






GUIDANCE NOTES		
		Level 0 Assessment Tool Version UBC 3.1
<u>List of Key Updates included in UBC 3.1 (19/07/2019)</u>		
1)	Fixed bug resulting in occasional difficulties signing Form BA0(1) and BA0(2).	
<u>List of Key Updates included in UBC 3.0 (12/04/2019)</u>		
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)	Ultimate moment of resistance calculations for RC flanged beams updated in accordance with BD44/15 and 5.3.2.1B of NR/GN/CIV/025.	
10)	New pretensioned inverted 'T' section type developed and incorporated into the Tool.	
11)	Ultimate shear resistance for pretensioned inverted 'T' beam and pretensioned 'U' beam updated in accordance with BD 44/15.	
12)	'Enables Add-in' bug that caused problems opening the Tool amended.	
<u>List of Key Updates included in UBC 2.3 (22/09/2017)</u>		
1)	Added inputs in the 'Scenarios' sheet to specify the 'Assessment Scenario' corresponding to each optional user-defined Loading Scenario (nos. 2-5).	
2)	Assessment Scenario information is now exported to CSAMS XML file for populating the CSAMS database.	
3)	Added error checking to the CSAMS XML exporting procedure, to ensure all required fields have been correctly populated by the user.	

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	<u>List of Key Updates included in UBC 2.2 (23/05/2017)</u>							
	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.						
	<u>List of Key Updates included in UBC 2.1 (30/03/2016)</u>							
	1)	Added feature to allow assessment with multiple loading scenarios within the same file. The feature allows up to five scenarios to be assessed, one predefined scenario and four user defined scenarios. The user defined scenarios can use RA1 type loading or alternatively use a user defined axle arrangement.						
	2)	Alterations have been made to the Assessment tab on the ribbon to allow calculation and navigation of scenarios.						
	3)	Details for up to four tracks can now be recorded and the track for which the assessment should be based upon selected.						
	4)	"Number of Tracks" and "Source" have been moved from the 'Track' sheet to the 'General' sheet.						
	5)	Recording of track IDs is now possible through new input fields, up to four tracks can be entered.						
	6)	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.						
	7)	Additional fields provided to allow for correct BCMI references to be entered if an element is not correctly defined in sheets "Deck" and "Subdeck".						
8)	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.							
	<table><tr><th>Old Input</th><th>New input (when imported)</th></tr><tr><td>Full section</td><td>As-built Condition</td></tr><tr><td>Damaged section</td><td>Section with Defect</td></tr></table>	Old Input	New input (when imported)	Full section	As-built Condition	Damaged section	Section with Defect	
Old Input	New input (when imported)							
Full section	As-built Condition							
Damaged section	Section with Defect							
9)	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 manual split the information into the newly created "Date" and "By" fields.							
10)	Added pop-up window to display import/calculation progress.							
11)	New functionality has been added to produce an XML which can be uploaded to the CSAMS database.							

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	<p align="center"><u>List of Key Updates included in UBC 2.0 (14/08/15)</u></p> <ol style="list-style-type: none"> 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) Advanced features such as User Defined Loading are now available using the "Enable NR Version" button from the Assessment Menu. These features should only be used with advanced agreement from the relevant Network Rail Structures Manager. 5) 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. 6) Name and Title are now mandatory inputs on the Form AA0 and Form BA0 to facilitate approval by Network Rail Structure Managers. 7) 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. 8) 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. 9) 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. 10) Improvements to the efficiency of the Tool have been made throughout. 11) Corrections to the calculation of Assessed Category have been made. <p align="center"><u>List of Key Updates included in UBC 1.4 (08/05/15)</u></p> <ol style="list-style-type: none"> 1) Clarification of the guidance notes regarding RC Slab widths 2) Issue with inputting Structure Name which some users experienced has been resolved. <p align="center"><u>List of Key Updates included in UBC 1.3 (03/12/13)</u></p> <ol style="list-style-type: none"> 1) Amendments to the Reinforced Concrete calculations to prevent errors occurring. 	

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	<p align="center"><u>List of Key Updates included in UBC 1.2 (21/06/13)</u></p> <p>1) Amendments to the Track Loading Factor (TLF) have been made for discrete beams. This is to account for small gaps between adjacent beams.</p> <p>2) The Network Rail version of the Tool has been developed and now includes User Defined loading. This is available only for Network Rail users.</p> <p>3) 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.</p> <p>4) Refinements have been made to the Guidance Notes for greater clarity.</p> <p align="center"><u>List of Key Updates included in UBC 1.1</u></p> <p>1) No key updates.</p>	

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<u>List of Abbreviations used</u>		
CRE	Contractor's Responsible Engineer	
Assmt	Assessment	
Calcs	Calculations	
RA	Route availability	
AC	Assessed Category	
U	Utilization factor	
BSU	British Standard Unit	
DL	Dead load	
LL	Live load	
SDL	Superimposed Dead Load	
TF	Track factor (as defined in NR/GN/CIV/025, cl. 4.3.8 for elements supporting more than one track)	
TLF	Track loading factor - Percentage of track loading carried by an element	
HAWP	Heavy Axle Weight Permission	
HGV	Heavy Goods Vehicle	
BM	Bending moment	
SF	Shear force	
SecProp	Section Properties	
Prop	Properties	
BCMI	Bridge Condition Marking Index	
DK	Deck	
SD	Subdeck	
DCK	Decking (transverse spanning reinforced concrete slab)	
LSE	Secondary longitudinal beam (exposed) e.g. parapet or walkway beam	
MGE	Main longitudinal beam or slab element (exposed)	
MGI	Main longitudinal beam or slab element (inner) or where a single slab deck	
MG	Reinforced concrete beam or slab	
SL	Reinforced concrete slab	
PT	Pre-tensioned concrete beam	
DC	Transverse spanning reinforced concrete slab	
Ed	End	
Md	Midspan	
VE	Position from support where shear enhancement is zero	
CR	Curtailment point for reinforcement	
DS	Damaged section	
AD	Assessor Defined	
c/c	Centre to centre	
b/w	Between	
CSAMS	Civils Strategic Asset Management Solution	

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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. This 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	This Level 0 Assessment Tool has been developed on the basis of NR/GN/CIV/025 Issue 3 and BA 44/96.
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 be undertaken only 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	This Assessment Tool is created for Level 0 assessment of concrete deck type underbridges, 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 interference 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	This 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: UBC2_1_ELR-No-DKNo.xls
10	Scope of the Tool - Elements articulation	Only simply supported elements may be assessed using this Level 0 Assessment Tool.
11	Scope of the Tool - Geometrical limitations	Only bridge spans greater than 2m and up to 30m (skew), and skews up to 20 degrees can be assessed using this Level 0 Assessment Tool.
12	Scope of the Tool - General arrangement limitations	This Level 0 Assessment Tool will consider decks comprising up to five main beams or discrete elements supporting up to four tracks with line speeds not exceeding 125 mph and cant not exceeding 150mm. Assessment of bridges with more than 5 main beams or discrete elements may be undertaken considering part of a deck carrying up to four tracks only and up to 5 main beams or discrete elements under those tracks.
13	Scope of the Tool - Elements	The scope of assessment using this Level 0 Assessment Tool is limited to the following types of elements: reinforced concrete slabs, reinforced concrete beams and pre-tensioned concrete beams.

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No.	Topic	General note
14	Scope of the Tool - Sections	This Level 0 Assessment Tool may be used to assess the following: Reinforced concrete beams/slabs arranged as discrete elements, Reinforced concrete beams/slabs arranged to form a single slab, A single reinforced concrete slab, Reinforced concrete beams with a transverse spanning slab (flanged beams), Pre-tensioned beams arranged as discrete elements, Pre-tensioned beams arranged to form a single slab.
15	Scope of the Tool - Capacity checks	Assessed elements are checked for: Bending - at midspan, at reinforcement curtailment points and at locations with damaged sections; Shear - at a distance "d" from the supports, at the point closest to the support where there is no shear enhancement, at reinforcement curtailment points and at locations with damaged sections
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.
17	Scope of the Tool - Loading Scenarios	The Level 0 Assessment Tool has the capability to assess the structure under five different live loading scenarios. Scenario 1 is a predefined scenario using RA1 type loading, the published RA and the local permissible speed of the track selected on the General tab as the 'Track used for Scenario 1'. Scenario 2 to Scenario 5 are user-defined loading scenarios. These scenarios can either use RA1 type loading or a custom axle arrangement specified by the user, depending on the Live Load Type selected. These four scenarios are not mandatory for the calculation. The calculation of these scenarios is independent of the Scenario 1 calculation and requires the user to input the Assessment RA (if applicable), Assessment Speed, whether the Track Factor is to be applied and Assessment Scenario. The Tool can calculate up to 5 scenarios simultaneously.
18	Scope of the Tool - CSAMS Assessment Scenarios	The CSAMS database uses a pre-defined list of 'Assessment Scenarios' to classify each loading scenario assessed in the Level 0 Assessment Tool. For pre-defined loading Scenario 1, the corresponding 'Assessment Scenario' is pre-set to "Published RA @ Permissible Line Speed" and cannot be changed. For user-defined loading Scenario 2 to Scenario 5, the user can either select "Heavy Axle Weight Permission (HAWP)" or "Other" as the 'Assessment Scenario'. For all qualitative assessment, the corresponding 'Assessment Scenario' is pre-set to "Qualitative" and cannot be changed.
19	Scope of the Tool - Disused tracks	The UBC Level 0 Assessment Tool is not capable of assessing elements that support only disused tracks. Elements that support a combination of active and disused tracks can be assessed by including the disused track(s) as a superimposed dead load within the relevant EI_Loads sheet. Foot or vehicle live loading on disused tracks would not be included within the calculations in such cases.

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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	<p><u>Assessor:</u></p> <p>Step 1 - Review structure and fill all relevant information in sheets "General" and "FormAA0".</p> <p><u>Contractor's Responsible Engineer (CRE):</u></p> <p>Step 2 - Contractor's Responsible Engineer (CRE) to review and sign "FormAA0". <i>Note that no changes to Form AA0 will be allowed after the form is signed.</i></p> <p><u>Assessor:</u></p> <p>Step 3 - Fill all relevant information on general input sheets "Deck", "Subdeck", "Track", "End_Connections", "Bridge_Strike", "SSI", "DK_Qual", "ES_IS_Qual" and "AssmtStatus".</p> <p>Step 4 - Fill all relevant information on applicable scenario sheets "Scenarios", "LL-Scenario 2", "LL-Scenario 3", "LL- Scenario 4", "LL-Scenario 5".</p> <p>Step 5 - Add elements (Assessment menu -> Add Elements) and fill all relevant information.</p> <p>Step 6 - Add sections (Assessment menu -> Add Sections) and fill all relevant information.</p> <p>Step 7 - Run calculations (Assessment menu -> Calculate Scenarios -> Calculate All).</p> <p>Step 8 - Correct all errors in the input data (if any).</p> <p>Step 9 - Review and correct warning messages (if any).</p> <p>Step 10 - Review results.</p> <p><u>Checker:</u></p> <p>Step 11 - Steps 1 to 10 to be checked and signed by checker.</p> <p><u>Contractor's Responsible Engineer (CRE):</u></p> <p>Step 12 - Contractor's Responsible Engineer (CRE) to review assessment, write recommendations (sheet "CRE") and sign Form BA0 (sheet "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). Note the Form BA0 cannot be signed until:</p> <ul style="list-style-type: none"> - 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	<p>"Units" must be assigned to each data input (if applicable). Select units from drop down menu. Generally there are 4 options ("in", "ft", "m", "mm") except for:</p> <p>"One track weight (if different type)" where the options are "kg/m", "kN/m", "lb/ft".</p> <p>Material Strengths where the options are "N/mm²", "MPa", "lb/in²", "tons/in²".</p> <p>"Area per strand/wire" where the options are "in²", "ft²", "m²", "mm²".</p> <p>When "units" are assigned to a table of values, all the input data in the table must be in the selected units.</p>
6	Source	<p>"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.</p> <p>Offline supporting sources may be included in the Tool.</p>

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No.	Topic	General note
7	Comments	<p>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.</p> <p><u>How to add "Comment" in Excel?</u></p> <ol style="list-style-type: none"> 1. Go to "File/Options/General" and change "User name:" to your organisation name and your initials. 2. Select the "yellow" cell to which you want to add a comment. 3. Right click and choose "Insert Comment". <p><u>How to change or delete "Comment" in Excel?</u></p> <ol style="list-style-type: none"> 1. Select the "yellow" cell with the comment. 2. Right click and choose "Edit Comment" or "Delete Comment". <p>Users are encouraged to make regular use of this facility explaining their decisions. Comments should be short, brief, clear and meaningful.</p>
8	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.
9	Intermediate Results	Intermediate results are presented for one scenario at a time. If an individual scenario is calculated the intermediate results relate to the calculated scenario. If all scenarios are calculated (using Calculate Scenarios -> Calculate All) the intermediate results relate to Scenario 1 (predefined).
10	Results	Results are presented for all scenarios calculated. Each result sheet is appended with "_S#", where # is the scenario number the result relates to. 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.
11	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.
12	NR Version	When NR version is enabled the Tool will consider bridge strike during the calculation. Once NR version is enabled it cannot be reversed.
13	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).

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Frequently Asked Questions (FAQ)

1. How to start?

Read 'Using_tool'. Item 3 in this sheet 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)' and '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. How to check that the Form code and the BCMI element reference are correct?

The values under 'Element Type' in column I of sheets 'Deck' and 'Subdeck' indicate what the element is, e.g.

SL - reinforced concrete slab,

MG - reinforced concrete beam,

PT - pre-tensioned concrete beam,

DCK - transverse spanning reinforced concrete slab.

This should be compared with Form code selected to ensure the intended elements are correct.

6. Why in the sheet 'Track' the total in deck/subdecks distances and track offsets distances don't match up?


Refer to the sketch in sheet 'Track'. The Total of deck/subdeck is the total width of the deck. Whereas the total of track offsets is the total distance from the same datum up to last rail.


7. What is the input for the 'Loading width for ballast' for each type of element?


Elements' > 'EI_Loads'. Item 'Loading width (for ballast loading)' in this sheet explains the loading width for each type of element.


8. 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 beginning of the text. Please avoid this. If you add a space in front of these signs it should work without error.


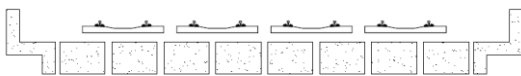
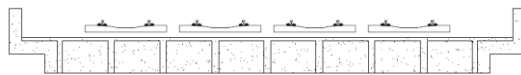
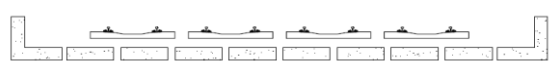
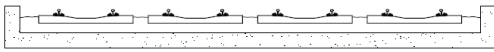
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Sheet name	Input data	Description	Suggested Sources
General	Route	e.g. Midland, Southern...	TS - Level Zero Task List
General	ELR	Engineer's Line Reference	TS - Level Zero Task List
General	Number	Bridge number. Use "-" symbol instead of "/" symbol 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 certain 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. Refer to BCMI code NR/L3/CIV/006/2C and sketch	RD - Record Drawings
General	Total number of decks	Number input. Deck is marked as DK in BCMI code. Refer to BCMI code NR/L3/CIV/006/2C and sketch	RD - Record Drawings
General	Construction date	Input date of construction. If not known, estimate the date and add a comment.	RD - Record Drawings
General	Superstructure date	Date of superstructure construction. If not known, estimate the date and add a 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	BCMI deck reference	Select option from drop down menu - options from "DK1" to "DK20"	
General	Obstacle crossed: Type, Name	Select from drop down menu for type. Describe the name of the obstacle, e.g. A321 public road.	RD - Record Drawings; AR - Last Assessment Report
General	Tracks carried	Name of the lines as described in SA. e.g. Up fast.	SA - Sectional Appendices
General	Track ID	The ID of the track, choose from dropdown list.	DE - Last Detailed Examination Report
General	Published RA	Current RA of the line.	SA - Sectional Appendices
General	Local permissible speed	Max 125mph	SA - Sectional Appendices
General	Differential speed	Select response from drop down menu - options "Yes" or "No" A loco speed restriction published in Table D may be considered as a differential speed.	SA - Sectional Appendices
General	Type	Drop down menu - 9 options	SA - Sectional Appendices
General	Speed	Max 125mph	SA - Sectional Appendices
General	Heavy Axle Weight Permission	Select response from drop down menu - options "Yes" or "No"	SA - Sectional Appendices
General	RA value	Input appropriate RA number if selected "Yes" for HAWP.	SA - Sectional Appendices
General	Speed	Input appropriate speed if selected "Yes" for HAWP.	SA - Sectional Appendices

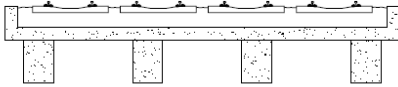
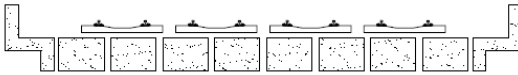
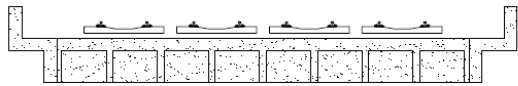
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Sheet name	Input data	Description	Suggested Sources
General	Track used for Scenario 1: (For Published RA & Speed)	The track from which the assessment values (published RA, Local permissible speed) will be taken from for Scenario 1 calculations. Choose from dropdown 'Track 1' to 'Track 4'.	
General	Number of tracks	Number of tracks per deck. Drop down menu - options from "1" to "4" (max 4 tracks). Only include operational tracks - ignore disused and removed tracks. Disused tracks should be considered as superimposed dead loads and included within "Other SDLs" in EL_Loads sheets for any relevant supporting elements.	SA - Sectional Appendices
General	Source: Number of tracks	Select information source from drop down menu - 13 options.	
General	Source type - Last Detailed Examination report (Date)	Use the format "dd/mm/yyyy"	
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"	

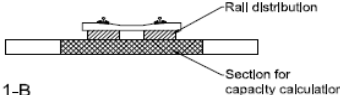
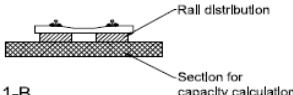
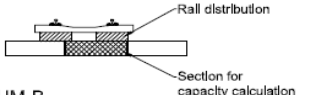
GUIDANCE NOTES			 Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
General	Source type - Additional Examination reports (By)	Name of organisation that wrote the Additional Examination Reports.	
General	Source type - SCMI report (Date)	Use the format "dd/mm/yyyy"	
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"	
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			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	
FormAA0	Assessment checklist	Drop down menu - options "Yes" or "No" to the 10 questions or 12 questions where the deck comprises discrete concrete beams.	
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. E.g. where simply supported discrete, narrow beams or simply supported discrete, narrow slabs are being assessed (arrangement akin to 'piano keys'), the Level 0 Assessment Tool may be used for skews greater than 20 degrees. The justification to assess elements of decks with skews in excess of 20 degrees must be input.	
FormAA0	Assessment checklist	Question 4: The scope of the Level 0 assessment is in accordance with clause 1.2 of NR/GN/CIV/025.	
FormAA0	Assessment checklist	Question 5: This Level 0 Assessment Tool does not assess any post-tensioned elements. Where individual longitudinally spanning concrete elements are post tensioned transversely, the assessor should decide whether the elements act discretely or not (i.e. form an effective slab.)	
FormAA0	Assessment checklist	Question 6: This Level 0 Assessment Tool does not assess any composite concrete and steel elements.	
FormAA0	Assessment checklist	Question 7: This Level 0 Assessment Tool assumes the deck and its elements are all simply supported and statically determinate.	
FormAA0	Assessment checklist	Question 8: This Level 0 Assessment Tool assumes the deck elements are all simply supported. Slabs acting in hogging are not assessed (e.g. overhanging the edge girder) and should be included as an additional sdl load on the main girder.	
FormAA0	Assessment checklist	Question 9: This Tool will undertake a Level 0 assessment of a deck formed of discrete longitudinal spanning reinforced concrete beams (form code DIM-B) and longitudinal spanning reinforced concrete beams with a transverse reinforced concrete slab spanning between them (form code DH-B). If these forms are being assessed, answering "Yes" to Q9 invokes Q10 and Q11. Where longitudinal spanning elements are connected together transversely to form an effective slab, the assessor shall answer "No".	
FormAA0	Assessment checklist	Question 10: 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 select the appropriate part of the deck to assess and record the decision in the justification box.	
FormAA0	Assessment checklist	Question 11: This Level 0 Assessment Tool limits the number of tracks per deck to 4. If the deck has more than 4 tracks, the assessor shall select the appropriate part of the deck to assess and record the decision in the justification box.	

GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	
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), 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	Assessment checklist	Question 12 (or Question 10): This Level 0 Assessment Tool considers only those structures that can be defined from the form code options given. This question number changes based on the answer given to Q9, it will be Q12 if "Yes" is answered to Q9.	
FormAA0	Enter correct form code	This field will become available if the users answers "No" to Question 12 (Question 10 if the answer to Question 9 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	Justification for adopting Level 0 assessment	If the answers to the questions in the Assessment Checklist result in the following statement appearing: "Bridge deck is NOT suitable for Level 0 assessment.", this Level 0 Assessment Tool is not wholly appropriate to assess the deck. However, a deck should not be excluded from level 0 assessment based on this alone. The assessing organisation should use their experience and engineering judgement to populate as many primary elements as possible in this Assessment Tool and record the justification in this box.	
FormAA0	Name/Signing Form AA0	Name of the CRE from the Assessing organisation.	
FormAA0	Title/Signing Form AA0	Title of the CRE from the Assessing organisation. To be filled by the CRE.	
FormAA0	Key/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.	

GUIDANCE NOTES		
		Level 0 Assessment Tool Version UBC 3.1
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> D :- Deck
FormAA0	Structural form code - Ref2	<u>Primary Longitudinal Elements (Ref2)</u> I :- Reinforced concrete slab H :- Reinforced concrete beams or slabs Q :- Pre-tensioned beams and slabs
FormAA0	Structural form code - Ref3	<u>No. of Primary Elements (Ref3)</u> 1 :- Single element M :- Multiple elements - :- Not applicable EXCEPT where DH selected and '-' refers to a monolithic beam and transverse spanning rc slab arrangement
FormAA0	Structural form code - Ref4	<u>Floor Types (Ref4)</u> - :- Not applicable for concrete underbridges.
FormAA0	Structural form code - Ref5	<u>Track/Road Form (Ref5)</u> B - Ballasted
FormAA0	Structural form code	The allowable combinations of the above five codes can be found within the Tool.
FormAA0	Structural Form Code - Example	 DHM-B (rc beams arranged as discrete elements)
FormAA0	Structural Form Code - Example	 DHM-B (rc beams arranged as single slab)
FormAA0	Structural Form Code - Example	 DHM-B (rc slabs arranged as discrete elements)
FormAA0	Structural Form Code - Example	 DI1-B (single rc slab)

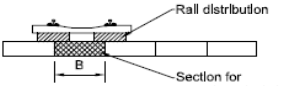
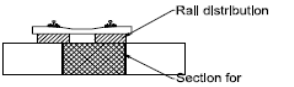
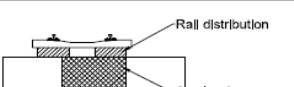
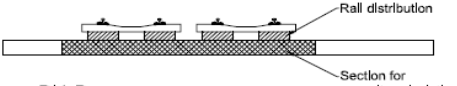
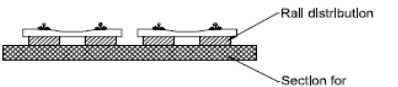
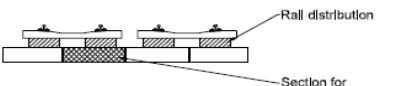
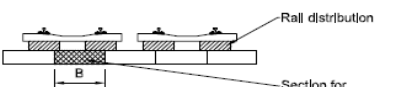
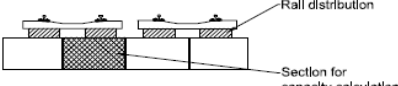
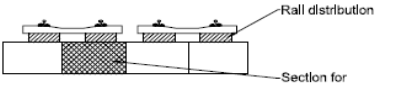
GUIDANCE NOTES			<div>NetworkRail</div> <div>Level 0 Assessment Tool Version UBC 3.1</div>	
Sheet name	Input data	Description		
FormAA0	Structural Form Code - Example	<div></div> <div>DH-B (rc beams, including flanged beams)</div>		
FormAA0	Structural Form Code - Example	<div></div> <div>DQ-B (pre-tensioned beams arranged as discrete elements)</div>		
FormAA0	Structural Form Code - Example	<div></div> <div>DQ-B (pre-tensioned beams arranged to form a single slab)</div>		
FormAA0	Structural Form Code - Action of tool	<div>Please see sketches below to see the way in which track loading is applied to each form code and which section properties should be input to the Tool.</div> <div>If these do not represent the type of UBC being assessed, then the Tool must be used with care.</div> <div>For discrete elements Rail Distribution considered over a distance of 800mm plus dispersal through ballast at 15° to the vertical (NR/GN/CIV/025 cl 4.3.3.3).</div> <div>For elements forming a slab loading from a 3m wide track is considered.</div>		


Single track	Track Loading Factor (TLF)	Centrifugal and Nosing Effects Considered
<div></div> <div>D1-B (wide single rc slab)</div>	TLF is the number of tracks, i.e. 1.0 for single track	No
<div></div> <div>D1-B (single rc slab)</div>	TLF is the number of tracks, i.e. 1.0 for single track	No
<div></div> <div>DHM-B (rc slabs arranged as discrete elements)</div>	TLF calculated from rail distribution	Yes


GUIDANCE NOTES





Level 0 Assessment Tool
Version UBC 3.1


Sheet name	Input data	Description	
 <p>DHM-B (rc slabs arranged to form a slab)</p>		$TLF = B / 3$	No
	 <p>DQ-B (pre-tensioned beams arranged as discrete elements)</p>	TLF calculated from rail distribution	Yes
	 <p>DQ-B (pre-tensioned beams arranged to form a slab)</p>	$TLF = B / 3$	No
	<u>Multiple tracks</u>		
	 <p>DI1-B (wide single rc slab)</p>	TLF is the number of tracks	No
	 <p>DI1-B (single rc slab)</p>	TLF is the number of tracks	No
	 <p>DHM-B (rc slabs arranged as discrete elements)</p>	TLF calculated from rail distribution	Yes
	 <p>DHM-B (rc slabs arranged to form a slab)</p>	$TLF = B / 3$	No
	 <p>DQ-B (pre-tensioned beams arranged as discrete elements)</p>	TLF calculated from rail distribution	Yes
	 <p>DQ-B (pre-tensioned beams arranged to form a slab)</p>	$TLF = B / 3$	No


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
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. IS1, IS2, ES2 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.	
Deck	Code	The assessor may select MGE or MGI from the drop down list where additional MGI elements are being assessed (e.g. in a wide deck with multiple tracks and multiple discrete elements). The assessor should input all applicable elements in the correct sequence without leaving gaps. For DI1-B MGI should be used.	AR - Last Assessment Report
Deck	No	The assessor may select reference numbers from the drop down list as appropriate (e.g. in a wide deck where the elements being assessed are under the second track, the MGI reference numbers may be Nos 5, 6 and 7).	AR - Last Assessment Report
Deck	Applicable	Select "Yes" from the drop down list if the minor elements exist in the proportion of deck being assessed. Otherwise select "No". The assessor must fill this column in full.	
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 number.	
Deck	Correct BCMI No	If the element is not correctly defined using the code field, enter the correct reference.	


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
Deck	Assmt Calcs	<p>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.</p> <p>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 ...)</p>	


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
Subdeck		This sheet is applicable only for the Level 0 assessment of form code DH--B, i.e. a deck formed of longitudinal spanning reinforced concrete beams with a transverse reinforced concrete slab spanning between them.	
Subdeck		Up to 4 sub decks may be included with DCK (i.e. a transverse spanning reinforced concrete slab) the default assessment option within a sub-deck.	
Subdeck		DCK1 refers to all DCKs in subdeck number 1. Refer to BCMI code NR/L3/CIV/006/2C.	
Subdeck	No	Select subdeck number from drop down menu - 5 options (1 to 5).	
Subdeck	(Index)	<p>Select reference (index) number from drop down menu - options from "(0)" to "(9)".</p> <p>To allow for the elements to be individually marked, an extra index (i) will be added e.g. DCK1(1), DCK5(2) etc. An index (0) can be used to mark these elements as a group e.g. DCK1(0) and will have the same meaning as in the current BCMI code.</p> <p>If the assessed element can represent all transverse spanning slabs in sub-deck number 1, the assessment results will be presented for DCK1(0).</p> <p>If there is a issue with inner transverse spanning slab number 2 (i.e. where deck has discrete transverse spanning slabs) in sub-deck number 1, then results will be presented for DCK1(2).</p> <p>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.</p>	
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.	


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
Subdeck	Assmt Calcs	<p>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.</p> <p>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 should be chosen for calculations and commenting facilities used to record why other elements have not been calculated. (e.g. Element same as ...)</p>	


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
Track	Number of tracks	Number of tracks on the proportion of the deck being assessed. Drop down menu - options from "1" to "4" (max 4 tracks).	SA - Sectional Appendices
Track	Track radius	If the track is straight and there is NO track cant - enter zero for track radius i.e. radius is infinity. If the track is straight but there is track cant - input track radius as 10km to allow for correct nosing effect on discrete elements to be calculated.	5M - Five Mile Plans
Track	Track cant	Input the cant. Units are "mm" and the maximum cant is (usually) 150mm. If there is no cant enter "0" (zero).	5M - Five Mile Plans
Track	Units	Select units from drop down menu - 4 options ("in", "ft", "m", "mm")	
Track	Source	Select information source from drop down menu - 13 options (refer to tab "General" for information sources)	
Track	Deck and sub-decks width, Distances	<p>These are the distances between the main longitudinal elements starting from the set datum. Datum is at the external face of the left most longitudinal deck element when facing high mileage i.e. MGE1 or LSE1 (if present). The datum used for deck and subdeck width and for track offsets must be the same. In case of a single reinforced concrete slab deck, the distance to the middle of the deck width must be entered as value for MG11. Enter distances as shown on the sketch i.e. distances between adjacent elements. End Distance must always be filled.</p> <p>For discrete elements the element widths and spacings must be approximately equal to ensure correct distribution of the load.</p>	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
Track	Track offsets, Distances, x1-x8	<p>These are the distances between the rails starting from the set datum. Datum is at the external face of the left most longitudinal deck element when facing high mileage i.e. "MG1" or LSE1 (if present). The datum used for deck and subdeck width and for track offsets must be the same. The distance between rails of the same track is set to 5 ft.</p> <p>The user can input track offsets at low mileage, midspan and high mileage if the distance varies.</p> <p>The Tool calculates and uses the average values and therefore a minimum of one set of track offsets is required.</p> <p>Enter distances as shown on the sketch i.e. distances between adjacent rails, x1 to x8.</p> <p>In case of a single reinforced concrete slab deck the track offsets are not required but may be input for information.</p>	RD - Record Drawings; AR - Last Assessment Report; At least one set of track offsets has to be input in order that live load effects on the main girders may be calculated.
Track	Total Deck Width	<p>Applicable only when NR Version Activated:</p> <p>The total deck width must be input. This is to account for the occasion where only part of the bridge deck is being assessed. The total deck width is used only for Bridge Strike Calculations.</p>	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
Bridge_Strike	Maximum permitted highway speed	Permitted maximum speed of vehicles using the highway beneath the bridge.	Internet
Bridge_Strike	Do conditions prevent HGVs from exceeding max permissible road speed?	Select from drop down menu - "Yes" / "No". Details or justification to be included in the notes if "Yes" selected.	
Bridge_Strike	Are there bracings or diaphragms between main beams?	Select from drop down menu - "Yes" / "No" / "N/A".	
Bridge_Strike	Width of narrowest footpath or verge:	Input the width of any footpath beneath the bridge. Enter a value of "0" (zero) if there is no footway/verge available on the road beneath the bridge.	Internet
Bridge_Strike	Is the outermost beam robustly connected to the rest of the superstructure?	Select from drop down menu - "Yes" / "No" / "N/A".	
Bridge_Strike	Units	Select units from drop down menu - 4 options ("in", "ft", "m", "mm")	
Bridge_Strike	Source	Select information source from drop down menu - 13 options (refer to tab "General" for information sources)	


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
SSI		Free text space provided for recording the findings of supplementary site inspection (SSI).	


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
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", "N/A", "Unknown".)	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. BGL1).	


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
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", "N/A", "Unknown").	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).	


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
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 ballast depth	Select from drop down menu - options "Yes", "No" or "N/A".	
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.	


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
Scenarios		There are five calculation scenarios included in the Tool - one predefined scenario and four user defined scenarios. It is possible to input additional assessment options for Scenarios 2 to 5, including alternative RA rating, alternative line speed, user defined axle arrangements, track factor and Assessment Scenario. Scenario 2 to Scenario 5 are not mandatory.	
Scenarios	Structure Condition	For User Defined Scenarios (Scenario 2 - 5) it is possible to choose the structure condition from the drop down list. Two options are available; Current and Proposed Change	
Scenarios	Live Load Type	Two options in a drop down list; RA1 loading and User Defined Loading. If RA1 loading is chosen the axle arrangement is RA1 type loading to NR/GN/CIV/025 as per Scenario 1 (predefined). If User Defined is chosen a new sheet will be created (LL_Scenario #, where # is the scenario number it relates to) and the user defined axle arrangement on the new sheet is used.	
Scenarios	Assessment RA for Assessed Category	Alternative RA rating can be added.	
Scenarios	Assessment Speed	Alternative assessment speed less than 125 mph can be added.	
Scenarios	Track Factor (TF) Applied	The track factor reduces the load from the 2nd and subsequent tracks on the bridge deck. This is only applicable to the DH--B type form code. Two options in a drop down list are provided; "Yes", "No"	
Scenarios	Assessment Scenario	For Loading Scenarios 2-5, Assessment Scenario can be one of either "Heavy Axle Weight Permission (HAWP)" or "Other". If "Other" is selected, a form appears allowing the user to specify their own Assessment Scenario name. There is no option to add/change the Assessment Scenario for Loading Scenario 1, as this is predefined as "Published RA @ Permissible Line Speed".	


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
LL-Scenario 1		Predefined live loads are RA1 loading - long and short trains. There are no cells for input.	


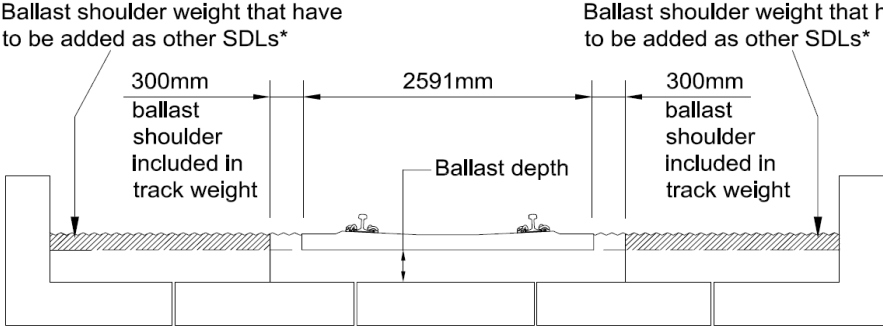
GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
LL-Scenario #		User defined live load can consist of a maximum of 32 axles. This is for use with the scenario choices made in the Scenarios sheet. The content of this sheet will change depending on the option selected for 'Live Load Type' on the Scenarios sheet.	
LL-Scenario #	Name	This is only visible when live load type is "User Defined". This is free text to allow identification of the load applied.	
LL-Scenario #	Axle Weight	This is only visible when live load type is "User Defined". Up to 32 axles are permitted for the User Defined Live Load. Input the weight per axle (kN) including any dynamic, impact and overload factors where applicable.	
LL-Scenario #	Distance between axles	This is only visible when live load type is "User Defined". Input a distance in metres for all axles that are applicable.	


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
CRE		Contractor's responsible Engineer's (CRE) recommendations to be written here.	


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
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. To be filled by the CRE.	
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	<p>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.</p> <p>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.</p>	


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
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. To be filled by the Structure Manager.	
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	<p>The Form BA0(2) should only 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".</p> <p>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.</p> <p>On signing, two XML files will be created which are used for adding assessment information to the Level 0 database and CSAMS database respectively.</p>	


GUIDANCE NOTES			 Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
EI_Loads		<p>Loading must be specified per element. Dead loads are calculated automatically based on midspan section properties for each element.</p> <p>Slabs acting in hogging and not assessed (e.g. overhanging the edge girder) should be included as an additional SDL load relevant to the element being assessed.</p> <p>Track load: Superimposed Dead Load (SDL) from track can be calculated based on track type and sleeper type. Alternatively, track type and sleeper type can be left blank and the assessor can input the value for track SDL as "One track weight (if different type)".</p> <p>There are 3 options to specify "Other SDLs": The assessor may input depth and material; or depth and unit weight; or calculated loading.</p> <p>If the applicable partial factor on the "Other SDLs" is not $g_f L = 1.2$, the appropriate factor for the loading should be input as the appropriate $g_f L / 1.2$. If a disused track is present, its weight (Track, Sleeper, Ballast) should be included by entering relevant values into "Other SDLs" section, with name 'Disused track'.</p>	
EI_Loads	Track type	Select track type from drop down menu - 6 options for ballasted track as per table 4.1 from NR/GN/CIV/025. Leave blank if not applicable and the assessor chooses to input the track weight manually.	AR - Last Assessment Report; IR - Last Inspection for Assessment report; DE - Last Detailed Examination report
EI_Loads	Sleeper type	Select sleeper material type from drop down menu - 2 options ("concrete", "timber"). The Tool returns the weights given in NR/GN/CIV/025-3, table 4.1.	AR - Last Assessment Report; IR - Last Inspection for Assessment report; DE - Last Detailed Examination report
EI_Loads	or One track weight (if different weight)	The assessor may input the weight of track if track and sleeper options are not included in NR/GN/CIV/025-3, table 4.1. The Tool will return an "error" if a Track type is selected AND One track weight (if different type) input.	
EI_Loads	Ballast depth	<p>Ballast depth to be applied per element. This is the average depth of ballast under the sleeper. If a significant difference in depth occurs along the element, input the maximum ballast depth and insert a comment.</p> <p>Note that the Tool only calculates the ballast depth below the sleeper soffit and to the top of the sleeper 300mm either end of the sleeper. If more ballast exists on the deck, this must be input as an SDL. Refer to figure below.</p>	IR - Last Inspection for Assessment report


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
 <p>* The input value has to be corrected with the ratio $gfl/1.2$</p>			
EI_Loads	Loading width (for ballast loading)	This is the loading width for ballast loading per element. It is usually equal to the elements' spacing (i.e. the spacing between main beams or slabs) which is usually the section width (B) input for the section properties. The loading width for single reinforced concrete slabs should be equal to the effective width of the slab in accordance with Table 4.10 of NR/GN/CIV/025 and must match the "Breadth" input for the section.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Loads	Controlled ballast	Select from drop down menu - options "Yes"/"No". If unknown, select "No" and insert a comment.	IR - Last Inspection for Assessment report; DE - Last Detailed Examination report; AR - Last Assessment Report
EI_Loads	Units	Select units from drop down menu - 4 options ("in", "ft", "m", "mm")	
EI_Loads	Source	Select information source from drop down menu - 13 options (refer to tab "General" for information sources)	
EI_Loads	SDLs: 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.	
EI_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
EI_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


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
EI_Loads	SDLs: Area loads: Width	This is the loading width per element for the specified area loading. It is usually equal to the elements' spacing (i.e. the spacing between main beams or slabs) which is usually the section width (B) input for the section properties.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_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
EI_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 to the element as a udl. If not applicable, leave blank and input the unit weight.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Loads	SDLs: Unit Weight	The assessor may input the Unit Weight (always in kg/m^3) and the Tool will use the unit weight input in calculating the SDL to apply to the element as a udl. The Tool will return an "error" if a Material is selected AND Unit Weight input.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Loads	SDLs: Loading	A udl (always in kN/m) may be input by the assessor if required. A factor $gfL = 1.2$ is applied to these loadings in the calculation. The Tool will return an "error" if a Loading (udl) is input AND a Depth or Width or Material or Unit Weight.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Loads	Live Load: DCK: Distance, Start	This is the distance to the start of the DCK considered from the set datum. The datum is at the external face of the left most deck element when facing high mileage i.e. "MG1" (or LSE1 if present). The DCK is assumed to span between the centres of the main beams, i.e. MGEs and MGIs. (Refer to sketches.)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Loads	Live Load (Track Offsets): Distances at DCK location, x1 -x8	These are the distances between the rails above the DCK starting from the set datum. The datum is at the external face of the left most deck element when facing high mileage i.e. MGE1 (or LSE1 if present). Refer to sketch. The distances to be input are as shown on the sketch, i.e. the distance between adjacent rails, x1 to x8.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
EI_Loads	Longitudinal Elements: Correct?	The user must select "Yes" or "No" to confirm which tracks are affecting the element from the proposed list provided by the Tool. Input does not affect the calculations, it is required for Network Rail's asset database only.	
EI_Loads	Transverse Elements: Does track affect element?	The user must select "Yes" or "No" to indicate which tracks are affecting the transverse element. Input does not affect the calculations, it is required for Network Rail's asset database only.	


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
EI_Sections	Units (except Strength)	Select units from drop down menu - 4 options ("in", "ft", "m", "mm")	
EI_Sections	Source	Select information source from drop down menu - 13 options (refer to tab "General" for information sources)	
EI_Sections	Effective span	Refer to NR/GN/CIV/025 and sketch in the tab. Generally this is the distance between supports of the deck (slab or beams). Insert a comment on how the effective span is calculated.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Overall length	Overall length of the deck (slab or beams).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_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
EI_Sections	Cross section type	<p>Select cross section type from drop down menu. The options available depend on the form code selected: "RC Slab", "RC Beam (Rectangular Discrete)", "RC Beam (Rectangular)", "Pre-tensioned Beam (Rectangular)" and "Pre-tensioned Beam (Rectangular Discrete)".</p> <p>Where multiple longitudinal spanning elements support the railway but are not connected together transversely, select the (Discrete) option. Note that this Tool assesses rectangular reinforced concrete sections, flanged reinforced concrete sections (only for form code DH--B: select "RC Flanged Beam") and rectangular pre-tensioned sections.</p> <p>Reinforced concrete slab sections and reinforced concrete beam sections are interchangeable in the Tool. The only difference is when inputting section properties, the flexural reinforcement for a slab is input as the bar diameter and spacing, whereas the reinforcement for a beam is input as the bar diameter and the total number of bars in the section defined.</p>	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Material strength type: Concrete	Select material strength type for from drop down menu - 2 options ("Concrete (Characteristic)" and "Concrete (Worst Credible)"). Refer to Clauses 7.2.2.1 and 7.2.2.2 in NR/GN/CIV/025 for more information.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
EI_Sections	Material strength type: Reinforcement	Select material strength type for from drop down menu - 3 options ("Reinforcing Bars (Characteristic)", "Reinforcing Bars (Worst Credible)" and "N/A"). Refer to Clauses 7.2.2.1 and 7.2.2.2 in NR/GN/CIV/025 for more information. Select "N/A" if no reinforced concrete elements are being assessed.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Material strength type: Tendons	Select material strength type for from drop down menu - 3 options ("Tendons (Characteristic)", "Tendons (Worst Credible)" and "N/A"). Refer to Clauses 7.2.2.1 and 7.2.2.2 in NR/GN/CIV/025 for more information. Select "N/A" if no pre-tensioned concrete elements are being assessed.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	28 day Concrete Strength	Input the cube strength of the concrete. Refer to Appendix B1 of NR/GN/CIV/025 for historical concrete grade details.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Tendon Strength	Input the strength of the pre-stressing tendons. Input "0" (zero) if there are no pre-tensioned concrete elements being assessed. Only horizontal tendons are considered.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Tendon initial stress, i.e. at T=0	Input the initial stress applied to the pre-stressing tendons, i.e. the stress applied when the element was constructed, $T = 0$. Note that losses are considered elsewhere in the Tool. Leave blank if there are no pre-tensioned concrete elements being assessed. Note that the initial stress should be input for the effective tendons only, i.e. debonding and curtailment must be considered.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Reinforcing Bars Strength (Flexural)	Input the strength of the main reinforcing bars (i.e. the reinforcement primarily resisting flexure). Input "0" (zero) if there are no reinforcing bars in the section being assessed.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Reinforcing Bars Strength (Shear)	Input the strength of the shear reinforcing bars (i.e. the reinforcement primarily resisting shear, e.g. links). Input "0" (zero) if there are no shear reinforcing bars in the section being assessed.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
EI_Sections	Strength: Units	Select material strength unit from drop down menu - 4 options("N/mm ² ", "MPa", "lb/in ² ", tons/in ²).	
EI_Sections	Elastic Modulus	This is automatically calculated based on NR/GN/CIV/025 clause 4.3.2B. Units are kN/mm ² .	NR/GN/CIV/025 clause 4.3.2B
EI_Sections	Code	<p>Select the relevant position along the element from the drop down menu - 5 options:</p> <p>"Ed" :- end of element, shear assessed (full shear enhancement),</p> <p>"Md" :- middle of element, shear and bending assessed,</p> <p>"CR" :- reinforcement curtailment point or tendon debonding point, shear and bending assessed,</p> <p>"VE" :- location along element from the support where shear enhancement is no longer applicable, shear and bending assessed,</p> <p>"DS" :- damaged or deteriorated section, shear and bending assessed,</p> <p>These references are used to identify the positions where the elements are assessed in determining the "section reference".</p> <p>"AD" :- assessor defined section. Any point along the beam at which the assessor deems necessary to assess.</p> <p>These references are used to identify the positions where the elements are assessed in determining the "section reference".</p> <p>All sections should be entered with no empty rows between sections.</p>	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	No.	Select a reference number from the drop down menu - options from "1" to "9". Used for "section reference".	


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
El_Sections	Section Reference	No manual input required: The section reference has been determined from the previous input. Consider the following example: For the external beam number 2 the full reference of the 2 default assessment check section references will be: MGE2-Ed1 at "d" m, MGE2-Md1 at midspan.	
El_Sections	Distance	<p>Input the distance from the start point of the element. Sections along the element are identified according to this distance. Note that start point of the element is defined as the beginning of the effective span. 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. The assessor must decide at what distance to assess the section where reinforcement is curtailed or tendons debonded.</p> <p>A check for the shear where there is no shear enhancement (i.e. at 3d from the support) is recommended.</p>	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Sections	Distance	The Tool has 2 default assessment check sections, at a distance d from the first support and at midspan. Note that these sections may not be the critical sections: The assessor must add the critical sections which may be between d and 3d for shear (consider also whether shear enhancement is applicable). In particular, the assessor must add the critical sections for bending and shear when assessing subdecks (DCK for DH--B) as the loading may not be symmetrical, i.e. the maximum bending may not be at midspan and the maximum shear may be adjacent to support 2.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
El_Sections	Condition	<p>Select appropriate condition description from the dropdown, choose from "As-built Condition", "Current Condition" and "Section with Defect".</p> <p>As-built Condition: The section has been taken as-built taking no account of deterioration.</p> <p>Current Condition: The section has been taken at a location of general deterioration.</p> <p>Section with Defect: The section has been taken at the location of a specific defect.</p>	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


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
		This sheet may be used to input the section properties for a rectangular, reinforced concrete beam or slab. The bending reinforcement input in this sheet is the bar diameter and bar spacing.	
Sec_RCS_Slab	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
Sec_RCS_Slab	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
Sec_RCS_Slab	Depth	Vertical dimension. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Breadth	Horizontal dimension. See the sketch provided. All slab sections considered in the Tool are rectangular and symmetrical about y-y axis. The "Breadth" input should be equal to the effective width of the slab in accordance with Table 4.10 of NR/GN/CIV/025. For DCK Elements the Loading assumes a width of 1.8m thus the section considered should equal 1.8m.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Cover to outermost bar: Top	Distance from concrete top face to the top reinforcing bars. If there are no top reinforcing bars, input "0" (zero).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Cover to outermost bar: Bottom	Distance from concrete bottom face to the bottom reinforcing bars. If there are no bottom reinforcing bars, input "0" (zero).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Layer spacing	Clear distance between the bottom layer of reinforcement and the layer above. If there is only one layer of reinforcement, input "0" (zero).	RD - Record Drawings; AR - Last Assessment Report
Sec_RCS_Slab	Spacing	Distance between the reinforcing bar centres. Input "0" (zero) if there is no reinforcement in that layer or section.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Diameter	<p>Diameter of the effectively anchored reinforcing bars. Input "0" (zero) if there is no reinforcement in that layer or section.</p> <p>Note that the effective bar diameters may be input where bars in the section considered are not fully anchored, e.g. if the section being assessed is at a distance less than the anchorage required for a particular bar, the bar may be considered effective but its diameter reduced. Include calculation and justification as a comment.</p>	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
Sec_RCS_Slab	Corrosion Loss	The loss of bar sectional area due to corrosion, input as a percentage of the original bar sectional area. Maximum corrosion loss applicable for use in this Tool is 30%. Refer to NR/GN/CIV/025 clause 7.2.3. Input "0" (zero) if no section loss is to be considered or is there is no reinforcement in that particular layer.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Are bars effectively anchored?	Only effectively anchored flexural steel may be considered in calculating shear enhancement. The assessor can select "Yes", "No" or "N/A" from the drop down list. If "No" or "N/A" is selected, the shear reinforcement will be considered ineffective and no shear enhancement will be permitted.	RD - Record Drawings; AR - Last Assessment Report
Sec_RCS_Slab	No. of shear legs	The number of effectively anchored shear legs the transverse section (i.e. within the breadth, "b"). The shear legs may be vertical or bent up. (Note that inclined links must be input as bent up bars). See the sketch provided. A numerical value must be entered. Input "0" (zero) if there are no shear legs. Note that the assessor must only consider and input properties of the bent up bars or inclined links where they comply with the recommendations in BA 44 cl. 5.3.3.2.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Angle ($30^\circ < \alpha \leq 45^\circ$)	The angle between the bent up bars (where they exist) and the horizontal. See the sketch provided. Where the angle exceeds 45° the assessor should refer to BA 44/96 cl. 5.3.3.2.	RD - Record Drawings; AR - Last Assessment Report


GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
		This sheet may be used to input the section properties for a rectangular, reinforced concrete slab or beam. The bending reinforcement input in this sheet is the bar diameter and number of bars.	
Sec_RCB_Beam	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
Sec_RCB_Beam	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
Sec_RCB_Beam	Depth	Vertical dimension. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Breadth	Horizontal dimension. See the sketch provided. All beam or slab sections considered in the Tool are rectangular and symmetrical about y-y axis. Generally the 'Breadth' input should equal the 'Loading width' for discrete beams and slabs.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Cover to outermost bar: Top	Distance from concrete top face to the top reinforcing bars. If there are no top reinforcing bars, input "0" (zero).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Cover to outermost bar: Bottom	Distance from concrete bottom face to the bottom reinforcing bars. If there are no bottom reinforcing bars, input "0" (zero).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Cover to outermost bar: Side	Distance from concrete side faces to the shear reinforcing bars (links). If there are no shear reinforcing bars, input "0" (zero).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Layer spacing	Clear distance between the bottom layer of reinforcement and the layer above. If there is only one layer of reinforcement, input "0" (zero).	RD - Record Drawings; AR - Last Assessment Report
Sec_RCB_Beam	Diameter	Diameter of the reinforcing bars. Input "0" (zero) if there is no reinforcement in that layer or section.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report


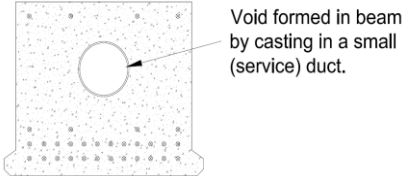
GUIDANCE NOTES			 Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
Sec_RCB_Beam	No. of bars	<p>The number of effectively anchored reinforcement bars in the section (i.e. within the breadth, "b"). A numerical value must be entered. Input "0" (zero) if there are no reinforcing bars in the section.</p> <p>Note that the number of effective bars should be calculated at the section being assessed, taking into account whether they are fully anchored or not, e.g. if the section being assessed is at a distance less than the anchorage required for a particular bar, a percentage of the bar may be considered effective and included. Include calculation and justification as a comment.</p>	RD - Record Drawings; AR - Last Assessment Report
Sec_RCB_Beam	Corrosion Loss	The loss of bar sectional area due to corrosion, input as a percentage of the original bar sectional area. Maximum corrosion loss applicable for use in this Tool is 30%. Refer to NR/GN/CIV/025 clause 7.2.3. Input "0" (zero) if no section loss is to be considered.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Are bars effectively anchored?	Only effectively anchored flexural steel may be considered in calculating shear enhancement. The assessor can select "Yes", "No" or "N/A" from the drop down list. If "No" or "N/A" is selected, the shear reinforcement will be considered ineffective and no shear enhancement will be permitted.	RD - Record Drawings; AR - Last Assessment Report
Sec_RCB_Beam	No. of shear legs	The number of effectively anchored shear legs the transverse section (i.e. within the breadth, "b"). The shear legs may be vertical or bent up. (Note that inclined links must be input as bent up bars). See the sketch provided. A numerical value must be entered. Input "0" (zero) if there are no shear legs. Note that the assessor must only consider and input properties of the bent up bars or inclined links where they comply with the recommendations in BA 44 cl. 5.3.3.2.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Spacing	Distance between the reinforcing bar centres. Input "0" (zero) if there are no links (vertical) or bent up bars.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Angle ($30^\circ < \alpha \leq 45^\circ$)	The angle between the bent up bars (where they exist) and the horizontal. See the sketch provided. Where the angle exceeds 45° the assessor should refer to BA 44/96 cl. 5.3.3.2.	RD - Record Drawings; AR - Last Assessment Report

GUIDANCE NOTES			
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Sheet name	Input data	Description	Suggested Sources
		This sheet may be used to input the section properties for a reinforced concrete flanged or tee beam, formed from a rectangular beam plus a width of transverse slab. All flanged or tee beams are considered symmetrical about the y-y axis.	
Sec_RCF_Beam	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
Sec_RCF_Beam	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
Sec_RCF_Beam	Beam depth	Vertical dimension of the effective flanged or tee beam. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Flange breadth	Horizontal dimension of the width of slab forming the flanged or tee beam. See the sketch provided. Generally the 'Flange Breadth' input should equal the 'Loading width' for flanged beams. The assessor must take care inputting the width of the flange to avoid applying excessive dead load (flange breadth of adjacent sections overlap) or miss dead load (flange breadth of adjacent section does not account for the full width of the slab forming the flanged or tee beam).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Flange thickness	Vertical dimension of the slab forming the flanged or tee beam. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Web breadth	Horizontal dimension of the beam section forming the flanged or tee beam. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Cover to outermost bar: Top	Distance from concrete top face to the top reinforcing bars. If there are no top reinforcing bars, input "0" (zero).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Cover to outermost bar: Bottom	Distance from concrete bottom face to the bottom reinforcing bars. If there are no bottom reinforcing bars, input "0" (zero).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Cover to outermost bar: Side	Distance from concrete side faces to the shear reinforcing bars (links). If there are no shear reinforcing bars, input "0" (zero).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Layer spacing	Clear distance between the bottom layer of reinforcement and the layer above in the beam section. If there is only one layer of reinforcement, input "0" (zero).	RD - Record Drawings; AR - Last Assessment Report

GUIDANCE NOTES			
			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
Sec_RCF_Beam	Diameter	Diameter of the reinforcing bars. Input "0" (zero) if there is no reinforcement in that layer or section.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	No. of bars	<p>The number of effectively anchored reinforcement bars in the section (i.e. within the breadth, "b"). A numerical value must be entered. Input "0" (zero) if there are no reinforcing bars in the section.</p> <p>Note that the number of effective bars should be calculated at the section being assessed, taking into account whether they are fully anchored or not, e.g. if the section being assessed is at a distance less than the anchorage required for a particular bar, a percentage of the bar may be considered effective and included. Include calculation and justification as a comment.</p>	RD - Record Drawings; AR - Last Assessment Report
Sec_RCF_Beam	Corrosion Loss	The loss of bar sectional area due to corrosion, input as a percentage of the original bar sectional area. Maximum corrosion loss applicable for use in this Tool is 30%. Refer to NR/GN/CIV/025 clause 7.2.3. Input "0" (zero) if no section loss is to be considered.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Are bars effectively anchored?	Only effectively anchored flexural steel may be considered in calculating shear enhancement. The assessor can select "Yes", "No" or "N/A" from the drop down list. If "No" or "N/A" is selected, the shear reinforcement will be considered ineffective and no shear enhancement will be permitted.	RD - Record Drawings; AR - Last Assessment Report
Sec_RCF_Beam	No. of shear legs	The number of effectively anchored shear legs the transverse section (i.e. within the breadth, "b"). The shear legs may be vertical or bent up. (Note that inclined links must be input as bent up bars). See the sketch provided. A numerical value must be entered. Input "0" (zero) if there are no shear legs. Note that the assessor must only consider and input properties of the bent up bars or inclined links where they comply with the recommendations in BA 44 cl. 5.3.3.2.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Spacing	Distance between the reinforcing bar centres. Input "0" (zero) if there are no links (vertical) or bent up bars.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Angle ($30^\circ < \alpha \leq 45^\circ$)	The angle between the bent up bars (where they exist) and the horizontal. See the sketch provided. Where the angle exceeds 45° the assessor should refer to BA 44/96 cl. 5.3.3.2.	RD - Record Drawings; AR - Last Assessment Report

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Sheet name	Input data	Description	Suggested Sources
		This sheet may be used to input the section properties for a rectangular, pre-tensioned concrete beam.	
Sec_PTR_Beam	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
Sec_PTR_Beam	Units	Select units from drop down menu - 4 options ("in", "ft", "m", "mm") except for Area of strand/wire where assessor to select from 4 options ("in^2", "ft^2", "m^2", "mm^2").	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Depth	Vertical dimension of the pre-tensioned beam. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Width	Horizontal dimension of the pre-tensioned beam. See the sketch provided. All beams considered in the Tool are rectangular and symmetrical about y-y axis. Generally the 'Width' input should equal the 'Loading width'.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Diameter	Diameter of the shear reinforcement (links), pre-stressing tendons or tension reinforcement. Input "0" (zero) if there is no reinforcement in that section. Pre-tensioned beam sections must have tendon details input.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Corrosion Loss	The loss of bar or tendon sectional area due to corrosion, input as a percentage of the original bar sectional area. Maximum corrosion loss applicable for use in this Tool is 30%. Refer to NR/GN/CIV/025 clause 7.2.3. Input "0" (zero) if no section loss is to be considered.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Shear Reinforcement: Spacing	Distance between the shear reinforcement (vertical links) bar centres. Input "0" (zero) if there are no links.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	No. of shear legs	The number of effectively anchored shear legs the transverse section (i.e. within the width, "b"). The shear legs must be vertical. A numerical value must be entered. Input "0" (zero) if there are no shear legs.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Type of Pre-stressing tendons	Select tendon type from drop down menu - 6 options: ("Plain wire, wave height < 0.15Φ", "Indented wire, wave height < 0.15Φ", "Crimped wire, wave height < 0.15Φ", "Crimped wire, wave height t ≥ 0.15Φ", "7-wire standard and super strand", "7-wire drawn or compacted strand").	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Area per strand/wire	The total area of each strand or wire. If a strand is made up of multiple wires input the strand area.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

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			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
Sec_PTR_Beam	Layer: No.	<p>The number of effectively anchored tendons in each layer. Where the section assessed is within the transmission zone of a number of tendons, the number of tendons should be calculated based on the number of tendons multiplied by the percentage of the transmission length at which the section is assessed.</p> <p>All tendons are assumed horizontal.</p> <p>A numerical value must be entered. Input "0" (zero) if there are no tendons in that layer.</p>	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Distance to soffit	Distance from the pre-tensioned beam soffit to the centre of the tendons in the layer.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	FOR INFORMATION ONLY	<p>An indication of the transmission length is given to aid in the calculation of the equivalent number of effective tendons at the section, to be entered into cells B34:B38.</p> <p>Space is also given in cells G34:I38 to input the actual number of tendons at the section, as a reference (these values not used in Tool calculations).</p>	
Sec_PTR_Beam	No. of bars	<p>The number of effectively anchored reinforcement bars in the section (i.e. within the breadth, "b"). A numerical value must be entered. Input "0" (zero) if there are no reinforcing bars in the section.</p> <p>Note that the number of effective bars should be calculated at the section being assessed, taking into account whether they are fully anchored or not, e.g. if the section being assessed is at a distance less than the anchorage required for a particular bar, a percentage of the bar may be considered effective and included. Include calculation and justification as a comment.</p>	RD - Record Drawings; AR - Last Assessment Report
Sec_PTR_Beam	Concrete cover (soffit)	Distance from the pre-tensioned beam soffit to the bottom reinforcing bars.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	No. of service ducts	The number of circular ducts within the effective section. Input "0" (zero) if there are no ducts.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

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			Level 0 Assessment Tool Version UBC 3.1
Sheet name	Input data	Description	Suggested Sources
Sec_PTR_Beam	Dia. of service duct	<p>The outer diameter of any circular ducts within the effective section. Input "0" (zero) if there are no ducts.</p> 	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Depth (centre to soffit)	<p>The distance from the pre-tensioned beam soffit to the centre of the duct. Input "0" (zero) if there are no ducts.</p>	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

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Sheet name	Input data	Description	Suggested Sources
Sec_PTT_Beam		This sheet may be used to input the section properties for a Tee shaped pre-tensioned concrete beam with insitu concrete surround and above.	
Sec_PTT_Beam	Source	Select information source from drop down menu - 12 options (refer to tab "General" for information sources)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Units	Select units from drop down menu - 4 options ("in", "ft", "m", "mm") except for Area of strand/wire where assessor to select from 4 options ("in^2", "ft^2", "m^2", "mm^2").	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Geometry	<p>When entering the geometry of the Tee pre-tensioned beam it must be approximated to two rectangles forming a "T". Care must be taken to not underestimate the size of the pre-tensioned beam. A sketch below is provided for guidance. The outline in red defines the approximate geometry that should be entered.</p>	
Sec_PTT_Beam	Width	Horizontal dimension of the pre-tensioned beam. See the sketch provided. Generally the 'Width' input should equal the 'Loading width'.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Depth	Vertical dimension of the pre-tensioned beam. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Web breadth	Horizontal dimension of the stem of the pre-tensioned beam. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Infill depth (top)	Vertical dimension of the pre-tensioned beam. See the sketch provided. The topping infill is not included in automatic calculation of dead load of elements. It must be entered separately as an SDL.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



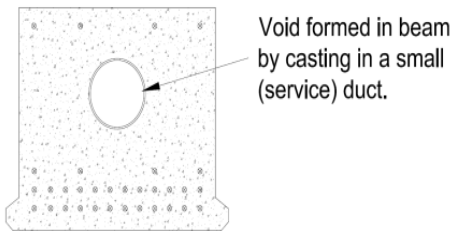
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Sheet name	Input data	Description	Suggested Sources
Sec_PTT_Beam	Flange Depth	Vertical dimension of the flange.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Diameter	Diameter of the shear reinforcement (links in the web), prestressing tendons or tension reinforcement. Input "0" (zero) or leave it blank if there is no reinforcement in that section. Pre-tensioned beam sections must have tendon details input.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Corrosion Loss	The loss of bar or tendon sectional area due to corrosion, input as a percentage of the original bar sectional area. Maximum corrosion loss applicable for use in this Tool is 30%. Refer to NR/GN/CIV/025 clause 7.2.3. Input "0" (zero) or leave it blank if no section loss is considered.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Shear Reinforcement: Spacing	Distance between the shear reinforcement (vertical links) bar centres. Input "0" (zero) or leave it blank if there are no links.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	No. of shear legs	The number of effectively anchored shear legs the transverse section (i.e. within the width, "b _w "). The shear legs must be vertical. A numerical value must be entered. Input "0" (zero) if there are no shear legs.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Type of Prestressing Tendons	Select tendon type from drop down menu - 5 options ("cold-drawn wire", "cold-drawn wire in mill coil", "7-wire standard", "7-wire super", "7-wire drawn").	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Area per strand/wire	The area of each strand or wire.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Layer: No.	The number of effectively anchored tendons in each layer. See the sketch provided. A numerical value must be entered. A numerical value must be entered. Input "0" (zero) or leave it blank if there are no tendons in that layer.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Distance to soffit	Distance from the pre-tensioned beam soffit to the centre of the tendons in the layer.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

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Sheet name	Input data	Description	Suggested Sources
Sec_PTT_Beam	FOR INFORMATION ONLY	An indication of the transmission length is given to aid in the calculation of the equivalent number of effective tendons at the section, to be entered into cells B38:B42. Space is also given in cells G38:I42 to input the actual number of tendons at the section, as a reference (these values not used in Tool calculations).	
Sec_PTT_Beam	No. of bars	The number of effectively anchored reinforcement bars in the section (i.e. within the breadth, "b"). A numerical value must be entered. Input "0" (zero) if there are no reinforcing bars in the section.	RD - Record Drawings; AR - Last Assessment Report
Sec_PTT_Beam	Concrete cover (soffit)	Distance from the pre-tensioned beam soffit to the bottom reinforcing bars.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	No. of service ducts	The number of circular ducts within the effective section. Input "0" (zero) if there are no ducts.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Dia. of service duct	The outer diameter of any circular ducts within the effective section. Input "0" (zero) or leave it blank if there are no ducts. 	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Depth (centre to soffit)	The distance from the pre-tensioned beam soffit to the centre of the duct. Input "0" (zero) or leave it blank if there are no ducts.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Depth (centre to soffit)	The distance from the pre-tensioned beam soffit to the centre of the duct. Input "0" (zero) if there are no ducts.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report