

AASHTOWare Bridge Design and Rating Visual Reference

Getting Started

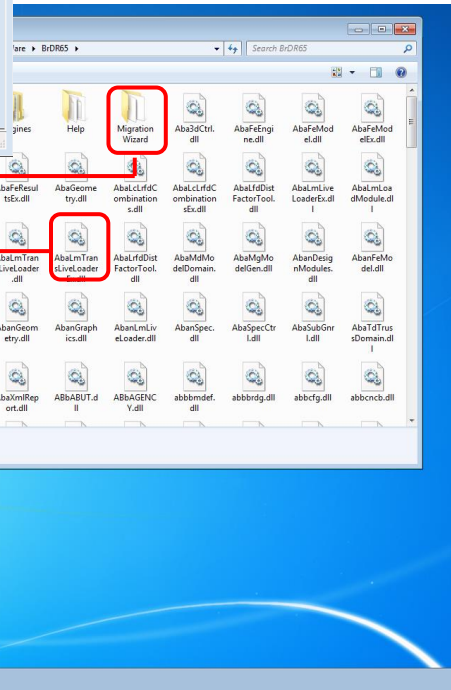
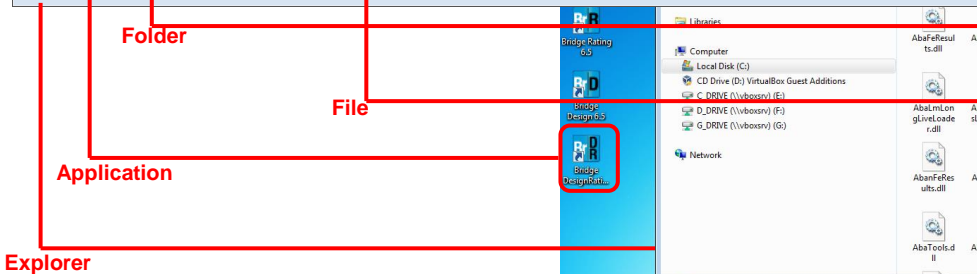
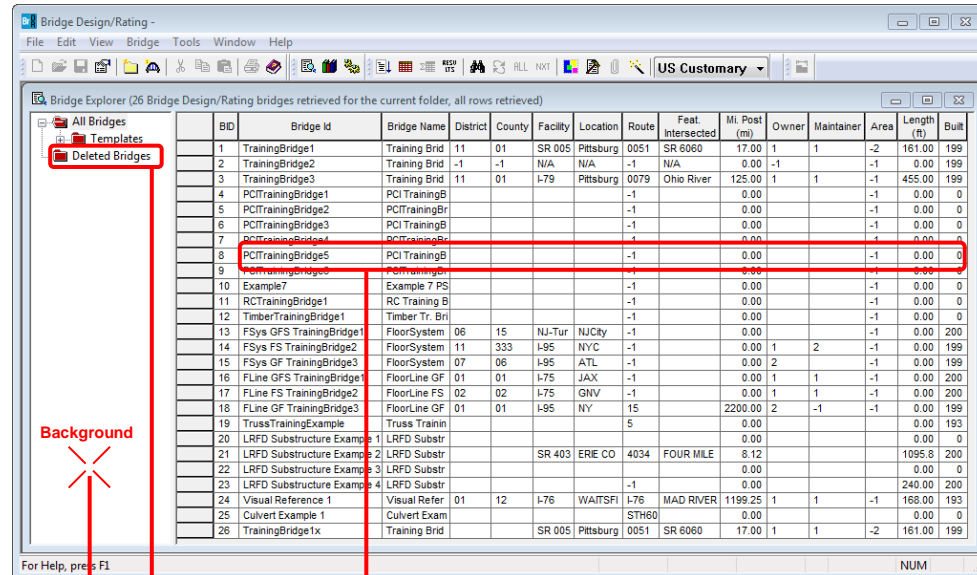
AASHTOWare Bridge Design and Rating Overview

What is AASHTOWare Bridge Design and Rating?

AASHTOWare Bridge Design and Rating may be considered as an operating environment with applications that aid in the design and load rating of bridges. This is similar to the role Microsoft Windows plays in that it is an environment where we run applications to conduct our day to day business.

AASHTOWare Bridge Design and Rating currently houses a few applications such as BrD and BrR for Design and Load rating. This is somewhat similar to applications that run in Windows, such as Excel or Word. The two applications still take the role of an environment, but their respective duties are more specific to their purpose. The underlying engines

that support BrD/BrR are the AASHTO ASD/LFD and LRFD/LRFR Engines, and the Madero ASD Engine. In time, more engines will be made available.



The similarities between BrD/BrR and Windows

BrR

BrR is used for bridge superstructure and culvert load rating, featuring graphical tools to speed preparation of the data and application of the results. Using the AASHTO LFR/LRFR as its analytical engine for load factor rating, BrR provides an integrated database where rating inputs and outputs can readily be stored, reviewed, and reused.



BrD

BrD is currently a bridge superstructure, substructure and culvert design-review software product using the AASHTO Load and Resistance Factor Design (LRFD) Bridge Specifications. BrD employs the same database and graphical user interface as BrR, and shares much of the same source code. Development of both products began in 1997. The AASHTO LRFD Engine provides the system's structural analysis and specification checking engine.



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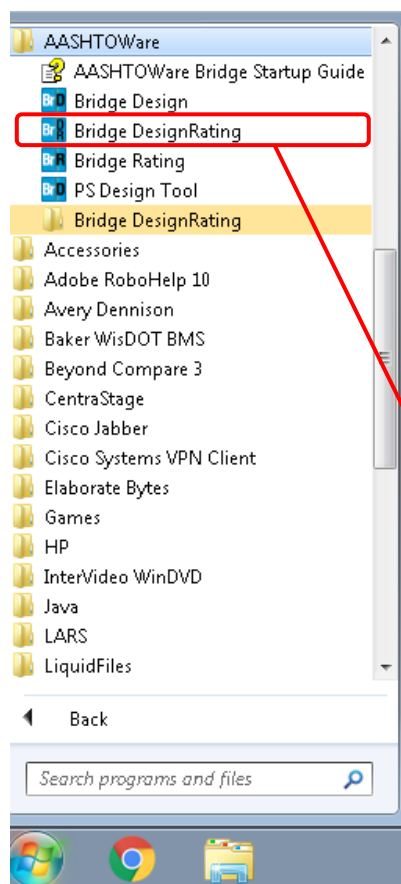
Starting AASHTOWare Bridge Design and Rating

From the Desktop

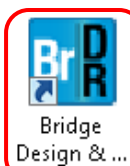
For most cases it would be best to double-click on the AASHTOWare Bridge Design and Rating icon. This would give you features of both BrD and BrR in one environment.

From the Start Menu

If you do not have icons on your desktop you can start the program from the Start Menu.



Select

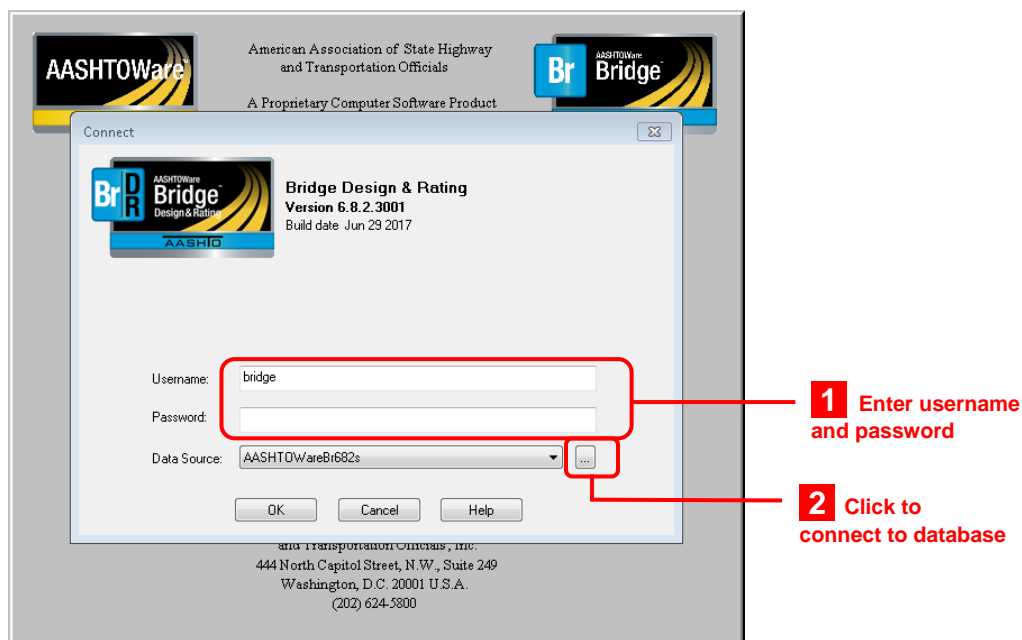


Double-click

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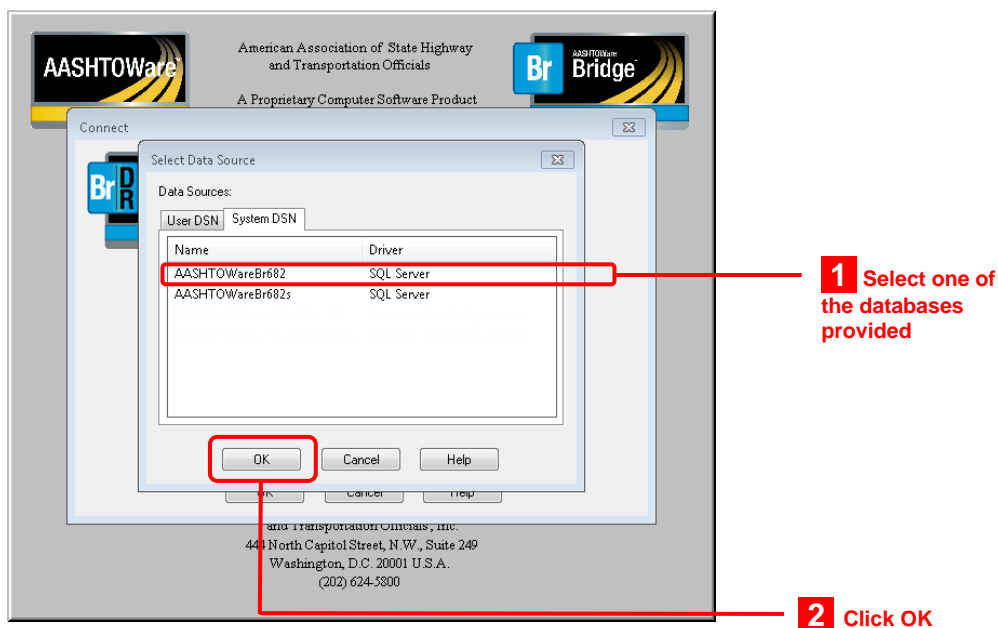
Entering Username and Password

The AASHTOWare Bridge Design and Rating Logo Window will pop up. Here you will need to enter your username and password in the provided fields.



Connecting to the database

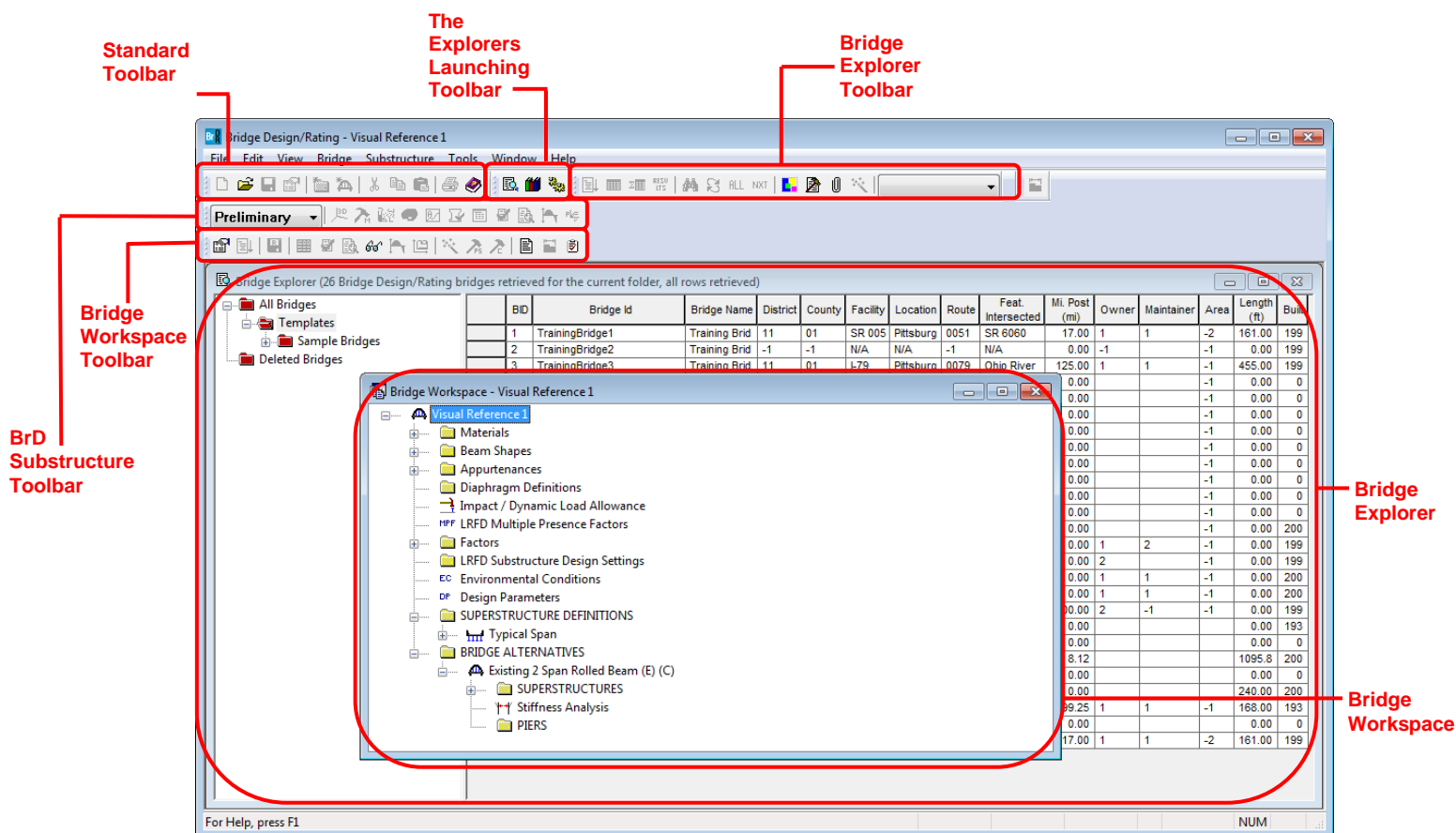
At times, the Data Source field will be empty. This means the database is not connected. You will need to connect to the database. To do this, click on the button with the three periods. Then . . .



AASHTOWare Bridge Design and Rating Visual Reference

AASHTOWare Bridge Design and Rating Basics

AASHTOWare Bridge Design and Rating Environment Tour



AASHTOWare Bridge Design and Rating Environment

AASHTOWare Bridge Design and Rating Visual Reference

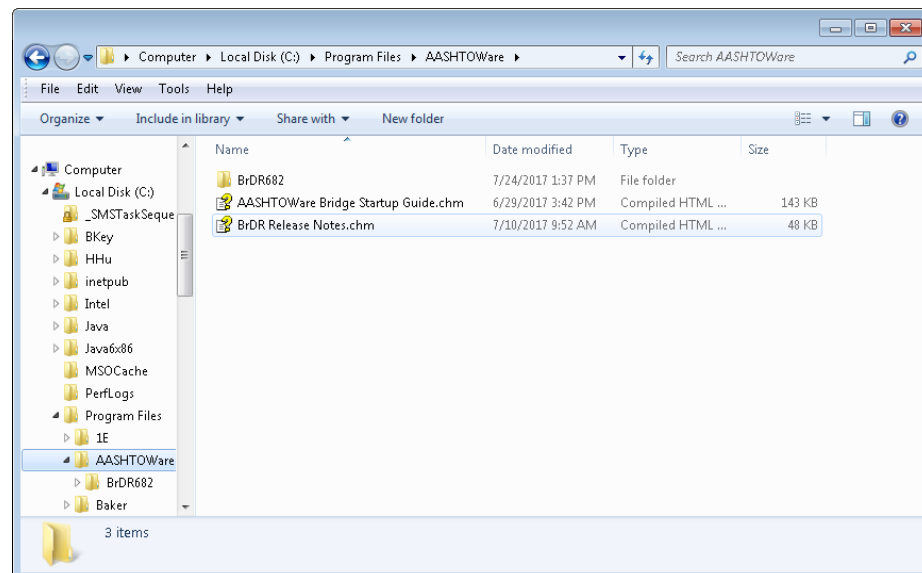
Bridge Explorer tree

Bridge Explorer (26 Bridge Design/Rating bridges retrieved for the current folder, all rows retrieved)

	Bridge Id	Bridge Name	District	County	Face
1	TrainingBridge1	Training Brid	11	01	SR
2	TrainingBridge2	Training Brid	-1	-1	N/A
3	TrainingBridge3	Training Brid	11	01	I-79
4	PCITrainingBridge1	PCI TrainingB			
5	PCITrainingBridge2	PCI TrainingBr			
6	PCITrainingBridge3	PCI TrainingB			
7	PCITrainingBridge4	PCI TrainingBr			
8	PCITrainingBridge5	PCI TrainingB			
9	PCITrainingBridge6	PCI TrainingBr			
10	Example7	Example 7 PS			
11	RCTrainingBridge1	RC Training B			
12	TimberTrainingBridge1	Timber Tr. Bri			
13	FSys GFS TrainingBridge1	FloorSystem	06	15	NU-T
14	FSys FS TrainingBridge2	FloorSystem	11	333	I-95
15	FSys GF TrainingBridge3	FloorSystem	07	06	I-95
16	FLine GFS TrainingBridge1	FloorLine GF	01	01	I-75
17	FLine FS TrainingBridge2	FloorLine FS	02	02	I-7
18	FLine GF TrainingBridge3	FloorLine GF	01	01	I-9
19	TrussTrainingExample	Truss Trainin			
20	LRFD Substructure Example 1	LRFD Substr			
21	LRFD Substructure Example 2	LRFD Substr			SR
22	LRFD Substructure Example 3	LRFD Substr			
23	LRFD Substructure Example 4	LRFD Substr			
24	Visual Reference 1	Visual Refer	01	12	I-7
25	Culvert Example 1	Culvert Exam			
26	TrainingBridge1x	Training Brid			SR

Bridge list corresponding to the selected folder

The Bridge Explorer is designed to work like the Windows Explorer



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Bridge Explorer Window

Sorting the Bridge List

Once you select a folder to find a bridge, you may sort the corresponding bridge list to make the search easier. Sorting the bridge list requires double-clicking on a column heading. The first time you do this, it will sort in an ascending order. Double-clicking again, will result in a descending sort. For example, I am looking for bridge 24 on I-76 in Waitsfield.

1 Double-click column heading to sort the bridge ID in ascending order

BID	Bridge ID	Bridge Name	District	County	Facility	Location	Route	Feature Intersected	Mile/Km Post (mi)	Owner	Maintainer	Area	Length (ft)	Year Built
25	Culvert Example 1	Culvert Exam					STH60							
10	Example7	Example 7 PS					-1							
17	FLine FS TrainingBridge2	FloorLine FS			I-75	GNV	-1			State Hi	State High	Unkn		2000
16	FLine GF TrainingBridge3	FloorLine GF			I-95	NY	15		2200.00	County	Unknown	Unkn		1999
14	FSys FS TrainingBridge2	FloorSystem			I-75	JAX	-1			State Hi	State High	Unkn		2001
15	FSys GF TrainingBridge3	FloorSystem			I-95	NYC	-1			State Hi	County H	Unkn		1998
13	FSys GFS TrainingBridge	FloorSystem			I-95	ATL	-1			County		Unkn		1998
26	LFD Curved Guide Spec	LFD Curved			NJ-Tur	NUCity	-1					Unkn		2002
20	LRFD Substructure Exam	LRFD Substr					1							
21	LRFD Substructure Exam	LRFD Substr			SR 403	ERE CO	4034	FOUR MILE	8.12				95.801	2002
22	LRFD Substructure Exam	LRFD Substr					-1						40.000	2004
23	LRFD Substructure Exam	LRFD Substr					100							2014
4	PCITrainingBridge1	PCI TrainingB					-1					Unkn		
5	PCITrainingBridge2	PCI TrainingBr					-1					Unkn		
6	PCITrainingBridge3	PCI TrainingB					-1					Unkn		
7	PCITrainingBridge4	PCI TrainingBr					-1					Unkn		
8	PCITrainingBridge5	PCI TrainingBr					-1					Unkn		
9	PCITrainingBridge6	PCI TrainingBr					-1					Unkn		
28	PS1 Training Bridge	New Bridge					-1					Unkn		
11	RCITrainingBridge1	RC Training B					-1					Unkn		
12	TimberTrainingBridge1	Timber Tr. Bri					-1					Unkn		
1	TrainingBridge1	Training Brd			SR 005	Pittsburg	0051	SR 6080	17.00	State Hi	State High	Not A	61.001	1999
2	TrainingBridge2	Training Brd	Unkn	Unkn	N/A	N/A	-1	N/A		Unkn		Unkn		1996
3	TrainingBridge3	Training Brd			I-75	Pittsburg	0079	Ohio River	125.00	State Hi	State High	Unkn	55.000	1999
19	TrussTrainingExample	Truss Trainin					5							1930
24	Visual Reference 1	Visual Refer			I-76	WAITSFI	I-76	MAD RIVER	1199.25	State Hi	State High	Unkn	68.000	1938

2 Double-click column heading to sort location in ascending order

BID	Bridge ID	Bridge Name	District	County	Facility	Location	Route	Feature Intersected	Mile/Km Post (mi)	Owner	Maintainer	Area	Length (ft)	Year Built
25	Culvert Example 1	Culvert Exam					STH60							
10	Example7	Example 7 PS					-1					Unkn		
26	LFD Curved Guide Spec	LFD Curved					1							
20	LRFD Substructure Exam	LRFD Substr					-1						40.000	2004
22	LRFD Substructure Exam	LRFD Substr					100							2014
27	MultiCell Box Examples	Multi Cell Box					-1					Unkn		
4	PCITrainingBridge1	PCI TrainingB					-1					Unkn		
5	PCITrainingBridge2	PCI TrainingBr					-1					Unkn		
6	PCITrainingBridge3	PCI TrainingB					-1					Unkn		
7	PCITrainingBridge4	PCI TrainingBr					-1					Unkn		
8	PCITrainingBridge5	PCI TrainingBr					-1					Unkn		
9	PCITrainingBridge6	PCI TrainingBr					-1					Unkn		
28	PS1 Training Bridge	New Bridge					-1					Unkn		
11	RCITrainingBridge1	RC Training B					-1					Unkn		
12	TimberTrainingBridge1	Timber Tr. Bri					-1					Unkn		
15	FSys GF TrainingBridge3	FloorSystem			I-95	ATL	-1			County		Unkn		1998
21	LRFD Substructure Exam	LRFD Substr			SR 403	ERE CO	4034	FOUR MILE	8.12				95.801	2002
17	FLine FS TrainingBridge2	FloorLine FS			I-75	GNV	-1			State Hi	State High	Unkn		2000
16	FLine GF TrainingBridge3	FloorLine GF			I-75	JAX	-1			State Hi	State High	Unkn		2001
2	TrainingBridge2	Training Brd	Unkn	Unkn	N/A	N/A	-1	N/A		Unkn		Unkn		1996
13	FSys GFS TrainingBridge	FloorSystem			NJ-Tur	NUCity	-1					Unkn		2002
18	FLine GF TrainingBridge3	FloorLine GF			I-95	NY	15		2200.00	County	Unknown	Unkn		1999
14	FSys FS TrainingBridge2	FloorSystem			I-95	NYC	-1			State Hi	County H	Unkn		1998
1	TrainingBridge1	Training Brd			SR 005	Pittsburg	0051	SR 6080	17.00	State Hi	State High	Not A	61.001	1999
3	TrainingBridge3	Training Brd			I-75	Pittsburg	0079	Ohio River	125.00	State Hi	State High	Unkn	55.000	1999
24	Visual Reference 1	Visual Refer			I-76	WAITSFI	I-76	MAD RIVER	1199.25	State Hi	State High	Unkn	68.000	1938

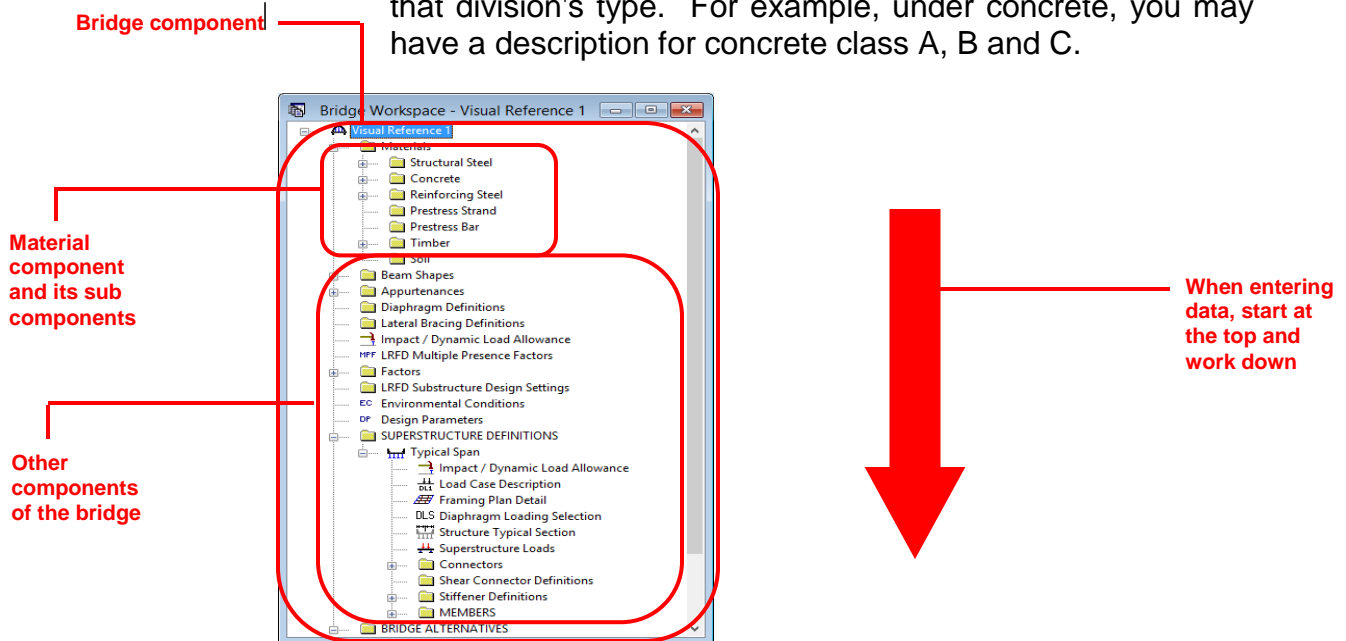
3 Select bridge from list

BID	Bridge ID	Bridge Name	District	County	Facility	Location	Route	Feature Intersected	Mile/Km Post (mi)	Owner	Maintainer	Area	Length (ft)	Year Built
25	Culvert Example 1	Culvert Exam					STH60							
10	Example7	Example 7 PS					-1					Unkn		
26	LFD Curved Guide Spec	LFD Curved					1							
20	LRFD Substructure Exam	LRFD Substr					-1						40.000	2004
22	LRFD Substructure Exam	LRFD Substr					100							2014
27	MultiCell Box Examples	Multi Cell Box					-1					Unkn		
4	PCITrainingBridge1	PCI TrainingB					-1					Unkn		
5	PCITrainingBridge2	PCI TrainingBr					-1					Unkn		
6	PCITrainingBridge3	PCI TrainingB					-1					Unkn		
7	PCITrainingBridge4	PCI TrainingBr					-1					Unkn		
8	PCITrainingBridge5	PCI TrainingBr					-1					Unkn		
9	PCITrainingBridge6	PCI TrainingBr					-1					Unkn		
28	PS1 Training Bridge	New Bridge					-1					Unkn		
11	RCITrainingBridge1	RC Training B					-1					Unkn		
12	TimberTrainingBridge1	Timber Tr. Bri					-1					Unkn		
19	TrussTrainingExample	Truss Trainin					5							1930
15	FSys GF TrainingBridge3	FloorSystem			I-95	ATL	-1			County		Unkn		1998
21	LRFD Substructure Exam	LRFD Substr			SR 403	ERE CO	4034	FOUR MILE	8.12				95.801	2002
17	FLine FS TrainingBridge2	FloorLine FS			I-75	GNV	-1			State Hi	State High	Unkn		2000
16	FLine GF TrainingBridge3	FloorLine GF			I-75	JAX	-1			State Hi	State High	Unkn		2001
2	TrainingBridge2	Training Brd	Unkn	Unkn	N/A	N/A	-1	N/A		Unkn		Unkn		1996
13	FSys GFS TrainingBridge	FloorSystem			NJ-Tur	NUCity	-1					Unkn		2002
18	FLine GF TrainingBridge3	FloorLine GF			I-95	NY	15		2200.00	County	Unknown	Unkn		1999
14	FSys FS TrainingBridge2	FloorSystem			I-95	NYC	-1			State Hi	County H	Unkn		1998
1	TrainingBridge1	Training Brd			SR 005	Pittsburg	0051	SR 6080	17.00	State Hi	State High	Not A	61.001	1999
3	TrainingBridge3	Training Brd			I-75	Pittsburg	0079	Ohio River	125.00	State Hi	State High	Unkn	55.000	1999
24	Visual Reference 1	Visual Refer			I-76	WAITSFI	I-76	MAD RIVER	1199.25	State Hi	State High	Unkn	68.000	1938

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The result is that both the Bridge ID number and the Location are sorted in ascending order. At this point I look down the list in the location column for Waitsfield, then I look over at the Bridge ID until I find bridge 24 (see where the cursor is pointing in the third screen shot above).

Double-clicking on a bridge from the bridge list opens the Bridge Workspace. The Bridge Workspace tree works similar to the Windows Explorer file tree, except that instead of sorting files and folders, the Bridge Workspace sorts out the different components of a bridge. These components include the materials the bridge uses, girders or beams, deck and supports to name a few. Each major component has components unto itself. The Materials component, for example, is broken down into structural and reinforcing steel, concrete, prestress strand and timber. These separate divisions are again broken down to the different materials of that division's type. For example, under concrete, you may have a description for concrete class A, B and C.



Checking Data Integrity

After completing your data entry for the bridge, the next step is to check your data for missing components. In some cases, this may not be necessary, but in general practice, it is always good to ensure you've entered all the data for your bridge design or rating. To run the check click on the

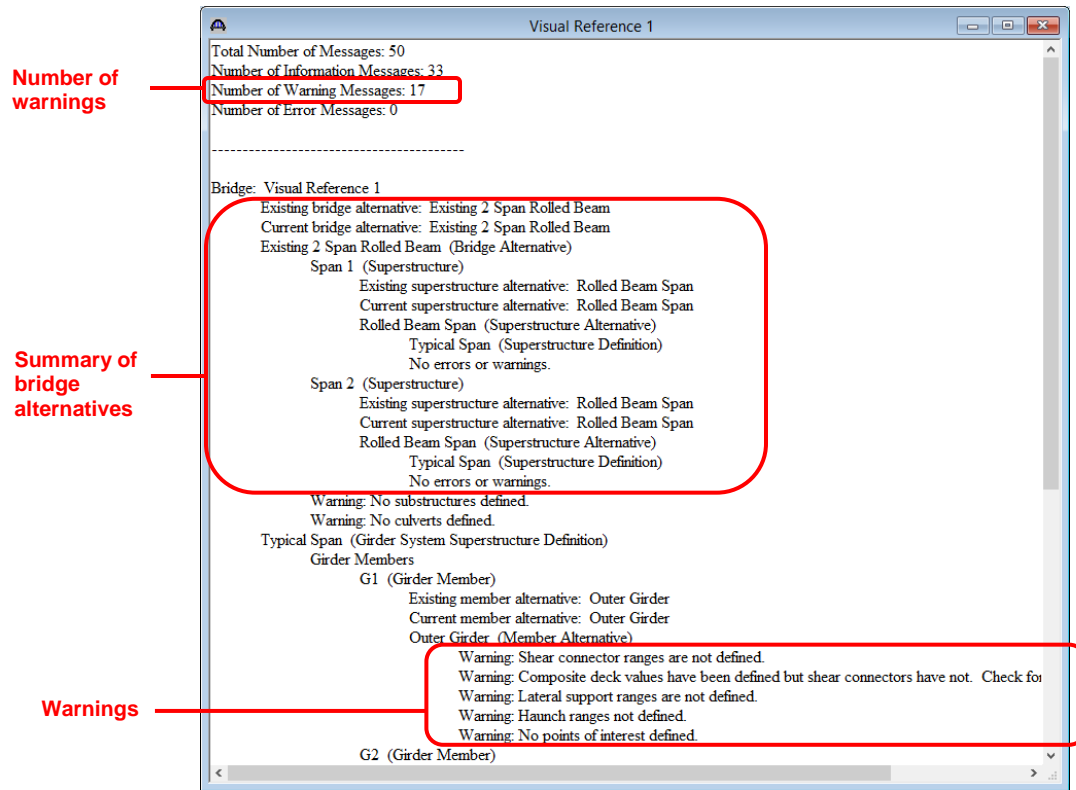


Validate

validate button from the Bridge workspace toolbar. The Validation window will appear. This window will give you a summary of the bridge data you've entered. It will also list a series of warnings regarding your data. If you've missed something, it

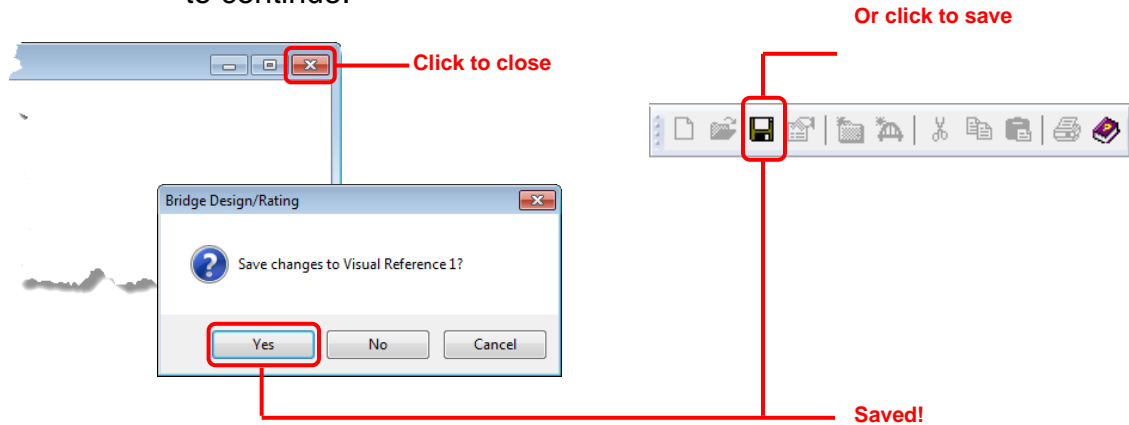
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will be listed here. Use this as a guide to ensure your data entry is complete.

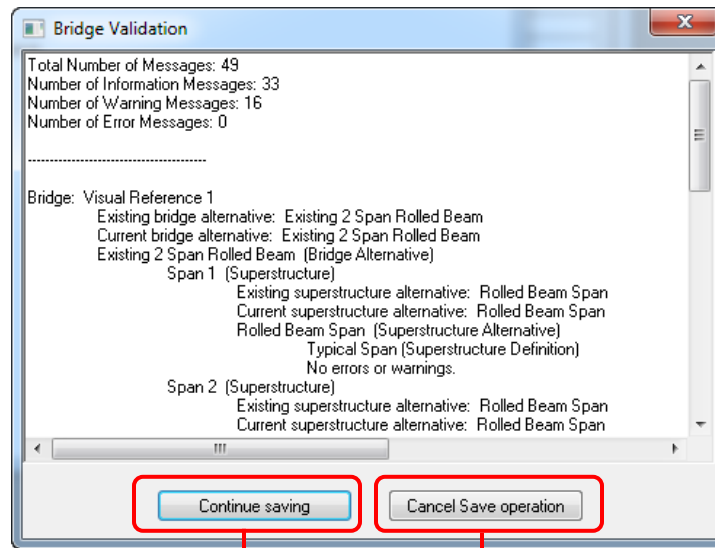


Saving your Bridge Data

Once your data has been entered and verified, click on the save button from the Standard Toolbar to save your data. If you close the bridge workspace before saving, AASHTOWare Bridge Design and Rating will ask if you want to save your data. Before saving, AASHTOWare Bridge Design and Rating will validate your data and ask if you want to continue.



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Click to save

Click to go back to
workspace