be disabled if the Tool is saved locally to the user's C: drive, as per above.
9	Scope of the Tool - General	Level 0 Assessment Tool is designed to assess one bridge deck at a time. Structures with more than one deck will require multiple files - one for each deck. Files' names are standardized in the following format: FBM2_0_ELR-No-DKNo.xls
10	Scope of the Tool - Elements articulation	Only simply supported elements may be assessed using the Tool.
11	Scope of the Tool - Geometrical limitations	Only bridge spans from 2m to 30m and skews up to 50 degrees can be assessed using the Level 0 Assessment Tool.
12	Scope of the Tool - General arrangement limitations	Assessment of Deck type bridges with more than 5 longitudinal girders may be undertaken considering part deck carrying one track only and corresponding number of girders under that one track.
13	Scope of the Tool - Elements	The scope of assessment is limited to the following types of elements: longitudinal timber decking, cross girders, transverse troughing, longitudinal troughing, filler beam decks, jack arch decks (jack arches not assessed), trough girders and main girders. The Tool may be used to assess girders with tension and compression flanges curved in elevation by inputting different sections. However, the Tool takes no account of the enhanced shear resistance beams with flanges curved in elevation may exhibit as described in Section 9.3.5A and 1.2E in accordance with NR/GN/CIV/025.

No.	Topic	General note
14	Scope of the Tool - Sections	The Level 0 Assessment Tool may be used to assess plate I-girders and plate girders with two webs, joists, Z-type girders, troughs (pressed), troughs (fabricated) and wheel timbers/decking with rectangular section. Girders with flanges curved or sloped in elevation are assessed without allowance for flange contribution to shear capacity. Girders with varying web depth can be assessed by adding additional sections at any locations within the length deemed potentially critical by the assessor (for example, at a change in flange gradient). It should be noted that the self-weight of an element is calculated from its mid-span section properties - this should be considered when reviewing results for sections in which dead load effects may be correspondingly under- or over-estimated.
15	Scope of the Tool - Capacity checks	Assessed elements are checked for: Bending - at midspan, at flange curtailments, at locations with damaged flange and at web splice locations (ignoring web); Shear - at the end, at web curtailments and at locations with damaged web; Web to flange connection check - at the end; Combined bending and shear check - all sections at locations other than midspan and end. The Level 0 assessment calculations also include end connections check for fasteners and welds in shear only.
16	Scope of the Tool - Qualitative assessment	Elements in deck supports and deck elements, which are not covered in the assessment calculations, are assessed qualitatively. Level 0 Assessment Tool also includes a procedure for enhanced qualitative assessment of bearing stiffener.
17	Scope of the Tool - Loading Scenarios	The Level 0 Assessment Tool uses a single pre-defined loading scenario.
18	Scope of the Tool - Loading Scenarios	The CSAMS database uses a pre-defined list of 'Assessment Scenarios' to classify the loading scenario assessed in the Level 0 Assessment Tool. For the pre-defined footbridge loading scenario, the corresponding 'Assessment Scenario' is pre-set to "Standard Requirement" and cannot be changed. For all qualitative assessment, the corresponding 'Assessment Scenario' is pre-set to "Qualitative" and cannot be changed.

No.	Topic	General note
1	Run macros	To use the Assessment Tool it is necessary for macros to be enabled. Go to "File/Options/Trust Centre/TrustCentre Settings/Macro Settings" and set "Disable all macros with notification". Re-open the Tool and choose "Enable Macros" from the "Security Warning" message box, which appears when you open file with macros.
2	"Assessment" menu	Once macros are enabled and the Tool re-opened an additional "Assessment" menu is automatically added to your Excel ribbon. Use the "Assessment" menu to progress with assessment (following the assessment steps as described in the next item) and to navigate in the Tool.
3	Assessment steps	Assessor: Step 1 - Review structure and fill all relevant information in sheets "General" and "FormAA0". Contractor's Responsible Engineer (CRE): Step 2 - Contractor's Responsible Engineer (CRE) to review and sign "FormAA0". *Note that no changes to Form AA0 will be allowed after the form is signed.* Assessor: Step 3 - Fill all relevant information on general input sheets "Deck", "Subdeck", "Deck_Width", "End_Connections", "SSI", "DK_Qual", "ES_IS_Qual" and "AssmtStatus". Step 4 - Add elements (Assessment menu -> Add Elements) and fill all relevant information. Step 5 - Add sections (Assessment menu -> Add Sections) and fill all relevant information. Step 6 - Run calculations for Predefined Scenario (Assessment menu -> Calculate -> Predefined Scenario). Step 7 - Correct all errors in the input data (if any). Step 8 - Review and correct warning messages (if any). Step 9 - Review results. Checker: Step 10 - Steps 1 to 9 to be checked and signed by checker. Contractor's Responsible Engineer (CRE): Step 11 - Contractor's Responsible Engineer (CRE) to review assessment, write recommendations (sheet "CRE") and sign Form BA0 (Sheets "Form BA0(1)"). Note the Form BA0 cannot be signed until: - All scenarios are calculated using the 'Calculate All' button in the ribbon (Calculate Scenarios -> Calculate All) - The CRE either selects "Yes" in the dropdown box (cell G44) to certify that the Tracking Tables have been populated and checked, or selects "No" and provides justification in the text box as to why this is not the case.
4	Input cells	There are two types of input cells in the Tool - "yellow" and "tan" coloured. "Yellow" coloured cells are data value input cells and "tan" coloured cells are either data units or data source input cells.
5	Units	"Units" must be assigned to each data input (if applicable). Select units from drop down menu: 4 options (in, ft, m, mm). When "units" are assigned to a table of values, all the input data in the table must be in the selected units.
6	Source	"Source" must be assigned to each data input. Select information source from drop down menu - 13 options (refer to tab "General" for information sources). When "source" is assigned to a table of values and different sources are used for the input data in this table - specify the principal information source and use the comments facilities to record if any data in the table is taken from a different source. Offline supporting sources may be included in the Tool.

No.	Topic	General note
7	Comments	Add comments only to the data value input cells i.e. "yellow" coloured cells. These comments will be listed together with the data description in a separate sheet "Comments". All comments have to be entered using the standard Excel commenting facility. <u>How to add "Comment" in Excel?</u> 1. Go to "File/Options/General" and change "User name:" to your initials. 2. Select the "yellow" cell to which you want to add a comment. 3. Right click and choose "Insert Comment". <u>How to change or delete "Comment" in Excel?</u> 1. Select the "yellow" cell with the comment. 2. Right click and choose "Edit Comment" or "Delete Comment". Users are encouraged to make regular use of this facility explaining their decisions. Comments should be short, brief, clear and meaningful.
8	Results	Comments may be added on individual element results sheets by right-clicking in the blue cells adjacent to the 'Detailed Results' table and using the Excel commenting facility (see also Item No. 7 above). These comments can then be compiled into a formatted table (as per general input comments) by selecting the "Results_Comments" sheet and selecting "Yes" when prompted by the Tool to populate the table. The user will also be prompted to update this table during printing.
9	Yes / No option	If cells with this option are left blank, this will be considered as "No", however all mandatory cells must be filled in.
10	Printing	Note that the format of page numbering when printed is "Page 1 of N", where N is number of pages printed. Therefore one and the same page can have different page number when different printing options are used.
11	Change of Input	The Tool will require re-calculation when there is any change of input. Changes to any CRE input will also result in a requirement for re-calculation, and re-signing of the forms BA0(1) and BA0(2).

Frequently Asked Questions (FAQ)

1. How to start?
Read 'Using_tool' Item 3 which explains the steps to use the Tool.

2. How to add elements and sections?
'Using_tool' Item 3' explains this.

3. How to sign the Form AA0 and Form BA0 using "electronic signature"?
'FormAA0', 'Form BA0(1)' & 'Form BA0(2)'. Item 'Key/Signing' explains this.

4. How to use the Tool to assess a bridge with more than one deck?
A separate assessment has to be undertaken for each deck of the bridge.

5. An error occurs when text is added to the text box on CRE Recommendations and other sheets
with text boxes.
The problem may appear because the text starts with "-". Signs like "-", "+", "=" will cause this problem if they are at
the beggining of the text. Please avoid this. If you add a space in front of these signs it should work without error.

| | | **GUIDANCE NOTES** | NetworkRail |
| | | | **Level 0 Assessment Tool**
Version FBM 3.1 |

Sheet name	Input data	Description	Suggested Sources
General	Route	e.g. Midland, Southern…	TS - Level Zero Task List
General	ELR	Engineer's Line Reference	TS - Level Zero Task List
General	Number	Bridge number. Use "_" symbol instead of "/" symbol for structures with more than one identification number (e.g. use 46_47 instead of 46/47) as bridge number is used as part of the file name and therefore some symbols are not permitted. Leading zeros may now be included as necessary within the bridge number (e.g. 00127).	TS - Level Zero Task List
General	Mileage	Format is "82.0022" which is 82m and 22yards.	TS - Level Zero Task List
General	OS Map Reference	Format is AA #### ####, e.g. TQ 1234 5678.	TS - Level Zero Task List
General	Bridge name	Local name.	TS - Level Zero Task List
General	Number of spans	Number input. BCMI is not applicable to footbridges although the principles are used. Refer to BCMI code NR/L3/CIV/006/2C and consider as an overbridge. Elements are numbered from left to right when looking from ES1 to ES2, where ES1 is left of low mileage when facing high mileage.	RD - Record Drawings
General	Total number of decks	Number input. Deck is marked as DK in BCMI code. BCMI is not applicable to footbridges although the principles are used. Refer to BCMI code NR/L3/CIV/006/2C and consider as an overbridge. Elements are numbered from left to right when looking from ES1 to ES2, where ES1 is left of low mileage when facing high mileage.	RD - Record Drawings
General	Construction date	Date of construction. If unknown, estimate date and add comment.	RD - Record Drawings
General	Superstructure date	Date of superstructure construction. If unknown, estimate date and add comment.	RD - Record Drawings
General	CARRS Parent GUID	Number input required	TS - Level Zero Task List
General	CARRS Child GUID	Number input required	TS - Level Zero Task List
General	Deck reference	Select option from dropdown menu - options from "DK1" to "DK20"	
General	Obstacle crossed: Type, Name	Select from dropdown menu for type - describe the name of the obstacle, e.g. A321 public road.	RD - Record Drawings; AR - Last Assessment Report
General	Loading requirement to NR/L3/CIV/023	Select the loading requirement of the footbridge from the dropdown. Choice of loading will affect the assessed category and utilisation factor of a section. Live load capacity is unaffected.	
General	Source type - Last Detailed Examination report (Date)	Use the format "dd/mm/yyyy"	

	GUIDANCE NOTES		**NetworkRail**
			Level 0 Assessment Tool **Version FBM 3.1**

Sheet name	**Input data**	**Description**	**Suggested Sources**
General	Source type - Last Detailed Examination report (By)	Name of organisation that wrote the Last Detailed Examination Report	
General	Source type - Last Assessment Report (Date)	Use the format "dd/mm/yyyy"	
General	Source type - Last Assessment Report (By)	Name of organisation that wrote the Last Assessment Report.	
General	Source type - Last Inspection for Assessment report (Date)	Use the format "dd/mm/yyyy"	
General	Source type - Last Inspection for Assessment report (By)	Name of organisation that wrote the Last Inspection for Assessment Report	
General	Source type -Last Visual Examination report -1 (Date)	Use the format "dd/mm/yyyy"	
General	Source type -Last Visual Examination report -1 (By)	Name of organisation that wrote the Last Visual Examination Report 1.	
General	Source type -Last Visual Examination report -2 (Date)	Use the format "dd/mm/yyyy"	
General	Source type -Last Visual Examination report -2 (By)	Name of organisation that wrote the Last Visual Examination Report 2.	
General	Source type - Additional Examination reports (Date)	Use the format "dd/mm/yyyy"	
General	Source type - Additional Examination reports (By)	Name of organisation that wrote the Additional Examination Reports.	
General	Source type - SCMI report (Date)	Use the format "dd/mm/yyyy"	
General	Source type - SCMI report (By)	Name of organisation that wrote the SCMI Report.	
General	Source type - Supplementary Site Inspection (Date)	Use the format "dd/mm/yyyy"	

Sheet name	Input data	Description	Suggested Sources
General	Source type - Supplementary Site Inspection (By)	Name of organisation that undertook the Supplementary Site Inspection.	
General	Date of last inspection for assessment (Date)	Use the format "dd/mm/yyyy"	
General	Date of last inspection for assessment (By)	Name of organisation that undertook the inspection for assessment	
General	Source type - Record Drawings	Use the format "5E/1720/1, 3, 5-7 & 21"	
General	Source type -Five Mile Plans	Use the format "Dated …"	
General	Source type - Sectional Appendices	Use the format "Dated …"	
General	Source type -Level 0 Task List	Use the format "Dated …"	
General	Source type - Internet	Use the format "Dated …, web address …"	
General	Source type - Hidden Critical Element Examination Report	Use the format "Dated …, by …"	
General	Offline supporting calculations & sketches (OL1-OL10) (Source Type)	Title and/or brief description of the offline supporting document to be appended to the Level 0 Assessment.	
General	Offline supporting calculations & sketches (OL1-OL10) (Date)	Use the format "dd/mm/yyyy"	
General	Offline supporting calculations & sketches (OL1-OL10) (By)	Name of organisation that created the document.	

GUIDANCE NOTES			**NetworkRail**
			Level 0 Assessment Tool **Version FBM 3.1**

Sheet name	Input data	Description	
FormAA0	Assessment checklist	Drop down menu -options "Yes" or "No" to all the 11 questions.	
FormAA0	Assessment checklist	Question 1: This Level 0 Assessment Tool assumes the deck is simply supported.	
FormAA0	Assessment checklist	Question 2: Only bridge spans greater than 2m and up to 30m (skew) can be assessed using this Level 0 Assessment Tool.	
FormAA0	Assessment checklist	Question 3: Only skews no greater than 20 degrees can be assessed using this Level 0 Assessment Tool unless the Assessor and CRE agree that the elements being assessed are not subjected to significant torsional effects. The justification to assess elements of decks with skews in excess of 20 degrees must be input.	
FormAA0	Assessment checklist	Question 4: This Tool only covers footbridges and does not allow for any vehicle loading.	
FormAA0	Assessment checklist	Question 5: This Level 0 Assessment Tool does not assess any composite concrete and steel elements.	
FormAA0	Assessment checklist	Question 6: This Level 0 Assessment Tool assumes the deck and its elements are all simply supported and statically determinate.	
FormAA0	Assessment checklist	Question 7: This Level 0 Assessment Tool limits the number of main beams per deck to 5. If the deck has more than 5 main beams, the assessor shall	
FormAA0	Assessment checklist	Question 8: The Tool considers cross girders to be equally spaced.	
FormAA0	Assessment checklist	Question 9: This Level 0 Assessment Tool is only valid where the cross girder spacing is not greater than 1/4 of the span.	
FormAA0	Assessment checklist	Question 10: This Level 0 Assessment Tool is only valid where the primary load bearing elements are not stiffened longitudinally.	
FormAA0	Assessment checklist	Question 11: This Level 0 Assessment Tool considers only those structures that can be defined from the form code options given.	
FormAA0	Enter correct form code	This field will become available if the answer to Question 11 is "No". Provide the correct form code for the structure if the bridge deck is not correctly and completely defined using the available form code options. The correct form code is selected using the form code builder which allows access to all available form codes.	
FormAA0	Structural form code	Form code consists of 5 letters/numbers (Ref1-Ref5) representing: Bridge Type (Ref1), Primary Longitudinal Elements (Ref2), No. of Primary Elements (Ref3), Floor Types (Ref4) and Track/Road Form (Ref5). Drop down menus with valid combinations for the form codes included in the Tool are provided. The assessor must choose the form code combination that defines the bridge deck correctly and completely.	
FormAA0	Justification for adopting Level 0 assessment (if required)	If the answer to any of the questions in the Assessment Checklist answered in such a way as to make the bridge deck unsuitable for assessment the following statement will appear: "Bridge deck is NOT suitable for Level 0 assessment.". However, a bridge should not be excluded from level 0 assessment based on this. Assessing organisation should use their experience and engineering judgement to populate as many primary elements as possible in the Assessment Tool and record the justification in this box.	

Sheet name	Input data	Description	
FormAA0	Name/Signing Form AA0	Name of the CRE from the Assessing organisation. To be filled by the CRE.	
FormAA0	Title/Signing Form AA0	Title of the CRE from the Assessing organisation. To be filled by the CRE.	
FormAA0	Signing Form AA0	The Form AA0 should only signed by the CRE. After filling in the Name and Title, go to Assessment menu and select "Sign Forms". It is the responsibility of the Assessor to ensure each form is signed by a competent and approved person. The signatures will be checked and approved by Network Rail Structures Managers. Completing the signing procedure will lock all the information in Form AA0 sheet.	

Sheet name	Input data	Description	
		The form code in the Tool is to be populated using the drop down list. This may be different than what is in the spreadsheet provided by Network Rail separately. Network Rail will capture the form code from the Tool which will form the definitive list.	
FormAA0	Structural form code - Ref1	<u>Bridge Type (Ref1)</u> H - Half-through bridges D - Decks	
FormAA0	Structural form code - Ref2	<u>Primary Longitudinal Elements (Ref2)</u> E - Plate girders Z - Z type girders A - Metal girder and timber/stone deck D - Trough girders F - Filler/cased beam G - Metal girder and metal deck T - Longitudinal troughing J - Metal Girder with Jack Arches	
FormAA0	Structural form code - Ref3	<u>No. of Primary Elements (Ref3)</u> 2 - Two girders/trusses 3 - Three girders/trusses M - More than 3 girders -	
FormAA0	Structural form code - Ref4	<u>Floor Types (Ref4)</u> F - Cross girders with floor plates A - Cross girder and timber deck C - Cross girder encased in concrete (concrete not assessed) D - Cross girder and concrete floor T - Transverse troughing U - Transverse timber and timber deck E - Concrete floor (concrete not assessed) P - Floor plate (plate not assessed) S - Floor plate with stiffeners in concrete (floor not assessed) J - Cross girders with Jack Arches -	
FormAA0	Structural form code - Ref5	<u>Track/Road Form (Ref5)</u> F - Foot Only	
FormAA0	Structural form code	The allowable combinations of the above five codes can be found within the Tool.	
FormAA0	Structural form code	If compression flange is not restrained by the deck then consider as a half through structure.	

Sheet name	Input data	Description	Suggested Sources
Deck	Span number	Number is required.	
Deck	Supports 1st	Label it as per BCMI code NR/L3/CIV/006/2C, i.e. ES1, IS1, etc. Refer to the sketch provided in the tab.	
Deck	Supports 2nd	Label it as per BCMI code NR/L3/CIV/006/2C, i.e. ES1, IS1, etc. Refer to the sketch provided in the tab.	
Deck	Min vertical clearance to soffit:	Number is required.	DE - Last Detailed Examination report; Internet
Deck	Skew:	The Tool assumes a torsionless system and as such the skew angle is limited to a max +/- 20 degrees unless justified otherwise. Skew effects are not considered in this Level 0 Assessment Tool and all decks are considered square.	RD - Record Drawings; AR - Last Assessment Report
Deck	Minor elements (individually marked)	Refer to BCMI code NR/L3/CIV/006/2C and Abbreviation list part of this Guidance Note. Although BCMI is not applicable to footbridges, the principles of the system are used.	
Deck	Applicable	Select "Yes" from the drop down list if the minor elements exist. Otherwise select "No". The assessor must fill this column in full as this will define the deck and subdecks.	
Deck	Name in RD (AR)	Label/name of the element used in VERA/RD/AR for reference code.	RD - Record Drawings; AR - Last Assessment Report
Deck	Correct BCMI Code	If the element is not correctly defined using the code field, enter the correct reference.	
Deck	Correct BCMI No	If the element is not correctly defined using the code field, enter the correct reference.	
Deck	Assmt Calcs	Select whether assessment calculations are required for the elements listed using the drop down menu - options "Yes" or "No". Note that only elements that have been identified as applicable for the structure can be selected. Only elements with different cross section, condition, loading or length should be chosen for "Assmt Calcs". When two (or more) elements are the same only one can be chosen for calculations and commenting facilities used to record why other elements have not been calculated. (e.g. Element same as ...)	

Sheet name	Input data	Description	Suggested Sources
Subdeck		XGE, XGI and DCK are collectively marked within a sub-deck (e.g. XGE1, XGI1 and DCK1 refer to all XGs and DCKs in sub-deck number 1). Refer to BCMI code NR/L3/CIV/006/2C. Level 0 assessment only allows for quantitative assessment of two DCK types - transverse troughing and longitudinal timber decking.	
Subdeck	No	Select from drop down menu - 5 options (1 to 5)	
Subdeck	(Index)	Select reference (index) number from drop down menu - options from "(0)" to "(9)". To allow for the elements to be individually marked it is suggested an extra index (i) to be added i.e. XGI1(1), XGI1(2),.., XGE1(1), XGE1(2),.. An index (0) can be used to mark these elements as a group e.g. LSI1(0), XGE1(0), and will have the same meaning as in the current BCMI code. If the assessed element can represent all inner cross girders in sub-deck number 1, the assessment results will be presented for XGI1(0). If there is damage/corrosion issue with inner cross girder number 2 in sub-deck number 1, then results will be presented for XGI1(2). The additional index (i) numbering will follow the same convention as for all minor elements in a deck i.e. low to high mileage and left to right when facing high mileage. Refer to sketch.	
Subdeck	Name in RD (AR)	Label/name of the element used in VERA/RD/AR for reference.	RD - Record Drawings; AR - Last Assessment Report
Subdeck	Correct BCMI Code	If the element is not correctly defined using the code field, enter the correct reference.	
Subdeck	Correct BCMI No	If the element is not correctly defined using the code field, enter the correct reference.	

Sheet name	Input data	Description	Suggested Sources
Subdeck	Assmt Calcs	Specify which minor elements will be assessed by selecting "Yes" or "No" from the drop down menu. Note that only elements that have been identified by filling the subdeck and index references can be selected. Only elements with different cross section, condition, loading or length should be chosen for "Assmt Calcs". When two (or more) elements are the same only one can be chosen for calculations and commenting facilities used to record why other elements have not been calculated. (e.g. Element same as ...)	
Subdeck	XGs' spacing	XG spacing is the distance between the cross girders (c/c).	
Subdeck	Units	Select units from drop down menu - 4 options (in, ft, m, mm)	
Subdeck	Source	Select information source from drop down menu - 13 options (refer to tab "General" for information sources)	

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Sheet name	Input data	Description	Suggested Sources
Deck_Width	Units	Select units from drop down menu - 4 options ("in", "ft", "m", "mm")	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Deck_Width	Source	Select information source from drop down menu - 13 options (refer to tab "General" for information sources)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Deck_Width	Deck and sub-decks width, Distances	These are the distances between the main longitudinal elements starting from the set datum. Datum is at the centre of the left most longitudinal deck element when looking along the bridge from ES1 to ES2, with ES1 left of low mileage when facing high mileage, i.e. MGE1. Enter distances as shown on the sketch i.e. distances between adjacent elements.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

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Sheet name	Input data	Description	Suggested Sources
End_connections	Typical XG/DCK element	A drop down list will be available if XG/DCK are present.	
End_connections	Typical MG element	A drop down list will be available if MG are present.	
End_connections	Type of fasteners	Select detail from drop down menu - "rivets" / "bolts"	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
End_connections	Bolted/riveted connection?	Yes/no input. If a bolted or riveted end connection is present, select 'Yes' from the drop-down menu.	
End_connections	Welded connection?	Yes/no input. If a welded end connection is present, select 'Yes' from the drop-down menu. Note that 'Yes' may be input for both bolted/riveted and welded connections (i.e. cases where the minor element is welded to an end plate, which is in turn fastened to the major element with bolts/rivets).	
End_connections	Fasteners' Material	Select fastener material from drop down menu - 7 options ("-", Wrought iron, Steel - Pre 1906, Steel - After 1906, Gr 4.6 Bolts, Gr 8.8 Bolts, Gr 10.9 Bolts). If not applicable you must leave blank.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
End_connections	Number	Input the number of fasteners which are in single shear, i.e. count the number of rivets/bolts to the web of the element to which the relevant element is connected as shown on the sketch	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
End_connections	Size	Input the diameter of rivets or input diameter of the shank of bolts.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
End_connections	Units	Select units from drop down menu - 4 options (in, ft, m, mm)	
End_connections	Source	Select information source from drop down menu - 13 options (refer to tab "General" for information sources)	
End_connections	Weld length (per web face)	Input the length of weld along one face of the web only. For example, for a 400mm deep web welded to an end plate along its full depth, weld length should be entered as 400mm.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
End_connections	Throat thickness	Input the throat thickness of the weld (note - not leg length)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

Sheet name	Input data	Description	Suggested Sources
End_connections	End plate material	Select end plate material from drop down menu - 11 options (Wrought iron, Steel - Pre 1906, Steel - After 1906, Steel BS 15: 1906, Steel BS 15: 1948, Steel BS 15: 1961, Steel BS 548: 1934, Steel BS 968: 1941, Steel BS 968: 1962, Steel BS 2762:1956 NDIA, IIA, IIIA, IVA, VA, Steel BS 2762:1956 NDIB, IIB, IIIB, IVB, VB). If welded directly to the web of the major element, select major element web material instead.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
End_connections	End plate thickness	Input the thickness of the end plate that the minor element is welded to. If welded directly to the web of the major element, input web thickness of major element.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

Sheet name	Input data	Description	Suggested Sources
SSI		Free text space provided for recording the findings of supplementary site inspection (SSI).	

Sheet name	Input data	Description	Suggested Sources
DK_Qual		For elements where a qualitative check is appropriate, the Tool has been designed so that the assessing engineer can record the judgement on whether the structure is adequate or not (as opposed to automating it based on the defect details input). Defects are noted using a drop down list to show the basis of the judgement.	
DK_Qual		Elements are grouped together by similar type. For example all bearings are included in one table with one list of standard defects. So a noted crack could apply to any bearing. Greater details can be included, where necessary, by using the commenting facility.	
DK_Qual	Material	Select element material from drop down menu - 11 options ("Masonry", "Concrete", "Steel", "Wrought Iron", "Cast Iron", "Timber, Elastomeric", "Felt", "Other", "Unknown", "N/A").	DE - Last Detailed Examination report; IR - Last Inspection for Assessment report
DK_Qual	Defects	Record whether any defects have been identified. Select from drop down menu - 4 options ("Yes", "No", "Unknown", "N/A"). These affect the recommendation for further action.	DE - Last Detailed Examination report; IR - Last Inspection for Assessment report
DK_Qual	Source	Select information source from drop down menu - 13 options (refer to tab "General" for information sources)	
DK_Qual	Qualitative assessment result	Record the qualitative assessment result from drop down menu - 3 options ("Adequate", "Inadequate", "Indeterminate"). Indeterminate should be selected when it has not been possible to determine the adequacy from the information available.	
DK_Qual	Qualitative Result based on Minor Element	Choose the leading minor element (with the most significant defect) that the qualitative result is based on. If no defects, select the first relevant element code listed above this entry and choose an element number of 1 (e.g. DCK1).	

Sheet name	Input data	Description	Suggested Sources
ES_IS_Qual		For elements where a qualitative check is appropriate, the Tool has been designed so that the assessing engineer can record the judgement on whether the structure is adequate or not (as opposed to automating it based on the defect details input). Defects are noted using a drop down list to show the basis of the judgement.	
ES_IS_Qual		Elements are grouped together by similar type. For example all abutments and wing walls are included on one table with one list of standard defects. So a noted crack could apply to either abutment or any wing walls. Further details can be included, where necessary, by using the commenting facility.	
ES_IS_Qual	Material	Select element material from drop down menu - 11 options ("Masonry", "Concrete", "Steel", "Wrought Iron", "Cast Iron", "Timber, Elastomeric", "Felt", "Other", "Unknown", "N/A").	IR - Last Inspection for Assessment report; DE - Last Detailed Examination report
ES_IS_Qual	Defects	Record whether any defects have been identified. Select from drop down menu - 4 options ("Yes", "No", "Unknown", "N/A"). These affect the recommendation for further action.	IR - Last Inspection for Assessment report; DE - Last Detailed Examination report
ES_IS_Qual	Source	Select information source from drop down menu - 13 options (refer to tab "General" for information sources)	
ES_IS_Qual	Qualitative assessment result	Record the qualitative assessment result from drop down menu - 3 options ("Adequate", "Inadequate", "Indeterminate"). Indeterminate should be selected when it has not been possible to determine the adequacy from the information available.	
ES_IS_Qual	Qualitative Result based on Minor Element	Choose the leading minor element (with the most significant defect) that the qualitative result is based on. If no defects, select the first relevant element code listed on the tab above this entry and add an element number of 1 (e.g. ABT1).	

Sheet name	Input data	Description	Suggested Sources
LL-Predef		Predefined live loads are pedestrian load (3, 4 or 5kN/m^2 depending on Footbridge Category A-C selected on the General tab) and nominal point load (1.5kN) for assessing transverse elements. There are no cells for input.	

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Sheet name	**Input data**	**Description**	**Suggested Sources**
AssmtStatus	Assessment status	Select status of this assessment from the drop down menu - 3 options (Provisional, Updated, Revalidated). The assessment status will automatically be changed to Final once the Form BA0(1) is signed by the CRE.	
AssmtStatus	Outstanding actions -Review of record drawings	Select from drop down menu - options "Yes", "No" or "N/A".	
AssmtStatus	Outstanding actions -Site measurement of key/missing dimensions	Select from drop down menu - options "Yes", "No" or "N/A". CRE is responsible for the review of the comments inserted for outstanding actions and making recommendations regarding site attendance to confirm/collect data.	
AssmtStatus	Outstanding actions - Confirmation of current condition	Select from drop down menu - options "Yes", "No" or "N/A".	
AssmtStatus	Outstanding actions - Other	Select from drop down menu - options "Yes", "No" or "N/A". If "Yes" insert a comment.	
AssmtStatus	Reason/basis for update	Select from drop down menu - options "Bridge bash damage" or "Other".	
AssmtStatus	Reason/basis for revalidation	Select from drop down menu - 4 options (Reconfirmed at next DE, Review of current condition, Review of current use, Other). If "Other" insert a comment.	

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Sheet name	**Input data**	**Description**	**Suggested Sources**
CRE		Contractor's responsible Engineer's (CRE) recommendations to be written here.	

Sheet name	Input data	Description	Suggested Sources
Form BA0(1)		First part of the Certificate	
Form BA0(1)	Address	Input the address of the Company responsible for the assessment in Royal Mail standard format.	
Form BA0(1)	Name/Signing Form BA0	Name of the CRE from the Assessing organisation.	
Form BA0(1)	Title/Signing Form BA0	Title of the CRE from the Assessing organisation. To be filled by the CRE.	
Form BA0(1)	Signing Form BA0	The Form BA0(1) should only be signed by the CRE. After filling in the Name and Title, the CRE must either verify that the Tracking Tables have been populated and checked by selecting "Yes" from the provided dropdown box, or otherwise select "No" but provide justification as to why this has not been carried out. The CRE may then go to the Assessment tab and select "Sign Forms" to complete Form BA0 sign-off. It is the responsibility of the Assessor to ensure each form is signed by a competent and approved person. The signatures will be checked and approved by Network Rail Structures Managers. Completing the signing procedure will lock all the information in Form BA0(1) sheet. Before signing the Form BA0(1) form the inputs will be checked to ensure no changes have been made since the calculation was run. If changes have been made, the calculation must be re-run before signing the forms. The Form BA0(1) cannot be signed unless Tracking Table status has been verified (with either a 'Yes' response, or a 'No' response with accompanying justification) and all scenarios have been calculated using the 'Calculate Scenarios' > 'Calculate All' button. This is even the case if only Scenario 1 (predefined) is being used.	

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Sheet name	Input data	Description	Suggested Sources
Form BA0(2)		Second part of the Certificate	
Form BA0(2)	Name/Signing Form BA0	Name of the Structure Manager, Network Rail.	
Form BA0(2)	Title/Signing Form BA0	Title of the Structure Manager, Network Rail. To be filled by the Structure Manager.	
Form BA0(2)	Signing Form BA0	The Form BA0(2) should only be signed by the Structure Manager. After filling in the Name and Title, go to Assessment menu and select "Sign Forms". Completing the signing procedure will lock the relevant information in Form BA0(2) sheet (i.e. "Structures Manager's comments on assessment") and change the Assessment Status to "Final". Before signing the Form BA0(2) form the inputs will be checked to ensure no changes have been made since the calculation was run. If changes have been made, the calculation must be re-run before signing the forms. On signing, two XML files will be created which are used for adding assessment information to the Level 0 database and CSAMS database respectively.	

Sheet name	Input data	Description	Suggested Sources
El_Loads		Loading must be specified per element. Dead loads are calculated based on midspan section properties for each element. There are 3 options to specify SDLs: The user may input depth and material; or depth and unit weight; or calculated loading. If other than gfL=1.2 factor is appropriate for the loading added as "Other SDLs", the input value has to be corrected with the ratio gfL/1.2.	
El_Loads	Loaded width (Pedestrian Load) of Element	The width of loading to be applied to the element should be input. For main girders this is typically the proportion of floor load acting on the girder. For cross girders this is typically the cross girder spacing. Live load is applied individually to each element and is not automatically transferred between elements.	
El_Loads	Units	Select units from drop down menu - 4 options ("in", "ft", "m", "mm")	
El_Loads	Source	Select information source from drop down menu - 13 options (refer to tab "General" for information sources)	
El_Loads	SDLs: Name	Add name of another SDL if different than the SDLs pre-defined. All input units to be kN and m.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Loads	General comment	Additional SDLs may be input or calculated in the Tool. They are classified as either "Area loads" (e.g. waterproofing) or "Line loads" (e.g. parapets) when the deck plan is considered. Note: Due to the often complex nature of footbridge decks the load from cross girders is not automatically applied to the main girder thus all floor loads must be input as a SDL.	
El_Loads	SDLs: Pre-Specified	For "XG/"DCK" and "Deck Pl." the appropriate gfL is selected based on the material selected or gfL = 1.2 if no material selected. For "Surfacing" gfL = 1.75.	
El_Loads	SDLs: Area loads: Depth	The assessor may input the depth (or thickness) of the SDL (e.g. waterproofing thickness) and the Tool will use this input to calculate the load to apply. Input must be in metres. (Refer to general comment for this Tab).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

Sheet name	Input data	Description	Suggested Sources
El_Loads	SDLs: Area loads: Width	This is the loading width per element for the specified area loading.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Loads	SDLs: Area loads: Loading	An Area load (always in kN/m2) may be input by the user if required. A factor gfL = 1.2 is applied to these loadings in the calculation.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Loads	SDLs: Line loads: Area	The assessor may input the area of the element and the Tool will calculate the line load to apply (e.g. sectional area of a parapet). Input must be in square metres. (Refer to general comment for this Tab). A factor gfL = 1.2 is applied to these loadings in the calculation.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Loads	SDLs: Material	Select the element material from the drop down menu. The menu includes all the options for materials in NR/GN/CIV/025-3, table 4.2 and will use the unit weight therein in calculating the SDL to apply. If not applicable choose "-" from drop down menu and input the unit weight.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Loads	SDLs: Unit Weight	Where the user selects the Material from the Material drop down menu, the Unit Weight (always in kg/m3) in NR/GN/CIV/025-3 table 4.2 is considered. If "-" has been selected from the Material drop down menu, input value.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Loads	SDLs: Line loads: Loading	A Line load (always in kN/m) may be input by the user if required.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

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Sheet name	Input data	Description	Suggested Sources
El_Sections	Units	Select units from drop down menu - 4 options ("in", "ft", "m", "mm")	
El_Sections	Source	Select information source from drop down menu - 13 options (refer to tab "General" for information sources)	
El_Sections	Effective span	Refer to NR/GN/CIV/025 and sketch in the tab. Generally this is the distance between supports of the girder although a number of support arrangements are possible (including bearing plates, rocker bearings, whether there are bearing stiffeners). Insert a comment on how the effective span is calculated.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Sections	Overall length	Overall length of the girder	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Sections	Length of the web panel for end shear "a"	This is the distance between bearing stiffener and 1st transverse stiffener. If there is no bearing stiffener fill the distance from end of girder to first transverse stiffener. If plate girder without any transverse stiffeners or rolled section fill the effective span.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Sections	le / L	Ratio effective length for lateral torsional buckling (le) to effective span (L) of the element. Commenting facilities has to be used to justified the input.	
El_Sections	Loaded length	The length over which the live load is applied.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Sections	Material	Select material from the drop down menu - 12 options (Wrought iron, Steel - Pre 1906, Steel - After 1906, Steel BS 15: 1906, Steel BS 15: 1948, Steel BS 15: 1961, Steel BS 548: 1934, Steel BS 968: 1941, Steel BS 968: 1962, Steel BS 2762:1956 NDIA, IIA, IIIA, IVA, VA, Steel BS 2762:1956 NDIB, IIB, IIIB, IVB, VB, Timber). Note: Timber material used in the Tool is Douglass fir.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Sections	Strengthening material (if strengthened)	Select material from the drop down menu. (This option is not active for Level 0 Assessment.)	IR - Last Inspection for Assessment report; RD - Record Drawings
El_Sections	Cross section type	Select cross section type from drop down menu - 9 options (Plate I-girder, Two webs plate girder, Joist, Z-girder, Trough (pressed), Trough (fabricated), Channel, Tee, Rectangular)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

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Sheet name	Input data	Description	Suggested Sources
El_Sections	Riveted/Welded	Select connection detail from drop down menu - "riveted" / "welded" girder.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

Sheet name	Input data	Description	Suggested Sources
El_Sections	Effective weld throat (g) (if applicable)	Input effective weld throat thickness.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Sections	Type of fasteners	Select fastener detail from drop down menu - "rivets" / "bolts"	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Sections	Fasteners' material	Select fastener material from drop down menu - 7 options ("-", Wrought iron, Steel - Pre 1906, Steel - After 1906, Gr 4.6 Bolts, Gr 8.8 Bolts, Gr 10.9 Bolts)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Sections	Fasteners' size	Input diameter of rivets/bolts. Input the minimum rivet/bolt diameter if section is fabricated with different sizes.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Sections	Fasteners' pitch	Input distance between the fasteners c/c. Input the maximum rivet/bolt pitch if it is different along the length of the element.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Sections	Code	Select the relevant position along the element from the drop down menu - 7 options (Ed, Md, CF, DF, CW, DW, WS). Used for "section reference". Refer to abbreviation list in this document. In addition to the distance from the start point each section is assigned a code/type -Ed, Md, CF, DF, CW, DW, WS. The type is used to identify capacity checks for each section: Ed-Shear, Web/Flange connection; Md-Bending; CF-Bending; DF-Bending; CW-Shear; DW-Shear; WS -Bending. Refer to the sketch in this sheet. WS is not applicable for Tee Sections. These references are used to identify the positions where the elements are assessed in determining the "section reference". All sections should be entered with no empty rows between sections.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Sections	No.	Select a reference number from the drop down menu - options from "1" to "9". Used for "section reference".	
El_Sections	Section Reference	No manual input required: It has been received from the adjacent input. For clarification see the example: For inner cross girder number 2 in sub-deck number 1 the full reference will be: XGI1(2)-Ed1 at 0 m; XGI1(2)-CF1 at x m. Refer to sketch	

Sheet name	Input data	Description	Suggested Sources
El_Sections	Distance	Input the distance from the start point of the girder. Sections along the girder are identified according to this distance. Note that start point of the girder is defined as the beginning of the effective span. (Refer to the sketch). For all longitudinal elements the start point is at the low mileage end and for all transverse members at the left end when facing high mileage. Distance to curtailment locations along the girder must be entered as the effective curtailment length measured from the beginning of effective span.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Sections	Condition	Select appropriate condition description from the dropdown, choose from "As-built Condition", "Current Condition" and "Section with Defect". As-built Condition: The section has been taken as-built taking no account of deterioration. Current Condition: The section has been taken at a location of general deterioration. Section with Defect: The section has been taken at a point of a specific defect.	DE - Last Detailed Examination report; IR - Last Inspection for Assessment report; BCMI - BCMI report
El_Sections	Defect ID	If the condition of a section is chosen to be "Section with Defect", a Defect ID should be provided.	Detailed examination report

Sheet name	Input data	Description	Suggested Sources
El-BS_Qual	Enhanced qualitative bearing stiffener assessment questions	Drop down menu - 3 options (Yes, No, N/A). Answer the questions starting with the top one. Subsequent questions depend on the response to the previous question. The assessor must provide justification for the answers including any corrosion using the commenting facility.	RD - Record Drawings IR - Last Inspection for Assessment report

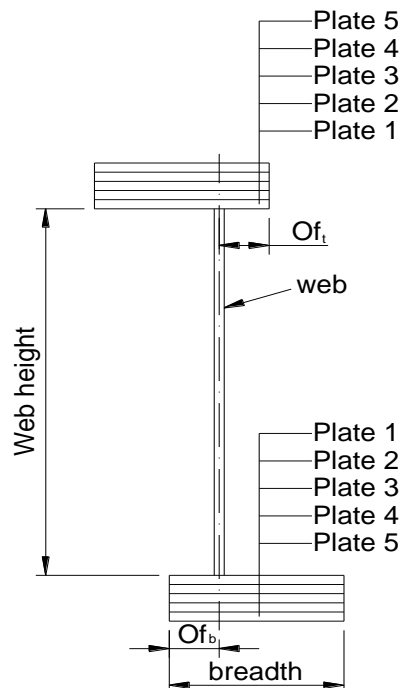| Sheet name	Input data	Description	Suggested Sources
Sec_Plate I-girder	Units	Select units from drop down menu - 4 options (in, ft, m, mm)	
Sec_Plate I-girder	Breadth	Horizontal dimension.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Plate I-girder	Depth	Vertical dimension.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Plate I-girder	No. rivets in web (Tension flange)	Input the number of rivets in web. (See the sketch below.)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Plate I-girder	No. rivets in flange (Tension flange)	Input the number of rivets in bottom flange. (See the sketch below.)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Plate I-girder	bfo	As per NR/GN/CIV/025, Figure A1.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Plate I-girder	tfo	As per NR/GN/CIV/025, Figure A1.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Plate I-girder	Angle dimensions	Please only specify dimensions for one angle within a pair. For example, one of the compression flange inner angles.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
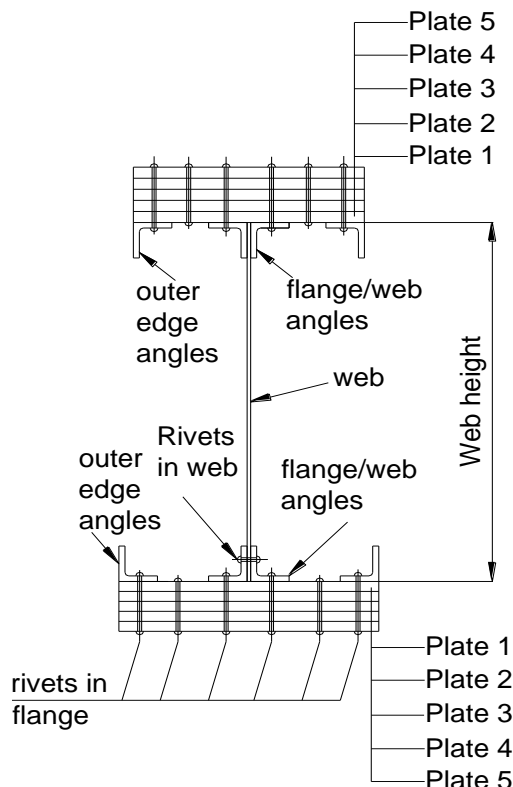
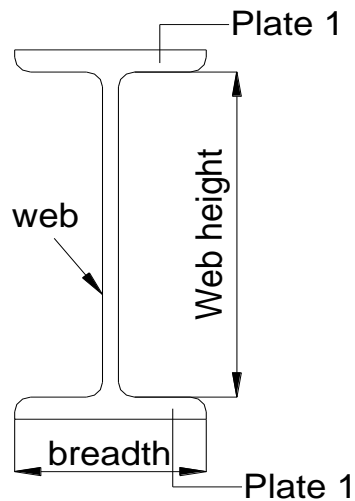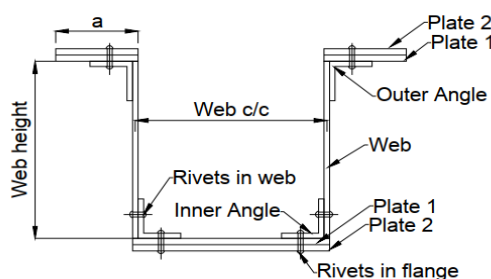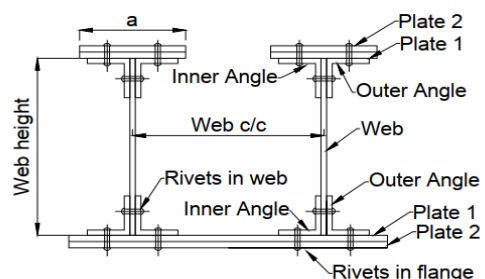| Sheet name	Input data	Description	Suggested Sources
Sec_Two webs plate girder	Units	Select units from drop down menu - 4 options (in, ft, m, mm)	
Sec_Two webs plate girder	Breadth	Horizontal dimension.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Two webs plate girder	Depth	Vertical dimension.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Two webs plate girder	No. rivets in web (Tension flange)	Input the number of rivets in ONE web. (See the sketch below.)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Two webs plate girder	No. rivets in flange (Tension flange)	Input the number of rivets in bottom flange. (See the sketch below.)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Two webs plate girder	bfo	As per NR/GN/CIV/025, Figure A1.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Two webs plate girder	tfo	As per NR/GN/CIV/025, Figure A1.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
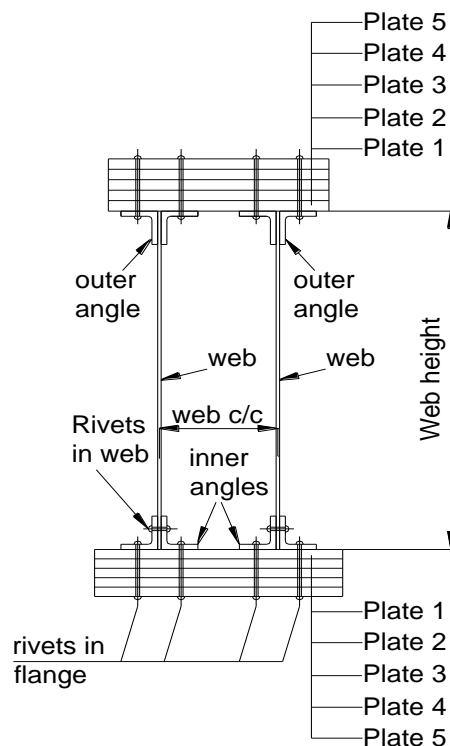
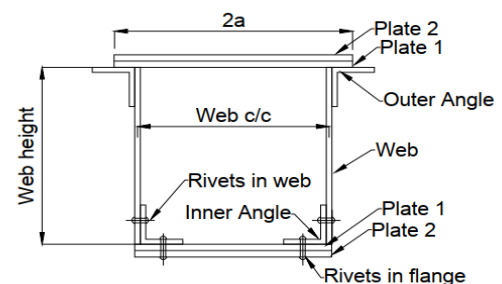| Sheet name	Input data	Description	Suggested Sources
Sec_Z-girder	Units	Select units from drop down menu - 4 options (in, ft, m, mm)	
Sec_Z-girder	Breadth	Horizontal dimension.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Z-girder	Depth	Vertical dimension.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Z-girder	Of_t	Offset of the top flange. (See the sketch below.)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Z-girder	Of_b	Offset of the bottom flange. (See the sketch below.)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

Sheet name	Input data	Description	Suggested Sources
Sec_Joist	Units	Select units from drop down menu - 4 options (in, ft, m, mm)	
Sec_Joist	Breadth	Horizontal dimension.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Joist	Depth	Vertical dimension.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

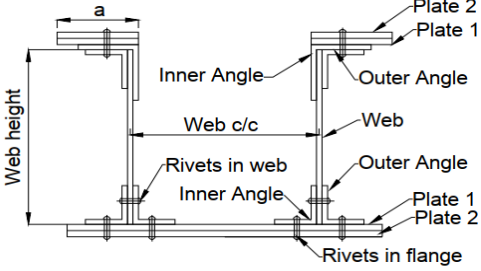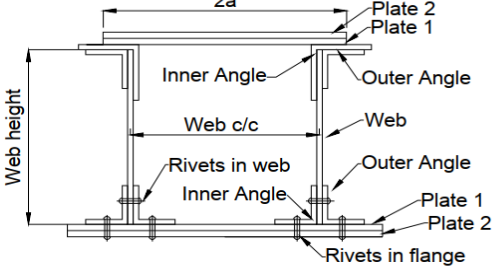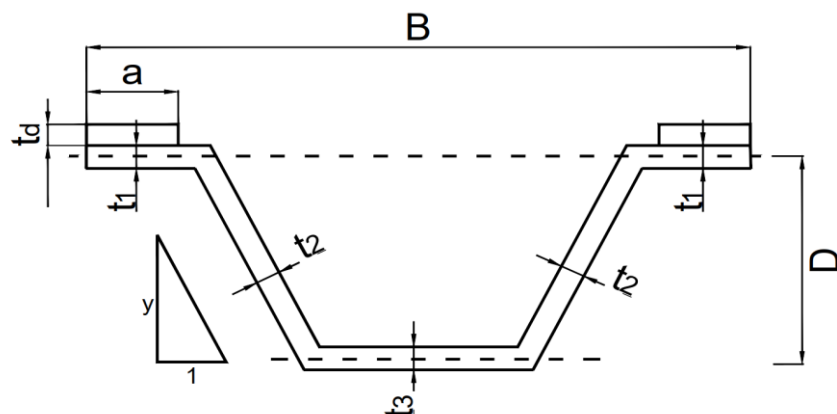| Sheet name	Input data	Description	Suggested Sources
Sec_Trough (fabricated)	Units	Select units from drop down menu - 4 options (in, ft, m, mm)	
Sec_Trough (fabricated)	Breadth	Horizontal dimension.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Trough (fabricated)	Depth	Vertical dimension.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Trough (fabricated)	No. rivets in web (Tension flange)	Input the number of rivets in ONE web. (See the sketch below.)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Trough (fabricated)	No. rivets in flange (Tension flange)	Input the number of rivets in bottom flange. (See the sketch below.)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Trough (fabricated)	bfo	As per NR/GN/CIV/025, Figure A1.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Trough (fabricated)	tfo	As per NR/GN/CIV/025, Figure A1.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

Sheet name	Input data	Description	Suggested Sources

GUIDANCE NOTES

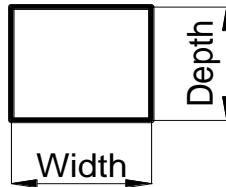| Sheet name	Input data	Description	Suggested Sources
Sec_Trough (pressed)	Units	Select units from drop down menu - 4 options (in, ft, m, mm)	
Sec_Trough (pressed)	Width (B)	See the sketch below.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Trough (pressed)	Depth (D)	See the sketch below.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Trough (pressed)	Thickness (t_1)	See the sketch below.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Trough (pressed)	Thickness (t_2)	See the sketch below.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Trough (pressed)	Thickness (t_3)	See the sketch below.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Trough (pressed)	Slope (y)	Slope can take values between 0.5 and 6. See sketch below.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Trough (pressed)	Width of doubler plate (2a)	See the sketch below.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Trough (pressed)	Thickness of doubler plate (t_d)	See the sketch below.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES

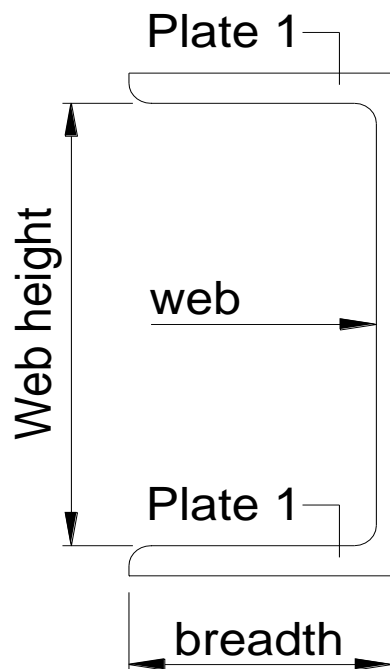| Sheet name	Input data	Description	Suggested Sources
Sec_Rectangular	Units	Select units from drop down menu - 4 options (in, ft, m, mm)	
Sec_Rectangular	Width	See the sketch below.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Rectangular	Depth	See the sketch below.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

Sheet name	Input data	Description	Suggested Sources
Sec_Channel	Units	Select units from drop down menu - 4 options (in, ft, m, mm)	
Sec_Channel	Breadth	Horizontal dimension.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Channel	Depth	Vertical dimension.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Channel	bfo	As per NR/GN/CIV/025, Figure A1.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Channel	tfo	As per NR/GN/CIV/025, Figure A1.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

Plate 1

Web height

web

Plate 1

breadth

Sheet name	Input data	Description	Suggested Sources
Sec_Tee	Units	Select units from drop down menu - 4 options (in, ft, m, mm)	
Sec_Tee	Breadth	Horizontal dimension.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Tee	Depth	Vertical dimension.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Tee	bfo	As per NR/GN/CIV/025, Figure A1.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_Tee	tfo	As per NR/GN/CIV/025, Figure A1.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report