

AASHTOWare BrD/BrR 6.8

Report Tutorial

LFR/ LFRF Detailed Rating Results Report

Topics Covered

- LFR Detailed Rating Results Report.
- LRFR Detailed Rating Results Report.

BID	Bridge ID	Bridge Name	District	County	Facility	Location	Route	Feature Intersected	Mile/Km Post (mi)	Owner	Maintainer	Area	Length (ft)	Year Built
1	TrainingBridge1	Training Brid	District	01 Abb	SR 005	Pittsburg	0051	SR 6060	17.00	State Hi	State High	Not A	161.00	1999
2	TrainingBridge2	Training Brid	Unkno	Unkno	N/A	N/A	-1	N/A		Unkno				1996
3	TrainingBridge3	Training Brid	District	01 Abb	I-79	Pittsburg	0079	Ohio River	125.00	State Hi	State High	Unkn	455.00	1999
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 TrainingB					-1							Unkn
9	PCITrainingBridge6	PCI TrainingBr					-1							Unkn
10	Example7	Example 7 P					-1							Unkn
11	RCTrainingBridge1	RC Training					-1							Unkn
12	Timber TrainingBridge1	Timber Tr. Bri					-1							Unkn
13	FSys GFS TrainingBridge1	FloorSystem	District	15 Coll	NA-Tur	NJCity	-1							Unkn
14	FSys FS TrainingBridge2	FloorSystem	District	333 No	I-95	NYC	-1			State Hi	County H			Unkn
15	FSys GF TrainingBridge3	FloorSystem	District	06 Bar	I-95	ATL	-1				County			Unkn
16	FLine GFS TrainingBridge1	FloorLine GF	District	01 Abb	I-75	JAX	-1			State Hi	State High			Unkn
17	FLine FS TrainingBridge2	FloorLine FS	District	02 Alke	I-75	GNV	-1			State Hi	State High			Unkn
18	FLine GF TrainingBridge3	FloorLine GF	District	01 Abb	I-95	NY	15		2200.00	County	Unknown			Unkn
19	TrussTrainingExample	Truss Trainin					5							1930
20	LRFD Substructure Example 1	LRFD Substr												
21	LRFD Substructure Example 2	LRFD Substr			SR 403	ERIE CO	4034	FOUR MILE	8.12				1095.8	2002
22	LRFD Substructure Example 3	LRFD Substr												
23	LRFD Substructure Example 4	LRFD Substr					-1						240.00	2004
24	Visual Reference 1	Visual Refer	District	12 Che	I-76	WAITSFJ	I-76	MAD RIVER	1199.25	State Hi	State High	Unkn	168.00	1938
25	Culvert Example 1	Culvert Exam						STH6						
26	LFD Curved Guide Spec	LFD Curved						1						
27	MultiCell Box Examples	Multi Cell Box						100						2014
28	Gusset Plate Example	Gusset Plate	District			Some Hi				State Hi			67.900	2015
29	Splice Example	Splice Examp					-1						240.00	2004
30	Simple DL-Cont LL-Splice	Simple DL Sp	Unkno	Unkno	N/A	N/A	-1	N/A		Unkno				1996
31	57 0524L	GILMAN DRI												
32	PS Training Bridge	PS1 Training					-1							Unkn
33	US-60-MAIN TRUSS-04042016	New Bridge												

Fig 1. Bridge Explorer

From the Bridge Explorer (Fig 1) select TrainingBridge1 (BID 1) and double click (or right click and select open) to open it.

Once Bridge Workspace tree shows up, expand “Simple Span Structure” under “SUPERSTRUCTURE DEFINITIONS” in the tree by clicking on “+”. Then expand “MEMBERS” and select “G2”. Expand “G2” and select “Plate Girder (E)(C)” under “MEMBER ALTERNATIVES”. Expand “Plate Girder (E) (C)” by clicking on the “+”. Then the Bridge Workspace tree will be as shown in Fig 2.

LFR Detailed Report

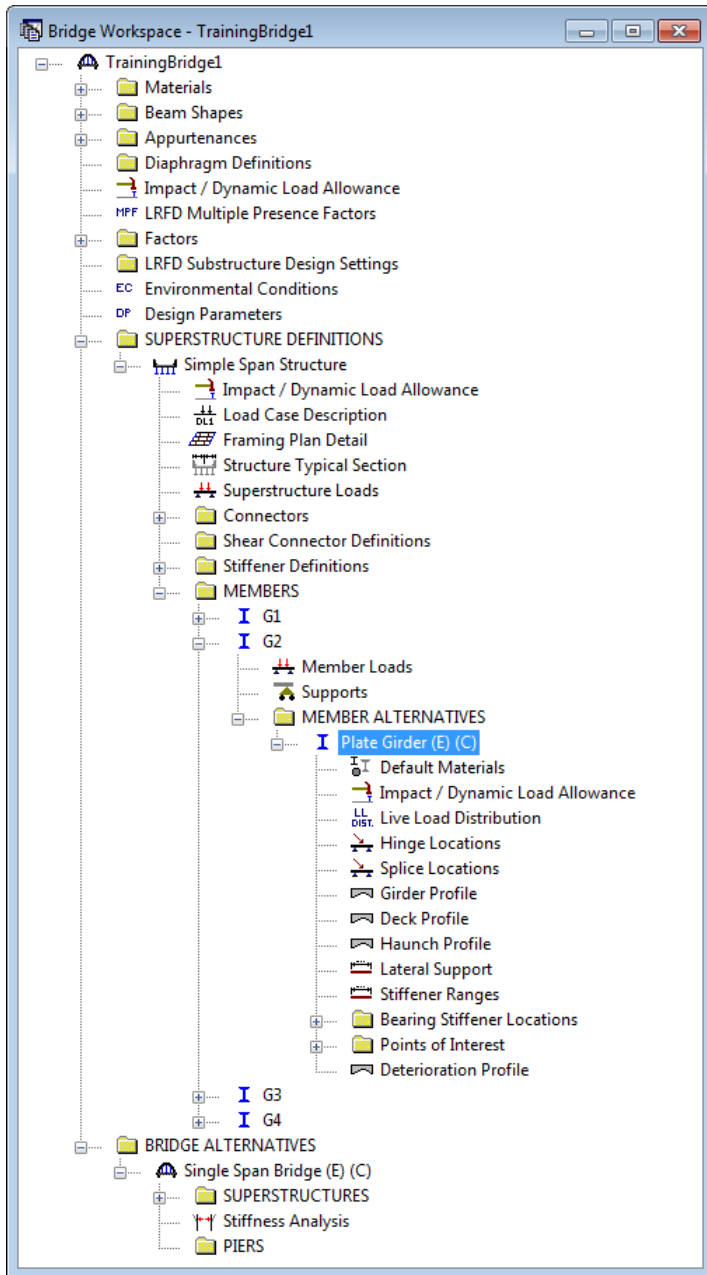


Fig 2. G2 - Girder Member Alternative Bridge Tree

After selecting the member alternative “Plate Girder (E) (C)”, go to toolbar and click on the “View Analysis Setting” button (Fig 3). Once Analysis Setting button is clicked Analysis Setting window will pop up (Fig 4).



Fig 3. View Analysis Setting Button

LFR Detailed Report

On Analysis Setting window select Rating Method as LFD. Go to Vehicles Selection column and select “HS 20-44” vehicle and click on “Add to Rating” button. Now Analysis Settings window will be as shown in Fig 4.

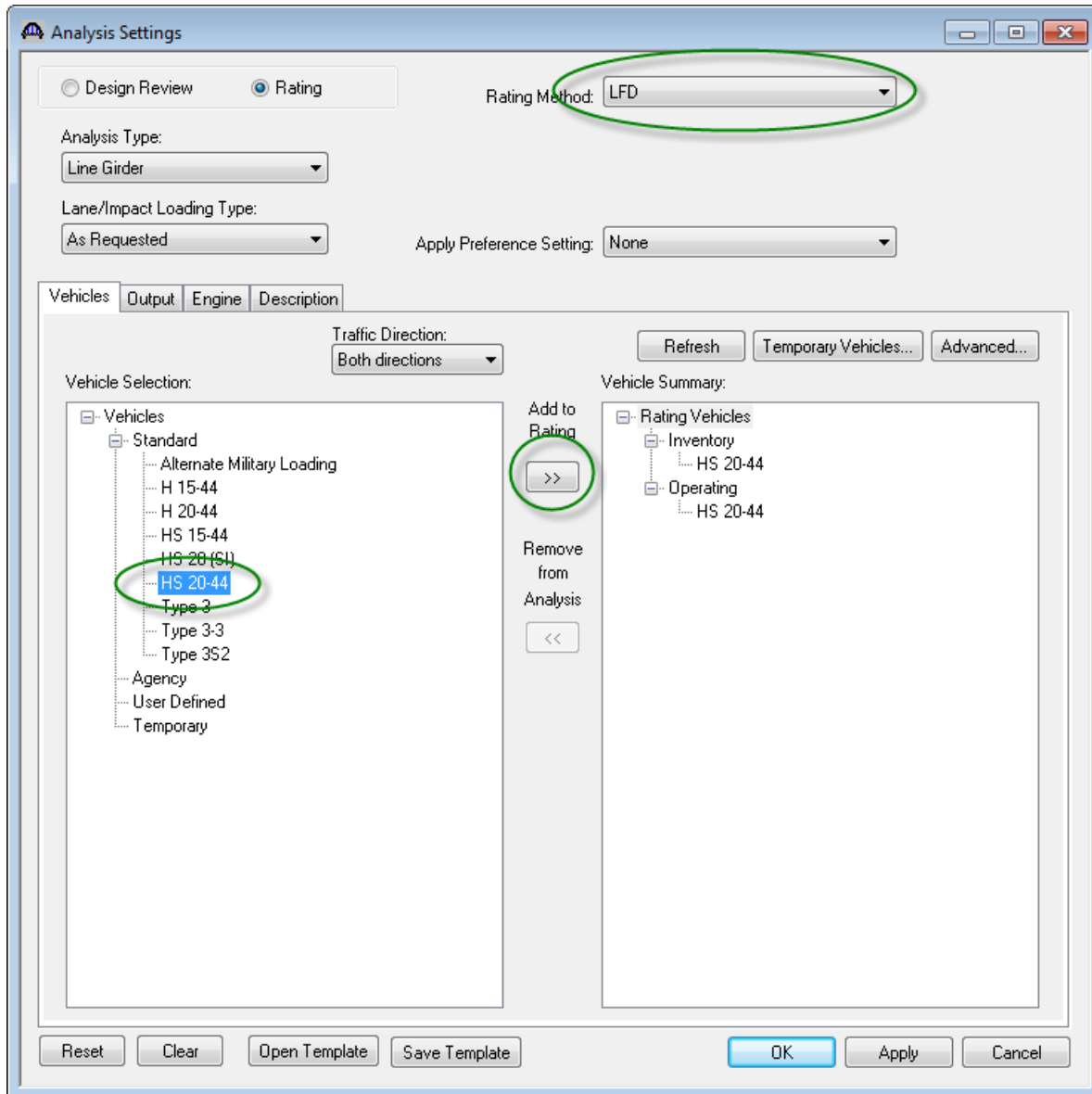


Fig 4. Analysis Settings Window

Click on “OK” button to save and close the window. Select G2-Plate Girder (E) (C) and click on “Analyze” button (Fig 5) on toolbar to run the analysis.



Fig 5. Analyze Button

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Once Analyze button is clicked “Analysis Progress” window (Fig 6) pops up. After analysis is completed click on “OK” button to close Analysis Progress window.

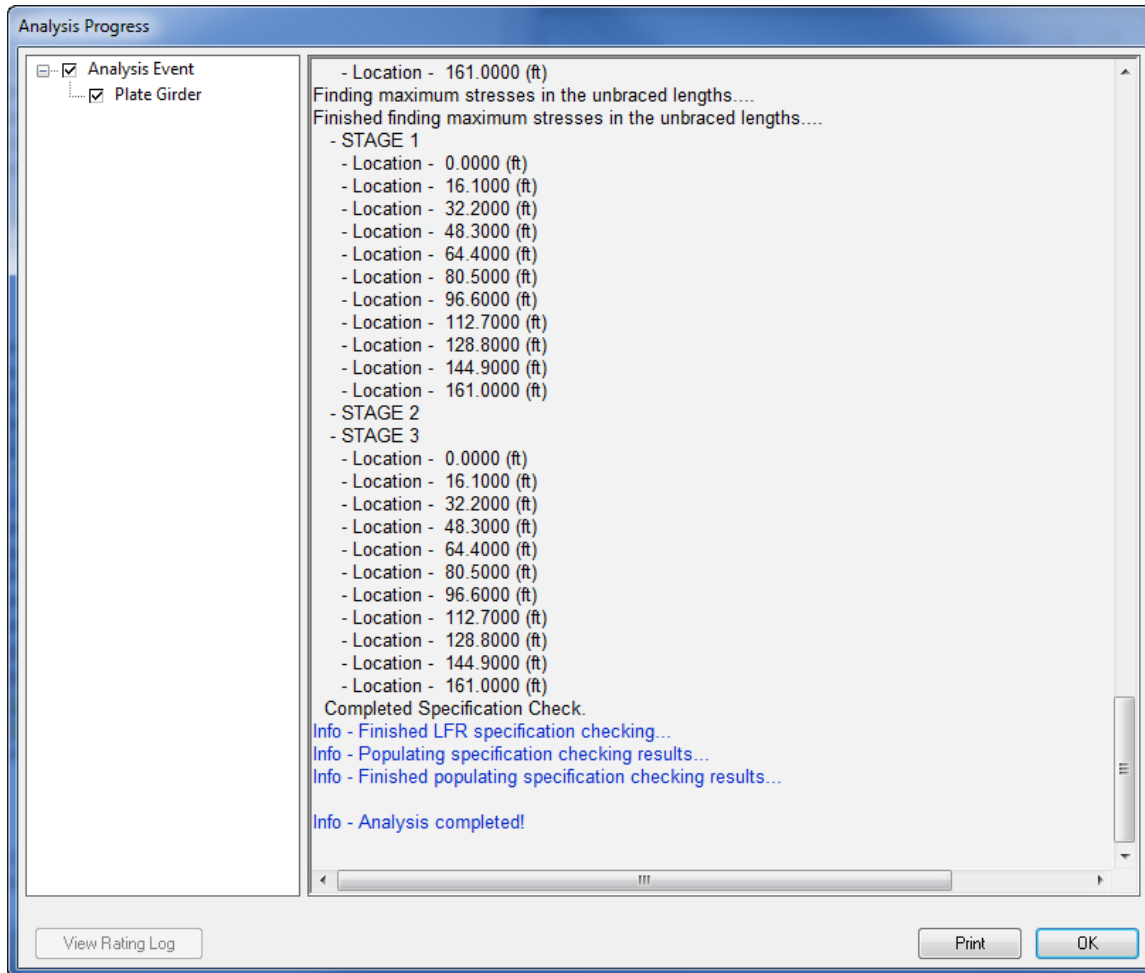


Fig 6. Analysis Progress Window.

Click on “Report Tool” button (Fig 7) on toolbar to open Report Tool window.

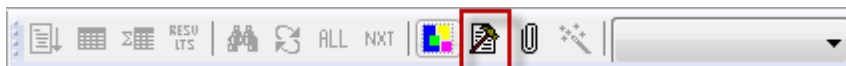


Fig 7. Report Tool Button

LFR Detailed Report

Select report Type as “LFD Analysis Output” in Report Tool window (Fig 8). List of options to generate various reports for LFD/LFR analysis will be populated.

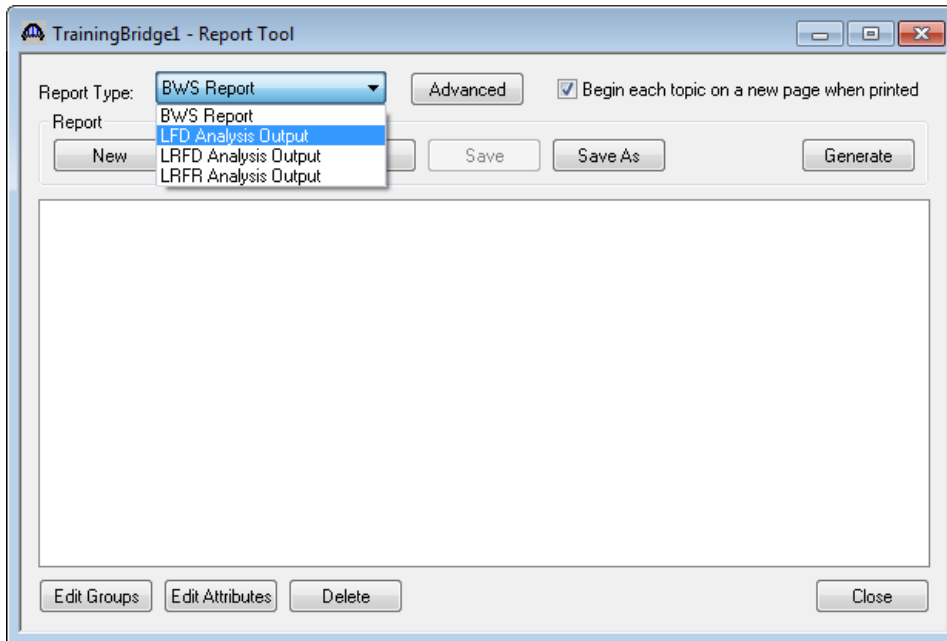


Fig 8. Report Tool Window.

Uncheck all the options except Detailed Rating Results. Now click on “Generate” button to generate LFR Detailed Rating Results report (Fig 10).

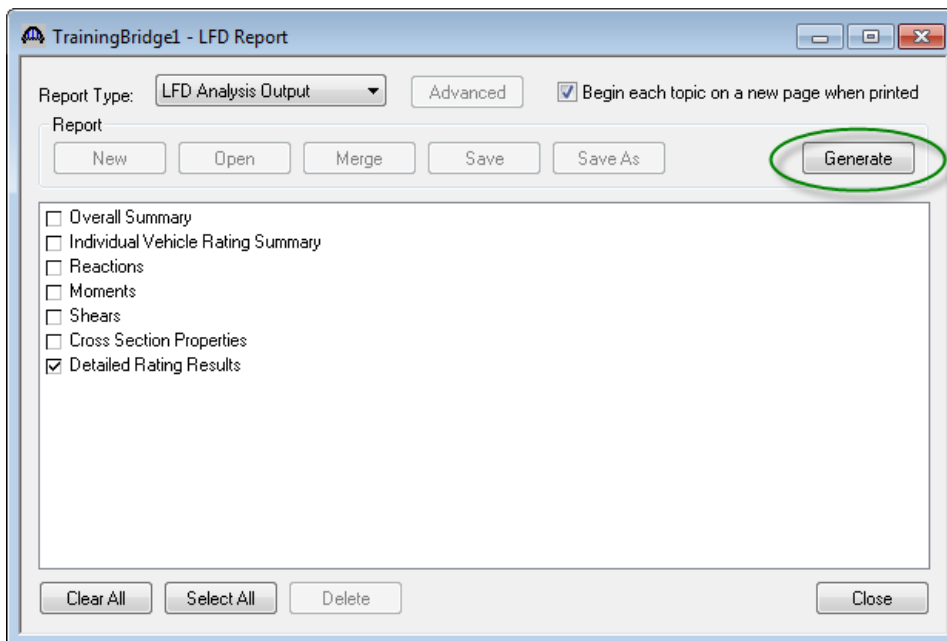


Fig 9. Report Tool Window for LFD Analysis Output.

LFR Detailed Report

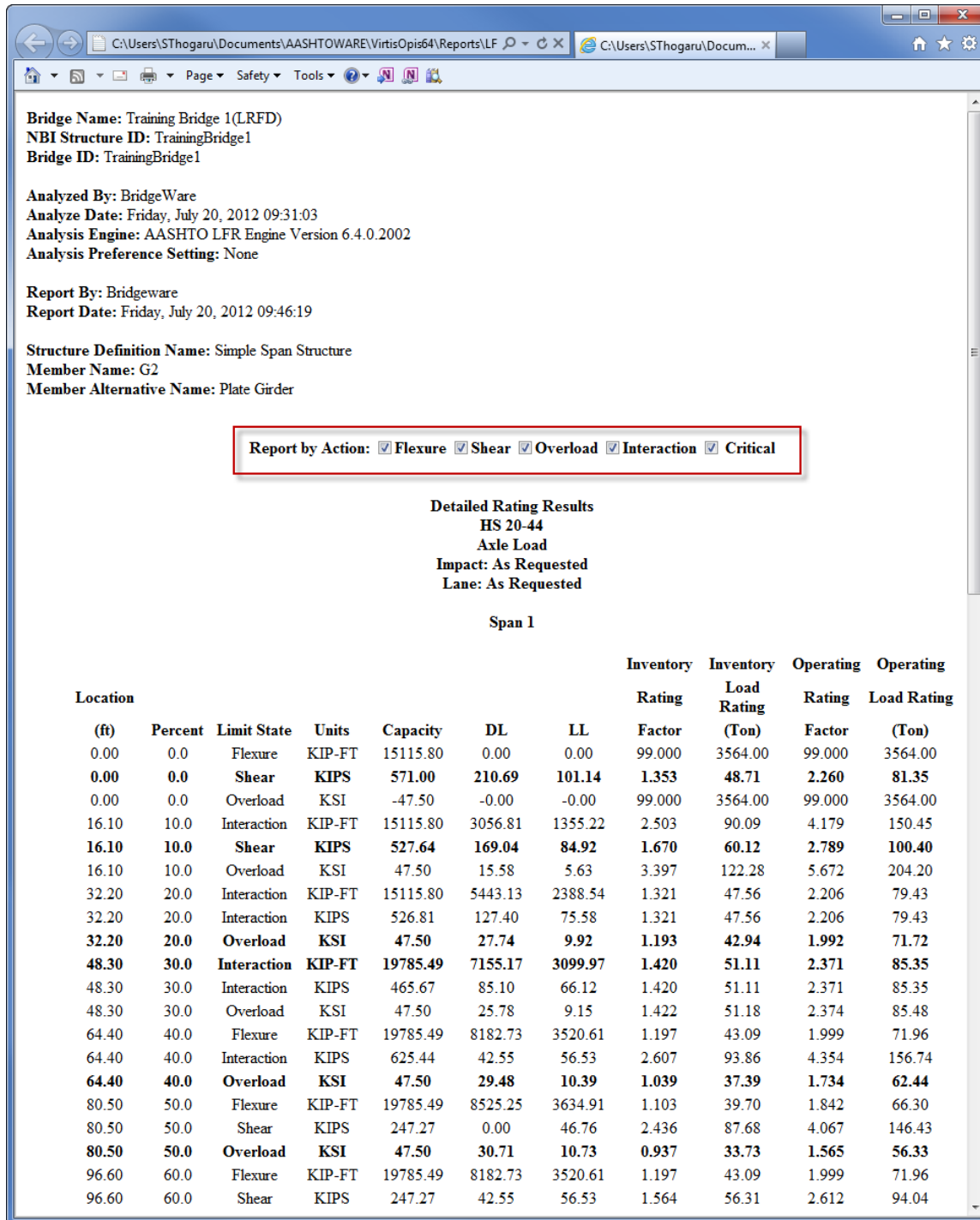


Fig 10. LFR Detailed rating results report

Above report would display details of critical rating factors at each location for Flexure, Shear, Overload and Interaction. Critical of four at a location is displayed in bold font. There are also checkboxes provided in the report for each type. By checking and unchecking them you can narrow your report for a particular type.

LFR Detailed Report

Similar report is available for LRFR analysis. To view LRFR Detailed Rating Results, select G2 - Plate Girder (E) (C) girder member alternative. Go to toolbar and click on View Analysis Setting button (Fig 3) to open Analysis Setting window. Click on Open Template button to open Template Library.

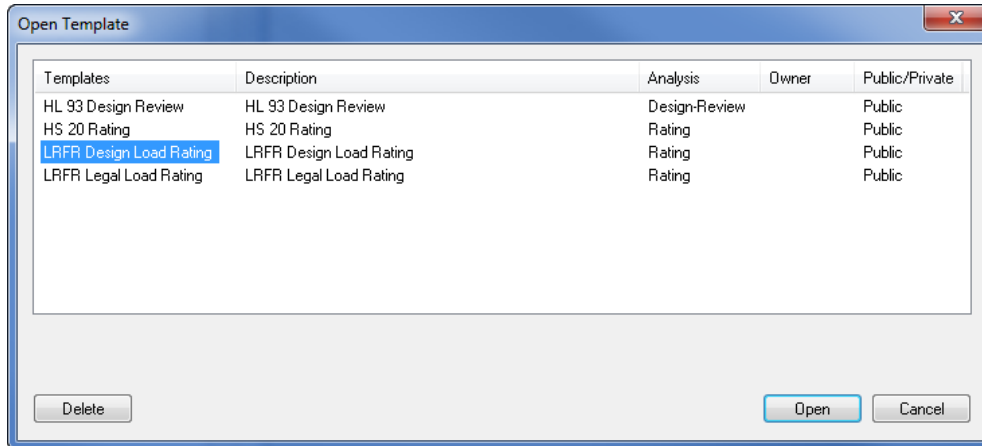


Fig 11. Open Template Window – LRFR Template selection

Select “LRFR Design Load Rating” Template from Template Library (Fig 11). Click on “Open” button to apply it to Analysis Settings. Select G2- Plate Girder (E) (C) and click “Analyze” Button (Fig. 5) on toolbar to run analysis. Once Analyze button is clicked, Analysis Progress window pops up. After analysis is completed click on “OK” button to close Analysis Progress window.

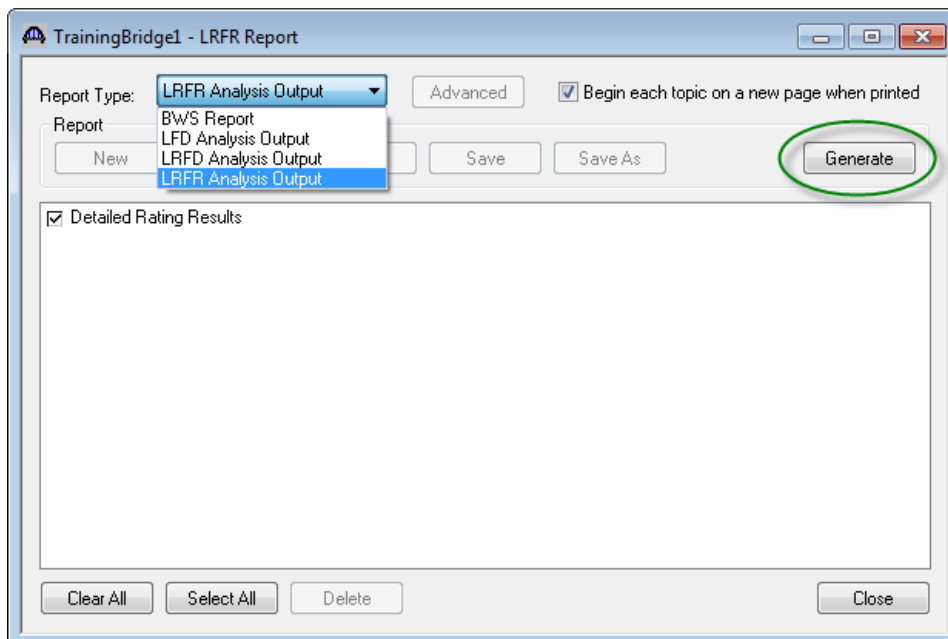


Fig 12. Report Tool Window for LRFR Analysis Output.

LFR Detailed Report

Click on Report Tool button (Fig 7) on toolbar to open Report Tool window. Select report Type as “LRFR Analysis Output” (Fig 12). Option to generate LRFR analysis “Detailed Rating Results” report will be populated. Now click on “Generate” button to generate the report (Fig 13).

Bridge Name: Training Bridge 1(LRFD)
 NBI Structure ID: TrainingBridge1
 Bridge ID: TrainingBridge1

Analyzed By: BridgeWare
 Analyze Date: Friday, July 20, 2012 15:36:02
 Analysis Engine: AASHTO LRFR Engine Version 6.4.0.2002
 Analysis Preference Setting: None

Report By: Bridgewater
 Report Date: Monday, July 23, 2012 08:38:37

Structure Definition Name: Simple Span Structure
 Member Name: G2
 Member Alternative Name: Plate Girder

Report by Action: Flexure Shear Overload Critical

Detailed Rating Results
 HL-93 (US)
 Truck + Lane
 Impact: As Requested
 Lane: As Requested

Span 1

Location (ft)	Percent	Limit State	Units	Capacity	DL	LL	Inventory Rating Factor	Inventory Load Rating (Ton)	Operating Rating Factor	Operating Load Rating (Ton)
0.00	0.0	Flexure	KSI	-50.00	-0.00	-0.00	99.000	3564.00	99.000	3564.00
0.00	0.0	Shear	KIPS	577.73	210.69	184.68	0.956	34.40	1.239	44.59
0.00	0.0	Overload	KSI	-47.50	-0.00	-0.00	99.000	3564.00	99.000	3564.00
16.10	10.0	Flexure	KSI	50.00	19.83	11.84	2.548	91.74	3.304	118.93
16.10	10.0	Shear	KIPS	529.81	169.04	159.44	1.126	40.52	1.459	52.53
16.10	10.0	Overload	KSI	47.50	15.58	8.79	3.630	130.67	4.719	169.87
32.20	20.0	Flexure	KSI	50.00	35.31	20.93	0.702	25.26	0.910	32.75
32.20	20.0	Shear	KIPS	528.98	127.40	119.15	1.757	63.26	2.278	82.00
32.20	20.0	Overload	KSI	47.50	27.74	15.55	1.271	45.75	1.652	59.47
48.30	30.0	Flexure	KSI	50.00	32.81	19.39	0.887	31.92	1.149	41.37
48.30	30.0	Shear	KIPS	467.91	85.10	99.33	2.067	74.41	2.680	96.46
48.30	30.0	Overload	KSI	47.50	25.78	14.40	1.508	54.30	1.961	70.59
64.40	40.0	Flexure	KSI	50.00	37.52	22.07	0.565	20.35	0.733	26.38
64.40	40.0	Shear	KIPS	627.53	42.55	80.69	4.059	146.14	5.262	189.44
64.40	40.0	Overload	KSI	47.50	29.48	16.40	1.099	39.57	1.429	51.44
80.50	50.0	Flexure	KSI	50.00	39.09	22.86	0.477	17.17	0.618	22.26
80.50	50.0	Shear	KIPS	239.20	0.00	63.23	2.162	77.82	2.802	100.87
80.50	50.0	Overload	KSI	47.50	30.71	16.98	0.988	35.58	1.285	46.26
96.60	60.0	Flexure	KSI	50.00	37.52	22.07	0.565	20.35	0.733	26.38
96.60	60.0	Shear	KIPS	239.20	42.55	80.69	1.309	47.14	1.697	61.10
96.60	60.0	Overload	KSI	47.50	29.48	16.40	1.099	39.57	1.429	51.44

Fig 13. LRFR Detailed rating results report

Above report would display details of critical rating factors at each location for Flexure, Shear and Overload. Critical of three at a location is displayed in bold font. There are also checkboxes provided in report for each type. By checking and unchecking them you can narrow your report for a particular type.