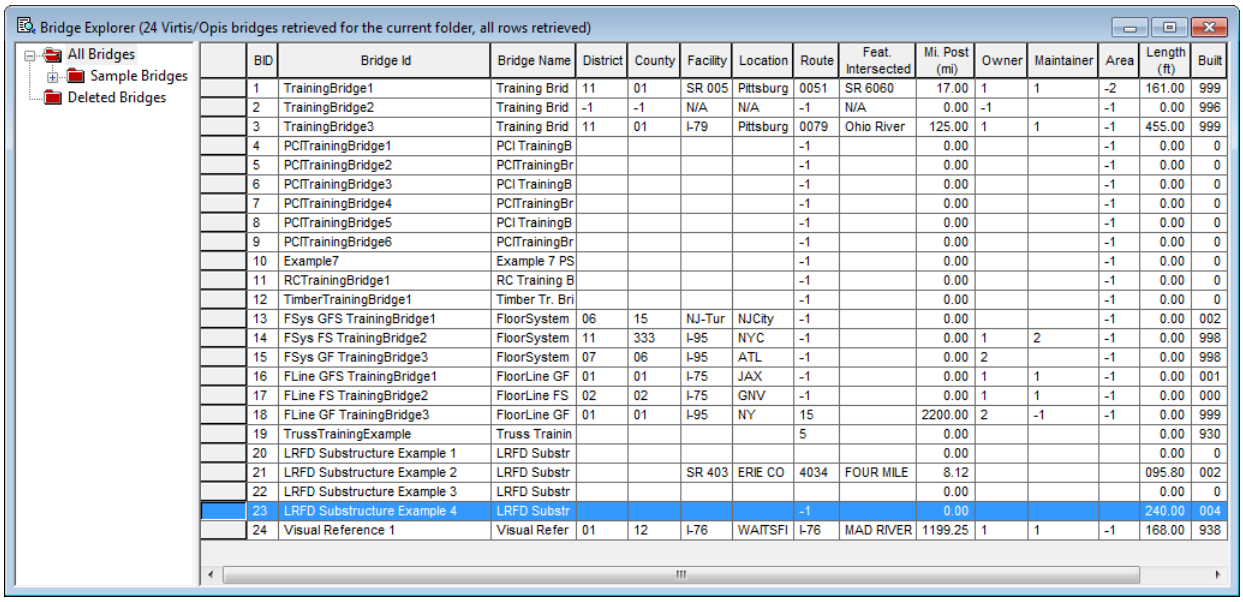
AASHTOWare Bridge Design Training - (BrD 6.4)

Substructure Results Report – Table of Contents

Topics Covered

- Table of Contents feature in substructure results report.



	BID	Bridge Id	Bridge Name	District	County	Facility	Location	Route	Feat. Intersected	Mi. Post (mi)	Owner	Maintainer	Area	Length (ft)	Built
	1	TrainingBridge1	Training Brid	11	01	SR 005	Pittsburg	0051	SR 6060	17.00	1	1	-2	161.00	999
	2	TrainingBridge2	Training Brid	-1	-1	N/A	N/A	-1	N/A	0.00	-1		-1	0.00	996
	3	TrainingBridge3	Training Brid	11	01	I-79	Pittsburg	0079	Ohio River	125.00	1	1	-1	455.00	999
	4	PCITrainingBridge1	PCI TrainingB					-1		0.00			-1	0.00	0
	5	PCITrainingBridge2	PCITrainingBr					-1		0.00			-1	0.00	0
	6	PCITrainingBridge3	PCI TrainingB					-1		0.00			-1	0.00	0
	7	PCITrainingBridge4	PCITrainingBr					-1		0.00			-1	0.00	0
	8	PCITrainingBridge5	PCI TrainingB					-1		0.00			-1	0.00	0
	9	PCITrainingBridge6	PCITrainingBr					-1		0.00			-1	0.00	0
	10	Example7	Example 7 PS					-1		0.00			-1	0.00	0
	11	RCTrainingBridge1	RC Training B					-1		0.00			-1	0.00	0
	12	TimberTrainingBridge1	Timber Tr. Bri					-1		0.00			-1	0.00	0
	13	FSys GFS TrainingBridge1	FloorSystem	06	15	NJ-Tur	NJCity	-1		0.00			-1	0.00	002
	14	FSys FS TrainingBridge2	FloorSystem	11	333	I-95	NYC	-1		0.00	1	2	-1	0.00	998
	15	FSys GF TrainingBridge3	FloorSystem	07	06	I-95	ATL	-1		0.00	2		-1	0.00	998
	16	FLine GFS TrainingBridge1	FloorLine GF	01	01	I-75	JAX	-1		0.00	1	1	-1	0.00	001
	17	FLine FS TrainingBridge2	FloorLine FS	02	02	I-75	GNV	-1		0.00	1	1	-1	0.00	000
	18	FLine GF TrainingBridge3	FloorLine GF	01	01	I-95	NY	15		2200.00	2	-1	-1	0.00	999
	19	TrussTrainingExample	Truss Trainin					5		0.00				0.00	930
	20	LRFD Substructure Example 1	LRFD Substr							0.00				0.00	0
	21	LRFD Substructure Example 2	LRFD Substr			SR 403	ERIE CO	4034	FOUR MILE	8.12				095.80	002
	22	LRFD Substructure Example 3	LRFD Substr							0.00				0.00	0
	23	LRFD Substructure Example 4	LRFD Substr					-1		0.00				240.00	004
	24	Visual Reference 1	Visual Refer	01	12	I-76	WAITSFI	I-76	MAD RIVER	1199.25	1	1	-1	168.00	938

Fig 1. Bridge Explorer

From the Bridge Explorer (Fig 1) select LRFD Substructure Example 4 (BID23) and double click (or right click and select open) to open it.

Once Bridge Workspace tree shows up expand “PIERS” at the end of tree by clicking on “+”. Then expand “pier 1” and select Pier 1 Hammerhead (E) (C) in the pier alternative. Expand pier alternative (Pier 1 Hammerhead) by clicking on “+”. Then Bridge Workspace tree will be as shown in Fig 2.

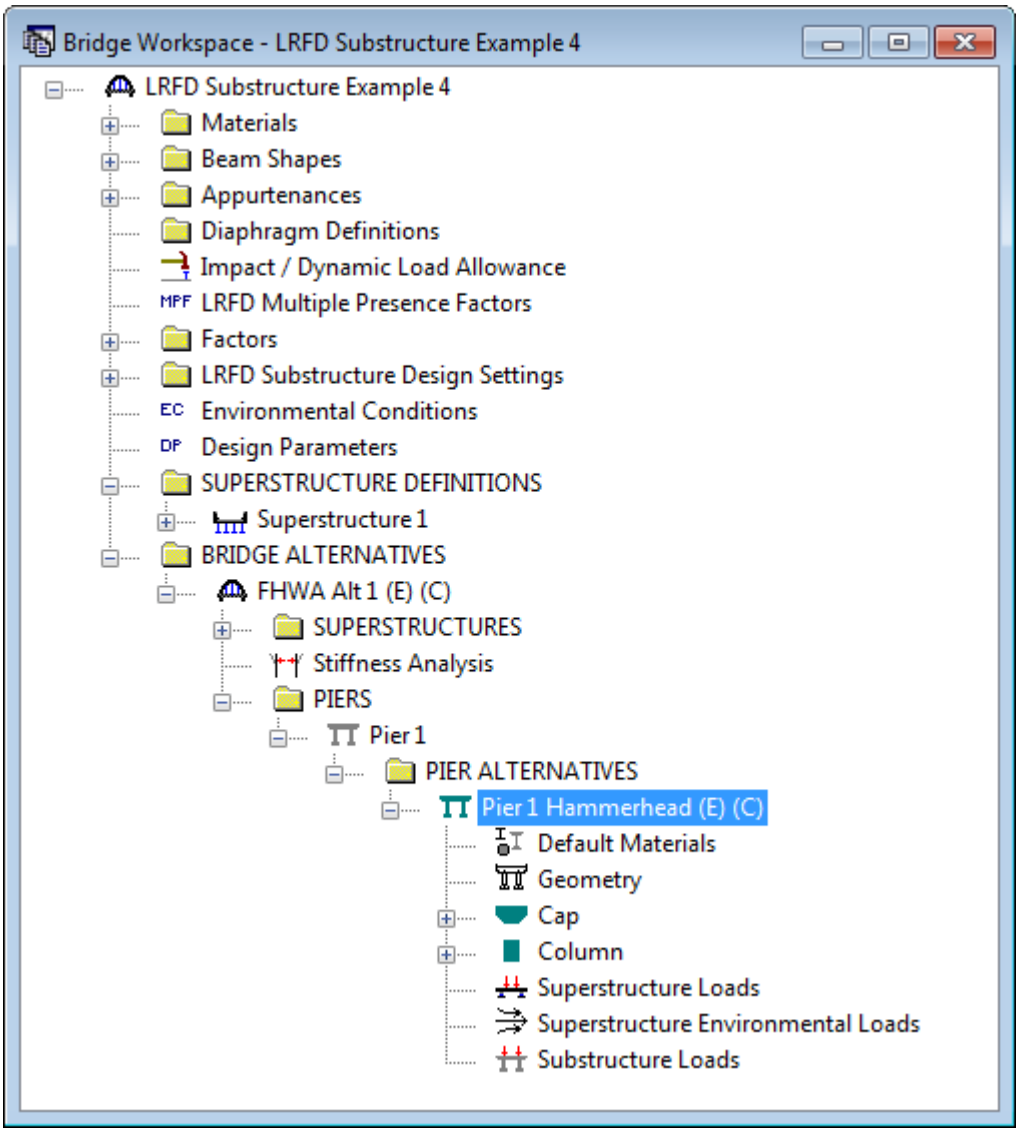


Fig 2. Pier Alternative in Bridge Tree

Run spec check analysis for Pier Alternative (Pier1 Hammerhead (E) (C)) by selecting the alternative and clicking “Spec Check” button (Fig 3) on toolbar.

Fig 3. Spec Check Button

After spec check is initialized bridge validation window will pop up. Once bridge validation is completed, click on “Continue Spec Check” button to perform spec check analysis. After “Continue Spec Check” button is clicked Substructure Analysis Progress window will be populated (Fig 4).

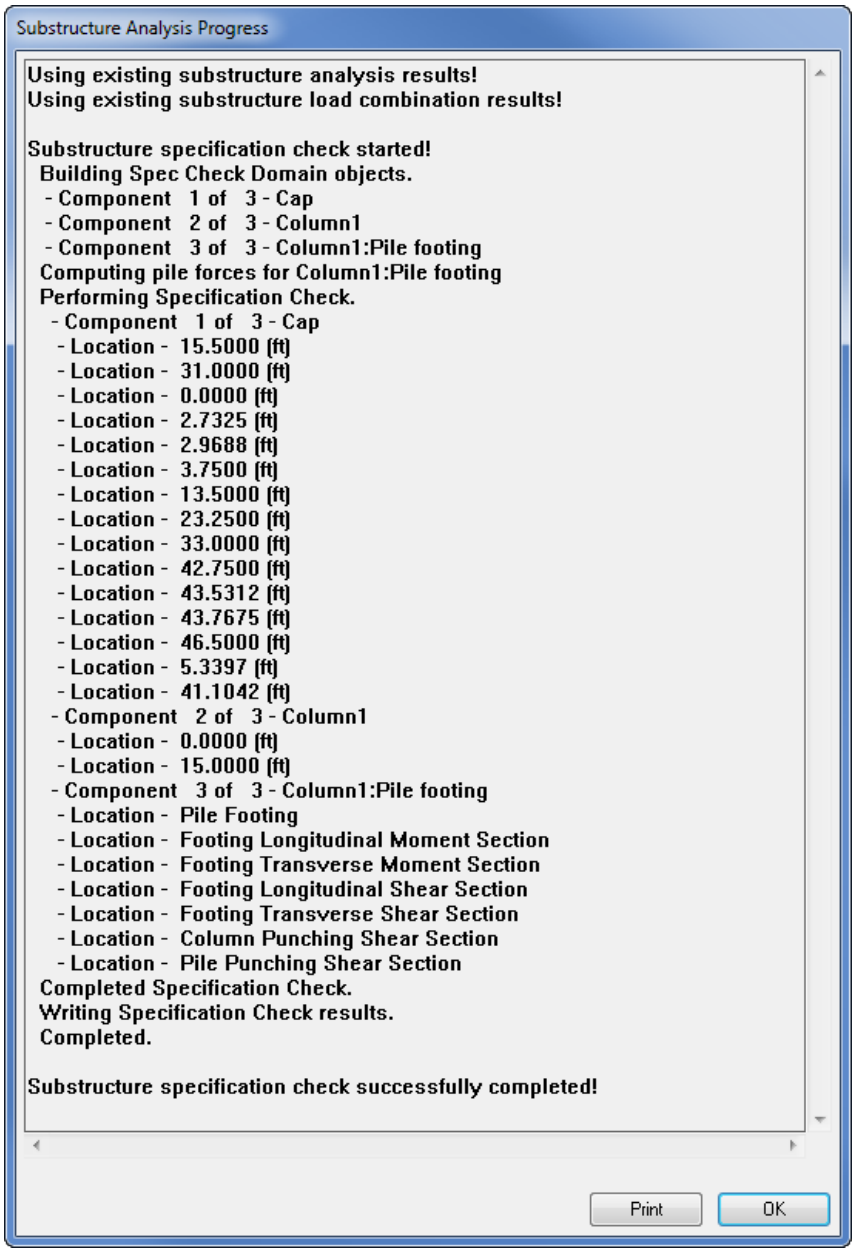


Fig4. Substructure Analysis Progress Window

After substructure specification check is completed click on “OK” to close window. Then click on “Substructure Tabular Results” button (Fig.5) on Toolbar. Once Substructure Tabular Results button is clicked, Tabular Results window will pop up.

Fig 5. Substructure Tabular Results Button

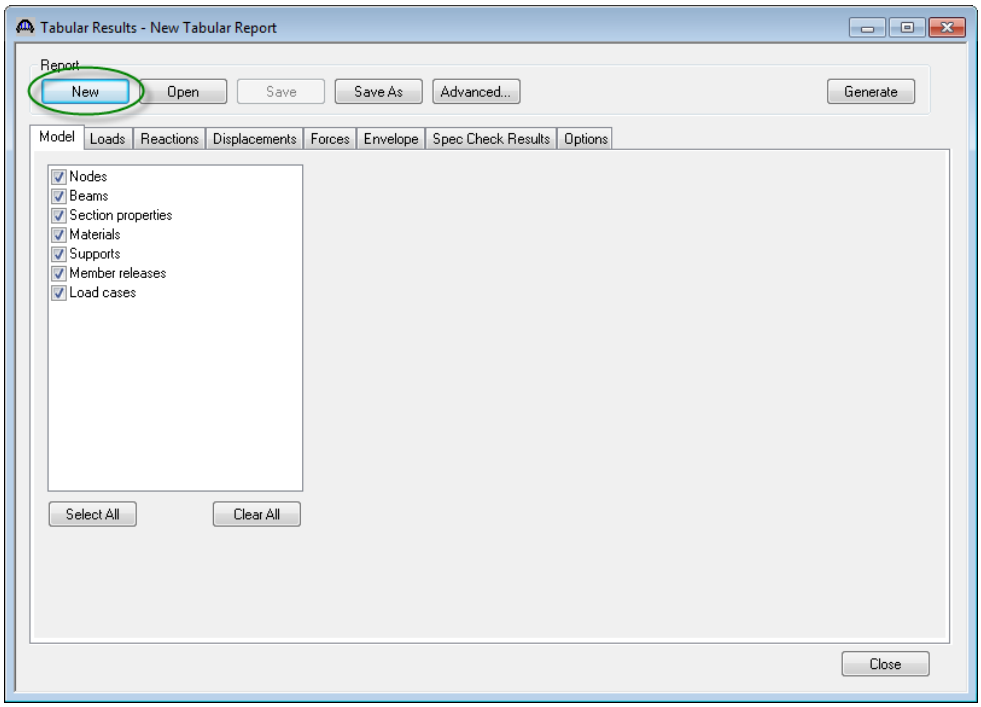


Fig 6. Tabular Results – New Tabular Report window.

On Tabular Results window click “New” button to open up a new report definition (Fig 6). Now on “Loads” tab select Strength-I limit state (Fig 7). Click on “Generate” button to generate report .

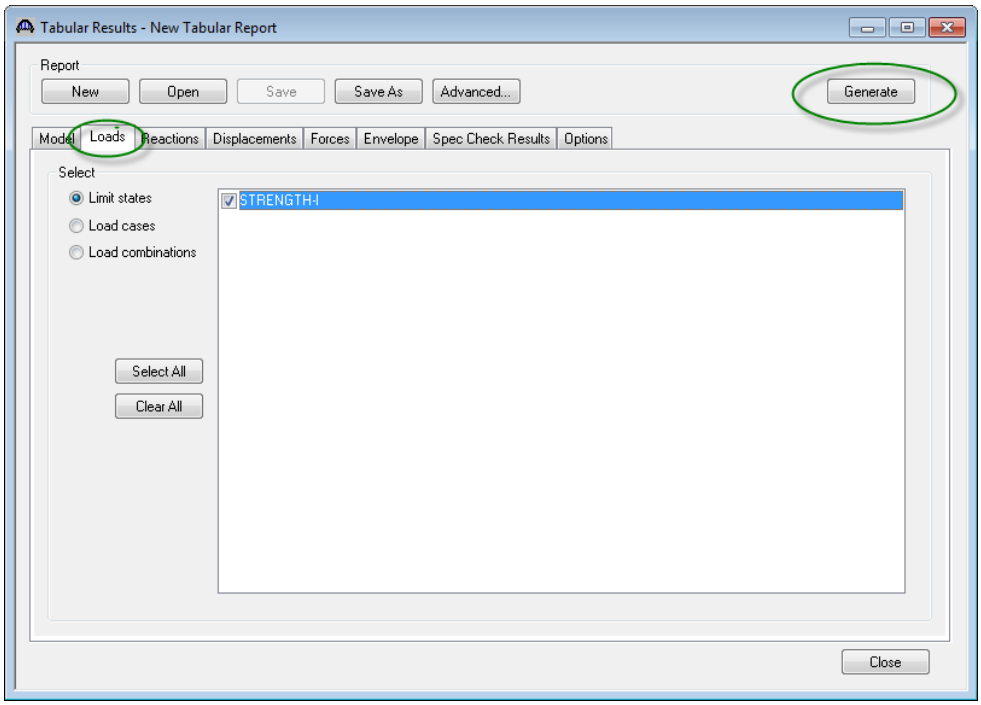
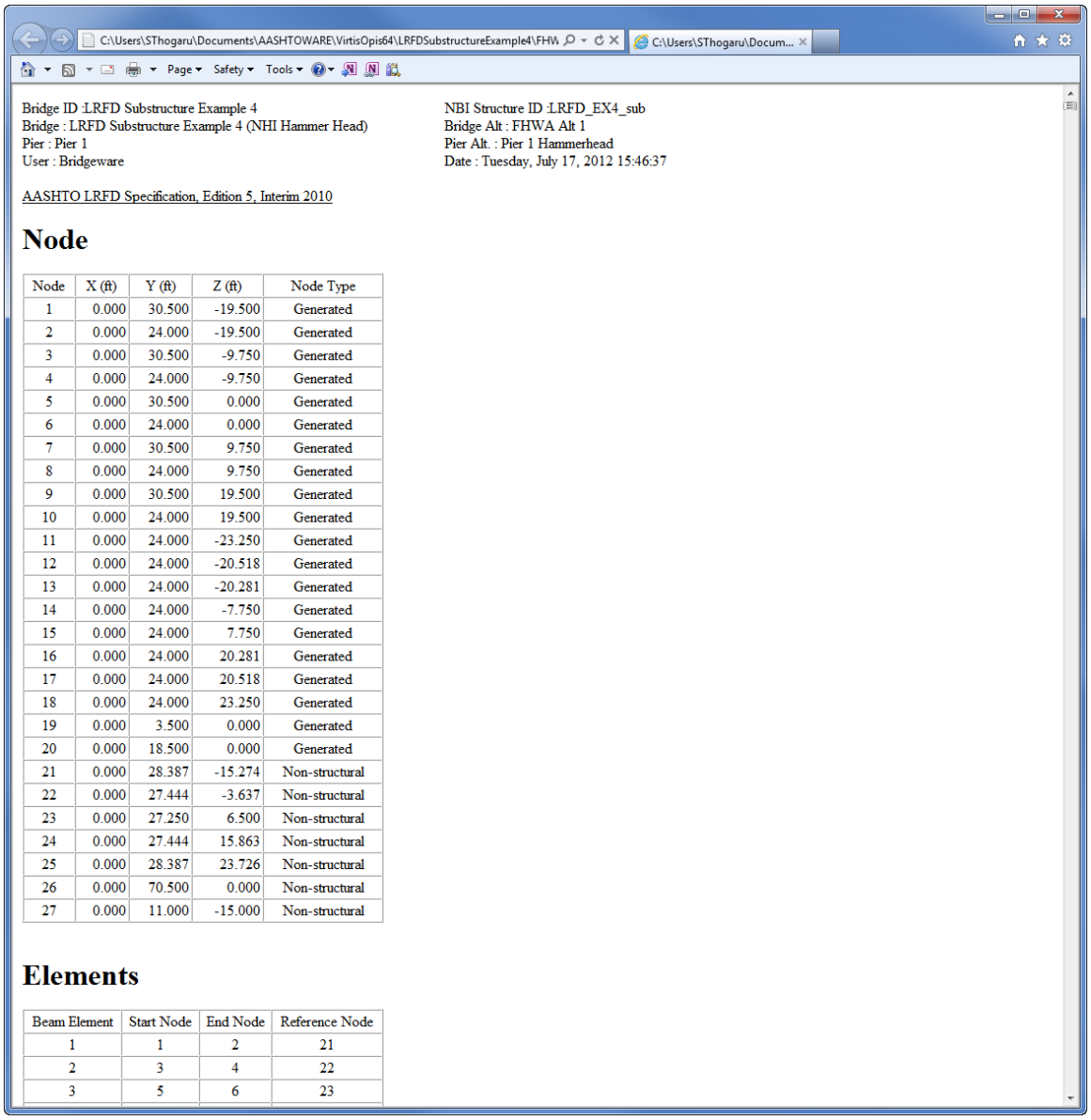


Fig 7. New Tabular Report – Loads Tab



Bridge ID :LRFD Substructure Example 4
Bridge : LRFD Substructure Example 4 (NHI Hammer Head)
Pier : Pier 1
User : Bridgeware

NBI Structure ID :LRFD_EX4_sub
Bridge Alt : FHWA Alt 1
Pier Alt. : Pier 1 Hammerhead
Date : Tuesday, July 17, 2012 15:46:37

AASHTO LRFD Specification, Edition 5, Interim 2010

Node

Node	X (ft)	Y (ft)	Z (ft)	Node Type
1	0.000	30.500	-19.500	Generated
2	0.000	24.000	-19.500	Generated
3	0.000	30.500	-9.750	Generated
4	0.000	24.000	-9.750	Generated
5	0.000	30.500	0.000	Generated
6	0.000	24.000	0.000	Generated
7	0.000	30.500	9.750	Generated
8	0.000	24.000	9.750	Generated
9	0.000	30.500	19.500	Generated
10	0.000	24.000	19.500	Generated
11	0.000	24.000	-23.250	Generated
12	0.000	24.000	-20.518	Generated
13	0.000	24.000	-20.281	Generated
14	0.000	24.000	-7.750	Generated
15	0.000	24.000	7.750	Generated
16	0.000	24.000	20.281	Generated
17	0.000	24.000	20.518	Generated
18	0.000	24.000	23.250	Generated
19	0.000	3.500	0.000	Generated
20	0.000	18.500	0.000	Generated
21	0.000	28.387	-15.274	Non-structural
22	0.000	27.444	-3.637	Non-structural
23	0.000	27.250	6.500	Non-structural
24	0.000	27.444	15.863	Non-structural
25	0.000	28.387	23.726	Non-structural
26	0.000	70.500	0.000	Non-structural
27	0.000	11.000	-15.000	Non-structural

Elements

Beam Element	Start Node	End Node	Reference Node
1	1	2	21
2	3	4	22
3	5	6	23

Fig 8. Substructure Tabular Report

Linked table of contents report is generated by checking “Generate linked table of contents” check box on “Options” tab (Fig 9). Click on the “Generate” button to generate report. Generated linked table of contents report is as shown in Fig 10.

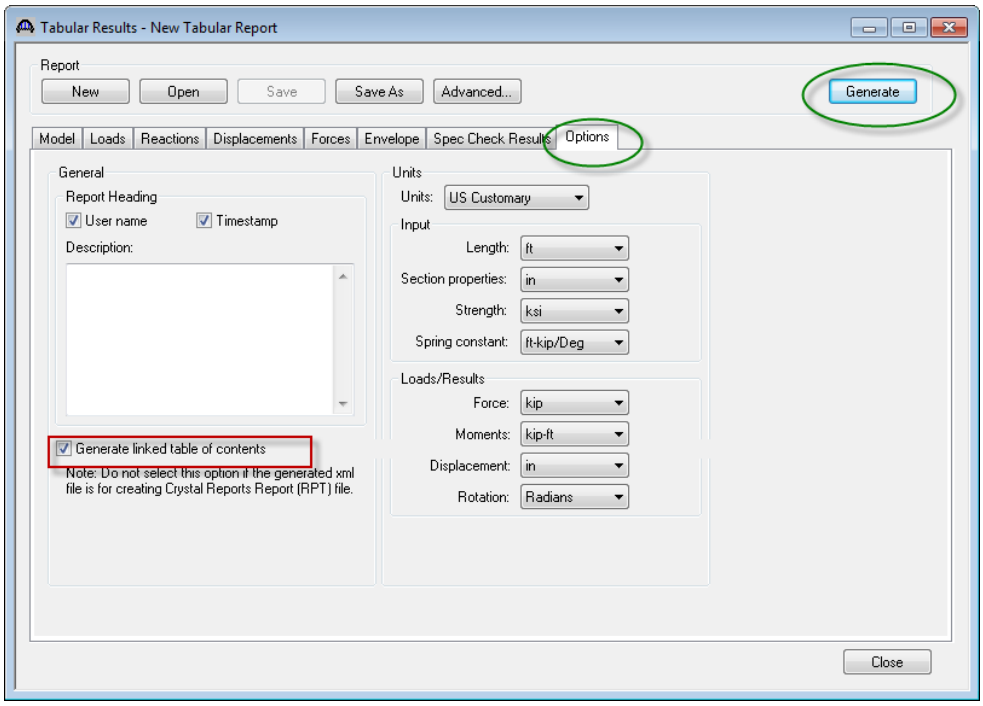


Fig 9. New Tabular Report – Options Tab

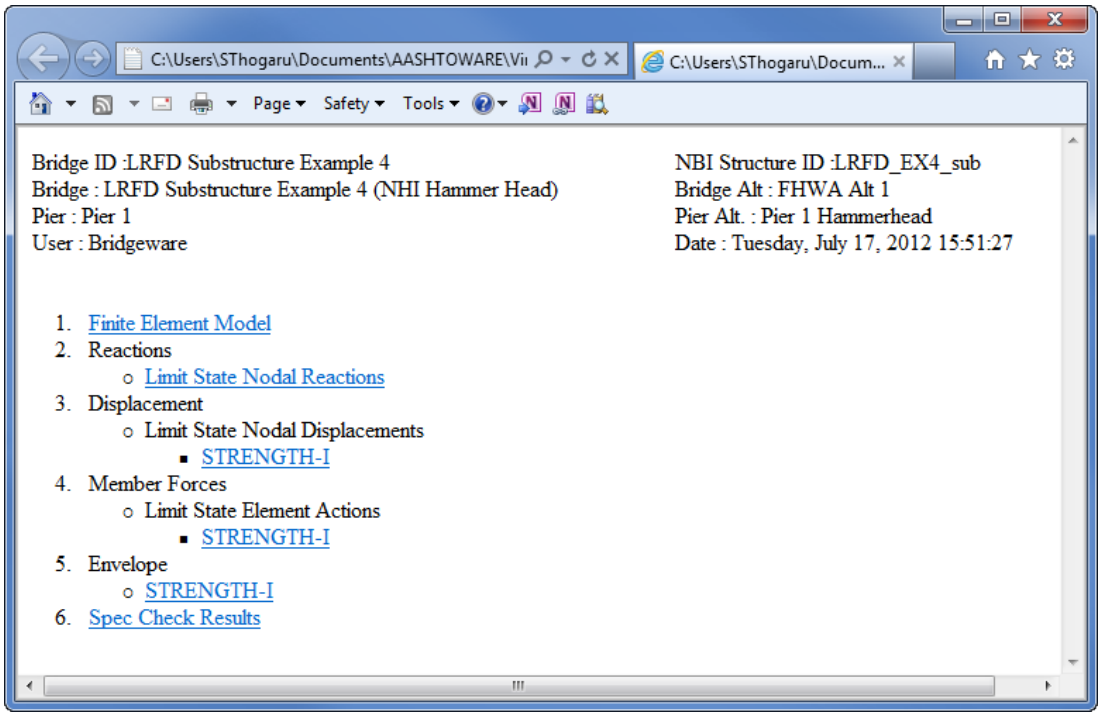
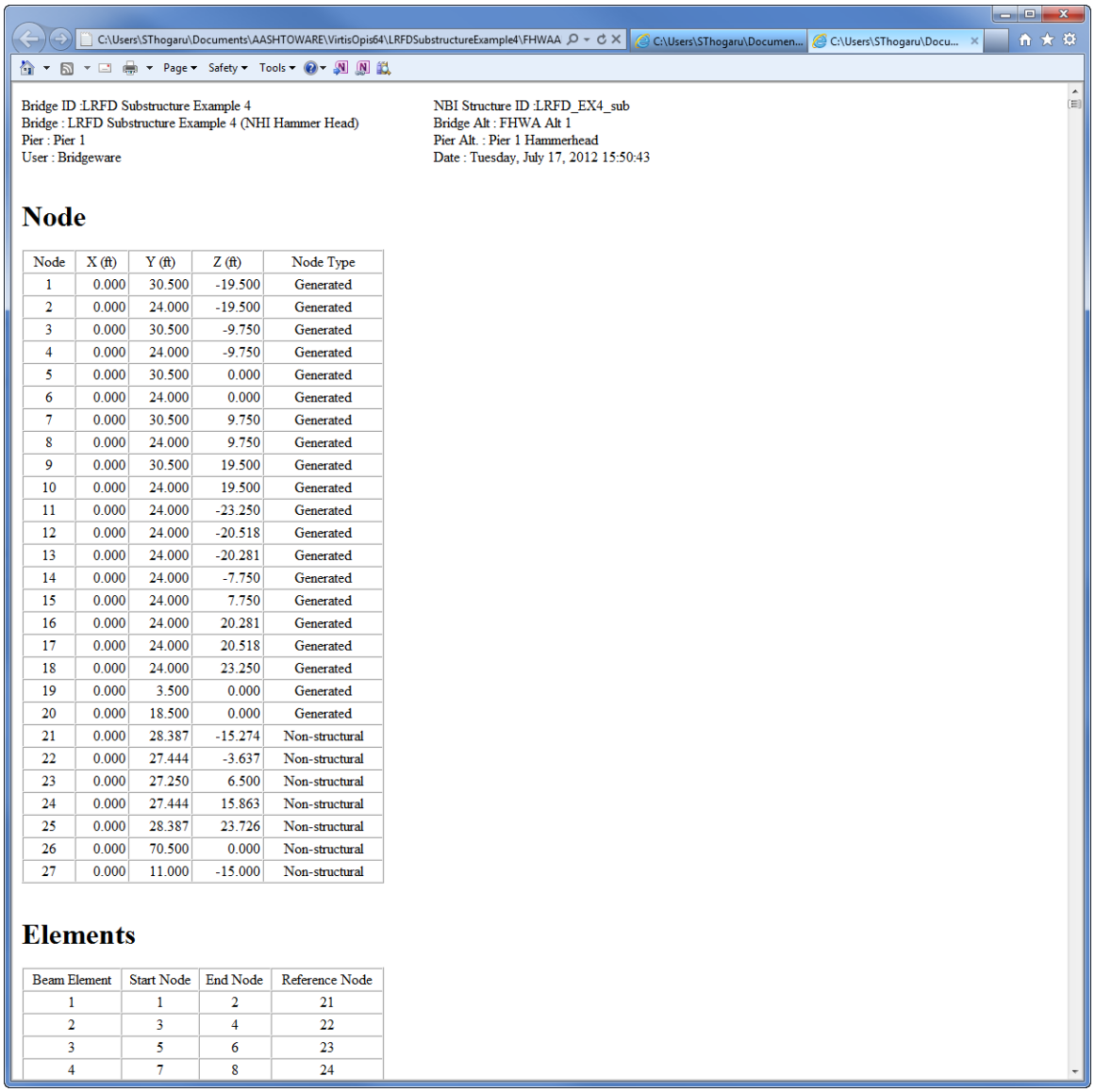


Fig 10. Substructures Tabular Report – Linked Table of Contents

Click on Finite Element Model link to view Finite Element Model report (Fig. 11) which would open on a new tab. Similarly all other reports can be viewed by clicking on corresponding links, which would open reports on new tabs.



Bridge ID :LRFD Substructure Example 4
Bridge : LRFD Substructure Example 4 (NHI Hammer Head)
Pier : Pier 1
User : Bridgeware

NBI Structure ID :LRFD_EX4_sub
Bridge Alt : FHWA Alt 1
Pier Alt. : Pier 1 Hammerhead
Date : Tuesday, July 17, 2012 15:50:43

Node

Node	X (ft)	Y (ft)	Z (ft)	Node Type
1	0.000	30.500	-19.500	Generated
2	0.000	24.000	-19.500	Generated
3	0.000	30.500	-9.750	Generated
4	0.000	24.000	-9.750	Generated
5	0.000	30.500	0.000	Generated
6	0.000	24.000	0.000	Generated
7	0.000	30.500	9.750	Generated
8	0.000	24.000	9.750	Generated
9	0.000	30.500	19.500	Generated
10	0.000	24.000	19.500	Generated
11	0.000	24.000	-23.250	Generated
12	0.000	24.000	-20.518	Generated
13	0.000	24.000	-20.281	Generated
14	0.000	24.000	-7.750	Generated
15	0.000	24.000	7.750	Generated
16	0.000	24.000	20.281	Generated
17	0.000	24.000	20.518	Generated
18	0.000	24.000	23.250	Generated
19	0.000	3.500	0.000	Generated
20	0.000	18.500	0.000	Generated
21	0.000	28.387	-15.274	Non-structural
22	0.000	27.444	-3.637	Non-structural
23	0.000	27.250	6.500	Non-structural
24	0.000	27.444	15.863	Non-structural
25	0.000	28.387	23.726	Non-structural
26	0.000	70.500	0.000	Non-structural
27	0.000	11.000	-15.000	Non-structural

Elements

Beam Element	Start Node	End Node	Reference Node
1	1	2	21
2	3	4	22
3	5	6	23
4	7	8	24

Fig 11. Substructures Tabular Report – Finite Element Model