



Milvon to West River Catenary Structure Assessment

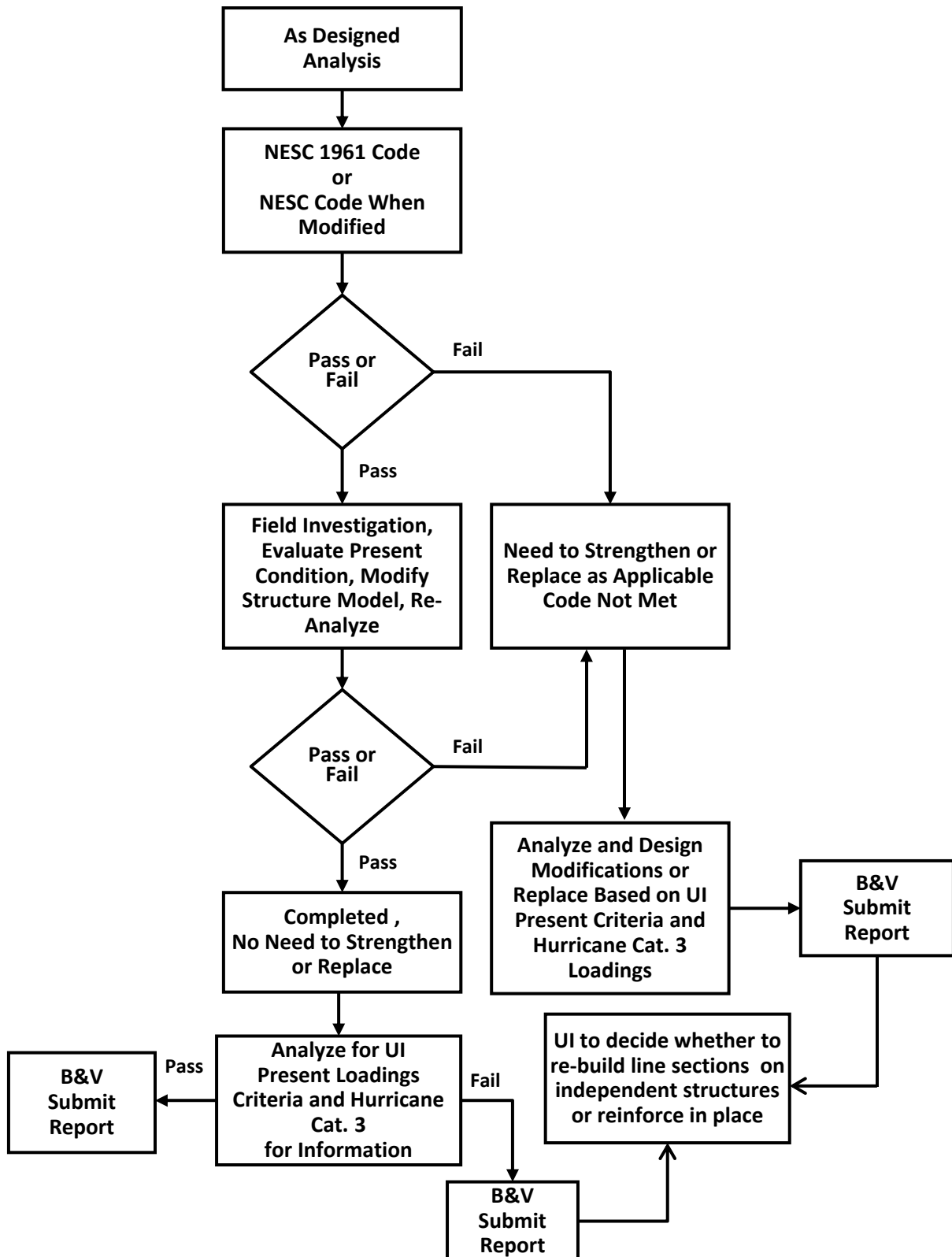
DOCKET 508
EXHIBIT CSC-12-1
ATTACHMENT MWR-A

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-A

STRUCTURAL ANALYSIS PROCEDURE

The United Illuminating Company 115 kV Railroad Catenary Structural Analysis Procedure





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ATTACHMENT MWR-B

STRUCTURE LIST MILVON TO WOODMONT

Applicable Milvon-Woodmont Catenary Structures					
Item #	Type 1&2 Structure Numbers	Type 3 Structure Numbers	Type 4 Structure Numbers	Type 5 Structure Numbers	Type 6 Structure Numbers
1	B896	B889	B888	B901	
2	B897	B890	B908	B902	
3	B898	B891	B909	B903	
4	B899	B892	B911	B904	
5	B900	B895	B912	B914	
6	B921	B906	B913	B915	
7	B922	B907	B928	B916	
8	B923	B916A	B929		
9	B924	B920	B930		
10	B925	B945	B931		
11	B926	B946	B932		
12	B927	B947	B933		
13	B937		B934		
14	B938		B935		
15	B939		B936		
16	B940				
17	B941				
18	B942				
19	B943				
20	B944				
21	B948				
22	B949				
23	B950				
24	B951				
25	B952				
26	B953				
27	B954				
28	B955				
29	B956				
TOTAL	29	12	15	7	0



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ATTACHMENT MWR-C

STRUCTURE LIST WOODMONT TO ALLINGS CROSSING

Applicable Woodmont-Allings Crossing Catenary Structures					
Item #	Type 1&2 Structure Numbers	Type 3 Structure Numbers	Type 4 Structure Numbers	Type 5 Structure Numbers	Type 6 Structure Numbers
1	B959	B969			B972
2	B960	B970			B973
3	B961	B971			
4	B963				
5	B964				
6	B965				
7	B966				
8	B967				
9	B974				
10	B975				
11	B976				
12	B977				
13	B978				
14	B979				
15	B980				
16	B981				
17	B982				
18	B983				
19	B984				
20	B985				
21	B986				
22	B987				
23	B988				
24	B989				
25	B990				
26	B991				
27	B992				
28	B993				
29	B994				
30	B995				
31	B996				
32	B997				
33	B998				
34	B999				
35	B1000				
36	B1001				
37	B1002				
38	B1003				
39	B1004				
40	B1105				
41	B1006				
42	B1007				
TOTAL					
	42	3	0	0	2



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ATTACHMENT MWR-D

STRUCTURE LIST ALLINGS CROSSING TO ELMWEST

Applicable Allings Crossing-Elmwest Catenary Structures					
Item #	Type 1&2 Structure Numbers	Type 3 Structure Numbers	Type 4 Structure Numbers	Type 5 Structure Numbers	Type 6 Structure Numbers
1	B1017	B1015	B1009	B1022	
2	B1018	B1024	B1010	B1023	
3	B1027		B1011		
4	B1028		B1012		
5			B1013		
6			B1014		
7			B1021		
8					
TOTAL					
	4	2	7	2	0



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ATTACHMENT MWR-E

STRUCTURE LIST ELMWEST TO WEST RIVER

Applicable Elmwest-West River Catenary Structures					
Item #	Type 1&2 Structure Numbers	Type 3 Structure Numbers	Type 4 Structure Numbers	Type 5 Structure Numbers	Type 6 Structure Numbers
1	B1030				B1044
2	B1031				
3	B1032				
4	B1033				
TOTAL	4	0	0	0	1



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ATTACHMENT MWR-E.1

TYPICAL WIND SPAN AND SPAN OUTLIERS



Structure Type	Maximum Wind Span (ft) (excluding outliers)
Type 1&2	305
Type 3	302
Type 4	305
Type 5	305
Type 6	229

Span Summary

Structure/ Structure Type	Maximum Wind Span (ft)
B1009/4	306
B1011/4	306
B1012/4	306
B1013/4	306
B1014/4	306
B1015/3	306
B1017/1	306
B1018/1	306
B1021/4	306
B1022/5	306
B1027/1	307
B1028/1	307
B1030/1	307
B1031/1	307
B1032/1	307
B1033/1	307

Span Outlier Summary



ATTACHMENT MWR-E.2

ASSESSMENT OF DEVIATIONS FROM TYPICAL REPRESENTATIVE STRUCTURES



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Structure Type	Comparison	Deviation	Structure(s)
1 & 2	outlier	Taller bonnet/pole extension than typical	B898, B900, B926, B960, B961, B990, B1032, B1033
	outlier	Suspected Dead-end structure	B900, B959, B963, B964, B1017, B1018
	outlier	Frame off of posts	B963, B964, B965
	no impact	Frame at supports instead of cross arms	B978, B1018
3	outlier	Suspected Dead-end structure	B1015
	outlier	Frame off of truss	B970
4	outlier	Taller bonnet/pole extension than typical	B929
	outlier	Suspected Dead-end structure	B928, B1021
6	outlier	Taller bonnet/pole extension than typical	B1044
	outlier	Suspected Dead-end structure	B1023

Assessment of Deviations from Typical Representative Structure



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ATTACHMENT MWR-E.3

REPRESENTATIVE STRUCTURE STANDARD CONFIGURATION



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Typical Representative Structure - Standard Configuration										
Catenary Structure Type	Maximum Line Angle	Representative Structure Height (Baseplate to Top of Bonnet/Pole) (ft)	Truss Span between post CL's (ft)	Truss Depth (ft)	Framing Type	Framing Member Sizes	Post Base & Lacing Configuration	Inset Bonnet/Pole	UI 115kV Supported Circuits	Notes
MWR - 1&2	Tangent (0°)	57.25	61	3.5	Lattice	Standard	Standard	None	2	Lattice Base Configuration (Most Common)
MWR - 3	1° - 0 minutes	57.25	61	3.5	Lattice	Varies	Varies	None	2	
MWR - 4	1° - 18 minutes	57.25	61	3.5	Lattice	Varies	Varies	None	2	
MWR - 5	2° - 15 minutes	57.25	61	3.5	Lattice	Varies	Varies	None	2	
MWR - 6	2° - 10 minutes	57.25	87	5	Lattice	Varies	Varies	None	2	



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ATTACHMENT MWR-F

ADDITIONAL SIMILAR STRUCTURES INCLUDED AFTER EVALUATION OF RESULTS

Additional Similar Structures Included After Evaluation of Results			
No.	Structure ID	Similar Structure Type	Structure Difference
1	B888	4	Different reference drawings for main structural components: Post is 1'-6" shorter than type 4. Frame Configuration of cross arm support. Internal guy wires both poles. Different UI wire connection arrangement. Additional transformer load at each post. Additional MNR wires at cross arms.
2	B889	3	Different reference drawings for main structural components: Post is 1'-6" shorter than type 3.
3	B890	3	Different reference drawings for main structural components: Post is 1'-6" shorter than type 3.
4	B891	3	Different reference drawings for main structural components: Post is 1'-6" shorter than type 3.
5	B892	3	Different reference drawings for main structural components: Post is 1'-6" shorter than type 3. Strain type dead end arrangement. Different vee members for supporting UI wires.
6	B895	3	Different reference drawings for main structural components: Post is 3' shorter than type 3. Strain type dead end arrangement. Different vee members for supporting UI wires.
7	B901	5	Different reference drawings for main structural components: Post is 3' shorter than type 5 Strain type dead end arrangement. Different vee members for supporting UI wires.
8	B904	5	Different reference drawings for main structural components: No major structural impact per variation to north post or south support component, Truss has smaller lattice member sizes. One Inset pole and support component on truss.
9	B906	3	Different reference drawings for main structural components: No major structural impact per variation to north support component or south post.
10	B907	3	Different reference drawings for main structural components: No major structural impact per variation to support components.
11	B908	4	Different reference drawings for main structural components: No major structural impact per variation to support components.
12	B909	4	Different reference drawings for main structural components: No major structural impact per variation to north support component. Different cross arm framing.
13	B911	4	Different reference drawings for main structural components: Post has thicker chord (1/16").
14	B916	5	Different reference drawings for main structural components. No major structural impact per variation to south support component or truss. One Inset pole and support component on truss.
15	B916A	3	One Inset pole and support component on truss.
16	B971	3	Different reference drawings for main structural components: Post has thinner chord (1/16").
17	B975	1&2	Different reference drawings for main structural components: Post is 3' shorter than type 1. Strain type dead end arrangement. Different vee members for supporting UI wires.
18	B976	1&2	Different reference drawings for main structural components: Post is 3' shorter than type 1. Strain type dead end arrangement. Different vee members for supporting UI wires.
19	B1007	1&2	Different reference drawings for main structural components: Post is 3' shorter than type 1. Strain type dead end arrangement. Different vee members for supporting UI wires. Internal guy wires. transformer on each post.
20	B1024	5	Strain type dead end arrangement. Additional MNR wires and locations. Different vee members for supporting UI wires.



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ATTACHMENT MWR-G

OVERALL INSPECTED STRUCTURES LIST & INSPECTION EVALUATION SUMMARY

Inspected Structure Line Segment Breakdown

Milvon to West River

Catenary Structure Type	Milvon to Woodmont (8.2 ckt miles)	Woodmont to Allings Crossing (5.8 ckt miles)	Allings Crossing to Elmwest (2.6 ckt miles)	Elmwest to West River (2.4 ckt miles)	Totals
MWR - 1&2	8	10	2	2	22
MWR - 3	1	1	1	-	3
MWR - 4	6	-	3	-	9
MWR - 5	4	-	-	-	4
MWR - 6	-	2	-	1	3
Inspected Structures	19	13	6	3	41

Milvon to West River Inspected Structure List					
Legend					
		Structure Already Inspected - Specific Item Inspected (Fly By)			
Item #	Structure Type MWR-1	Structure Type MWR-3	Structure Type MWR-4	Structure Type MWR-5	Structure Type MWR-6
Milvon to Woodmont					
1	B898	B920	B912	B902	
2	B900		B913	B903	
	B921				
	B922				
3	B937		B928	B914	
4	B938		B930	B915	
5	B939		B931		
6	B940		B932		
Woodmont to Allings Crossing					
1	B960	B970			B972
2	B961				B973
3	B963				
4	B964				
5	B965				
6	B977				
7	B978				
8	B991				
9	B992				
10	B993				
Allings Crossing to Elmwest					
1	B1017	B1015	B1012		
2	B1018		B1013		
3			B1014		
Elmwest to West River					
1	B1032				B1044
2	B1033				
TOTAL	22	3	9	4	3

Inspection Evaluation Summary			
Legend			
	Updated Applied to Models for Field Condition		
No.	Item	Applicable Structures (out of 41 Inspected Structures)	Action to be Taken In Updating Structure Models
Corrosion			
1	infill concrete present in base of posts covers first lattice bracing on E&W faces	All structures except for those encased in concrete	None. Considered to be added to prevent corrosion.
2	Angle L6x4x3/8 and 5/16" PL that support cross arm supports have section loss corrosion	25 - Apply to all structure types	Revise L6x4x3/8 to L4x3x3/8 to account for corrosion loss. Revise 5/16" plate to 3/16" plate to account for corrosion loss.
3	section loss/surface corrosion in baseplate assembly of baseplates	14	None. Baseplates are considered part of foundation and are not included in the scope of this analysis.
4	minor surface corrosion, i.e. rust visible, possible surface pitting	3	None. Surface corrosion is not considered significant enough to affect member strength.
5	corrosion expansion at angle to lattice plate interface	30 - Apply to all structure types	Locations of corrosion expansion varies across structure types. Utilize 1/16" reduction in all lattice members on posts and support component (i.e. post above truss).
6	post outside face reinforcement plates (type 6 only) corrosion	B0972, B0973 and B1044 - Apply to structure type 6 only	Exclude reinforcement in the model. Type 6 structure only.
7	Corrosion expansion at interface of L3 angle and 5/16" PL at top of support component	9 - Apply to all structure types	Revise L3x3x3/8 to L3x2 1/2x3/8 to account for corrosion loss. Revise 9x5/16" PL to 9x3/16" PL to account for corrosion loss.
8	Possible section loss from corrosion on truss cross brace	B0940	None. This may result in additional member failures in the structure(s)
Missing members/wires			
9	portion of arch missing	5 - Apply to all structure types	Remove arch from model(s).
10	no L3 angles on North and South sides at top of support component	All - Apply to all structure types	Remove L3 angles on North and South sides at top of support component in each model.
11	Pole no longer present and wires moved to adjacent new monopole	6 (Note: 4 additional structures noted to have poles removed as determined from PLS-CADD for a total of 10.)	None. Analysis is conservative for the six structures affected, and model(s) will not be changed to reflect this. Individual structural analysis may show fewer members failing.
12	no cross arms present, i.e. no MNR wires present	3	None. Analysis is conservative for the three structures affected, and model(s) will not be changed to reflect this. Individual structural analysis may show fewer members failing.
13	individual MNR wire connection not present	3	None. Analysis is conservative for the three structures affected, and model(s) will not be changed to reflect this. Individual structural analysis may show fewer members failing.
Framing components revised			
14	Base of steel structure encased in concrete	13	None. Analysis is conservative for the thirteen structures affected, and model(s) will not be changed to reflect this. Individual structural analysis may show fewer members failing.
15	Top truss chords have plates added at several locations	14	None. Plates are not considered to be structural reinforcement due to nature of placement.
16	Top truss chords have angles added at several locations	6	None. Angles are not considered to be structural reinforcement due to nature of placement.
17	lattice member replaced with steel plate	1	None. Affects are judged negligible.
18	WT or double angle member instead of Angle (L6x4x3/8) for bottom cross arm	B1018	None. Revision likely due to wires being strain type dead end. Occurs in only one structure. No size information available on structural member.
19	Channel frame instead of vee components	B1018	None. Revision likely due to wires being strain type dead end. Occurs in only one structure. No size information available on structural member.

Inspection Evaluation Summary			
Legend			
	Updated Applied to Models for Field Condition		
No.	Item	Applicable Structures (out of 41 Inspected Structures)	Action to be Taken In Updating Structure Models
20	taller pole than shown on drawings	3 (Note: 7 additional structures noted to have taller poles from existing drawing information for a total of 10.)	None. This may result in additional member failures in the structure(s)
21	Interior Diagonal cross bracing at truss/post intersection shown on the drawings had a plate rather than diagonal members.	All - Apply to all structure types	Diagonal brace members removed and angle members along perimeter of plate found in the field are modeled with a fixed end condition to approximate the effect of the plate.
New Framing found on structure (i.e. new loads)			
22	Additional structural frame off posts supporting 3 or more communication lines	3	None. This may result in additional member failures in the structure(s)
23	additional angle connect below bottom cross arm support angle (add'l angle runs perpendicular to cross arm member)	B0978	None. Appears to have supported a component that is no longer present. Affects judged negligible.
24	frame off of truss	B0978	None. Negligible load as does not support any components.
25	old ladder attached to post face	B0978	None. Negligible load.
26	fence around post supported off of post leg members	B1017	None. Negligible load.
27	channel frame around cross arms	B1018	None. Revision likely due to wires being strain type dead end. Occurs in only one structure. No size information available on structural members.
28	additional trolley wire frame present that was not shown on Raytheon infrastructure drawings.	17 - Apply to all structure types	Add loading to account for the additional trolley wire frame that was found for a majority of the structures. Continue to use the typical arrangement of 3 trolley wire frames in the model, and distribute the load of the additional trolley wire frames to the modeled members.
29	4" tubes off side of post	5	None. This may result in additional member failures in the structure(s)
30	transformer on truss	1	None. Negligible load.
31	structures have transformer attached to post	6	None. Negligible load.
32	Strain Type and Full Deadend wires on cross arms	5 (Note: 5 additional structures were determined to have strain type deadend per PLS-CADD for a total of 10.)	None. This may result in additional member failures in the structure(s)
33	structures have additional framing off of truss for "phase break" i.e. de-energizing trolley wire connection to train over a section of track	1	None. This may result in additional member failures in the structure(s)
Known load adjustments			
34	Greater than 3 communication lines off each post	4	None. This may result in additional member failures in the structure(s)
35	Less than 3 communication lines off each post	13	None. Analysis is conservative for the ten structures affected, and model(s) will not be changed to reflect this. Individual structural analysis may show fewer members failing.
36	Communication lines connected to one leg rather than two legs	15 - Apply to all structure types	Revise one communication line to be supported off a single leg to account for this situation. Use North Post - NE leg and South Post - SW leg.
37	cables running inside truss frame	9	None. Negligible load.
38	Pulley system to tension wires exists at several structures as identified on the drawings as BWA loads.	Apply to all structure types with BWA loads per Raytheon drawings	Incorporate a typical load to account for the pulley system.
39	Cantilever off of post to support communication line(s)	10	None. This may result in additional member failures in the structure(s)

Inspection Evaluation Summary			
Legend			
	Updated Applied to Models for Field Condition		
No.	Item	Applicable Structures (out of 41 Inspected Structures)	Action to be Taken In Updating Structure Models
Physical Effects on Structure			
40	Bending in post lattice members due to some other cause	5	None. Recommend replacement of any bent lattice members.
41	Bend in chord leg likely due to some impact force	2	None. Not considered to have significant effect on chord.
42	Significant number of unused holes in truss chords	1	None. Not considered to have significant effect on chord.
43	lean in pole	B0978, B0915 and B0992	None. Recommend replacement of connection of pole to support component.
44	Torsional deformation in crossarm	B0978, B1032 and B0915	None. Recommend replacement of member.
45	ground wire connection requires replacement as currently hanging by rope.	B0965	None. Recommend replacement of wire connection.
Guy comments			
46	Guys at base of posts	Apply to all structure types with guys at base per Raytheon drawings	Apply loading to model types 1&2, 3, 4, and 6 per Raytheon drawings.
47	guy wire to grade rather than adjacent structure	6	None. This may result in additional member failures in the structure(s) due to significant compressive load applied by the guy into the structural post.
48	guy wire to pole for deadend load rather than BWA load	NONE	None.
49	guy wire at end of "phase break"	B0972	None. Assume loading is similar to guy loads from BWA assembly. Given typical load approach, consider loading accounted for by BWA assembly loads.
50	BWA load on post without a guy wire	NONE	None.
51	guy wire for trolley wire assembly without a pulley system	B0964	None. Assume loading is similar to guy loads from BWA assembly. Given typical load approach, consider loading accounted for by BWA assembly loads.
52	guy wire to adjacent structure at same height (no slope of guy wire)	B1017 and B1018	None. Loads in guy wire are completely balanced in this situation.



ATTACHMENT MWR-G.1
PLATE SUMMARY RESULTS



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Plate Summary Results

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Plate Evaluation Summary - Overstressed Plates			
	Number of Overstressed Plates		
Structure Type	As Designed NESC 1961 Evaluation	Field Condition NESC 1961 Evaluation	Field Condition NESC 2012, UI Criteria, and Hurricane Cat. 3 Evaluation
MWR-1&2	0	0	90
MWR-3	0	0	45
MWR-4	0	0	39
MWR-5	0	0	32
MWR-6	0	0	54

Plate Evaluation Summary - Plate Stress			
	Max Plate Stress (ksi)		
Structure Type	As Designed NESC 1961 Evaluation	Field Condition NESC 1961 Evaluation	Field Condition NESC 2012, UI Criteria, and Hurricane Cat. 3 Evaluation
MWR-1&2	23.1	24.5	189
MWR-3	23.2	28.9	163
MWR-4	20.1	24.2	163
MWR-5	16.3	19.2	163
MWR-6	21.2	23	192



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ATTACHMENT MWR-G.2

INDIVIDUAL STRUCTURE TYPE ANALYSIS RESULTS (TYPES 1 THROUGH 6)



Type 5 Field Condition Analysis Results – NESC 1961 Evaluation

For the Type 5 Structure Field Condition NESC 1961 analysis, there were 2 member failures. While there were 26 member failures for the As-Designed analysis, all but 2 of the member failures were removed in the Field Condition model. Therefore, the number of member failures stayed the same at 2 when compared to the As-Designed analysis. See Figure 4.1k for a visual of the failing members. The maximum failure occurred in the pole members with a maximum member utilization of 110%.

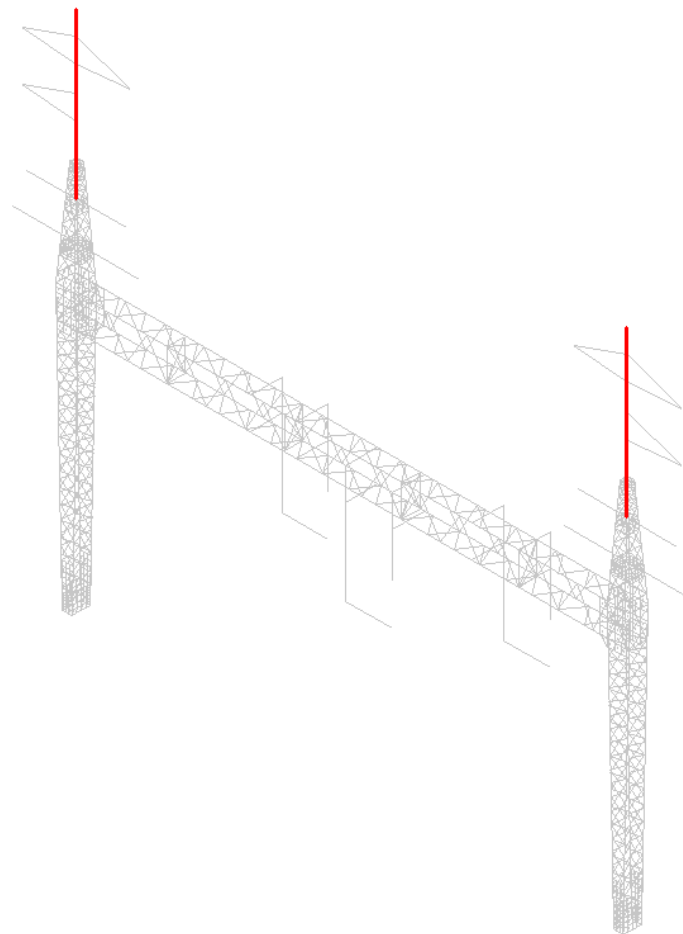


Figure 4.1k: Structure Type 5 – Member Failures –
Field Condition NESC 1961 Evaluation

Type 5 Field Condition Analysis Results– NESC 2012, UI Criteria, and Hurricane Cat. 3 Evaluation

For the Type 5 Structure Field Condition NESC 2012, UI Criteria, and Hurricane Cat. 3 analysis, there were 137 member failures. This was an increase as compared to the Field Condition NESC 1961 Evaluation due to the later load criteria requirements. See Figure 4.1l for a visual of the failing members. The maximum failures occurred in the cross arm support pole extensions with a

4.3.2.1 INDIVIDUAL STRUCTURE TYPE ANALYSIS RESULTS



Figure 3: Typical Existing structure (Structure Type 1&2 - #922 Shown)

4.3.2.1.1 STRUCTURE TYPE 1&2

There are 79 Type 1&2 structures within the project extents representing approximately 61% of the analyzed structures. Field inspection of Structure Types 1&2 yielded no difference in the structures so the structures were combined for the analysis. Structure Types 1&2 have a maximum height of 57.25 feet to the top of the bonnet/pole extension. The truss depth is 3.5 feet and spans 61 feet between the centerline of the posts. Structure Type 1&2 has a line angle of 0°.

Type 1&2 As-Designed Analysis Results – NESC 1961 Evaluation

For the Type 1&2 Structure As-Designed analysis, there were 30 member failures. See Figure 4.1a for a visual of the failing members. The maximum failure occurred in the arch members on the South end of the truss with a member utilization of 156%. The bottom truss chords failed due to combined compression and bending with a maximum member utilization of 143%. 16 members of the arch brace at each end of the truss failed due to compression and bending with a member utilization between 136% and 156%. Several of the vertical post members failed, both reinforced and unreinforced sections, with a member utilization between 106% and 118%.

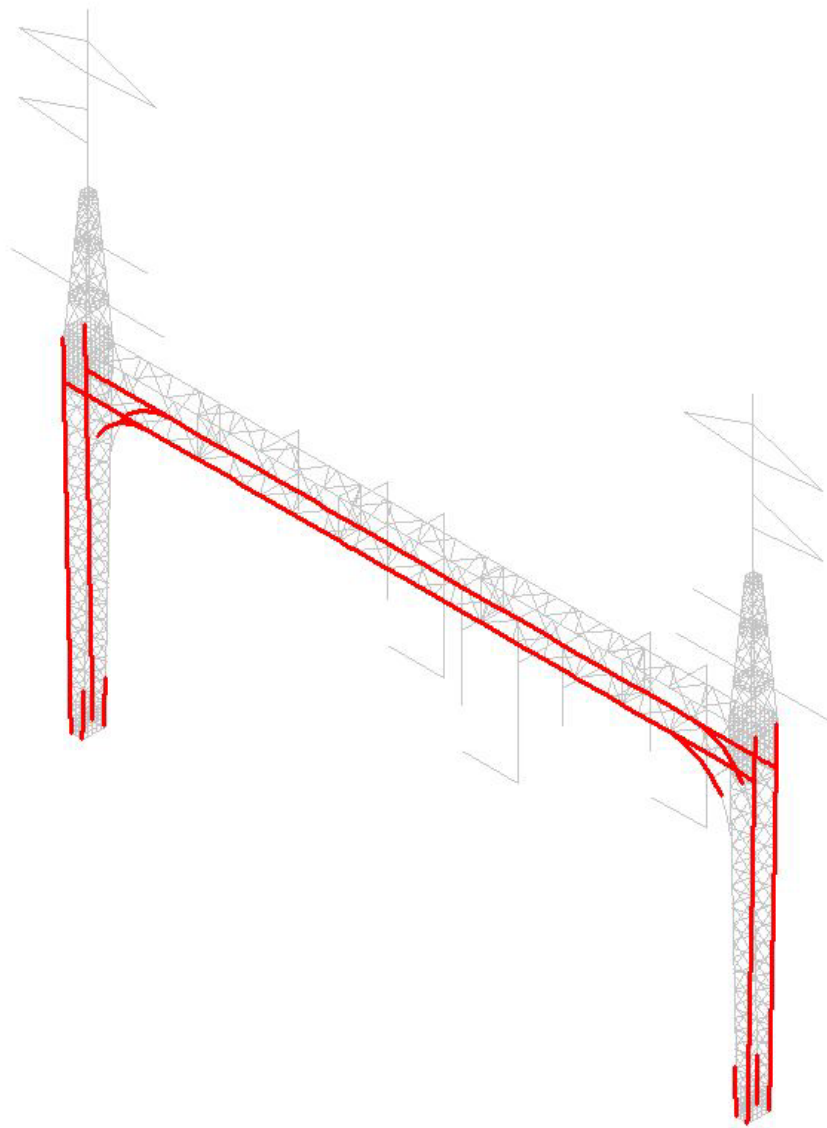


Figure 4.1a: Structure Type 1&2 – Member Failures –
As Designed NESC 1961 Evaluation

Type 1&2 Field Condition Analysis Results – NESC 1961 Evaluation

For the Type 1&2 Structure Field Condition NESC 1961 analysis, there were 122 member failures. This was an increase as compared to the As-Designed analysis due to the conditions determined in the field including additional loads and deterioration of the structure. See Figure 4.1b for a visual of the failing members. The maximum failure occurred in the post lattice members with a maximum member utilization of 161%. The vertical post members failed with a maximum member utilization of 123%. The bottom truss chords failed with a maximum member utilization of 145%.

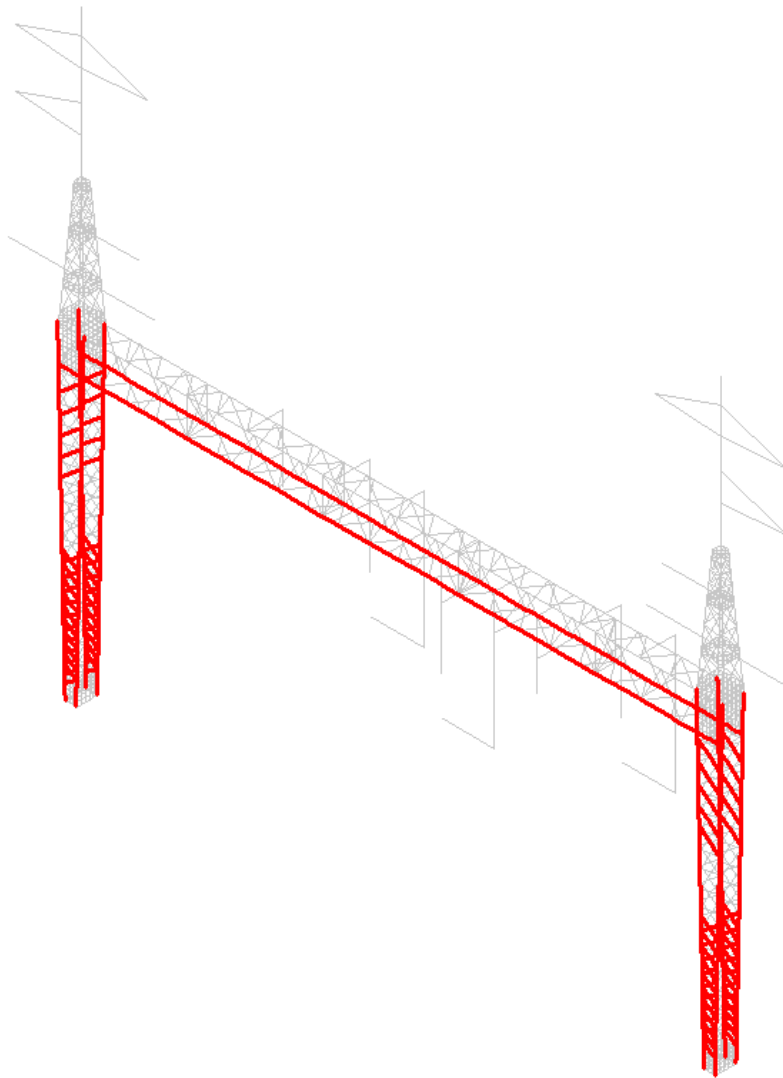


Figure 4.1b: Structure Type 1&2 – Member Failures –
Field Condition NESC 1961 Evaluation

Type 1&2 Field Condition Analysis Results – NESC 2012, UI Criteria, and Hurricane Cat. 3 Evaluation

For the Type 1&2 Structure Field Condition NESC 2012, UI Criteria, and Hurricane Cat. 3 analysis, there were 310 member failures. This was an increase as compared to the Field Condition NESC 1961 Evaluation due to the later load criteria requirements. See Figure 4.1c for a visual of the failing members. The maximum failure occurred in the bonnet/pole members with a maximum member utilization of 999% due to the Broken Conductor load case. All eight of the post vertical members failed with a maximum member utilization of 302%. All the cross arms failed with a maximum member utilization of 326%. All the truss chords failed with a maximum member utilization of 146%. 276 of the lattice members failed with a maximum member utilization of 896%.

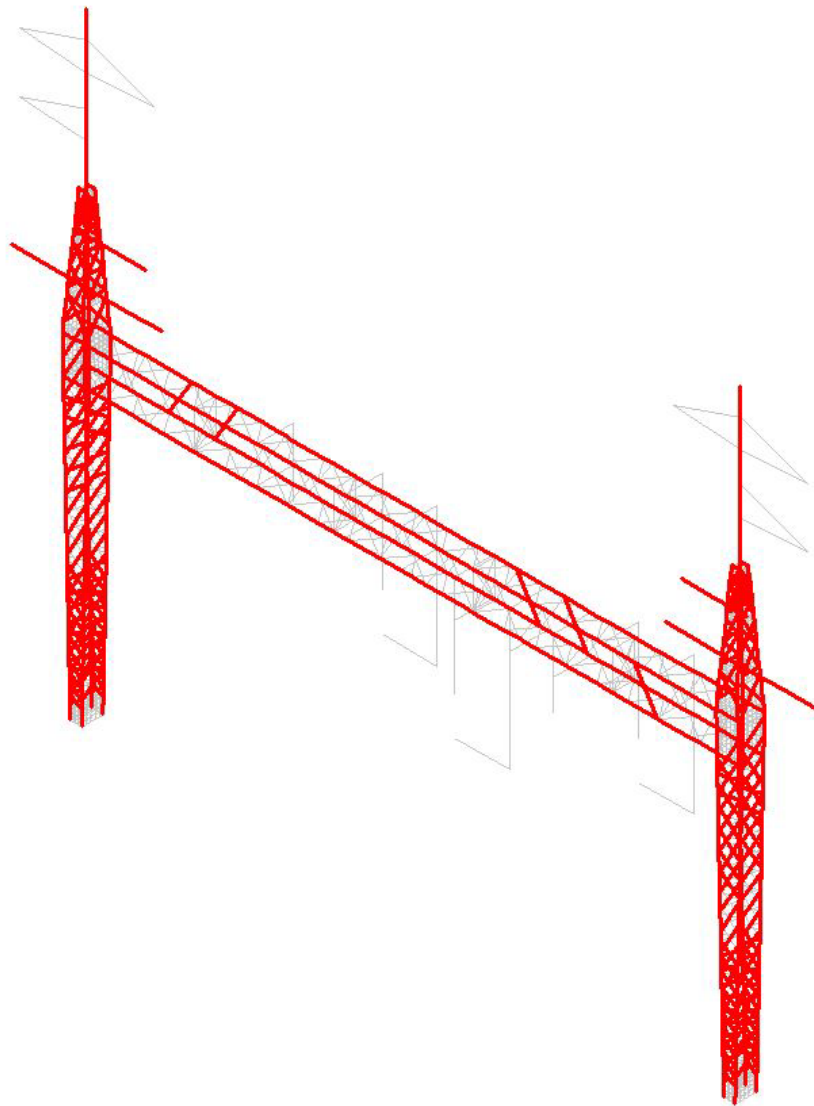


Figure 4.1c: Structure Type 1&2 – Member Failures –
Field Condition NESC 2012, UI Criteria, and Hurricane Cat. 3 Evaluation

4.3.2.1.2 STRUCTURE TYPE 3

There are 17 Type 3 structures within the project extents representing approximately 13% of the analyzed structures. Structure Type 3 differs from the Type 1&2 structure by member sizes in the posts and truss top and bottom chords. Truss depth and length remain the same. The structure is on a 1°-0 second curve. The Type 3 structure has minor geometry differences in the post framing as compared to Structure Type 1&2.



Type 3 As-Designed Analysis Results - NESC 1961 Evaluation

For the Type 3 Structure As-Designed analysis, there were 45 member failures. See Figure 4.1d for a visual of the failing members. The maximum failures occurred in bracing members due to axial compression in the members with a maximum member utilization of 339%. Seven vertical post members failed with a maximum member utilization of 117%. Cross arm support pole extensions failed with a maximum member utilization of 108%.

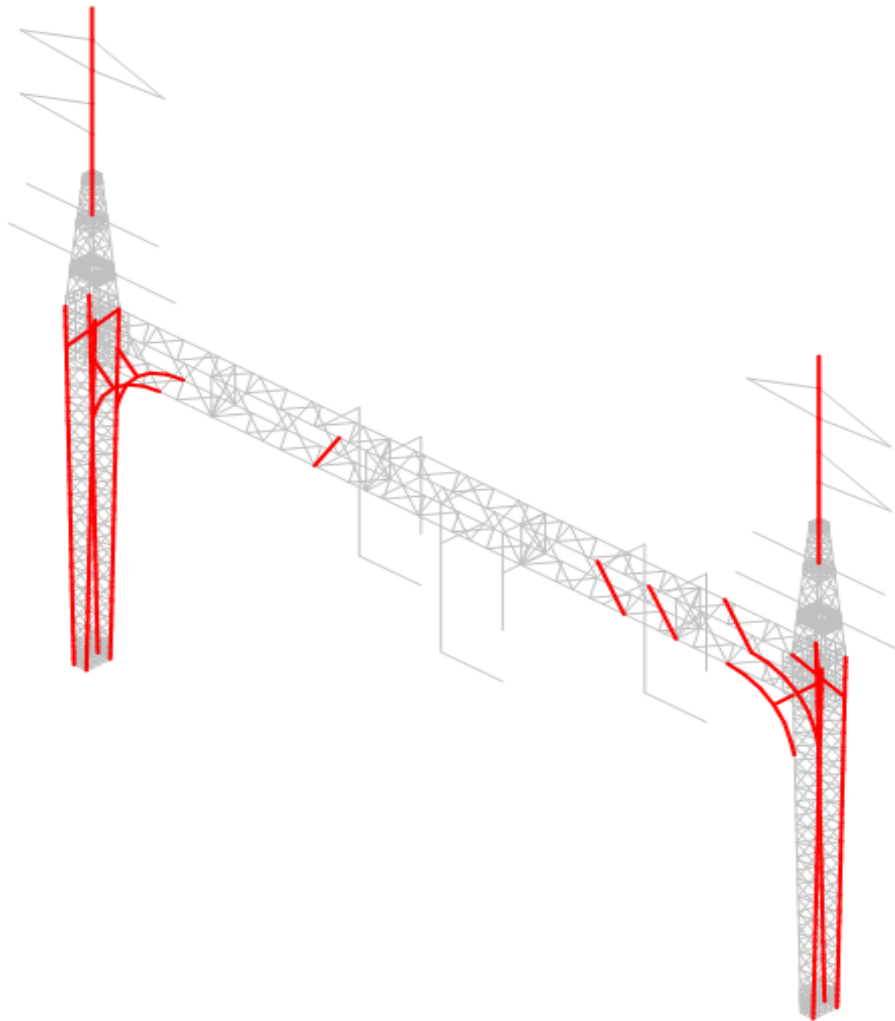


Figure 4.1d: Structure Type 3 – Member Failures –
As Designed NESC 1961 Evaluation



Type 3 Field Condition Analysis Results – NESC 1961 Evaluation

For the Type 3 Structure Field Condition NESC 1961 analysis, there were 62 member failures. This was an increase as compared to the As-Designed analysis due to the conditions determined in the field including additional loads and deterioration of the structure. See Figure 4.1e for a visual of the failing members. The maximum failure occurred in the post lattice members with a maximum member utilization of 146%. The vertical post members failed with a maximum member utilization of 132%. The bottom truss chords failed with a maximum member utilization of 116%. The pole members failed with a maximum member utilization of 108%.

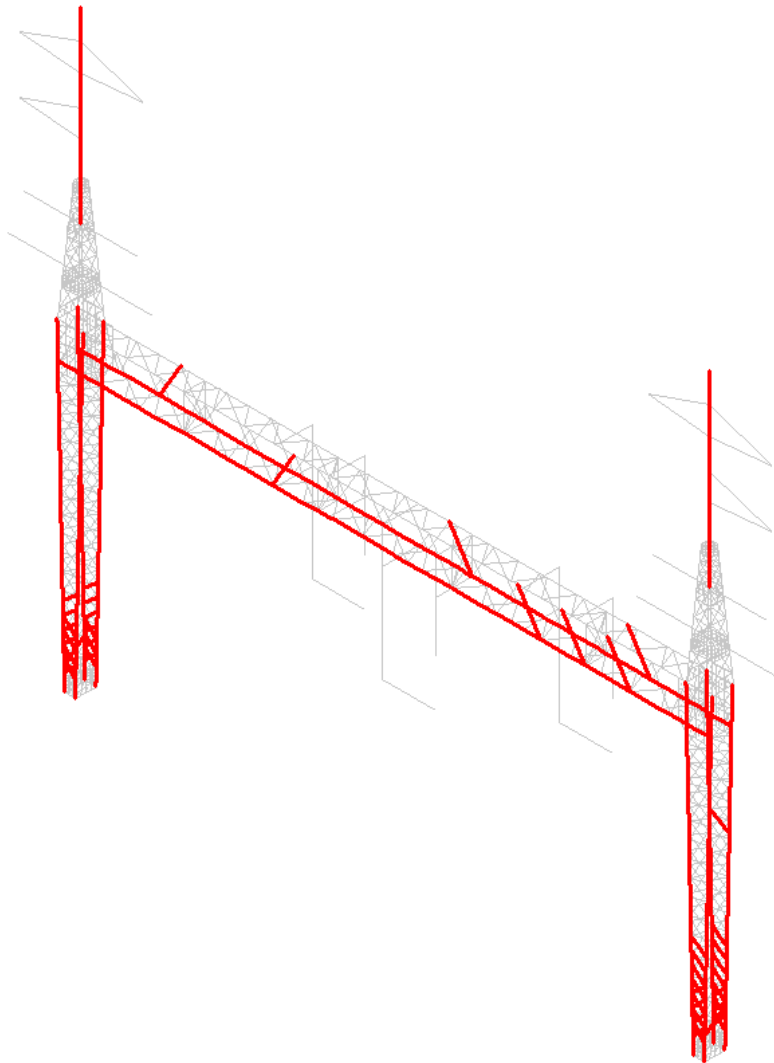


Figure 4.1e: Structure Type 3 – Member Failures –
Field Condition NESC 1961 Evaluation



Type 3 Field Condition Analysis Results – NESC 2012, UI Criteria, and Hurricane Cat. 3 Evaluation

For the Type 3 Structure Field Condition NESC 2012, UI Criteria, and Hurricane Cat. 3 analysis, there were 217 member failures. This was an increase as compared to the Field Condition NESC 1961 Evaluation due to the later load criteria requirements. See Figure 4.1f for a visual of the failing members. The maximum failures occurred in bracing members due to axial compression in the members with a maximum member utilization of 432% due to the Broken Conductor load case. Eight vertical post members failed with a maximum member utilization of 214%. Bottom chords of the truss failed with a maximum member utilization of 116%. Cross arm support pole extensions failed with a maximum member utilization of 428%. Top and bottom cross arms failed with a maximum member utilization of 327%.

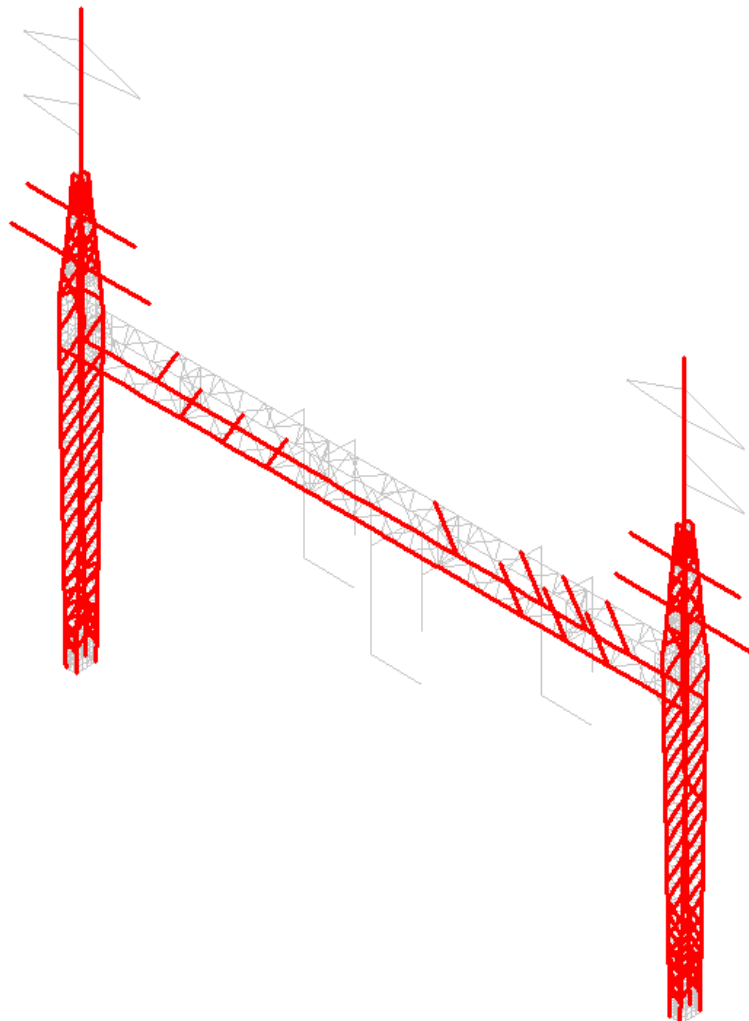


Figure 4.1f: Structure Type 3 – Member Failures –
Field Condition NESC 2012, UI Criteria, and Hurricane Cat. 3 Evaluation



4.3.2.1.3 STRUCTURE TYPE 4

There are 22 Type 4 structures within the project extents representing approximately 17% of the analyzed structures. Structure Type 4 differs from the Type 1&2 and Type 3 structures by member sizes in the posts, truss top and bottom chords. Truss depth and length remain the same. This structure is on a 1°-18 second curve. The Type 4 structure has minor geometry differences in the post framing as compared to Structure Type 1&2.

Type 4 As-Designed Analysis Results - NESC 1961 Evaluation

For the Type 4 Structure As-Designed analysis, there were 35 member failures. See Figure 4.1g for a visual of the failing members. The maximum failures occurred in bracing members due to axial compression in the members with a maximum member utilization of 281%. Pole extensions failed with a maximum member utilization of 117%.

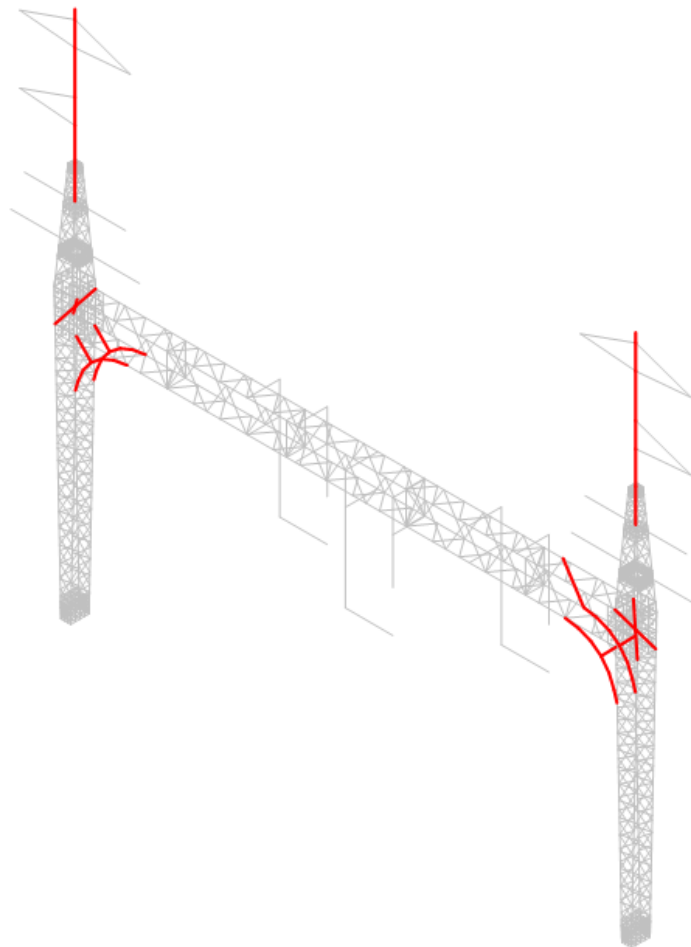


Figure 4.1g: Structure Type 4 – Member Failures –
As Designed NESC 1961 Evaluation



Type 4 Field Condition Analysis Results – NESC 1961 Evaluation

For the Type 4 Structure Field Condition NESC 1961 analysis, there were 15 member failures. While there were 35 member failures for the As-Designed analysis, all but 3 of the member failures were removed in the Field Condition model. Therefore, this was an increase from 3 to 15 failures when compared to the As-Designed analysis due to the conditions determined in the field including additional loads and deterioration of the structure. See Figure 4.1h for a visual of the failing members. The maximum failure occurred in the post lattice members with a maximum member utilization of 118%. The pole members failed with a maximum member utilization of 117%.

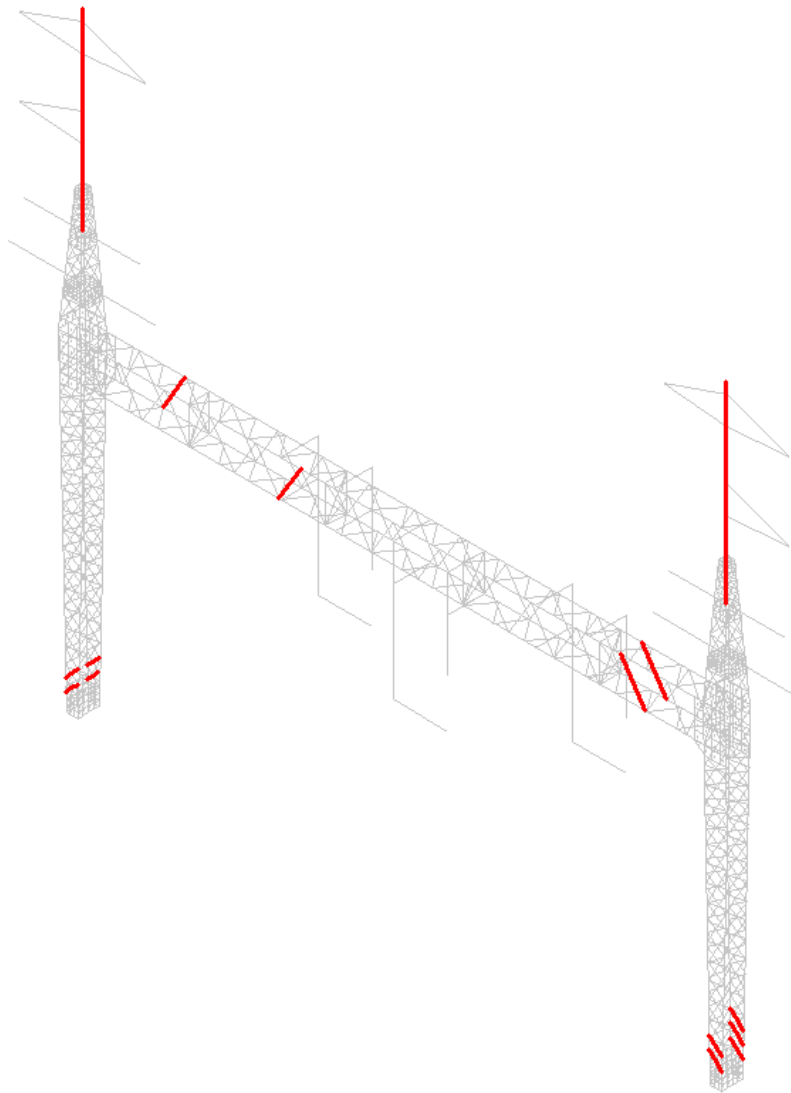


Figure 4.1h: Structure Type 4 – Member Failures –
Field Condition NESC 1961 Evaluation



Type 4 Field Condition Analysis Results– NESC 2012, UI Criteria, and Hurricane Cat. 3 Evaluation

For the Type 4 Structure Field Condition NESC 2012, UI Criteria and Hurricane Cat. 3 analysis, there were 184 member failures. This was an increase as compared to the Field Condition NESC 1961 Evaluation due to the later load criteria requirements. See Figure 4.1i for a visual of the failing members. The maximum failures occurred in the cross arm support pole extensions with a maximum member utilization of 476% due to the Unbalanced load case. Eight vertical post members failed with a maximum member utilization of 191%. Four cross arms failed with a maximum member utilization of 327%.

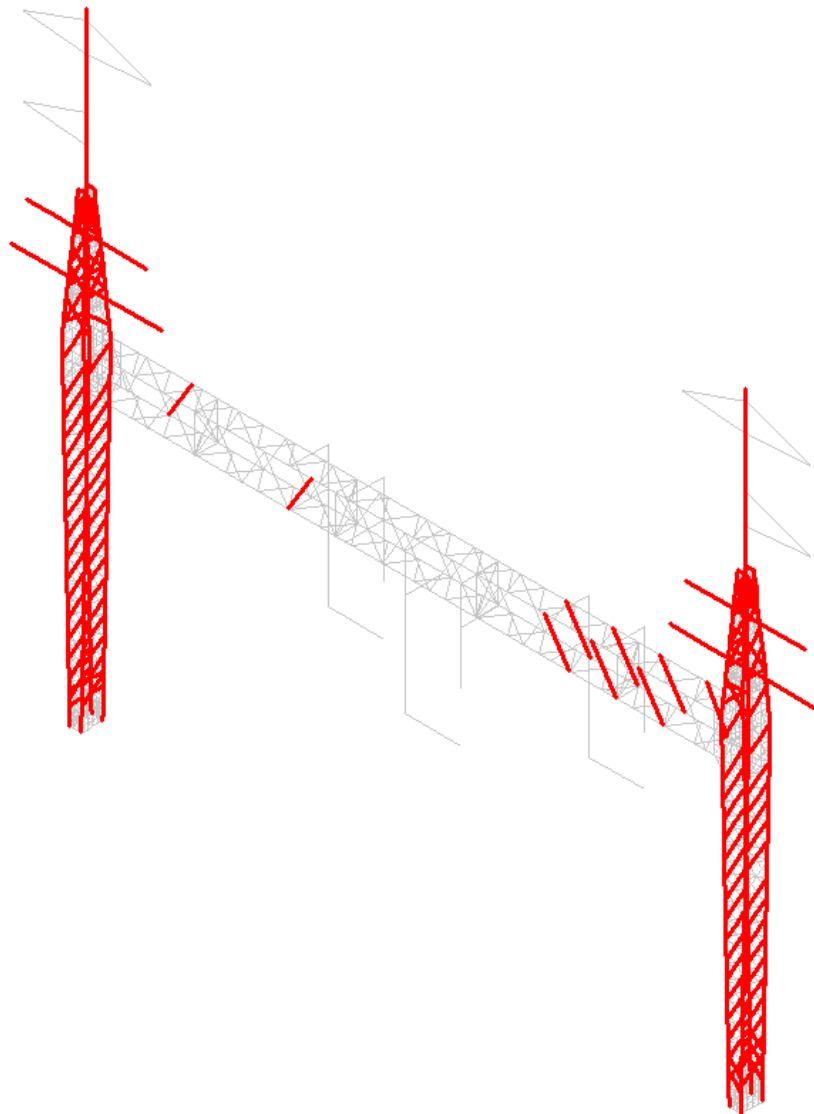


Figure 4.1i: Structure Type 4 – Member Failures –
Field Condition NESC 2012, UI Criteria, and Hurricane Cat. 3 Evaluation



4.3.2.1.4 STRUCTURE TYPE 5

There are 9 Type 5 structures within the project extents representing approximately 7% of the analyzed structures. Structure Type 5 differs from the Type 1&2, 3, & 4 structures by member sizes in the posts and truss top and bottom chords. Truss depth and length remain the same. This structure is on a 2°-15 second curve. The Type 5 structure has minor geometry differences in the post framing as compared to Structure Type 1&2.

Type 5 As-Designed Analysis Results - NESC 1961 Evaluation

For the Type 5 Structure As-Designed analysis, there were 26 member failures. See Figure 4.1j for a visual of the failing members. The maximum failures occurred in bracing members due to axial compression in the members with a maximum member utilization of 193%. Cross arm support pole extensions failed with a maximum member utilization of 110%.

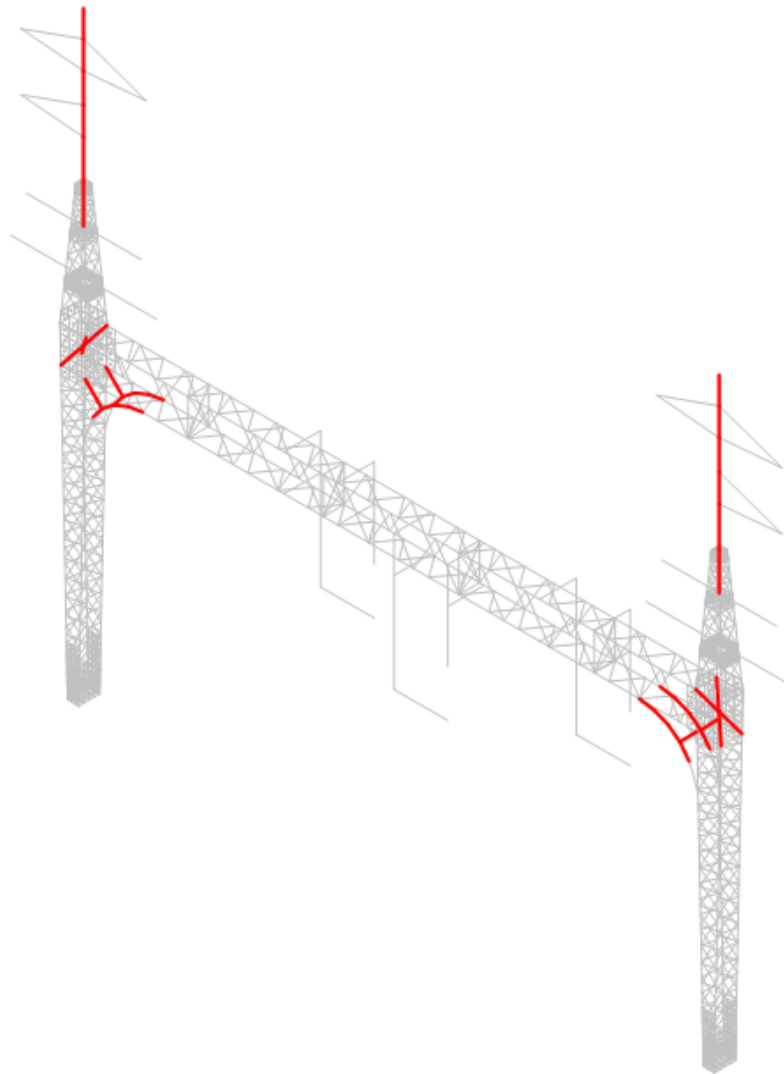


Figure 4.1j: Structure Type 5 – Member Failures – As Designed NESC 1961 Evaluation



maximum member utilization of 439% due to the Unbalance load case. Bottom cross arms failed with a maximum member utilization of 327%. Eight vertical post members failed with a maximum member utilization of 118%.

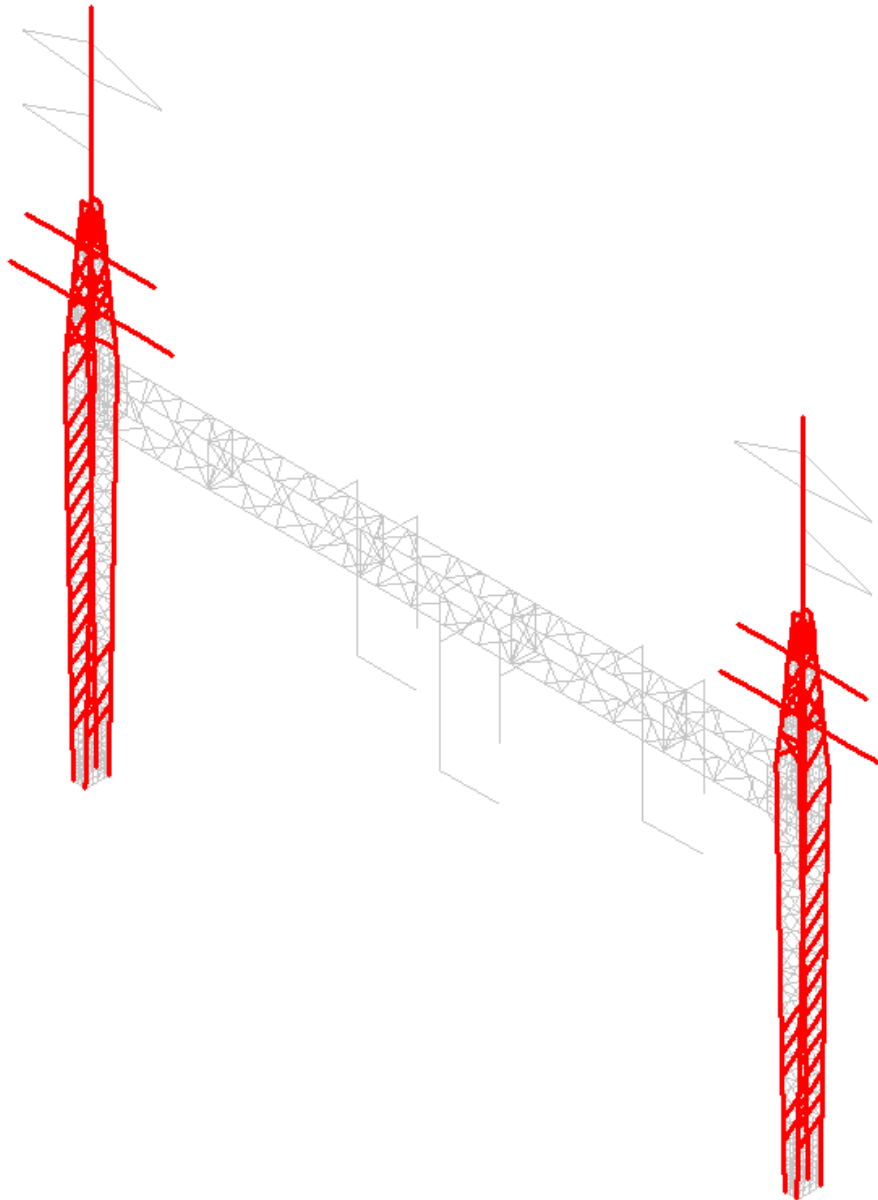


Figure 4.11: Structure Type 5 – Member Failures –
Field Condition NESC 2012, UI Criteria, and Hurricane Cat. 3 Evaluation



4.3.2.1.5 STRUCTURE TYPE 6

There are three Type 6 structures within the project extents representing approximately 2% of the analyzed structures. Structure Type 6 includes a longer (87 ft.) and deeper (5 ft.) truss than Structure Type 1&2. The structure is also on a 2°-10 second curve. The structure has member size differences as well as minor geometry differences in the post framing as compared to Structure Type 1&2.

Type 6 As-Designed Analysis Results - NESC 1961 Evaluation

For the Type 6 Structure As-Designed analysis, there were 16 member failures. See Figure 4.1m for a visual of the failing members. The maximum failure occurred in the post vertical members at the unreinforced section (near grade) with a member utilization of 133%. All of the post vertical members at the unreinforced section failed. The post vertical members with reinforcement on the inside of the posts also failed with a maximum member utilization of 107%. The bottom truss chords failed with a maximum member utilization of 119%, and the pole members failed with a maximum member utilization of 107%.

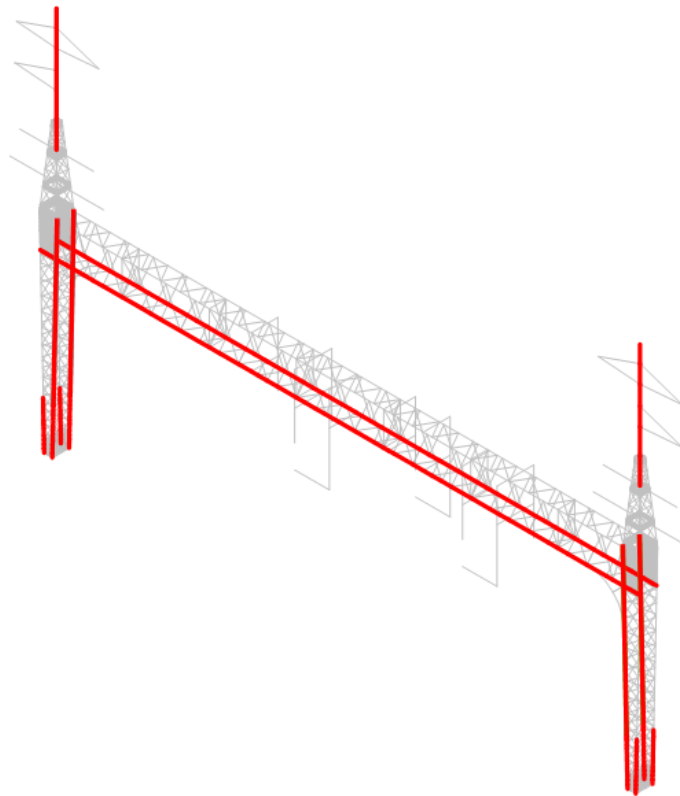


Figure 4.1m: Structure Type 6 – Member Failures –
As Designed NESC 1961 Evaluation



Type 6 Field Condition Analysis Results – NESC 1961 Evaluation

For the Type 6 Structure Field Condition NESC 1961 analysis, there were 98 member failures. This was an increase as compared to the As-Designed analysis due to the conditions determined in the field including additional loads and deterioration of the structure. See Figure 4.1n for a visual of the failing members. The maximum failure occurred in the lattice members with a maximum member utilization of 163%. Twelve vertical post members failed with a maximum member utilization of 145%. The truss bottom chord members failed with a maximum member utilization of 139%. The pole members failed with a maximum member utilization of 107%.

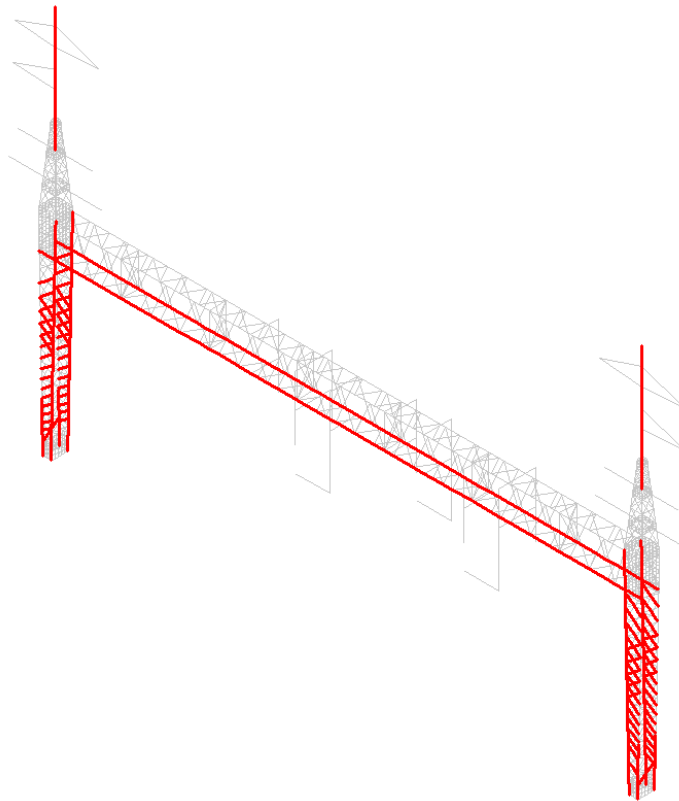


Figure 4.1n: Structure Type 6 – Member Failures –
Field Condition NESC 1961 Evaluation

Type 6 Field Condition Analysis Results– NESC 2012, UI Criteria, and Hurricane Cat. 3 Evaluation

For the Type 6 Structure Field Condition NESC 2012, UI Criteria, and Hurricane Cat. 3 analysis, there were 251 member failures. This was an increase as compared to the Field Condition NESC 1961 Evaluation due to the later load criteria requirements. See Figure 4.1o for a visual of the failing members. The maximum failure occurred in the pole members with a member utilization of 999% due to the Broken Conductor load case. All eight of the post vertical members failed with a maximum member utilization of 183%. All the cross arms failed with a maximum member utilization of 319%. The bottom truss chords failed with a maximum member utilization of 142%. 219 of the lattice members failed with a maximum member utilization of 724%.

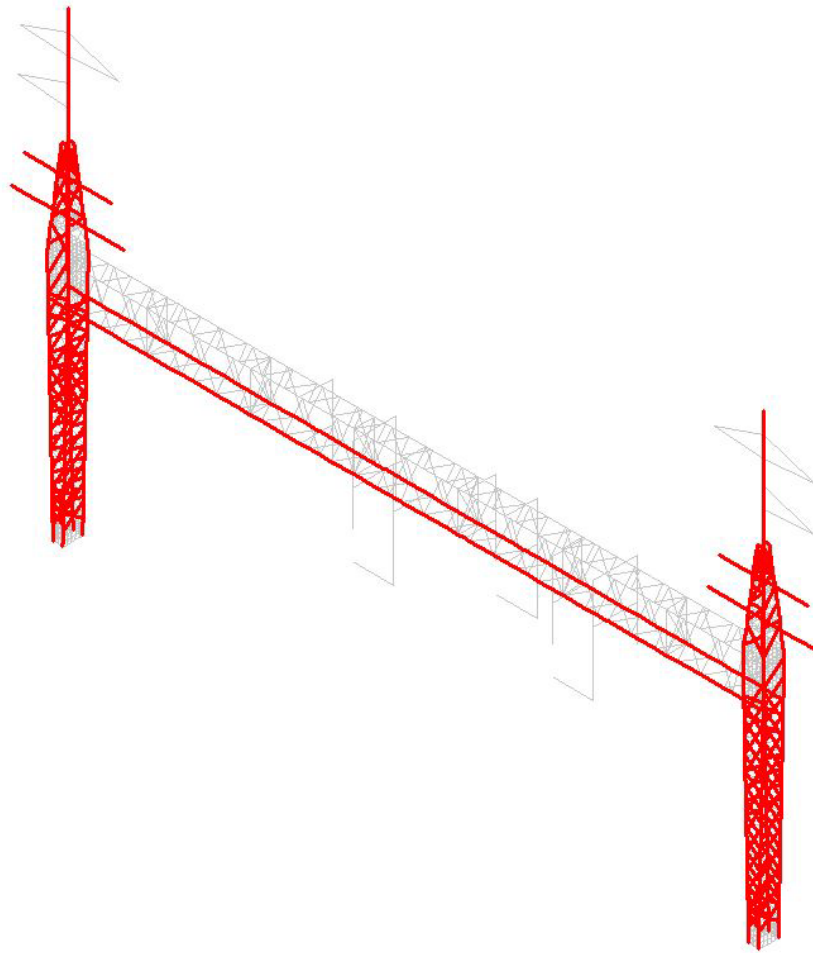


Figure 4.1o: Structure Type 6 – Member Failures –
Field Condition NESC 2012, UI Criteria, and Hurricane Cat. 3 Evaluation



Milvon to West River Catenary Structure Assessment

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-H

STRUCTURE TYPE 1&2 AS DESIGNED NESC 1961 COMPLETE MEMBER RESULTS



Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
1	M564	L2.5x2.5x5	1.562	1.435	62.134	1.435	y 62	23575.103	39420	1096.767	2509.3	1	H2-1
2	M563	L2.5x2.5x5	1.561	0	62.124	0	y 62	23575.103	39420	1096.767	2509.3	1	H2-1
3	M570	L2.5x2.5x5	1.550	1.435	62.134	1.435	z 62	7115.391	39420	1096.767	2509.3	1	H2-1
4	M569	L2.5x2.5x5	1.550	0	62.123	0	z 62	7115.391	39420	1096.767	2509.3	1	H2-1
5	M369A	L2.5x2.5x5	1.502	0	61.130	0	y 61	23575.103	39420	1096.767	2509.3	1	H2-1
6	M368A	L2.5x2.5x5	1.501	1.437	61.119	1.437	y 61	23575.103	39420	1096.767	2509.3	1	H2-1
7	M375A	L2.5x2.5x5	1.495	0	61.128	0	z 61	7115.391	39420	1096.767	2509.3	1	H2-1
8	M374A	L2.5x2.5x5	1.494	1.437	61.120	1.437	z 61	7115.391	39420	1096.767	2509.3	1	H2-1
9	M639	L4x3x5	1.431	60.697	61.096	61.357	y 61	49613.931	56430	1896.028	3750.65	1	H2-1
10	M640	L4x3x5	1.431	60.697	62.127	7.917	y 61	49613.931	56430	1896.028	3750.65	1	H2-1
11	M565	L2.5x2.5x5	1.426	0	62.047	1.436	y 61	23575.103	39420	1096.767	2196.74	1	H2-1
12	M566	L2.5x2.5x5	1.424	1.436	62.088	0	y 62	23575.103	39420	1096.767	2196.74	1	H2-1
13	M571	L2.5x2.5x5	1.412	0	62.053	1.436	z 61	7115.391	39420	1096.767	2196.74	1	H2-1
14	M572	L2.5x2.5x5	1.410	1.436	62.088	0	z 62	7115.391	39420	1096.767	2196.74	1	H2-1
15	M370A	L2.5x2.5x5	1.372	1.436	61.044	0	y 62	23575.103	39420	1096.767	2196.74	1	H2-1
16	M371A	L2.5x2.5x5	1.370	0	61.085	1.436	y 61	23575.103	39420	1096.767	2196.74	1	H2-1
17	M376A	L2.5x2.5x5	1.365	1.436	61.045	0	z 62	7115.391	39420	1096.767	2196.74	1	H2-1
18	M377A	L2.5x2.5x5	1.363	0	61.084	1.436	z 61	7115.391	39420	1096.767	2196.74	1	H2-1
19	M693	L4x4x6 + P...	1.180	2.956	61.097	1.757	y 62	98478.227	102573	3285.904	5053.341	1	H2-1
20	M688	L4x4x6 + P...	1.169	.879	62.095	1.717	y 61	98478.227	102573	3285.904	5053.341	1	H2-1
21	M694	L4x4x6 + P...	1.116	1.678	61.108	1.757	y 61	98478.227	102573	3285.904	18163.4...	1	H2-1
22	M404A	L4x4x6	1.112	27.174	61.028	3.114	z 62	74070.528	77220	3665.399	8238.66	1	H2-1
23	M691	L4x4x6 + P...	1.110	2.157	62.108	1.717	y 62	98478.227	102573	3285.904	18163.4...	1	H2-1
24	M160	L4x4x6	1.109	0	62.028	2.494	z 62	74070.528	77220	3665.399	8238.66	1	H2-1
25	M402A	L4x4x6	1.103	.849	61.028	2.494	z 62	74070.528	77220	3665.399	8238.66	1	H2-1
26	M158	L4x4x6	1.097	26.325	62.027	3.114	z 62	74070.528	77220	3665.399	8238.66	1	H2-1
27	M692	L4x4x6 + P...	1.081	.879	62.103	1.717	y 61	98478.227	102573	3285.904	5053.341	1	H2-1
28	M689	L4x4x6 + P...	1.061	2.956	61.101	1.757	y 62	98478.227	102573	3285.904	5053.341	1	H2-1
29	M695	L4x4x6 + P...	1.040	2.157	62.104	1.717	y 62	98478.227	102573	3285.904	18163.4...	1	H2-1
30	M403A	L4x4x6	1.040	0	62.176	23.494	z 61	74070.528	77220	3665.399	8238.66	1	H2-1
31	M401A	L4x4x6	1.039	3.68	61.181	3.68	z 61	74070.528	77220	3665.399	8238.66	1	H2-1
32	M161	L4x4x6	1.028	27.174	61.177	3.68	z 62	74070.528	77220	3665.399	8238.66	1	H2-1
33	M189	L6x4x6	1.028	8.021	62.037	8.021	y 61	29768.748	97470	4257.614	12648.6...	1	H2-1
34	M629	L6x4x6	1.028	5.979	61.037	5.979	y 61	29768.748	97470	4257.614	12648.6...	1	H2-1
35	M690	L4x4x6 + P...	1.027	1.678	61.102	1.717	y 61	98478.227	102573	3285.904	18163.4...	1	H2-1
36	M159	L4x4x6	1.012	23.494	62.177	3.114	z 62	74070.528	77220	3665.399	8238.66	1	H2-1
37	M562	L2.5x2.5x5	1.011	1.436	62.055	0	y 62	23575.103	39420	1096.767	2196.74	1	H2-1
38	M561	L2.5x2.5x5	1.011	0	62.067	0	y 61	23575.103	39420	1096.767	2196.74	1	H2-1
39	M568	L2.5x2.5x5	1.001	1.436	62.050	0	y 62	23575.103	39420	1096.767	2196.74	1	H2-1
40	M567	L2.5x2.5x5	1.001	0	62.063	0	y 61	23575.103	39420	1096.767	2196.74	1	H2-1
41	M367A	L2.5x2.5x5	.973	0	61.051	1.436	y 62	23575.103	39420	1096.767	2196.74	1	H2-1
42	M366A	L2.5x2.5x5	.972	1.458	61.062	0	y 62	23575.103	39420	1096.767	2196.74	1	H2-1
43	M373A	L2.5x2.5x5	.968	0	61.051	1.436	z 62	7115.391	39420	1096.767	2196.74	1	H2-1
44	M372A	L2.5x2.5x5	.967	1.458	61.062	0	z 61	7115.391	39420	1096.767	2196.74	1	H2-1
45	M382A	L2.5X1.5X5	.953	1.844	61.007	4.116	y 61	11061.282	31113.2...	475.557	1512.341	1...	H2-1
46	M638	L4x3x6	.913	60.854	61.091	31.75	y 61	59061.508	67230	2238.689	4423.283	1	H2-1
47	M637	L4x3x6	.890	2.646	61.059	7.938	z 62	59061.508	67230	2238.689	4423.283	1	H2-1
48	M531	PL2.25x0.3...	.879	.758	61.047	0	y 61	12119.726	18984.3...	123.597	889.893	1...	H1-1a
49	M491	PL2.25x0.3...	.879	.758	61.055	0	y 61	12119.726	18984.3...	123.597	889.893	1...	H1-1a
50	M277	PL2.25x0.3...	.872	.758	62.047	0	y 62	12119.726	18984.3...	123.597	889.893	1...	H1-1a
51	M489	PL2.25x0.3...	.870	.702	61.049	1.434	y 61	12904.41	18984.3...	123.597	889.893	1...	H1-1a
52	M237	PL2.25x0.3...	.857	.758	62.054	0	y 62	12119.726	18984.3...	123.597	889.893	1...	H1-1a
53	M241	L2.5X1.5X5	.848	1.844	62.006	0	y 62	11061.282	31113.2...	475.557	1512.341	1...	H2-1
54	M235	PL2.25x0.3...	.846	.702	62.048	1.434	y 62	12904.41	18984.3...	123.597	889.893	1...	H1-1a
55	M481	PL2.25x0.3...	.846	.787	61.035	0	y 61	11691.054	18984.3...	123.597	889.893	1...	H1-1a
56	M256	L2.5X1.5X5	.842	2.273	61.003	4.116	y 62	11061.282	31113.2...	475.557	1512.341	1...	H2-1

By comparison to member M690, reinforced section is failing by inspection.

Hand calculated reinforced section properties yield member utilization of 126%. Member is failing.



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
57	M479	PL2.25x0.3...	.839	.729	61	.038	.729	y	62	12528.324	18984.3...	123.597	889.893	1...	H1-1a
58	M521	PL2.25x0.3...	.837	.787	61	.036	0	y	61	11691.054	18984.3...	123.597	889.893	1...	H1-1a
59	M289A	PL2.25x0.3...	.828	.787	62	.036	0	y	62	11691.054	18984.3...	123.597	889.893	1...	H1-1a
60	M529	PL2.25x0.3...	.825	.702	61	.050	.717	y	62	12904.41	18984.3...	123.597	889.893	1...	H1-1a
61	M249A	PL2.25x0.3...	.823	.787	62	.034	0	y	62	11691.054	18984.3...	123.597	889.893	1...	H1-1a
62	M493	PL2.25x0.3...	.818	.819	61	.029	0	y	61	11238.884	18984.3...	123.597	889.893	1...	H1-1a
63	M247A	PL2.25x0.3...	.817	.729	62	.037	.729	y	61	12528.324	18984.3...	123.597	889.893	1...	H1-1a
64	M275	PL2.25x0.3...	.815	.702	62	.049	.717	y	61	12904.41	18984.3...	123.597	889.893	1...	H1-1a
65	M258	L2.5X1.5X5	.811	2.273	61	.001	4.116	y	62	11060.999	31113.2...	475.557	1512.338	1...	H2-1
66	M533	PL2.25x0.3...	.809	.819	61	.029	0	y	61	11238.884	18984.3...	123.597	889.893	1...	H1-1a
67	M519	PL2.25x0.3...	.807	.729	61	.045	0	y	61	12528.324	18984.3...	123.597	889.893	1...	H1-1a
68	M384A	L2.5X1.5X5	.804	1.791	61	.001	3.998	y	61	11725.89	31113.2...	475.557	1519.173	1...	H2-1
69	M483	PL2.25x0.3...	.802	.852	61	.024	0	y	61	10766.601	18984.3...	123.597	889.893	1...	H1-1a
70	M279A	PL2.25x0.3...	.800	.819	62	.029	0	y	62	11238.884	18984.3...	123.597	889.893	1...	H1-1a
71	M287A	PL2.25x0.3...	.799	.729	62	.045	0	y	62	12528.324	18984.3...	123.597	889.893	1...	H1-1a
72	M487	PL2.25x0.3...	.796	1.023	61	.005	0	y	61	8178.023	18984.3...	123.597	889.893	1...	H1-1a
73	M239A	PL2.25x0.3...	.795	.819	62	.029	0	y	62	11238.884	18984.3...	123.597	889.893	1...	H1-1a
74	M520	PL2.25x0.3...	.793	.758	62	.045	.758	y	61	12119.726	18984.3...	123.597	889.893	1...	H1-1a
75	M485	PL2.25x0.3...	.792	.929	61	.013	0	y	61	9684.406	18984.3...	123.597	889.893	2...	H1-1a
76	M580	6H25	.791	4.01	61	.198	3.819	y	61	32380.313	215681.4	21582	40822.49	1	H1-1b
77	M191	6H25	.791	4.01	62	.198	3.819	y	62	32380.313	215681.4	21582	40822.49	1	H1-1b
78	M523	PL2.25x0.3...	.790	.852	61	.024	0	y	61	10766.601	18984.3...	123.597	889.893	1...	H1-1a
79	M495	PL2.25x0.3...	.786	.887	61	.019	0	y	61	10274.112	18984.3...	123.597	889.893	1...	H1-1a
80	M527	PL2.25x0.3...	.785	1.023	61	.005	0	y	61	8178.023	18984.3...	123.597	889.893	1...	H1-1a
81	M525	PL2.25x0.3...	.782	.929	61	.013	0	y	61	9684.406	18984.3...	123.597	889.893	2...	H1-1a
82	M480	PL2.25x0.3...	.782	.758	62	.049	0	y	62	12119.726	18984.3...	123.597	889.893	1...	H1-1a
83	M291A	PL2.25x0.3...	.781	.852	62	.024	0	y	62	10766.601	18984.3...	123.597	889.893	1...	H1-1a
84	M288A	PL2.25x0.3...	.779	.758	61	.045	.758	y	62	12119.726	18984.3...	123.597	889.893	1...	H1-1a
85	M251A	PL2.25x0.3...	.779	.852	62	.024	0	y	62	10766.601	18984.3...	123.597	889.893	1...	H1-1a
86	M535	PL2.25x0.3...	.777	.887	61	.019	0	y	61	10274.112	18984.3...	123.597	889.893	1...	H1-1a
87	M293A	PL2.25x0.3...	.774	.929	62	.014	0	y	62	9684.406	18984.3...	123.597	889.893	2...	H1-1a
88	M295A	PL2.25x0.3...	.772	1.023	62	.006	0	y	62	8178.023	18984.3...	123.597	889.893	2...	H1-1a
89	M517	PL2.25x0.3...	.772	.675	61	.042	1.378	y	61	13291.722	18984.3...	123.597	889.893	1...	H1-1a
90	M253A	PL2.25x0.3...	.769	.929	62	.013	0	y	62	9684.406	18984.3...	123.597	889.893	2...	H1-1a
91	M281A	PL2.25x0.3...	.769	.887	62	.019	0	y	62	10274.112	18984.3...	123.597	889.893	1...	H1-1a
92	M255A	PL2.25x0.3...	.768	1.023	62	.005	0	y	62	8178.023	18984.3...	123.597	889.893	2...	H1-1a
93	M206	L2.5X1.5X5	.768	2.273	62	.002	0	y	62	11060.999	31113.2...	475.557	1512.338	1...	H2-1
94	M477	PL2.25x0.3...	.766	.675	61	.046	.689	y	62	13291.722	18984.3...	123.597	889.893	1...	H1-1a
95	M243	L2.5X1.5X5	.765	1.844	62	.002	4.116	y	62	11060.999	31113.2...	475.557	1512.338	1...	H2-1
96	M241A	PL2.25x0.3...	.764	.887	62	.019	0	y	62	10274.112	18984.3...	123.597	889.893	1...	H1-1a
97	M285A	PL2.25x0.3...	.763	.675	62	.042	1.378	y	62	13291.722	18984.3...	123.597	889.893	1...	H1-1a
98	M497	PL2.25x0.3...	.762	.956	61	.009	0	y	61	9303.417	18984.3...	123.597	889.893	2...	H1-1a
99	M478	PL2.25x0.3...	.762	.702	62	.047	1.434	y	62	12904.41	18984.3...	123.597	889.893	1...	H1-1a
100	M248A	PL2.25x0.3...	.756	.758	61	.047	0	y	61	12119.726	18984.3...	123.597	889.893	1...	H1-1a
101	M537	PL2.25x0.3...	.752	.956	61	.009	0	y	61	9303.417	18984.3...	123.597	889.893	2...	H1-1a
102	M208	L2.5X1.5X5	.745	2.273	62	.001	0	y	61	11060.999	31113.2...	475.557	1512.338	1...	H2-1
103	M245A	PL2.25x0.3...	.745	.675	62	.045	.689	y	61	13291.722	18984.3...	123.597	889.893	1...	H1-1a
104	M283A	PL2.25x0.3...	.744	.956	62	.010	0	y	62	9303.417	18984.3...	123.597	889.893	2...	H1-1a
105	M490	PL2.25x0.3...	.744	.729	62	.040	.729	y	61	12528.324	18984.3...	123.597	889.893	1...	H1-1a
106	M532	PL2.25x0.3...	.743	.787	62	.034	.804	y	61	11691.054	18984.3...	123.597	889.893	1...	H1-1a
107	M210	L2.5X1.5X5	.742	2.273	62	.001	0	y	61	11061.282	31113.2...	475.557	1512.341	1...	H2-1
108	M492	PL2.25x0.3...	.742	.787	62	.033	.804	y	61	11691.054	18984.3...	123.597	889.893	1...	H1-1a
109	M243A	PL2.25x0.3...	.740	.956	62	.009	0	y	62	9303.417	18984.3...	123.597	889.893	2...	H1-1a
110	M246A	PL2.25x0.3...	.736	.702	61	.045	1.434	y	61	12904.41	18984.3...	123.597	889.893	1...	H1-1a
111	M278A	PL2.25x0.3...	.730	.787	61	.034	.804	y	62	11691.054	18984.3...	123.597	889.893	1.5	H1-1a
112	M514	PL2.25x0.375	.728	1.366	61	.013	1.366	y	61	8090.984	22788	177.75	1068.75	1...	H1-1a
113	M518	PL2.25x0.3...	.727	.702	62	.054	.717	y	61	12904.41	18984.3...	123.597	889.893	1...	H1-1a



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
114	M530	PL2.25x0.3...	.726	.729	62	.041	0	y	62	12528.324	18984.3...	123.597	889.893	1...	H1-1a
115	M204	L2.5X1.5X5	.724	2.273	62	.006	4.116	y	62	11061.282	31113.2...	475.557	1512.341	1...	H2-1
116	M554	PL2.25x0.375	.721	1.366	61	.014	1.366	y	61	8090.984	22788	177.75	1068.75	1...	H1-1a
117	M223	L2.5X1.5X5	.720	1.844	61	.002	4.116	y	61	11060.999	31113.2...	475.557	1512.338	1...	H2-1
118	M236	PL2.25x0.3...	.719	.729	61	.040	.729	y	62	12528.324	18984.3...	123.597	889.893	1...	H1-1a
119	M245	L2.5X1.5X5	.719	1.844	62	.001	4.116	y	61	11060.999	31113.2...	475.557	1512.338	1...	H2-1
120	M238	PL2.25x0.3...	.716	.787	61	.033	.804	y	62	11691.054	18984.3...	123.597	889.893	1...	H1-1a
121	M388A	L2.5X1.5X5	.716	2.207	61	.002	3.998	y	61	11725.89	31113.2...	475.557	1519.173	1...	H2-1
122	M522	PL2.25x0.3...	.716	.819	62	.027	.836	y	61	11238.884	18984.3...	123.597	889.893	1...	H1-1a
123	M482	PL2.25x0.3...	.715	.819	62	.027	.836	y	61	11238.884	18984.3...	123.597	889.893	1...	H1-1a
124	M276	PL2.25x0.3...	.713	.729	61	.041	0	y	61	12528.324	18984.3...	123.597	889.893	1...	H1-1a
125	M286A	PL2.25x0.3...	.713	.702	61	.054	.717	y	62	12904.41	18984.3...	123.597	889.893	1...	H1-1a
126	M239	L2.5X1.5X5	.711	1.661	62	.001	3.89	y	61	12372.939	31113.2...	475.557	1525.474	1...	H2-1
127	M302A	PL2.25x0.375	.710	1.366	62	.014	1.366	y	62	8090.984	22788	177.75	1068.75	1.4	H1-1a
128	M262	PL2.25x0.375	.704	1.366	62	.012	1.366	y	62	8090.984	22788	177.75	1068.75	1...	H1-1a
129	M290A	PL2.25x0.3...	.703	.819	61	.028	.836	y	62	11238.884	18984.3...	123.597	889.893	1...	H1-1a
130	M212	L2.5X1.5X5	.700	2.273	62	.001	4.116	y	61	11060.999	31113.2...	475.557	1512.338	1...	H2-1
131	M260	L2.5X1.5X5	.700	2.273	61	.001	4.116	y	62	11060.999	31113.2...	475.557	1512.338	1...	H2-1
132	M494	PL2.25x0.3...	.700	.852	62	.022	0	y	62	10766.601	18984.3...	123.597	889.893	1...	H1-1a
133	M534	PL2.25x0.3...	.698	.852	62	.022	0	y	62	10766.601	18984.3...	123.597	889.893	1...	H1-1a
134	M516	PL2.25x0.375	.697	1.5	61	.016	1.5	y	61	6696.814	22788	177.75	1068.75	1...	H1-1a
135	M496	PL2.25x0.3...	.693	.949	62	.013	0	y	62	9196.866	18984.3...	123.597	889.893	1...	H1-1a
136	M536	PL2.25x0.3...	.692	.929	62	.012	0	y	62	9684.406	18984.3...	123.597	889.893	1...	H1-1a
137	M250A	PL2.25x0.3...	.690	.819	61	.026	.836	y	62	11238.884	18984.3...	123.597	889.893	1...	H1-1a
138	M556	PL2.25x0.375	.690	1.5	61	.018	1.5	y	61	6696.814	22788	177.75	1068.75	1...	H1-1a
139	M498	PL2.25x0.3...	.688	1.023	62	.006	0	y	62	8178.023	18984.3...	123.597	889.893	2...	H1-1a
140	M484	PL2.25x0.3...	.687	.887	62	.017	0	y	62	10274.112	18984.3...	123.597	889.893	1...	H1-1a
141	M504	PL2.25x0.375	.687	1.317	61	.015	1.317	y	61	8699.708	22788	177.75	1068.75	1...	H1-1a
142	M524	PL2.25x0.3...	.687	.887	62	.017	0	y	62	10274.112	18984.3...	123.597	889.893	1...	H1-1a
143	M280A	PL2.25x0.3...	.686	.852	61	.022	0	y	61	10766.601	18984.3...	123.597	889.893	1...	H1-1a
144	M528	PL2.25x0.3...	.686	.675	62	.041	.689	y	61	13291.722	18984.3...	123.597	889.893	1...	H1-1a
145	M538	PL2.25x0.3...	.683	1.023	62	.005	0	y	62	8178.023	18984.3...	123.597	889.893	2...	H1-1a
146	M214	L2.5X1.5X5	.682	2.273	62	.001	0	y	61	11060.999	31113.2...	475.557	1512.338	1...	H2-1
147	M282A	PL2.25x0.3...	.680	.929	61	.013	0	y	61	9684.406	18984.3...	123.597	889.893	1...	H1-1a
148	M544	PL2.25x0.375	.679	1.317	61	.016	1.317	y	61	8699.708	22788	177.75	1068.75	1...	H1-1a
149	M304A	PL2.25x0.375	.677	1.5	62	.017	1.5	y	62	6696.814	22788	177.75	1068.75	1...	H1-1a
150	M240A	PL2.25x0.3...	.675	.852	61	.021	0	y	61	10766.601	18984.3...	123.597	889.893	1...	H1-1a
151	M292A	PL2.25x0.3...	.675	.887	61	.018	0	y	61	10274.112	18984.3...	123.597	889.893	1...	H1-1a
152	M486	PL2.25x0.3...	.673	.976	62	.009	0	y	62	8818.511	18984.3...	123.597	889.893	1...	H1-1a
153	M274	PL2.25x0.3...	.673	.675	61	.041	.689	y	62	13291.722	18984.3...	123.597	889.893	1...	H1-1a
154	M488	PL2.25x0.3...	.672	.675	62	.054	.689	y	61	13291.722	18984.3...	123.597	889.893	1...	H1-1a
155	M284A	PL2.25x0.3...	.671	1.023	61	.006	0	y	61	8178.023	18984.3...	123.597	889.893	2...	H1-1a
156	M264	PL2.25x0.375	.670	1.5	62	.016	1.5	y	62	6696.814	22788	177.75	1068.75	1...	H1-1a
157	M242A	PL2.25x0.3...	.669	.949	61	.011	0	y	61	9196.866	18984.3...	123.597	889.893	1...	H1-1a
158	M526	PL2.25x0.3...	.668	.976	62	.009	0	y	62	8818.511	18984.3...	123.597	889.893	1...	H1-1a
159	M310A	PL2.25x0.375	.667	1.317	62	.016	1.317	y	62	8699.708	22788	177.75	1068.75	1...	H1-1a
160	M244A	PL2.25x0.3...	.665	1.023	61	.006	1.023	y	62	8178.023	18984.3...	123.597	889.893	2...	H1-1a
161	M270	PL2.25x0.375	.664	1.317	62	.013	1.317	y	62	8699.708	22788	177.75	1068.75	1...	H1-1a
162	M252A	PL2.25x0.3...	.663	.887	61	.016	0	y	61	10274.112	18984.3...	123.597	889.893	1...	H1-1a
163	M294A	PL2.25x0.3...	.656	.976	61	.010	0	y	61	8818.511	18984.3...	123.597	889.893	1...	H1-1a
164	M506	PL2.25x0.375	.653	1.429	61	.015	1.399	y	61	7383.957	22788	177.75	1068.75	1...	H1-1a
165	M254A	PL2.25x0.3...	.651	.976	61	.008	0	y	61	8818.511	18984.3...	123.597	889.893	1...	H1-1a
166	M234	PL2.25x0.3...	.649	.675	61	.053	.689	y	62	13291.722	18984.3...	123.597	889.893	1...	H1-1a
167	M512	PL2.25x0.375	.648	1.258	61	.009	1.258	y	61	9475.807	22788	177.75	1068.75	1...	H1-1a
168	M546	PL2.25x0.375	.644	1.429	61	.014	1.399	y	61	7383.957	22788	177.75	1068.75	1...	H1-1a
169	M254	L2.5X1.5X5	.640	2.273	61	.001	0	y	61	11060.999	31113.2...	475.557	1512.338	1...	H2-1
170	M552	PL2.25x0.375	.640	1.258	61	.010	1.258	y	61	9475.807	22788	177.75	1068.75	1...	H1-1a



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
171	M312A	PL2.25x0.375	.633	1.429	62 .012	1.399	y 62	7383.957	22788	177.75	1068.75	1...	H1-1a
172	M252	L2.5X1.5X5	.631	2.273	61 .001	4.116	y 62	11060.999	31113.2...	475.557	1512.338	1...	H2-1
173	M300A	PL2.25x0.375	.630	1.258	62 .010	1.258	y 62	9475.807	22788	177.75	1068.75	1...	H1-1a
174	M272	PL2.25x0.375	.629	1.429	62 .014	1.399	y 62	7383.957	22788	177.75	1068.75	1...	H1-1a
175	M216	L2.5X1.5X5	.626	2.273	62 .001	4.116	y 61	11061.282	31113.2...	475.557	1512.341	1...	H2-1
176	M260A	PL2.25x0.375	.626	1.258	62 .009	0	y 61	9475.807	22788	177.75	1068.75	1...	H1-1a
177	M502	PL2.25x0.375	.620	1.207	61 .009	1.207	y 61	10171.135	22788	177.75	1068.75	1...	H1-1a
178	M542	PL2.25x0.375	.612	1.207	61 .007	1.207	y 61	10171.135	22788	177.75	1068.75	1...	H1-1a
179	M247	L2.5X1.5X5	.605	1.844	62 .001	0	y 61	11061.282	31113.2...	475.557	1512.341	1...	H2-1
180	M308A	PL2.25x0.375	.602	1.207	62 .007	1.207	y 62	10171.135	22788	177.75	1068.75	1...	H1-1a
181	M202	L2.5X1.5X5	.601	2.229	62 .001	3.89	y 61	12372.939	31113.2...	475.557	1525.474	1...	H2-1
182	M268	PL2.25x0.375	.599	1.207	62 .009	1.207	y 62	10171.135	22788	177.75	1068.75	1...	H1-1a
183	M510	PL2.25x0.375	.592	1.157	61 .008	1.157	y 61	10853.65	22788	177.75	1068.75	1...	H1-1a
184	M550	PL2.25x0.375	.583	1.157	61 .007	1.157	y 61	10853.65	22788	177.75	1068.75	1...	H1-1a
185	M594	PL2.25x0.375	.580	1.531	61 .014	2.881	y 62	6642.944	22788	177.75	1068.75	1...	H1-1a
186	M513	PL2.25x0.375	.579	1.317	62 .011	2.634	y 61	8699.708	22788	177.75	1068.75	1...	H1-1a
187	M553	PL2.25x0.375	.578	1.317	62 .012	1.317	y 62	8699.708	22788	177.75	1068.75	1...	H1-1a
188	M251	L2.5X1.5X5	.576	1.844	62 .001	0	y 62	11060.999	31113.2...	475.557	1512.338	1...	H2-1
189	M386A	L2.5X1.5X5	.576	2.273	61 .001	4.116	y 62	11061.282	31113.2...	475.557	1512.341	1...	H2-1
190	M249	L2.5X1.5X5	.575	1.844	62 .001	0	y 61	11060.999	31113.2...	475.557	1512.338	1...	H2-1
191	M319	PL2.25x0.375	.575	1.531	62 .014	2.881	y 61	6642.944	22788	177.75	1068.75	1...	H1-1a
192	M298A	PL2.25x0.375	.574	1.157	62 .006	1.157	y 62	10853.65	22788	177.75	1068.75	1...	H1-1a
193	M258A	PL2.25x0.375	.571	1.157	62 .008	1.157	y 62	10853.65	22788	177.75	1068.75	1...	H1-1a
194	M318	PL2.25x0.375	.566	1.531	62 .017	2.881	y 61	6642.944	22788	177.75	1068.75	1...	H1-1a
195	M500	PL2.25x0.375	.566	1.11	61 .007	1.11	y 61	11517.738	22788	177.75	1068.75	1...	H1-1a
196	M301A	PL2.25x0.375	.565	1.317	61 .011	0	y 62	8699.708	22788	177.75	1068.75	1...	H1-1a
197	M503	PL2.25x0.375	.565	1.258	62 .009	2.517	y 61	9475.807	22788	177.75	1068.75	1...	H1-1a
198	M543	PL2.25x0.375	.564	1.258	62 .009	1.258	y 62	9475.807	22788	177.75	1068.75	1...	H1-1a
199	M593	PL2.25x0.375	.562	1.531	61 .017	2.881	y 62	6642.944	22788	177.75	1068.75	1...	H1-1a
200	M540	PL2.25x0.375	.558	1.11	61 .006	1.11	y 61	11517.738	22788	177.75	1068.75	1...	H1-1a
201	M261	PL2.25x0.375	.557	1.317	61 .011	1.317	y 61	8699.708	22788	177.75	1068.75	1...	H1-1a
202	M309A	PL2.25x0.375	.551	1.258	61 .009	0	y 62	9475.807	22788	177.75	1068.75	1...	H1-1a
203	M213	L2.5X1.5X5	.551	1.844	61 .001	0	y 61	11061.282	31113.2...	475.557	1512.341	1...	H2-1
204	M190	L6x4x6	.550	1.348	62 .129	1.283	y 61	44440.683	97470	4257.614	12792.4...	1	H2-1
205	M630	L6x4x6	.550	4.813	61 .129	4.877	y 62	44440.683	97470	4257.614	12792.4...	1	H2-1
206	M306A	PL2.25x0.375	.549	1.11	62 .005	1.11	y 62	11517.738	22788	177.75	1068.75	1...	H1-1a
207	M266	PL2.25x0.375	.546	1.11	62 .007	1.11	y 62	11517.738	22788	177.75	1068.75	1...	H1-1a
208	M269	PL2.25x0.375	.543	1.258	61 .009	0	y 62	9475.807	22788	177.75	1068.75	1...	H1-1a
209	M508	PL2.25x0.375	.543	1.065	61 .005	1.065	y 61	12159.94	22788	177.75	1068.75	1...	H1-1a
210	M218	L2.5X1.5X5	.542	2.273	62 .001	4.116	y 61	11060.999	31113.2...	475.557	1512.338	1...	H2-1
211	M221	L2.5X1.5X5	.538	1.844	61 .002	0	y 61	11060.999	31113.2...	475.557	1512.338	1...	H2-1
212	M548	PL2.25x0.375	.536	1.065	61 .004	1.065	y 61	12159.94	22788	177.75	1068.75	1...	H1-1a
213	M257	L2.5X1.5X5	.530	1.844	62 .003	4.116	y 61	11060.999	31113.2...	475.557	1512.338	1...	H2-1
214	M296A	PL2.25x0.375	.527	1.065	62 .003	1.065	y 62	12159.94	22788	177.75	1068.75	1...	H1-1a
215	M255	L2.5X1.5X5	.524	1.844	62 .002	0	y 61	11060.999	31113.2...	475.557	1512.338	1...	H2-1
216	M256A	PL2.25x0.375	.524	1.065	62 .005	1.065	y 62	12159.94	22788	177.75	1068.75	1...	H1-1a
217	M511	PL2.25x0.375	.522	1.207	62 .009	0	y 61	10171.135	22788	177.75	1068.75	1...	H1-1a
218	M551	PL2.25x0.375	.522	1.207	62 .009	1.207	y 62	10171.135	22788	177.75	1068.75	1...	H1-1a
219	M419	PL2.25x0.3...	.519	2.016	61 .004	2.016	y 62	2209.692	18984.3...	123.597	841.54	1...	H1-1a
220	M299A	PL2.25x0.375	.510	1.207	61 .007	0	y 62	10171.135	22788	177.75	1068.75	1...	H1-1a
221	M501	PL2.25x0.375	.504	1.157	62 .008	0	y 61	10853.65	22788	177.75	1068.75	1...	H1-1a
222	M541	PL2.25x0.375	.503	1.157	62 .007	0	y 61	10853.65	22788	177.75	1068.75	1...	H1-1a
223	M259A	PL2.25x0.375	.502	1.207	61 .009	0	y 62	10171.135	22788	177.75	1068.75	1...	H1-1a
224	M581	PL2.25x0.375	.502	1.531	62 .019	2.881	y 61	6642.944	22788	177.75	1068.75	1...	H1-1a
225	M330	PL2.25x0.375	.501	1.531	61 .019	2.881	y 62	6642.944	22788	177.75	1068.75	2...	H1-1a
226	M211	L2.5X1.5X5	.499	1.844	61 .001	0	y 62	11060.999	31113.2...	475.557	1512.338	1...	H2-1
227	M259	L2.5X1.5X5	.497	1.844	62 .002	0	y 62	11061.282	31113.2...	475.557	1512.341	1...	H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
228	M576	L3x2.5x5	.495	6.268	61	.038	8.358	y	61	39023.547	44010	1270.778	2996.056	1	H2-1
229	M139	L3x2.5x5	.495	5.531	62	.039	3.441	y	62	39023.547	44010	1270.778	2996.056	1	H2-1
230	M331	PL2.25x0.375	.495	1.531	61	.015	2.881	y	62	6642.944	22788	177.75	1068.75	1...	H1-1a
231	M582	PL2.25x0.375	.494	1.531	62	.015	2.881	y	61	6642.944	22788	177.75	1068.75	2...	H1-1a
232	M307A	PL2.25x0.375	.492	1.157	61	.006	0	y	62	10853.65	22788	177.75	1068.75	1...	H1-1a
233	M140	L3x2.5x5	.488	6.268	62	.029	8.358	y	61	39023.547	44010	1270.778	2996.056	1	H2-1
234	M577	L3x2.5x5	.488	5.531	61	.029	3.196	z	61	39023.547	44010	1270.778	2996.056	1	H2-1
235	M267	PL2.25x0.375	.484	1.157	61	.008	0	y	62	10853.65	22788	177.75	1068.75	1...	H1-1a
236	M515	PL2.25x0.375	.484	1.429	62	.015	2.858	y	61	7383.957	22788	177.75	1068.75	1...	H1-1a
237	M555	PL2.25x0.375	.482	1.429	62	.014	2.858	y	61	7383.957	22788	177.75	1068.75	1...	H1-1a
238	M209	L2.5X1.5X5	.482	1.844	61	.001	4.116	y	62	11060.999	31113.2...	475.557	1512.338	1...	H2-1
239	M215	L2.5X1.5X5	.481	1.844	61	.001	4.116	y	62	11060.999	31113.2...	475.557	1512.338	1...	H2-1
240	M509	PL2.25x0.375	.478	1.11	62	.006	0	y	61	11517.738	22788	177.75	1068.75	1...	H1-1a
241	M549	PL2.25x0.375	.478	1.11	62	.005	0	y	61	11517.738	22788	177.75	1068.75	1...	H1-1a
242	M217	L2.5X1.5X5	.475	1.844	61	.001	4.116	y	61	11060.999	31113.2...	475.557	1512.338	1...	H2-1
243	M253	L2.5X1.5X5	.474	1.844	62	.001	0	y	61	11061.282	31113.2...	475.557	1512.341	1...	H2-1
244	M303A	PL2.25x0.375	.473	1.429	61	.013	2.858	y	62	7383.957	22788	177.75	1068.75	1...	H1-1a
245	M505	PL2.25x0.375	.468	1.366	62	.016	0	y	61	8090.984	22788	177.75	1068.75	1...	H1-1a
246	M545	PL2.25x0.375	.467	1.366	62	.017	0	y	61	8090.984	22788	177.75	1068.75	1...	H1-1a
247	M297A	PL2.25x0.375	.467	1.11	61	.005	0	y	62	11517.738	22788	177.75	1068.75	1...	H1-1a
248	M263	PL2.25x0.375	.464	1.429	61	.015	2.858	y	62	7383.957	22788	177.75	1068.75	1...	H1-1a
249	M257A	PL2.25x0.375	.460	1.11	61	.006	0	y	62	11517.738	22788	177.75	1068.75	1...	H1-1a
250	M311A	PL2.25x0.375	.460	1.366	61	.017	0	y	62	8090.984	22788	177.75	1068.75	1...	H1-1a
251	M499	PL2.25x0.375	.460	1.065	62	.004	1.065	y	61	12159.94	22788	177.75	1068.75	1...	H1-1a
252	M539	PL2.25x0.375	.460	1.065	62	.004	0	y	61	12159.94	22788	177.75	1068.75	1...	H1-1a
253	M271	PL2.25x0.375	.451	1.366	61	.015	0	y	62	8090.984	22788	177.75	1068.75	1...	H1-1a
254	M305A	PL2.25x0.375	.449	1.065	61	.005	0	y	62	12159.94	22788	177.75	1068.75	1...	H1-1a
255	M665A	L3x3x3	.448	.375	61	.132	.75	y	61	27653.061	29430	1100.081	2421.005	1...	H2-1
256	M661	L3x3x3	.448	.375	62	.132	0	y	62	27653.061	29430	1100.081	2421.005	1...	H2-1
257	M660	L3x3x3	.443	.375	62	.133	0	z	62	27653.061	29430	1100.081	2421.005	1...	H2-1
258	M664A	L3x3x3	.443	.375	61	.133	.75	z	61	27653.061	29430	1100.081	2421.005	1...	H2-1
259	M265	PL2.25x0.375	.442	1.065	61	.005	1.065	y	62	12159.94	22788	177.75	1068.75	1...	H1-1a
260	M207	L2.5X1.5X5	.442	1.844	61	.001	0	y	62	11061.282	31113.2...	475.557	1512.341	1...	H2-1
261	M220	L2.5X1.5X5	.416	2.273	62	.003	0	y	61	11060.999	31113.2...	475.557	1512.338	1...	H2-1
262	M578	L3x2.5x5	.401	5.408	62	.036	3.441	y	62	39023.547	44010	1270.778	2996.056	1	H2-1
263	M137	L3x2.5x5	.398	6.391	61	.036	8.358	y	61	39023.547	44010	1270.778	2996.056	1	H2-1
264	M138	L3x2.5x5	.396	5.408	61	.036	3.441	y	62	39023.547	44010	1270.778	2996.056	1	H2-1
265	M579	L3x2.5x5	.393	6.391	62	.036	8.358	y	61	39023.547	44010	1270.778	2996.056	1	H2-1
266	M507	PL2.25x0.375	.385	1.5	62	.013	0	y	61	6696.814	22788	177.75	1068.75	1...	H1-1a
267	M547	PL2.25x0.375	.385	1.5	62	.015	0	y	61	6696.814	22788	177.75	1068.75	1...	H1-1a
268	M248	L2.5X1.5X5	.383	2.273	61	.001	0	y	61	11060.999	31113.2...	475.557	1512.338	1...	H2-1
269	M250	L2.5X1.5X5	.378	2.273	61	.001	0	y	62	11061.282	31113.2...	475.557	1512.341	1...	H2-1
270	M313A	PL2.25x0.375	.376	1.5	61	.015	0	y	62	6696.814	22788	177.75	1068.75	1...	H1-1a
271	M558	L2.5x2.5x5	.376	2.083	62	.002	0	y	62	24050.235	39420	1096.767	2551.08	1...	H2-1
272	M557	L2.5x2.5x5	.374	2.083	62	.001	0	z	61	24050.235	39420	1096.767	2551.08	1...	H2-1
273	M246	L2.5X1.5X5	.370	2.273	61	.001	4.116	y	62	11060.999	31113.2...	475.557	1512.338	1...	H2-1
274	M385A	L2.5X1.5X5	.367	1.844	62	.001	0	y	62	11060.999	31113.2...	475.557	1512.338	1...	H2-1
275	M273	PL2.25x0.375	.364	1.5	61	.013	0	y	62	6696.814	22788	177.75	1068.75	1...	H1-1a
276	M315	L2.5x2.5x5	.364	2.083	61	.001	0	z	61	24050.235	39420	1096.767	2551.08	1...	H2-1
277	M205	L2.5X1.5X5	.360	1.844	61	.002	4.116	y	62	11060.999	31113.2...	475.557	1512.338	1...	H2-1
278	M381A	L2.5X1.5X5	.358	2.273	62	.004	4.116	y	61	11060.999	31113.2...	475.557	1512.338	1...	H2-1
279	M314	L2.5x2.5x5	.357	2.083	61	.002	4.254	y	61	24050.235	39420	1096.767	2551.08	1...	H2-1
280	M219	L2.5X1.5X5	.349	1.844	61	.002	0	y	61	11061.282	31113.2...	475.557	1512.341	1...	H2-1
281	M412	PL2.25x0.3...	.323	1.932	61	.004	0	y	61	2209.692	18984.3...	123.597	833.018	1...	H1-1a
282	M240	L2.5X1.5X5	.309	2.015	62	.007	0	y	62	11060.999	31113.2...	475.557	1512.338	1...	H2-1
283	M242	L2.5X1.5X5	.306	2.015	62	.003	0	y	62	11060.999	31113.2...	475.557	1512.338	1...	H2-1
284	M383A	L2.5X1.5X5	.305	1.957	61	.009	0	y	61	11725.89	31113.2...	475.557	1519.173	1...	H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
285	M653	L6x4x6	.281	.805	61	.128	.402	z	62	90609.468	97470	4257.614	12792.4...	1...	H2-1
286	M222	L2.5X1.5X5	.281	2.273	62	.002	0	y	61	11061.282	31113.2...	475.557	1512.341	1...	H2-1
287	M656	L6x4x6	.279	.805	62	.129	1.207	z	61	90609.468	97470	4257.614	12792.4...	1...	H2-1
288	M387A	L2.5X1.5X5	.276	2.041	61	.002	0	y	61	11725.89	31113.2...	475.557	1519.173	1...	H2-1
289	M654	L6x4x6	.274	.579	61	.097	.289	z	61	91511.923	97470	4257.614	12792.4...	1...	H2-1
290	M651	L6x4x6	.274	.579	62	.097	.868	z	62	91511.923	97470	4257.614	12792.4...	1...	H2-1
291	M616	PL2.25x0.3...	.274	.728	61	.013	0	y	61	12410.994	18984.3...	123.597	889.893	1...	H1-1a
292	M350	PL2.25x0.3...	.274	.728	62	.013	0	y	62	12410.994	18984.3...	123.597	889.893	1...	H1-1a
293	M362	PL2.25x0.3...	.273	.728	62	.016	0	y	62	12410.994	18984.3...	123.597	889.893	1...	H1-1a
294	M628	PL2.25x0.3...	.272	.728	61	.016	0	y	61	12410.994	18984.3...	123.597	889.893	1...	H1-1a
295	M244	L2.5X1.5X5	.272	2.015	62	.001	4.116	y	62	11061.282	31113.2...	475.557	1512.341	1...	H2-1
296	M642	L2.5X1.5X5	.270	1.874	61	.002	0	y	61	12735.405	31113.2...	475.557	1529.091	1...	H2-1
297	M198	PL2.25x0.375	.266	1.276	62	.039	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
298	M203	L2.5X1.5X5	.264	2.101	62	.007	4.116	y	62	11060.999	31113.2...	475.557	1512.338	1...	H2-1
299	M360	PL2.25x0.3...	.264	.875	62	.020	0	y	62	10442.756	18984.3...	123.597	889.893	1...	H1-1a
300	M614	PL2.25x0.3...	.264	.875	61	.015	0	y	61	10442.756	18984.3...	123.597	889.893	1...	H1-1a
301	M626	PL2.25x0.3...	.264	.875	61	.020	0	y	61	10442.756	18984.3...	123.597	889.893	1...	H1-1a
302	M348	PL2.25x0.3...	.264	.875	62	.015	0	y	62	10442.756	18984.3...	123.597	889.893	1...	H1-1a
303	M405A	PL2.25x0.375	.264	1.276	61	.040	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
304	M650	L6x4x6	.263	.579	62	.087	.868	z	62	91511.923	97470	4257.614	12792.4...	1...	H2-1
305	M655	L6x4x6	.262	.579	61	.087	.289	z	61	91511.923	97470	4257.614	12792.4...	1...	H2-1
306	M657	L6x4x6	.261	.805	62	.118	.402	z	62	90609.468	97470	4257.614	12792.4...	1...	H2-1
307	M652	L6x4x6	.259	.805	62	.118	1.207	z	61	90609.468	97470	4257.614	12414.3...	1...	H2-1
308	M279	L2.5X1.5X5	.258	1.874	62	.001	0	y	62	12735.405	31113.2...	475.557	1529.091	1...	H2-1
309	M441	PL2.25x0.375	.244	1.276	62	.036	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
310	M162	PL2.25x0.375	.243	1.276	61	.035	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
311	M643	L2.5X1.5X5	.241	1.954	61	.002	3.829	y	61	12735.405	31113.2...	475.557	1529.091	1...	H2-1
312	M605	PL2.25x0.375	.238	1.676	62	.007	3.155	y	62	5446.743	22788	177.75	1068.75	1...	H1-1a
313	M343	PL2.25x0.375	.237	1.676	61	.007	3.155	y	61	5446.743	22788	177.75	1068.75	1...	H1-1a
314	M418	PL2.25x0.3...	.234	2.016	62	.005	2.016	y	62	2209.692	18984.3...	123.597	799.23	1...	H1-1a
315	M575	PL2.25x0.3...	.231	1.186	62	.007	0	y	62	1730.828	18984.3...	123.597	889.893	1...	H1-1a
316	M574	PL2.25x0.3...	.229	1.186	62	.006	0	y	62	1730.828	18984.3...	123.597	889.893	1...	H1-1a
317	M380A	PL2.25x0.3...	.222	1.186	61	.006	0	y	61	1730.828	18984.3...	123.597	889.893	1...	H1-1a
318	M379A	PL2.25x0.3...	.221	1.186	61	.007	2.277	y	61	1730.828	18984.3...	123.597	889.893	1...	H1-1a
319	M420	PL2.25x0.375	.219	1.276	62	.022	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
320	M278	L2.5X1.5X5	.217	1.954	62	.001	0	y	62	12735.405	31113.2...	475.557	1529.091	1...	H2-1
321	M438	PL2.25x0.375	.215	1.276	62	.025	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
322	M321	PL2.25x0.3...	.212	1.202	62	.023	0	y	62	6085.438	18984.3...	123.597	889.893	1...	H1-1b
323	M596	PL2.25x0.3...	.212	1.202	61	.023	0	y	61	6085.438	18984.3...	123.597	889.893	1...	H1-1b
324	M213A	PL2.25x0.375	.211	1.276	61	.020	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
325	M598	PL2.25x0.3...	.208	1.202	61	.022	0	y	61	6085.438	18984.3...	123.597	889.893	1...	H1-1b
326	M323	PL2.25x0.3...	.208	1.202	62	.022	0	y	62	6085.438	18984.3...	123.597	889.893	1...	H1-1b
327	M231	PL2.25x0.375	.205	1.276	61	.024	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
328	M423	PL2.25x0.375	.203	1.276	61	.039	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
329	M216A	PL2.25x0.375	.202	1.276	62	.038	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
330	M195A	PL2.25x0.375	.199	1.276	62	.036	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
331	M177	PL2.25x0.375	.197	1.276	62	.034	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
332	M602	PL2.25x0.3...	.193	.821	61	.033	.821	y	61	12516.094	18984.3...	123.597	889.893	2...	H1-1b
333	M327	PL2.25x0.3...	.193	.821	62	.033	.821	y	62	12516.094	18984.3...	123.597	889.893	2...	H1-1b
334	M324	PL2.25x0.3...	.192	.821	62	.034	.821	y	62	12516.094	18984.3...	123.597	889.893	2...	H1-1b
335	M599	PL2.25x0.3...	.192	.821	61	.034	.821	y	61	12516.094	18984.3...	123.597	889.893	2...	H1-1b
336	M474	PL2.25x0.375	.188	1.276	61	.037	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
337	M459	PL2.25x0.375	.183	1.276	62	.035	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
338	M406A	PL2.25x0.375	.182	1.276	61	.039	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
339	M597	PL2.25x0.3...	.182	1.289	61	.031	1.289	y	61	7239.587	18984.3...	123.597	889.893	2...	H1-1b
340	M322	PL2.25x0.3...	.182	1.289	62	.031	1.289	y	62	7239.587	18984.3...	123.597	889.893	2...	H1-1b
341	M320	PL2.25x0.3...	.181	1.289	62	.031	1.289	y	62	7239.587	18984.3...	123.597	889.893	3...	H1-1b



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Ean
342	M595	PL2.25x0.3...	.181	1.289	61	.031	1.289	y	61	7239.587	18984.3...	123.597	889.893	3...	H1-1b
343	M180	PL2.25x0.375	.181	1.276	61	.034	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
344	M456	PL2.25x0.375	.180	1.276	61	.035	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
345	M199	PL2.25x0.375	.178	1.276	62	.038	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
346	M424	PL2.25x0.375	.177	1.276	61	.038	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
347	M612	PL2.25x0.3...	.173	.784	61	.015	0	y	61	11709.721	18984.3...	123.597	889.893	1...	H1-1b
348	M352	PL2.25x0.3...	.173	.784	62	.015	0	y	62	11709.721	18984.3...	123.597	889.893	1...	H1-1b
349	M217A	PL2.25x0.375	.173	1.276	62	.038	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
350	M364A	PL2.25x0.3...	.172	.784	62	.019	0	y	62	11709.721	18984.3...	123.597	889.893	1...	H1-1b
351	M624	PL2.25x0.3...	.172	.784	61	.019	0	y	61	11709.721	18984.3...	123.597	889.893	1...	H1-1b
352	M336	PL2.25x0.3...	.167	.821	62	.032	1.546	y	62	12516.094	18984.3...	123.597	889.893	2...	H1-1b
353	M587	PL2.25x0.3...	.167	.821	61	.032	1.546	y	61	12516.094	18984.3...	123.597	889.893	2...	H1-1b
354	M590	PL2.25x0.3...	.167	.821	61	.031	1.546	y	61	12516.094	18984.3...	123.597	889.893	2...	H1-1b
355	M339	PL2.25x0.3...	.167	.821	62	.031	1.546	y	62	12516.094	18984.3...	123.597	889.893	2...	H1-1b
356	M442	PL2.25x0.375	.166	1.276	62	.035	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
357	M437	PL2.25x0.375	.164	1.276	61	.027	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
358	M163	PL2.25x0.375	.163	1.276	61	.035	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
359	M176	PL2.25x0.375	.161	1.276	62	.038	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
360	M419A	PL2.25x0.375	.161	1.276	61	.029	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
361	M473	PL2.25x0.375	.160	1.276	61	.036	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
362	M455	PL2.25x0.375	.159	1.276	61	.038	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
363	M194A	PL2.25x0.375	.158	1.276	62	.035	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
364	M212A	PL2.25x0.375	.157	1.276	62	.028	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
365	M586	PL2.25x0.3...	.157	1.202	62	.017	1.225	y	62	6085.438	18984.3...	123.597	889.893	1...	H1-1b
366	M460	PL2.25x0.375	.156	1.276	62	.034	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
367	M333	PL2.25x0.3...	.156	1.202	61	.019	0	y	61	6085.438	18984.3...	123.597	889.893	1...	H1-1b
368	M335	PL2.25x0.3...	.155	1.202	61	.017	1.225	y	61	6085.438	18984.3...	123.597	889.893	1...	H1-1b
369	M584	PL2.25x0.3...	.154	1.202	62	.019	0	y	62	6085.438	18984.3...	123.597	889.893	1...	H1-1b
370	M472	PL2.25x0.375	.154	1.276	61	.037	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
371	M230	PL2.25x0.375	.154	1.276	62	.025	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
372	M334	PL2.25x0.3...	.152	1.289	61	.026	1.289	y	61	7239.587	18984.3...	123.597	889.893	2...	H1-1b
373	M585	PL2.25x0.3...	.151	1.289	62	.026	1.289	y	62	7239.587	18984.3...	123.597	889.893	2...	H1-1b
374	M181	PL2.25x0.375	.151	1.276	61	.033	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
375	M583	PL2.25x0.3...	.149	1.289	62	.027	2.381	y	61	7239.587	18984.3...	123.597	889.893	2...	H1-1b
376	M332	PL2.25x0.3...	.149	1.289	61	.027	2.381	y	62	7239.587	18984.3...	123.597	889.893	2...	H1-1b
377	M193A	PL2.25x0.375	.147	1.276	62	.036	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
378	M200	PL2.25x0.375	.146	1.276	62	.028	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
379	M425	PL2.25x0.375	.145	1.276	61	.028	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
380	M175	PL2.25x0.375	.145	1.276	62	.033	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
381	M454	PL2.25x0.375	.144	1.276	61	.035	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
382	M407A	PL2.25x0.375	.143	1.276	61	.028	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
383	M218A	PL2.25x0.375	.141	1.276	62	.029	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
384	M603	PL2.25x0.3...	.139	.734	61	.035	.748	y	61	12378.783	18984.3...	123.597	889.893	1...	H1-1b
385	M328	PL2.25x0.3...	.139	.734	62	.035	.748	y	62	12378.783	18984.3...	123.597	889.893	1...	H1-1b
386	M591	PL2.25x0.3...	.138	.734	61	.033	1.409	y	61	12378.783	18984.3...	123.597	889.893	1...	H1-1b
387	M340	PL2.25x0.3...	.138	.734	62	.032	1.409	y	62	12378.783	18984.3...	123.597	889.893	1...	H1-1b
388	M325	PL2.25x0.3...	.138	.734	62	.033	0	y	62	12378.783	18984.3...	123.597	889.893	1...	H1-1b
389	M600	PL2.25x0.3...	.137	.734	61	.033	0	y	61	12378.783	18984.3...	123.597	889.893	1...	H1-1b
390	M337	PL2.25x0.3...	.137	.734	62	.031	1.409	y	62	12378.783	18984.3...	123.597	889.893	1...	H1-1b
391	M588	PL2.25x0.3...	.137	.734	61	.031	1.409	y	61	12378.783	18984.3...	123.597	889.893	1...	H1-1b
392	M361	PL2.25x0.3...	.132	.784	62	.019	.784	y	62	11709.721	18984.3...	123.597	889.893	1...	H1-1b
393	M627	PL2.25x0.3...	.132	.784	61	.019	.784	y	61	11709.721	18984.3...	123.597	889.893	1...	H1-1b
394	M461	PL2.25x0.375	.131	1.276	62	.026	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
395	M615	PL2.25x0.3...	.131	.784	61	.016	.784	y	61	11709.721	18984.3...	123.597	889.893	1...	H1-1b
396	M349	PL2.25x0.3...	.131	.784	62	.015	.784	y	62	11709.721	18984.3...	123.597	889.893	1...	H1-1b
397	M453	PL2.25x0.375	.131	1.276	61	.035	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
398	M471	PL2.25x0.375	.131	1.276	61	.033	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b



Company : B&V
Designer : S.Suntum
Job Number : 190704
Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
399	M363A	PL2.25x0.3...	.131	.893	62	.019	.875	y	62	11977.241	18984.3...	123.597	889.893	1...	H1-1b
400	M623	PL2.25x0.3...	.130	.893	61	.019	.875	y	61	11977.241	18984.3...	123.597	889.893	1...	H1-1b
401	M611	PL2.25x0.3...	.129	.893	61	.016	.875	y	61	11977.241	18984.3...	123.597	889.893	1...	H1-1b
402	M351	PL2.25x0.3...	.129	.893	62	.015	.875	y	62	11977.241	18984.3...	123.597	889.893	1...	H1-1b
403	M182	PL2.25x0.375	.129	1.276	61	.026	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
404	M443	PL2.25x0.375	.128	1.276	62	.025	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
405	M174	PL2.25x0.375	.127	1.276	62	.034	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
406	M164	PL2.25x0.375	.127	1.276	61	.025	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
407	M470	PL2.25x0.375	.126	1.276	61	.028	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
408	M354	PL2.25x0.375	.125	1.676	61	.010	3.155	y	61	5446.743	22788	177.75	1068.75	1...	H1-1b
409	M192A	PL2.25x0.375	.125	1.276	62	.031	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
410	M618	PL2.25x0.375	.124	1.676	62	.010	3.155	y	62	5446.743	22788	177.75	1068.75	1...	H1-1b
411	M365A	PL2.25x0.3...	.123	.728	62	.015	.728	y	62	12410.994	18984.3...	123.597	889.893	1...	H1-1b
412	M625	PL2.25x0.3...	.123	.728	61	.015	.728	y	61	12410.994	18984.3...	123.597	889.893	1...	H1-1b
413	M613	PL2.25x0.3...	.122	.728	61	.013	.728	y	61	12410.994	18984.3...	123.597	889.893	1...	H1-1b
414	M353	PL2.25x0.3...	.122	.728	62	.013	.728	y	62	12410.994	18984.3...	123.597	889.893	1...	H1-1b
415	M418A	PL2.25x0.375	.120	1.276	62	.018	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
416	M610	PL2.25x0.3...	.119	1.299	61	.013	1.324	y	61	5266.436	18984.3...	123.597	889.893	1...	H1-1b
417	M345	PL2.25x0.3...	.119	1.299	62	.013	1.324	y	62	5266.436	18984.3...	123.597	889.893	1...	H1-1b
418	M191A	PL2.25x0.375	.118	1.276	62	.027	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
419	M211A	PL2.25x0.375	.117	1.276	61	.016	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
420	M436	PL2.25x0.375	.116	1.276	62	.017	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
421	M201	PL2.25x0.375	.116	1.276	62	.022	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
422	M426	PL2.25x0.375	.116	1.276	61	.022	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
423	M400	PL2.25x0.3...	.115	2.016	62	.004	0	y	62	2209.692	18984.3...	123.597	799.771	1...	H1-1b
424	M408A	PL2.25x0.375	.114	1.276	61	.022	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
425	M452	PL2.25x0.375	.113	1.276	61	.026	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
426	M219A	PL2.25x0.375	.113	1.276	62	.022	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
427	M173	PL2.25x0.375	.112	1.276	62	.024	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
428	M229	PL2.25x0.375	.110	1.276	61	.018	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
429	M451	PL2.25x0.375	.110	1.276	61	.022	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
430	M601	PL2.25x0.3...	.108	.696	61	.019	0	y	61	12860.554	18984.3...	123.597	889.893	1...	H1-1b
431	M326	PL2.25x0.3...	.108	.696	62	.019	0	y	62	12860.554	18984.3...	123.597	889.893	1...	H1-1b
432	M439	PL2.25x0.375	.108	1.276	62	.014	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
433	M342	PL2.25x0.375	.106	1.676	62	.010	3.155	y	62	5446.743	22788	177.75	1068.75	1...	H1-1b
434	M421	PL2.25x0.375	.105	1.276	62	.016	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
435	M435	PL2.25x0.375	.105	1.276	61	.018	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
436	M329	PL2.25x0.3...	.104	.696	62	.017	0	y	62	12860.554	18984.3...	123.597	889.893	1...	H1-1b
437	M457	PL2.25x0.375	.104	1.276	61	.032	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
438	M604	PL2.25x0.3...	.104	.696	61	.017	0	y	61	12860.554	18984.3...	123.597	889.893	1...	H1-1b
439	M232	PL2.25x0.375	.104	1.276	61	.011	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
440	M617	PL2.25x0.375	.104	1.676	61	.011	3.155	y	61	5446.743	22788	177.75	1068.75	1...	H1-1b
441	M165	PL2.25x0.375	.104	1.276	61	.021	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
442	M462	PL2.25x0.375	.103	1.276	62	.020	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
443	M444	PL2.25x0.375	.103	1.276	62	.020	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
444	M172	PL2.25x0.375	.102	1.276	62	.021	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
445	M417A	PL2.25x0.375	.102	1.276	62	.018	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
446	M606	PL2.25x0.375	.102	1.676	61	.010	3.155	y	61	5446.743	22788	177.75	1068.75	1...	H1-1b
447	M469	PL2.25x0.375	.101	1.276	61	.020	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
448	M214A	PL2.25x0.375	.101	1.276	61	.015	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
449	M210A	PL2.25x0.375	.100	1.276	61	.018	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
450	M355	PL2.25x0.375	.100	1.676	62	.011	3.155	y	62	5446.743	22788	177.75	1068.75	1...	H1-1b
451	M357	PL2.25x0.3...	.100	1.299	62	.016	1.324	y	62	5266.436	18984.3...	123.597	889.893	1...	H1-1b
452	M622	PL2.25x0.3...	.100	1.299	61	.015	1.324	y	61	5266.436	18984.3...	123.597	889.893	1...	H1-1b
453	M183	PL2.25x0.375	.099	1.276	61	.019	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
454	M401	PL2.25x0.3...	.099	2.016	61	.003	2.016	y	62	2209.692	18984.3...	123.597	889.893	1...	H1-1b
455	M190A	PL2.25x0.375	.097	1.276	62	.019	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Ean
456	M228	PL2.25x0.375	.096	1.276	62	.015	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
457	M468	PL2.25x0.375	.095	1.276	61	.017	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
458	M416A	PL2.25x0.375	.093	1.276	62	.016	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
459	M427	PL2.25x0.375	.092	1.276	61	.015	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
460	M648	L2.5x2.5x5	.092	.396	61	.027	.396	z	61	35341.325	39420	1096.767	2551.08	1...	H2-1
461	M359	PL2.25x0.3...	.091	1.299	62	.011	1.324	y	61	5266.436	18984.3...	123.597	889.893	1...	H1-1b
462	M434	PL2.25x0.375	.091	1.276	62	.015	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
463	M620	PL2.25x0.3...	.091	1.299	61	.011	1.324	y	62	5266.436	18984.3...	123.597	889.893	1...	H1-1b
464	M358	PL2.25x0.3...	.091	1.399	62	.014	1.399	y	62	6290.19	18984.3...	123.597	889.893	1...	H1-1b
465	M202A	PL2.25x0.375	.091	1.276	62	.015	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
466	M589	PL2.25x0.3...	.090	.696	61	.018	.696	y	61	12860.554	18984.3...	123.597	889.893	1...	H1-1b
467	M619	PL2.25x0.3...	.090	1.399	61	.014	1.399	y	61	6290.19	18984.3...	123.597	889.893	1...	H1-1b
468	M338	PL2.25x0.3...	.090	.696	62	.017	.696	y	62	12860.554	18984.3...	123.597	889.893	1...	H1-1b
469	M220A	PL2.25x0.375	.090	1.276	62	.016	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
470	M608	PL2.25x0.3...	.089	1.299	61	.011	1.324	y	62	5266.436	18984.3...	123.597	889.893	1...	H1-1b
471	M209A	PL2.25x0.375	.089	1.276	61	.014	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
472	M347	PL2.25x0.3...	.089	1.299	62	.011	1.324	y	61	5266.436	18984.3...	123.597	889.893	1...	H1-1b
473	M189A	PL2.25x0.375	.088	1.276	62	.017	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
474	M475	PL2.25x0.375	.088	1.276	61	.032	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
475	M227	PL2.25x0.375	.087	1.276	61	.016	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
476	M409A	PL2.25x0.375	.087	1.276	61	.015	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
477	M450	PL2.25x0.375	.087	1.276	61	.016	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
478	M646	L2.5x2.5x5	.087	1.604	62	.024	1.604	y	62	35341.325	39420	1096.767	2551.08	1...	H2-1
479	M341	PL2.25x0.3...	.087	.696	62	.016	.696	y	62	12860.554	18984.3...	123.597	889.893	1...	H1-1b
480	M592	PL2.25x0.3...	.087	.696	61	.016	.696	y	61	12860.554	18984.3...	123.597	889.893	1...	H1-1b
481	M458	PL2.25x0.375	.086	1.276	61	.010	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
482	M463	PL2.25x0.375	.084	1.276	62	.014	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
483	M171	PL2.25x0.375	.083	1.276	62	.014	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
484	M184	PL2.25x0.375	.082	1.276	61	.015	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
485	M178	PL2.25x0.375	.080	1.276	62	.031	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
486	M422	PL2.25x0.375	.080	1.276	61	.006	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
487	M305	L2.5x1.25x5	.079	1.234	62	.002	0	y	61	16726.443	29003.9...	340.889	1463.587	1...	H2-1
488	M445	PL2.25x0.375	.079	1.276	62	.014	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
489	M449	PL2.25x0.375	.079	1.276	61	.013	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
490	M307	L2.5x1.25x5	.078	1.234	62	.004	2.467	y	62	16726.443	29003.9...	340.889	1463.587	1...	H2-1
491	M166	PL2.25x0.375	.078	1.276	61	.013	0	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
492	M196A	PL2.25x0.375	.077	1.276	62	.028	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
493	M440	PL2.25x0.375	.077	1.276	61	.008	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
494	M233	PL2.25x0.375	.076	1.276	62	.008	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
495	M433	PL2.25x0.375	.074	1.276	62	.013	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
496	M607	PL2.25x0.3...	.074	1.399	61	.011	1.399	y	61	6290.19	18984.3...	123.597	889.893	1...	H1-1b
497	M346	PL2.25x0.3...	.074	1.399	62	.010	1.399	y	62	6290.19	18984.3...	123.597	889.893	1...	H1-1b
498	M415A	PL2.25x0.375	.073	1.276	62	.012	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
499	M208A	PL2.25x0.375	.072	1.276	61	.013	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
500	M215A	PL2.25x0.375	.072	1.276	62	.007	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
501	M467	PL2.25x0.375	.072	1.276	61	.012	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
502	M170	PL2.25x0.375	.072	1.276	62	.013	1.276	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
503	M356	PL2.25x0.3...	.072	1.399	61	.011	1.399	y	61	6290.19	18984.3...	123.597	889.893	1...	H1-1b
504	M226	PL2.25x0.375	.071	1.276	61	.010	1.276	y	61	9570.665	22788	177.75	1068.75	1...	H1-1b
505	M621	PL2.25x0.3...	.071	1.399	62	.011	1.399	y	62	6290.19	18984.3...	123.597	889.893	1...	H1-1b
506	M609	PL2.25x0.3...	.071	1.399	62	.010	1.399	y	62	6290.19	18984.3...	123.597	889.893	1...	H1-1b
507	M370	L2.5x1.25x5	.070	1.234	62	.002	2.467	y	62	16726.006	29003.9...	340.889	1494.276	1...	H2-1
508	M344	PL2.25x0.3...	.070	1.399	61	.010	1.399	y	61	6290.19	18984.3...	123.597	889.893	1...	H1-1b
509	M413	PL2.25x0.3...	.069	2.016	62	.003	2.016	y	61	2209.692	18984.3...	123.597	889.893	1...	H1-1b
510	M179	PL2.25x0.375	.069	1.276	62	.009	0	y	62	9570.665	22788	177.75	1068.75	1...	H1-1b
511	M374	L2.5x1.25x5	.068	1.208	61	.001	2.467	y	61	16726.443	29003.9...	340.889	1494.276	1...	H2-1
512	M399A	L2.5x1.25x5	.068	1.208	61	.006	0	y	61	16726.443	29003.9...	340.889	1494.276	1...	H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y [lb-ft]	phi*Mn z [lb-ft]	Cb	Eqn
513	M476	PL2.25x0.375	.068	1.276	61	.011	0	y 61	9570.665	22788	177.75	1068.75	1... H1-1b
514	M391A	L2.5x1.25x5	.068	1.208	62	.004	0	y 62	16726.443	29003.9...	340.889	1463.587	1... H2-1
515	M188	PL2.25x0.375	.067	1.276	62	.011	1.276	y 62	9570.665	22788	177.75	1068.75	1... H1-1b
516	M197A	PL2.25x0.375	.066	1.276	62	.012	0	y 62	9570.665	22788	177.75	1068.75	1... H1-1b
517	M649	L2.5x2.5x5	.066	1	61	.001	2	y 61	35341.325	39420	1096.767	2551.08	1... H2-1
518	M389A	L2.5x1.25x5	.066	1.208	62	.003	0	y 62	16726.443	29003.9...	340.889	1463.587	1... H2-1
519	M645	L2.5x1.25x5	.065	1.197	61	.017	0	y 61	16897.433	29003.9...	340.889	1494.276	1... H2-1
520	M372	L2.5x1.25x5	.065	1.208	61	.001	2.467	y 61	16726.443	29003.9...	340.889	1494.276	1... H2-1
521	M389	L2.5x1.25x5	.065	1.259	62	.004	0	y 62	16726.443	29003.9...	340.889	1494.276	1... H2-1
522	M414A	PL2.25x0.375	.065	1.276	62	.011	1.276	y 62	9570.665	22788	177.75	1068.75	1... H1-1b
523	M647	L2.5x2.5x5	.064	1	62	.001	2	z 62	35341.325	39420	1096.767	2551.08	1... H2-1
524	M203A	PL2.25x0.375	.064	1.276	62	.011	0	y 62	9570.665	22788	177.75	1068.75	1... H1-1b
525	M432	PL2.25x0.375	.064	1.276	62	.010	1.276	y 62	9570.665	22788	177.75	1068.75	1... H1-1b
526	M466	PL2.25x0.375	.063	1.276	61	.009	1.276	y 61	9570.665	22788	177.75	1068.75	1... H1-1b
527	M207A	PL2.25x0.375	.062	1.276	61	.008	1.276	y 61	9570.665	22788	177.75	1068.75	1... H1-1b
528	M225	PL2.25x0.375	.062	1.276	61	.011	1.276	y 61	9570.665	22788	177.75	1068.75	1... H1-1b
529	M428	PL2.25x0.375	.062	1.276	61	.010	0	y 61	9570.665	22788	177.75	1068.75	1... H1-1b
530	M410A	PL2.25x0.375	.061	1.276	61	.010	0	y 61	9570.665	22788	177.75	1068.75	1... H1-1b
531	M378	L2.5x1.25x5	.061	1.208	61	.001	2.467	y 61	16726.443	29003.9...	340.889	1494.276	1... H2-1
532	M301	L2.5x1.25x5	.060	1.259	61	.002	2.467	y 61	16726.006	29003.9...	340.889	1463.583	1... H2-1
533	M221A	PL2.25x0.375	.060	1.276	62	.009	0	y 62	9570.665	22788	177.75	1068.75	1... H1-1b
534	M387	L2.5x1.25x5	.060	1.259	62	.003	0	y 62	16726.443	29003.9...	340.889	1494.276	1... H2-1
535	M299	L2.5x1.25x5	.058	1.259	61	.002	0	y 62	16726.006	29003.9...	340.889	1463.583	1... H2-1
536	M303	L2.5x1.25x5	.058	1.259	61	.002	0	y 62	16726.006	29003.9...	340.889	1463.583	1... H2-1
537	M376	L2.5x1.25x5	.058	1.208	61	.001	2.467	y 61	16726.443	29003.9...	340.889	1494.276	1... H2-1
538	M291	L2.5x1.25x5	.057	1.259	61	.001	2.467	y 61	16726.356	29003.9...	340.889	1463.586	1... H2-1
539	M394A	L2.5x1.25x5	.057	1.168	61	.004	2.337	y 61	17700.827	29003.9...	340.889	1473.086	1... H2-1
540	M187	PL2.25x0.375	.057	1.276	62	.009	1.276	y 62	9570.665	22788	177.75	1068.75	1... H1-1b
541	M448	PL2.25x0.375	.057	1.276	61	.008	1.276	y 61	9570.665	22788	177.75	1068.75	1... H1-1b
542	M167	PL2.25x0.375	.057	1.276	61	.010	0	y 61	9570.665	22788	177.75	1068.75	1... H1-1b
543	M297	L2.5x1.25x5	.057	1.259	61	.001	0	y 62	16726.006	29003.9...	340.889	1463.583	1... H2-1
544	M446	PL2.25x0.375	.055	1.276	62	.009	0	y 62	9570.665	22788	177.75	1068.75	1... H1-1b
545	M288	L2.5x1.25x5	.055	1.208	62	.002	0	y 62	16726.006	29003.9...	340.889	1463.583	1... H2-1
546	M464	PL2.25x0.375	.055	1.276	62	.009	0	y 62	9570.665	22788	177.75	1068.75	1... H1-1b
547	M395A	L2.5x1.25x5	.055	1.208	61	.008	2.467	y 61	16726.443	29003.9...	340.889	1494.276	1... H2-1
548	M396A	L2.5x1.25x5	.053	1.259	62	.008	0	y 61	16726.006	29003.9...	340.889	1494.276	1... H2-1
549	M295	L2.5x1.25x5	.053	1.259	61	.001	0	y 61	16726.443	29003.9...	340.889	1463.587	1... H2-1
550	M169	PL2.25x0.375	.053	1.276	62	.007	1.276	y 62	9570.665	22788	177.75	1068.75	1... H1-1b
551	M185	PL2.25x0.375	.052	1.276	61	.008	0	y 61	9570.665	22788	177.75	1068.75	1... H1-1b
552	M397A	L2.5x1.25x5	.052	1.208	61	.014	0	y 61	16726.443	29003.9...	340.889	1494.276	1... H2-1
553	M382	L2.5x1.25x5	.051	1.208	61	.002	0	y 61	16726.006	29003.9...	340.889	1494.276	1... H2-1
554	M380	L2.5x1.25x5	.050	1.208	61	.001	2.467	y 61	16726.443	29003.9...	340.889	1494.276	1... H2-1
555	M384	L2.5x1.25x5	.050	1.208	61	.002	0	y 62	16726.094	29003.9...	340.889	1494.276	1... H2-1
556	M431	PL2.25x0.375	.050	1.276	62	.008	1.276	y 62	9570.665	22788	177.75	1068.75	1... H1-1b
557	M309	L2.5x1.25x5	.049	1.234	62	.002	0	y 61	16726.443	29003.9...	340.889	1463.587	1... H2-1
558	M413A	PL2.25x0.375	.049	1.276	62	.006	1.276	y 62	9570.665	22788	177.75	1068.75	1... H1-1b
559	M224	PL2.25x0.375	.048	1.276	61	.005	1.276	y 61	9570.665	22788	177.75	1068.75	1... H1-1b
560	M407	PL2.25x0.3...	.047	2.016	62	.003	2.016	y 62	2209.692	18984.3...	123.597	889.893	1... H1-1b
561	M206A	PL2.25x0.375	.047	1.276	61	.008	1.276	y 61	9570.665	22788	177.75	1068.75	1... H1-1b
562	M290	L2.5x1.25x5	.047	1.208	62	.003	0	y 62	16726.006	29003.9...	340.889	1463.583	1... H2-1
563	M365	L2.5x1.25x5	.047	1.234	61	.003	2.467	y 61	16726.443	29003.9...	340.889	1494.276	1... H2-1
564	M363	L2.5x1.25x5	.045	1.234	61	.004	2.467	y 61	16726.443	29003.9...	340.889	1494.276	1... H2-1
565	M406	PL2.25x0.3...	.044	2.016	62	.003	2.016	y 61	2209.692	18984.3...	123.597	889.893	1... H1-1b
566	M375	L2.5x1.25x5	.044	1.234	61	.002	0	y 61	16726.006	29003.9...	340.889	1494.276	1... H2-1
567	M373	L2.5x1.25x5	.043	1.234	61	.002	2.467	y 62	16726.006	29003.9...	340.889	1494.276	1... H2-1
568	M447	PL2.25x0.375	.043	1.276	61	.005	1.276	y 61	9570.665	22788	177.75	1068.75	1... H1-1b
569	M379	L2.5x1.25x5	.042	1.234	61	.001	0	y 61	16726.006	29003.9...	340.889	1494.276	1... H2-1



Company : B&V
Designer : S.Suntum
Job Number : 190704
Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	...	Cb	Eqn
570	M429	PL2.25x0.375	.042	1.276	61	.005	1.276	y	61	9570.665	22788	177.75	1068.75	1...		H1-1b
571	M310	L2.5x1.25x5	.042	1.234	61	.003	0	y	62	16726.006	29003.9...	340.889	1463.583	1...		H2-1
572	M377	L2.5x1.25x5	.042	1.234	61	.002	0	y	61	16726.006	29003.9...	340.889	1494.276	1...		H2-1
573	M663A	L3x3x3	.042	.375	61	.014	.375	y	61	27653.061	29430	1100.081	2421.005	1...		H2-1
574	M306	L2.5x1.25x5	.042	1.234	62	.002	2.467	y	61	16726.006	29003.9...	340.889	1463.583	1...		H2-1
575	M302	L2.5x1.25x5	.042	1.234	61	.001	2.467	y	62	16726.443	29003.9...	340.889	1463.587	1...		H2-1
576	M390A	L2.5x1.25x5	.041	1.259	61	.004	2.467	y	61	16726.006	29003.9...	340.889	1463.583	1...		H2-1
577	M658	L3x3x3	.041	.375	62	.013	.375	z	62	27653.061	29430	1100.081	2421.005	1...		H2-1
578	M204A	PL2.25x0.375	.041	1.276	62	.004	0	y	62	9570.665	22788	177.75	1068.75	1...		H1-1b
579	M662	L3x3x3	.041	.375	61	.013	.375	z	61	27653.061	29430	1100.081	2421.005	1...		H2-1
580	M222A	PL2.25x0.375	.040	1.276	62	.006	1.276	y	62	9570.665	22788	177.75	1068.75	1...		H1-1b
581	M392A	L2.5x1.25x5	.040	1.258	61	.003	0	y	62	16741.29	29003.9...	340.889	1463.731	1...		H2-1
582	M287	L2.5x1.25x5	.040	1.234	62	.001	2.467	y	62	16726.443	29003.9...	340.889	1463.587	1...		H2-1
583	M293	L2.5x1.25x5	.040	1.259	61	.001	2.467	y	61	16726.443	29003.9...	340.889	1463.587	1...		H2-1
584	M659	L3x3x3	.040	.375	62	.013	.375	y	62	27653.061	29430	1100.081	2421.005	1...		H2-1
585	M386	L2.5x1.25x5	.040	1.234	62	.002	2.467	y	62	16726.006	29003.9...	340.889	1494.276	1...		H2-1
586	M393A	L2.5x1.25x5	.040	1.234	61	.003	2.467	y	61	16726.443	29003.9...	340.889	1463.587	1...		H2-1
587	M369	L2.5x1.25x5	.040	1.234	62	.004	0	y	62	16726.443	29003.9...	340.889	1494.276	1...		H2-1
588	M367	L2.5x1.25x5	.040	1.234	61	.003	2.467	y	61	16726.443	29003.9...	340.889	1494.276	1...		H2-1
589	M286	L2.5x1.25x5	.040	1.234	61	.001	0	y	62	16726.443	29003.9...	340.889	1463.587	1...		H2-1
590	M388	L2.5x1.25x5	.040	1.234	62	.004	2.467	y	62	16726.006	29003.9...	340.889	1494.276	1...		H2-1
591	M465	PL2.25x0.375	.039	1.276	61	.005	1.276	y	61	9570.665	22788	177.75	1068.75	1...		H1-1b
592	M186	PL2.25x0.375	.038	1.276	61	.005	0	y	61	9570.665	22788	177.75	1068.75	1...		H1-1b
593	M644	L2.5x1.25x5	.038	1.199	61	.006	2.398	y	61	17242.875	29003.9...	340.889	1468.602	1...		H2-1
594	M298	L2.5x1.25x5	.038	1.234	61	.001	2.467	y	62	16726.443	29003.9...	340.889	1463.587	1...		H2-1
595	M400A	L2.5x1.25x5	.038	1.168	61	.002	0	y	61	17700.827	29003.9...	340.889	1494.276	1...		H2-1
596	M398A	L2.5x1.25x5	.038	1.233	61	.017	0	y	61	16741.29	29003.9...	340.889	1494.276	1...		H2-1
597	M289	L2.5x1.25x5	.037	1.234	62	.001	2.467	y	61	16726.443	29003.9...	340.889	1463.587	1...		H2-1
598	M385	L2.5x1.25x5	.037	1.234	61	.001	2.467	y	61	16726.356	29003.9...	340.889	1494.276	1...		H2-1
599	M168	PL2.25x0.375	.037	1.276	62	.005	1.276	y	62	9570.665	22788	177.75	1068.75	1...		H1-1b
600	M381	L2.5x1.25x5	.037	1.234	61	.001	2.467	y	61	16726.443	29003.9...	340.889	1494.276	1...		H2-1
601	M368	L2.5x1.25x5	.037	1.234	62	.000	2.467	y	62	16726.006	29003.9...	340.889	1494.276	1...		H2-1
602	M411A	PL2.25x0.375	.037	1.276	61	.004	1.276	y	61	9570.665	22788	177.75	1068.75	1...		H1-1b
603	M300	L2.5x1.25x5	.037	1.234	61	.001	2.467	y	62	16726.443	29003.9...	340.889	1463.587	1...		H2-1
604	M371	L2.5x1.25x5	.037	1.234	62	.001	2.467	y	61	16726.443	29003.9...	340.889	1494.276	1...		H2-1
605	M311	L2.5x1.25x5	.037	1.234	61	.003	0	y	62	16726.443	29003.9...	340.889	1463.587	1...		H2-1
606	M304	L2.5x1.25x5	.036	1.234	61	.002	2.467	y	62	16726.443	29003.9...	340.889	1463.587	1...		H2-1
607	M395	L2.5x1.25x5	.036	1.168	62	.003	2.337	y	62	17701.021	29003.9...	340.889	1494.276	1...		H2-1
608	M412A	PL2.25x0.375	.036	1.276	62	.005	1.276	y	62	9570.665	22788	177.75	1068.75	1...		H1-1b
609	M223A	PL2.25x0.375	.035	1.276	61	.005	1.276	y	61	9570.665	22788	177.75	1068.75	1...		H1-1b
610	M430	PL2.25x0.375	.035	1.276	62	.004	1.276	y	62	9570.665	22788	177.75	1068.75	1...		H1-1b
611	M391	L2.5x1.25x5	.035	1.259	62	.013	2.467	y	62	16726.006	29003.9...	340.889	1494.276	1...		H2-1
612	M205A	PL2.25x0.375	.035	1.276	61	.004	1.276	y	62	9570.665	22788	177.75	1068.75	1...		H1-1b
613	M383	L2.5x1.25x5	.034	1.234	61	.001	2.467	y	61	16726.443	29003.9...	340.889	1494.276	1...		H2-1
614	M312	L2.5x1.25x5	.033	1.234	61	.003	0	y	62	16726.006	29003.9...	340.889	1463.583	1...		H2-1
615	M280	L2.5x1.25x5	.032	1.199	61	.006	0	y	62	17242.875	29003.9...	340.889	1468.602	1...		H2-1
616	M393	L2.5x1.25x5	.032	1.259	62	.020	0	y	62	16733.87	29003.9...	340.889	1494.276	1...		H2-1
617	M294	L2.5x1.25x5	.032	1.234	61	.001	0	y	62	16726.006	29003.9...	340.889	1463.583	1...		H2-1
618	M414	L2.5x1.25x5	.032	1	61	.002	0	y	62	20199.817	29003.9...	340.889	1494.276	1...		H2-1
619	M416	L3x2.5x5	.030	1.859	61	.002	3.5	z	61	32983.482	44010	1270.778	2980.991	1...		H2-1
620	M292	L2.5x1.25x5	.030	1.234	61	.001	2.467	y	62	16726.094	29003.9...	340.889	1463.584	1...		H2-1
621	M284	L2.5x1.25x5	.029	1.208	62	.002	0	y	62	16726.443	29003.9...	340.889	1463.587	1...		H2-1
622	M415	L2.5x1.25x5	.029	1	62	.002	0	y	61	20199.817	29003.9...	340.889	1494.276	1...		H2-1
623	M308	L2.5x1.25x5	.029	1.234	61	.003	2.467	y	61	16726.006	29003.9...	340.889	1463.583	1...		H2-1
624	M296	L2.5x1.25x5	.028	1.234	61	.001	2.467	y	62	16726.443	29003.9...	340.889	1463.587	1...		H2-1
625	M282	L2.5x1.25x5	.028	1.207	62	.002	2.466	y	62	16733.651	29003.9...	340.889	1463.657	1...		H2-1
626	M392	L2.5x1.25x5	.027	1.234	62	.021	2.467	y	62	16726.443	29003.9...	340.889	1494.276	1...		H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [...]	phi*Mn y...	phi*Mn z...	Cb	Eqn
627	M641	L2.5x1.25x5	.024	1.222	62	.019	0	y	62	16897.433	29003.9...	340.889	1494.276	1...	H2-1
628	M313	L2.5x1.25x5	.023	1.234	61	.001	0	y	62	16726.443	29003.9...	340.889	1463.587	1...	H2-1
629	M283	L2.5x1.25x5	.023	1.233	62	.002	0	y	62	16733.87	29003.9...	340.889	1463.659	1...	H2-1
630	M394	L2.5x1.25x5	.023	1.233	62	.010	0	y	62	16733.651	29003.9...	340.889	1494.276	1...	H2-1
631	M285	L2.5x1.25x5	.022	1.234	62	.003	0	y	62	16726.006	29003.9...	340.889	1463.583	1...	H2-1
632	M396	L2.5x1.25x5	.022	1	61	.001	0	y	61	20199.817	29003.9...	340.889	1494.276	1...	H2-1
633	M390	L2.5x1.25x5	.021	1.234	62	.008	2.467	y	62	16726.443	29003.9...	340.889	1494.276	1...	H2-1
634	M366	L2.5x1.25x5	.021	1.234	61	.002	0	y	61	16726.006	29003.9...	340.889	1494.276	1...	H2-1
635	M411	L3x2.5x5	.021	1.641	61	.002	3.5	z	61	32983.482	44010	1270.778	2980.991	1...	H2-1
636	M364	L2.5x1.25x5	.021	1.234	62	.005	0	y	61	16726.006	29003.9...	340.889	1494.276	1...	H2-1
637	M281	L2.5x1.25x5	.019	1.168	62	.004	0	y	62	17701.021	29003.9...	340.889	1473.087	1...	H2-1
638	M397	L2.5x1.25x5	.018	1	62	.001	2	y	61	20199.817	29003.9...	340.889	1494.276	1...	H2-1
639	M409	L2.5x1.25x5	.014	1	61	.001	2	y	61	20199.817	29003.9...	340.889	1494.276	1...	H2-1
640	M573	PL5x0.3125	.013	1	62	.001	2	y	62	4987.193	42187.5	274.658	3900.808	1...	H1-1b
641	M378A	PL5x0.3125	.013	1	61	.001	2	y	62	4987.193	42187.5	274.658	3900.808	1...	H1-1b
642	M417	L3x2.5x5	.013	1.823	61	.004	0	z	62	32983.482	44010	1270.778	2980.991	1...	H2-1
643	M398	L3x2.5x5	.013	1.859	61	.001	3.5	z	62	32983.482	44010	1270.778	2980.991	1...	H2-1
644	M399	L3x2.5x5	.013	1.641	62	.001	3.5	z	62	32983.482	44010	1270.778	2996.056	1...	H2-1
645	M408	L2.5x1.25x5	.011	1	61	.001	0	y	61	20199.817	29003.9...	340.889	1494.276	1...	H2-1
646	M403	L2.5x1.25x5	.009	1	62	.001	2	y	62	20199.817	29003.9...	340.889	1494.276	1...	H2-1
647	M405	L3x2.5x5	.008	1.641	62	.002	0	z	61	32983.482	44010	1270.778	2996.056	1...	H2-1
648	M402	L2.5x1.25x5	.008	1	61	.001	0	y	61	20199.817	29003.9...	340.889	1494.276	1...	H2-1
649	M404	L3x2.5x5	.008	1.859	62	.001	0	z	62	32983.482	44010	1270.778	2996.056	1...	H2-1
650	M410	L3x2.5x5	.007	1.677	61	.002	0	z	61	32983.482	44010	1270.778	2980.991	1...	H2-1



Milvon to West River Catenary Structure Assessment

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-I

STRUCTURE TYPE 1&2 FIELD CONDITION NESC 1961 COMPLETE MEMBER RESULTS



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
1	M487	PL2.25 x 1/...	1.606	1.012	61	.006	1.012	y	62	4338.298	15201	78.75	711	1...	H1-1a
2	M527	PL2.25 x 1/...	1.574	1.012	61	.006	1.012	y	62	4338.298	15201	78.75	711	1...	H1-1a
3	M295A	PL2.25 x 1/...	1.552	1.012	62	.007	1.012	y	61	4338.298	15201	78.75	711	2...	H1-1a
4	M255A	PL2.25 x 1/...	1.534	1.012	62	.006	1.012	y	61	4338.298	15201	78.75	711	2...	H1-1a
5	M485	PL2.25 x 1/...	1.506	.939	61	.014	0	y	61	5041.116	15201	78.75	711	2...	H1-1a
6	M497	PL2.25 x 1/...	1.503	.966	61	.009	0	y	61	4764.921	15201	78.75	711	2...	H1-1a
7	M525	PL2.25 x 1/...	1.478	.939	61	.013	0	y	61	5041.116	15201	78.75	711	2...	H1-1a
8	M537	PL2.25 x 1/...	1.473	.966	61	.009	0	y	61	4764.921	15201	78.75	711	2...	H1-1a
9	M293A	PL2.25 x 1/...	1.460	.939	62	.014	0	y	62	5041.116	15201	78.75	711	2...	H1-1a
10	M283A	PL2.25 x 1/...	1.455	.966	62	.011	0	y	62	4764.921	15201	78.75	711	2...	H1-1a
11	M640	L4x3x5	1.454	60.777	62	.035	20.472	z	62	49613.931	56430	1896.028	3433.878	4...	H2-1
12	M253A	PL2.25 x 1/...	1.448	.939	62	.013	0	y	62	5041.116	15201	78.75	711	2...	H1-1a
13	M639	L4x3x5	1.448	60.777	61	.079	42.864	y	61	49613.931	56430	1896.028	3212.527	3...	H2-1
14	M243A	PL2.25 x 1/...	1.445	.966	62	.009	0	y	62	4764.921	15201	78.75	711	2...	H1-1a
15	M495	PL2.25 x 1/...	1.420	.896	61	.019	0	y	61	5537.156	15201	78.75	711	1...	H1-1a
16	M535	PL2.25 x 1/...	1.396	.896	61	.019	0	y	61	5537.156	15201	78.75	711	1...	H1-1a
17	M483	PL2.25 x 1/...	1.379	.861	61	.025	0	y	61	5996.873	15201	78.75	711	1...	H1-1a
18	M281A	PL2.25 x 1/...	1.378	.896	62	.020	0	y	62	5537.156	15201	78.75	711	1...	H1-1a
19	M241A	PL2.25 x 1/...	1.365	.896	62	.018	0	y	62	5537.156	15201	78.75	711	1...	H1-1a
20	M481	PL2.25 x 1/...	1.360	.78	61	.036	0	y	61	7249.81	15201	78.75	711	1...	H1-1a
21	M498	PL2.25 x 1/...	1.358	1.012	62	.007	0	y	62	4338.298	15201	78.75	711	2...	H1-1a
22	M493	PL2.25 x 1/...	1.354	.811	61	.030	0	y	61	6825.972	15201	78.75	711	1...	H1-1a
23	M491	PL2.25 x 1/...	1.353	.75	61	.056	0	y	61	7659.688	15201	78.75	711	1...	H1-1a
24	M531	PL2.25 x 1/...	1.350	.75	61	.046	0	y	61	7659.688	15201	78.75	711	1...	H1-1a
25	M523	PL2.25 x 1/...	1.350	.861	61	.024	0	y	61	5996.873	15201	78.75	711	1...	H1-1a
26	M538	PL2.25 x 1/...	1.343	1.012	62	.005	1.012	y	61	4338.298	15201	78.75	711	2...	H1-1a
27	M277	PL2.25 x 1/...	1.342	.75	62	.046	0	y	62	7659.688	15201	78.75	711	1...	H1-1a
28	M521	PL2.25 x 1/...	1.335	.78	61	.037	0	y	61	7249.81	15201	78.75	711	1...	H1-1a
29	M291A	PL2.25 x 1/...	1.333	.861	62	.025	0	y	62	5996.873	15201	78.75	711	1...	H1-1a
30	M533	PL2.25 x 1/...	1.332	.811	61	.030	0	y	61	6825.972	15201	78.75	711	1...	H1-1a
31	M251A	PL2.25 x 1/...	1.325	.861	62	.024	0	y	62	5996.873	15201	78.75	711	1...	H1-1a
32	M289A	PL2.25 x 1/...	1.321	.78	62	.037	0	y	62	7249.81	15201	78.75	711	1...	H1-1a
33	M279A	PL2.25 x 1/...	1.318	.811	62	.030	0	y	62	6825.972	15201	78.75	711	1...	H1-1a
34	M284A	PL2.25 x 1/...	1.315	1.012	61	.008	0	y	61	4338.298	15201	78.75	711	2...	H1-1a
35	M237	PL2.25 x 1/...	1.309	.75	62	.054	0	y	62	7659.688	15201	78.75	711	1...	H1-1a
36	M249A	PL2.25 x 1/...	1.309	.78	62	.035	0	y	62	7249.81	15201	78.75	711	1...	H1-1a
37	M489	PL2.25 x 1/...	1.308	.696	61	.050	1.434	y	61	8429.868	15201	78.75	711	1...	H1-1a
38	M496	PL2.25 x 1/...	1.302	.939	62	.014	0	y	62	5041.116	15201	78.75	711	1...	H1-1a
39	M239A	PL2.25 x 1/...	1.301	.811	62	.029	0	y	62	6825.972	15201	78.75	711	1...	H1-1a
40	M486	PL2.25 x 1/...	1.298	.966	62	.010	0	y	62	4764.921	15201	78.75	711	1...	H1-1a
41	M479	PL2.25 x 1/...	1.295	.722	61	.039	.722	y	62	8057.556	15201	78.75	711	1...	H1-1a
42	M244A	PL2.25 x 1/...	1.295	1.012	61	.006	1.012	y	62	4338.298	15201	78.75	711	1...	H1-1a
43	M536	PL2.25 x 1/...	1.286	.939	62	.012	0	y	62	5041.116	15201	78.75	711	1...	H1-1a
44	M526	PL2.25 x 1/...	1.283	.966	62	.008	0	y	62	4764.921	15201	78.75	711	1...	H1-1a
45	M282A	PL2.25 x 1/...	1.261	.939	61	.014	0	y	61	5041.116	15201	78.75	711	1...	H1-1a
46	M235	PL2.25 x 1/...	1.258	.696	62	.049	1.434	y	62	8429.868	15201	78.75	711	1...	H1-1a
47	M294A	PL2.25 x 1/...	1.257	.966	61	.011	0	y	61	4764.921	15201	78.75	711	1...	H1-1a
48	M247A	PL2.25 x 1/...	1.251	.722	62	.037	.722	y	61	8057.556	15201	78.75	711	1...	H1-1a
49	M514	PL2.25x0.3...	1.250	1.352	61	.011	1.352	y	61	4854.591	18981	123.75	891	1...	H1-1a
50	M529	PL2.25 x 1/...	1.250	.696	61	.049	.71	y	62	8429.868	15201	78.75	711	1...	H1-1a
51	M242A	PL2.25 x 1/...	1.241	.939	61	.011	0	y	61	5041.116	15201	78.75	711	1...	H1-1a
52	M254A	PL2.25 x 1/...	1.239	.966	61	.008	.966	y	62	4764.921	15201	78.75	711	1...	H1-1a
53	M275	PL2.25 x 1/...	1.235	.696	62	.049	.71	y	61	8429.868	15201	78.75	711	1...	H1-1a
54	M554	PL2.25x0.3...	1.230	1.352	61	.011	0	y	62	4854.591	18981	123.75	891	1.4	H1-1a
55	M519	PL2.25 x 1/...	1.229	.722	61	.046	0	y	61	8057.556	15201	78.75	711	1...	H1-1a
56	M484	PL2.25 x 1/...	1.228	.896	62	.018	0	y	62	5537.156	15201	78.75	711	1...	H1-1a



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [...]	phi*Mn y...	phi*Mn z...	Cb	Eqn	
57	M693	L4x4x6 + P...	1.228	2.944	61	.108	1.704	y	62	98478.227	102573	3285.904	5053.341	1	H2-1
58	M287A	PL2.25 x 1/...	1.218	.722	62	.046	0	y	62	8057.556	15201	78.75	711	1...	H1-1a
59	M302A	PL2.25x0.3...	1.213	1.352	62	.009	1.352	y	62	4854.591	18981	123.75	891	1...	H1-1a
60	M524	PL2.25 x 1/...	1.213	.896	62	.017	0	y	62	5537.156	15201	78.75	711	1...	H1-1a
61	M516	PL2.25x0.3...	1.212	1.485	61	.016	1.485	y	61	4018.088	18981	123.75	891	1...	H1-1a
62	M688	L4x4x6 + P...	1.211	.891	62	.105	1.743	y	61	98478.227	102573	3285.904	5053.341	1	H2-1
63	M401A	L4x4x6	1.200	3.568	61	.171	3.843	z	61	74070.528	77220	3665.399	8238.66	1	H2-1
64	M520	PL2.25 x 1/...	1.199	.75	62	.044	.75	y	61	7659.688	15201	78.75	711	1...	H1-1a
65	M262	PL2.25x0.3...	1.199	1.352	62	.011	0	y	61	4854.591	18981	123.75	891	1...	H1-1a
66	M494	PL2.25 x 1/...	1.192	.861	62	.023	0	y	62	5996.873	15201	78.75	711	1.5	H1-1a
67	M556	PL2.25x0.3...	1.191	1.485	61	.018	1.485	y	61	4018.088	18981	123.75	891	1...	H1-1a
68	M292A	PL2.25 x 1/...	1.189	.896	61	.019	0	y	61	5537.156	15201	78.75	711	1...	H1-1a
69	M480	PL2.25 x 1/...	1.186	.75	62	.048	0	y	62	7659.688	15201	78.75	711	1...	H1-1a
70	M161	L4x4x6	1.183	3.568	62	.168	3.843	z	62	74070.528	77220	3665.399	8238.66	1	H2-1
71	M403A	L4x4x6	1.181	23.606	61	.178	23.88	z	61	74070.528	77220	3665.399	8238.66	1	H2-1
72	M288A	PL2.25 x 1/...	1.179	.75	61	.044	.75	y	62	7659.688	15201	78.75	711	1...	H1-1a
73	M159	L4x4x6	1.176	23.606	62	.179	23.88	z	62	74070.528	77220	3665.399	8238.66	1	H2-1
74	M534	PL2.25 x 1/...	1.174	.861	62	.022	0	y	62	5996.873	15201	78.75	711	1...	H1-1a
75	M304A	PL2.25x0.3...	1.172	1.485	62	.017	1.485	y	62	4018.088	18981	123.75	891	1...	H1-1a
76	M252A	PL2.25 x 1/...	1.171	.896	61	.016	0	y	61	5537.156	15201	78.75	711	1...	H1-1a
77	M482	PL2.25 x 1/...	1.170	.828	62	.028	.828	y	61	6438.755	15201	78.75	711	1...	H1-1a
78	M492	PL2.25 x 1/...	1.169	.796	62	.034	.796	y	61	6873.3	15201	78.75	711	1...	H1-1a
79	M504	PL2.25x0.3...	1.169	1.304	61	.013	1.304	y	61	5219.825	18981	123.75	891	1...	H1-1a
80	M506	PL2.25x0.3...	1.164	1.415	61	.015	1.386	y	61	4430.374	18981	123.75	891	1...	H1-1a
81	M532	PL2.25 x 1/...	1.159	.78	62	.034	.796	y	61	7249.81	15201	78.75	711	1...	H1-1a
82	M522	PL2.25 x 1/...	1.157	.828	62	.028	.828	y	61	6438.755	15201	78.75	711	1...	H1-1a
83	M694	L4x4x6 + P...	1.156	1.704	61	.110	1.743	y	61	98478.227	102573	3285.904	18163.4...	1	H2-1
84	M264	PL2.25x0.3...	1.156	1.485	62	.016	1.485	y	62	4018.088	18981	123.75	891	1...	H1-1a
85	M691	L4x4x6 + P...	1.154	2.13	62	.110	1.82	y	62	98478.227	102573	3285.904	18163.4...	1	H2-1
86	M280A	PL2.25 x 1/...	1.151	.861	61	.023	0	y	61	5996.873	15201	78.75	711	1...	H1-1a
87	M160	L4x4x6	1.148	0	62	.035	23.88	z	61	74070.528	77220	3665.399	8238.66	1	H2-1
88	M404A	L4x4x6	1.148	27.174	61	.032	3.294	z	62	74070.528	77220	3665.399	8238.66	1	H2-1
89	M544	PL2.25x0.3...	1.147	1.304	61	.011	1.304	y	61	5219.825	18981	123.75	891	1...	H1-1a
90	M402A	L4x4x6	1.140	0	61	.036	23.88	z	62	74070.528	77220	3665.399	8238.66	1	H2-1
91	M546	PL2.25x0.3...	1.139	1.415	61	.014	1.386	y	61	4430.374	18981	123.75	891	1...	H1-1a
92	M278A	PL2.25 x 1/...	1.139	.78	61	.035	.796	y	62	7249.81	15201	78.75	711	1...	H1-1a
93	M240A	PL2.25 x 1/...	1.136	.861	61	.020	.861	y	62	5996.873	15201	78.75	711	1...	H1-1a
94	M517	PL2.25 x 1/...	1.134	.668	61	.041	1.378	y	61	8819.319	15201	78.75	711	1...	H1-1a
95	M290A	PL2.25 x 1/...	1.134	.828	61	.029	.828	y	62	6438.755	15201	78.75	711	1...	H1-1a
96	M248A	PL2.25 x 1/...	1.133	.75	61	.046	0	y	61	7659.688	15201	78.75	711	1...	H1-1a
97	M477	PL2.25 x 1/...	1.131	.668	61	.046	.682	y	62	8819.319	15201	78.75	711	1...	H1-1a
98	M310A	PL2.25x0.3...	1.130	1.304	62	.010	1.304	y	62	5219.825	18981	123.75	891	1...	H1-1a
99	M158	L4x4x6	1.130	27.174	62	.031	3.294	z	61	74070.528	77220	3665.399	8238.66	1	H2-1
100	M490	PL2.25 x 1/...	1.128	.722	62	.042	.722	y	61	8057.556	15201	78.75	711	1...	H1-1a
101	M692	L4x4x6 + P...	1.123	.891	62	.118	1.782	y	61	98478.227	102573	3285.904	5053.341	1	H2-1
102	M285A	PL2.25 x 1/...	1.122	.668	62	.041	1.378	y	62	8819.319	15201	78.75	711	1...	H1-1a
103	M312A	PL2.25x0.3...	1.121	1.415	62	.013	1.386	y	62	4430.374	18981	123.75	891	1...	H1-1a
104	M270	PL2.25x0.3...	1.119	1.304	62	.013	1.304	y	62	5219.825	18981	123.75	891	1...	H1-1a
105	M478	PL2.25 x 1/...	1.119	.696	62	.047	1.434	y	62	8429.868	15201	78.75	711	1...	H1-1a
106	M238	PL2.25 x 1/...	1.117	.796	61	.033	.796	y	62	6873.3	15201	78.75	711	1...	H1-1a
107	M250A	PL2.25 x 1/...	1.116	.828	61	.027	.828	y	62	6438.755	15201	78.75	711	1...	H1-1a
108	M512	PL2.25x0.3...	1.109	1.246	61	.012	1.246	y	61	5719.546	18981	123.75	891	1...	H1-1a
109	M272	PL2.25x0.3...	1.108	1.415	62	.015	1.386	y	62	4430.374	18981	123.75	891	1...	H1-1a
110	M689	L4x4x6 + P...	1.100	2.13	62	.115	1.782	y	62	98478.227	102573	3285.904	5053.341	1	H2-1
111	M552	PL2.25x0.3...	1.088	1.246	61	.010	1.246	y	61	5719.546	18981	123.75	891	1...	H1-1a
112	M245A	PL2.25 x 1/...	1.087	.668	62	.043	.682	y	61	8819.319	15201	78.75	711	1...	H1-1a
113	M530	PL2.25 x 1/...	1.087	.722	62	.041	0	y	62	8057.556	15201	78.75	711	1...	H1-1a



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
114	M695	L4x4x6 + P...	1.086	2.13	62	.114	1.704	y	61	98478.227	102573	3285.904	18163.4...	1	H2-1
115	M236	PL2.25 x 1/...	1.078	.722	61	.041	.722	y	62	8057.556	15201	78.75	711	1	H1-1a
116	M690	L4x4x6 + P...	1.076	1.704	61	.113	1.975	y	62	98478.227	102573	3285.904	18163.4...	1	H2-1
117	M518	PL2.25 x 1/...	1.073	.696	62	.054	.71	y	61	8429.868	15201	78.75	711	1	H1-1a
118	M300A	PL2.25x0.3...	1.072	1.246	62	.009	1.246	y	62	5719.546	18981	123.75	891	1	H1-1a
119	M246A	PL2.25 x 1/...	1.067	.696	61	.045	1.434	y	61	8429.868	15201	78.75	711	1	H1-1a
120	M276	PL2.25 x 1/...	1.066	.722	61	.041	0	y	61	8057.556	15201	78.75	711	1	H1-1a
121	M260A	PL2.25x0.3...	1.061	1.246	62	.012	1.246	y	62	5719.546	18981	123.75	891	1	H1-1a
122	M286A	PL2.25 x 1/...	1.053	.696	61	.054	.71	y	62	8429.868	15201	78.75	711	1	H1-1a
123	M502	PL2.25x0.3...	1.047	1.195	61	.012	1.195	y	61	6221.618	18981	123.75	891	1	H1-1a
124	M515	PL2.25x0.3...	1.033	1.415	62	.014	2.858	y	61	4430.374	18981	123.75	891	1	H1-1a
125	M505	PL2.25x0.3...	1.030	1.352	62	.013	0	y	61	4854.591	18981	123.75	891	1	H1-1a
126	M382A	L2.5X1.5X5	1.029	1.871	61	.003	0	y	62	11061.282	31113.2...	475.557	1513.1	1	H2-1
127	M542	PL2.25x0.3...	1.027	1.195	61	.010	1.195	y	61	6221.618	18981	123.75	891	1	H1-1a
128	M555	PL2.25x0.3...	1.024	1.415	62	.013	2.858	y	61	4430.374	18981	123.75	891	1	H1-1a
129	M189	L6x4x6	1.019	8.061	62	.037	8.061	y	62	29768.748	97470	4257.614	12648.6...	1	H2-1
130	M629	L6x4x6	1.019	5.939	61	.037	5.939	y	62	29768.748	97470	4257.614	12648.6...	1	H2-1
131	M545	PL2.25x0.3...	1.018	1.352	62	.011	0	y	61	4854.591	18981	123.75	891	1	H1-1a
132	M308A	PL2.25x0.3...	1.012	1.195	62	.009	1.195	y	62	6221.618	18981	123.75	891	1	H1-1a
133	M268	PL2.25x0.3...	1.002	1.195	62	.011	1.195	y	62	6221.618	18981	123.75	891	1	H1-1a
134	M311A	PL2.25x0.3...	.999	1.352	61	.010	0	y	62	4854.591	18981	123.75	891	1	H1-1a
135	M303A	PL2.25x0.3...	.996	1.415	61	.013	2.858	y	62	4430.374	18981	123.75	891	1	H1-1a
136	M513	PL2.25x0.3...	.989	1.304	62	.013	0	y	61	5219.825	18981	123.75	891	1	H1-1a
137	M510	PL2.25x0.3...	.988	1.146	61	.010	1.146	y	61	6766.395	18981	123.75	891	1	H1-1a
138	M528	PL2.25 x 1/...	.987	.682	62	.041	.682	y	61	8498.759	15201	78.75	711	1	H1-1a
139	M263	PL2.25x0.3...	.981	1.415	61	.014	2.858	y	62	4430.374	18981	123.75	891	1	H1-1a
140	M553	PL2.25x0.3...	.980	1.304	62	.011	1.304	y	62	5219.825	18981	123.75	891	1	H1-1a
141	M271	PL2.25x0.3...	.976	1.352	61	.012	0	y	62	4854.591	18981	123.75	891	1	H1-1a
142	M638	L4x3x6	.973	60.934	61	.121	31.429	y	61	59061.508	67230	2238.689	4423.283	1	H2-1
143	M550	PL2.25x0.3...	.969	1.146	61	.009	1.146	y	61	6766.395	18981	123.75	891	1	H1-1a
144	M274	PL2.25 x 1/...	.967	.682	61	.041	.682	y	62	8498.759	15201	78.75	711	1	H1-1a
145	M488	PL2.25 x 1/...	.964	.668	62	.056	.682	y	61	8819.319	15201	78.75	711	1	H1-1a
146	M301A	PL2.25x0.3...	.959	1.304	61	.010	0	y	62	5219.825	18981	123.75	891	1	H1-1a
147	M637	L4x3x6	.956	2.566	61	.048	32.071	y	61	59061.508	67230	2238.689	4423.283	1	H2-1
148	M298A	PL2.25x0.3...	.954	1.146	62	.007	1.146	y	62	6766.395	18981	123.75	891	1	H1-1a
149	M258A	PL2.25x0.3...	.945	1.146	62	.010	1.146	y	62	6766.395	18981	123.75	891	1	H1-1a
150	M261	PL2.25x0.3...	.939	1.304	61	.012	0	y	62	5219.825	18981	123.75	891	1	H1-1a
151	M500	PL2.25x0.3...	.932	1.099	61	.008	1.099	y	61	7355.297	18981	123.75	891	1	H1-1a
152	M503	PL2.25x0.3...	.928	1.246	62	.012	0	y	61	5719.546	18981	123.75	891	1	H1-1a
153	M543	PL2.25x0.3...	.920	1.246	62	.010	0	y	61	5719.546	18981	123.75	891	1	H1-1a
154	M256	L2.5X1.5X5	.918	2.245	61	.007	0	y	61	11061.282	31113.2...	475.557	1513.1	1	H2-1
155	M234	PL2.25 x 1/...	.917	.668	61	.053	.682	y	62	8819.319	15201	78.75	711	1	H1-1a
156	M540	PL2.25x0.3...	.913	1.099	61	.007	1.099	y	61	7355.297	18981	123.75	891	1	H1-1a
157	M306A	PL2.25x0.3...	.900	1.099	62	.006	1.099	y	62	7355.297	18981	123.75	891	1	H1-1a
158	M309A	PL2.25x0.3...	.900	1.246	61	.009	0	y	62	5719.546	18981	123.75	891	1	H1-1a
159	M266	PL2.25x0.3...	.891	1.099	62	.008	1.099	y	62	7355.297	18981	123.75	891	1	H1-1a
160	M241	L2.5X1.5X5	.890	1.871	62	.001	0	y	61	11061.282	31113.2...	475.557	1513.1	1	H2-1
161	M508	PL2.25x0.3...	.882	1.055	61	.006	1.055	y	61	7936.788	18981	123.75	891	1	H1-1a
162	M269	PL2.25x0.3...	.881	1.246	61	.012	0	y	62	5719.546	18981	123.75	891	1	H1-1a
163	M511	PL2.25x0.3...	.876	1.195	62	.010	0	y	61	6221.618	18981	123.75	891	1	H1-1a
164	M384A	L2.5X1.5X5	.874	1.777	61	.001	0	y	61	11725.89	31113.2...	475.557	1519.923	1	H2-1
165	M507	PL2.25x0.3...	.871	1.485	62	.012	0	y	61	4018.088	18981	123.75	891	1	H1-1a
166	M551	PL2.25x0.3...	.869	1.195	62	.009	1.195	y	62	6221.618	18981	123.75	891	1	H1-1a
167	M548	PL2.25x0.3...	.864	1.055	61	.005	1.055	y	62	7936.788	18981	123.75	891	1	H1-1a
168	M258	L2.5X1.5X5	.863	2.245	61	.002	4.116	y	61	11060.999	31113.2...	475.557	1513.097	1	H2-1
169	M296A	PL2.25x0.3...	.851	1.055	62	.004	1.055	y	61	7936.788	18981	123.75	891	1	H1-1a
170	M547	PL2.25x0.3...	.851	1.485	62	.014	0	y	61	4018.088	18981	123.75	891	1	H1-1a



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

July 14, 2016

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
171	M299A	PL2.25x0.3...	.849	1.195	61	.008	0	y	62	6221.618	18981	123.75	891	1...	H1-1a
172	M256A	PL2.25x0.3...	.843	1.055	62	.006	1.055	y	62	7936.788	18981	123.75	891	1...	H1-1a
173	M313A	PL2.25x0.3...	.841	1.485	61	.015	0	y	62	4018.088	18981	123.75	891	1...	H1-1a
174	M259A	PL2.25x0.3...	.832	1.195	61	.010	0	y	62	6221.618	18981	123.75	891	1...	H1-1a
175	M501	PL2.25x0.3...	.825	1.146	62	.009	0	y	61	6766.395	18981	123.75	891	1...	H1-1a
176	M541	PL2.25x0.3...	.818	1.146	62	.008	0	y	61	6766.395	18981	123.75	891	1...	H1-1a
177	M206	L2.5X1.5X5	.810	2.245	62	.001	0	y	62	11060.999	31113.2...	475.557	1513.097	1...	H2-1
178	M243	L2.5X1.5X5	.802	1.871	62	.001	0	y	61	11060.999	31113.2...	475.557	1513.097	1...	H2-1
179	M594	PL2.25x0.3...	.802	1.513	61	.014	1.542	y	61	3985.766	18981	123.75	891	2...	H1-1a
180	M273	PL2.25x0.3...	.801	1.485	61	.012	0	y	62	4018.088	18981	123.75	891	1...	H1-1a
181	M307A	PL2.25x0.3...	.800	1.146	61	.007	0	y	62	6766.395	18981	123.75	891	1...	H1-1a
182	M580	6H25	.798	3.889	61	.198	3.704	y	61	32380.313	215681.4	21582	40822.49	1	H1-1b
183	M191	6H25	.798	3.889	62	.198	3.704	y	62	32380.313	215681.4	21582	40822.49	1	H1-1b
184	M319	PL2.25x0.3...	.791	1.513	62	.014	1.542	y	62	3985.766	18981	123.75	891	2...	H1-1a
185	M210	L2.5X1.5X5	.787	2.245	62	.001	0	y	61	11061.282	31113.2...	475.557	1513.1	1...	H2-1
186	M208	L2.5X1.5X5	.786	2.245	62	.001	4.116	y	61	11060.999	31113.2...	475.557	1513.097	1...	H2-1
187	M267	PL2.25x0.3...	.783	1.146	61	.009	0	y	62	6766.395	18981	123.75	891	1...	H1-1a
188	M318	PL2.25x0.3...	.781	1.513	62	.016	2.881	y	61	3985.766	18981	123.75	891	2...	H1-1a
189	M388A	L2.5X1.5X5	.775	2.221	61	.002	3.998	y	61	11725.89	31113.2...	475.557	1519.923	1...	H2-1
190	M509	PL2.25x0.3...	.774	1.099	62	.006	0	y	61	7355.297	18981	123.75	891	1...	H1-1a
191	M593	PL2.25x0.3...	.771	1.513	61	.016	2.881	y	62	3985.766	18981	123.75	891	2...	H1-1a
192	M549	PL2.25x0.3...	.769	1.099	62	.006	1.099	y	62	7355.297	18981	123.75	891	1...	H1-1a
193	M204	L2.5X1.5X5	.761	2.245	62	.001	4.116	y	61	11061.282	31113.2...	475.557	1513.1	1...	H2-1
194	M239	L2.5X1.5X5	.761	1.69	62	.001	0	y	62	12372.939	31113.2...	475.557	1526.214	1...	H2-1
195	M245	L2.5X1.5X5	.758	1.871	62	.001	0	y	61	11060.999	31113.2...	475.557	1513.097	1...	H2-1
196	M212	L2.5X1.5X5	.754	2.245	62	.001	4.116	y	61	11060.999	31113.2...	475.557	1513.097	1...	H2-1
197	M223	L2.5X1.5X5	.753	1.871	61	.001	4.116	y	62	11060.999	31113.2...	475.557	1513.097	1...	H2-1
198	M297A	PL2.25x0.3...	.752	1.099	61	.006	0	y	62	7355.297	18981	123.75	891	1...	H1-1a
199	M260	L2.5X1.5X5	.739	2.245	61	.001	0	y	62	11060.999	31113.2...	475.557	1513.097	1...	H2-1
200	M499	PL2.25x0.3...	.736	1.055	62	.004	0	y	62	7936.788	18981	123.75	891	2...	H1-1a
201	M257A	PL2.25x0.3...	.735	1.099	61	.006	0	y	62	7355.297	18981	123.75	891	1...	H1-1a
202	M539	PL2.25x0.3...	.730	1.055	62	.004	0	y	61	7936.788	18981	123.75	891	2...	H1-1a
203	M214	L2.5X1.5X5	.730	2.245	62	.001	0	y	61	11060.999	31113.2...	475.557	1513.097	1...	H2-1
204	M305A	PL2.25x0.3...	.715	1.055	61	.006	0	y	61	7936.788	18981	123.75	891	2...	H1-1a
205	M265	PL2.25x0.3...	.699	1.055	61	.005	1.055	y	62	7936.788	18981	123.75	891	2...	H1-1a
206	M581	PL2.25x0.3...	.686	1.513	62	.018	2.881	y	61	3985.766	18981	123.75	891	2...	H1-1a
207	M330	PL2.25x0.3...	.680	1.513	61	.018	2.881	y	62	3985.766	18981	123.75	891	2...	H1-1a
208	M254	L2.5X1.5X5	.673	2.245	61	.002	4.116	y	61	11060.999	31113.2...	475.557	1513.097	1...	H2-1
209	M331	PL2.25x0.3...	.671	1.513	61	.014	1.542	y	61	3985.766	18981	123.75	891	2...	H1-1a
210	M582	PL2.25x0.3...	.666	1.513	62	.015	1.542	y	62	3985.766	18981	123.75	891	2...	H1-1a
211	M216	L2.5X1.5X5	.664	2.245	62	.001	0	y	61	11061.282	31113.2...	475.557	1513.1	1...	H2-1
212	M252	L2.5X1.5X5	.658	2.245	61	.001	4.116	y	62	11060.999	31113.2...	475.557	1513.097	1...	H2-1
213	M202	L2.5X1.5X5	.646	2.2	62	.002	3.89	y	62	12372.939	31113.2...	475.557	1526.214	1...	H2-1
214	M247	L2.5X1.5X5	.636	1.871	62	.001	4.116	y	61	11061.282	31113.2...	475.557	1513.1	1...	H2-1
215	M251	L2.5X1.5X5	.608	1.871	62	.002	0	y	62	11060.999	31113.2...	475.557	1513.097	1...	H2-1
216	M249	L2.5X1.5X5	.606	1.871	62	.001	4.116	y	61	11060.999	31113.2...	475.557	1513.097	1...	H2-1
217	M419	PL2.25x0.3...	.588	1.995	61	.005	4.031	y	61	2317.049	18981	123.75	862.382	1...	H1-1a
218	M386A	L2.5X1.5X5	.582	2.245	61	.002	0	y	61	11061.282	31113.2...	475.557	1513.1	1...	H2-1
219	M218	L2.5X1.5X5	.572	2.245	62	.001	0	y	61	11060.999	31113.2...	475.557	1513.097	1...	H2-1
220	M213	L2.5X1.5X5	.569	1.871	61	.001	4.116	y	61	11061.282	31113.2...	475.557	1513.1	1...	H2-1
221	M190	L6x4x6	.553	1.307	62	.129	1.307	y	61	44440.683	97470	4257.614	12792.4...	1	H2-1
222	M630	L6x4x6	.552	4.854	61	.129	4.854	y	62	44440.683	97470	4257.614	12792.4...	1	H2-1
223	M221	L2.5X1.5X5	.550	1.871	61	.002	4.116	y	61	11060.999	31113.2...	475.557	1513.097	1...	H2-1
224	M257	L2.5X1.5X5	.543	1.871	62	.007	0	y	61	11060.999	31113.2...	475.557	1513.097	1...	H2-1
225	M255	L2.5X1.5X5	.534	1.871	62	.002	0	y	61	11060.999	31113.2...	475.557	1513.097	1...	H2-1
226	M576	L3x2.5x5	.503	6.317	61	.040	8.343	y	61	39023.547	44010	1270.778	2996.056	1	H2-1
227	M139	L3x2.5x5	.502	5.482	62	.042	3.456	y	62	39023.547	44010	1270.778	2996.056	1	H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

July 14, 2016

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn v	phi*Mn z	Cb	Eqn	
228	M140	L3x2.5x5	.499	6.317	62	.029	8.343	y	61	39023.547	44010	1270.778	2996.056	1	H2-1
229	M577	L3x2.5x5	.498	5.482	61	.030	3.456	y	62	39023.547	44010	1270.778	2996.056	1	H2-1
230	M211	L2.5X1.5X5	.494	1.871	61	.001	4.116	y	62	11060.999	31113.2...	475.557	1513.097	1...	H2-1
231	M259	L2.5X1.5X5	.489	1.871	62	.002	0	y	62	11061.282	31113.2...	475.557	1513.1	1...	H2-1
232	M209	L2.5X1.5X5	.476	1.871	61	.001	4.116	y	62	11060.999	31113.2...	475.557	1513.097	1...	H2-1
233	M253	L2.5X1.5X5	.468	1.871	62	.001	4.116	y	61	11061.282	31113.2...	475.557	1513.1	1...	H2-1
234	M215	L2.5X1.5X5	.467	1.871	61	.001	4.116	y	62	11060.999	31113.2...	475.557	1513.097	1...	H2-1
235	M217	L2.5X1.5X5	.464	1.871	61	.002	0	y	61	11060.999	31113.2...	475.557	1513.097	1...	H2-1
236	M656	L4x3x6	.461	.813	61	.131	1.61	z	61	64562.919	67230	2238.689	5885.484	2...	H2-1
237	M653	L4x3x6	.450	.797	62	.130	0	z	62	64562.919	67230	2238.689	5885.484	1...	H2-1
238	M198	PL2.25x0.3...	.438	1.288	62	.035	0	y	62	5785.216	18981	123.75	891	1...	H1-1a
239	M652	L4x3x6	.438	.797	62	.118	1.203	z	61	64562.919	67230	2238.689	5885.484	1...	H2-1
240	M657	L4x3x6	.436	.797	62	.119	.407	z	62	64562.919	67230	2238.689	5885.484	1...	H2-1
241	M207	L2.5X1.5X5	.427	1.871	61	.001	0	y	62	11061.282	31113.2...	475.557	1513.1	1...	H2-1
242	M220	L2.5X1.5X5	.422	2.245	62	.005	0	y	61	11060.999	31113.2...	475.557	1513.097	1...	H2-1
243	M405A	PL2.25x0.3...	.420	1.288	61	.036	0	y	61	5785.216	18981	123.75	891	1...	H1-1a
244	M578	L3x2.5x5	.416	3.695	62	.036	3.456	y	62	39023.547	44010	1270.778	2449.275	1...	H2-1
245	M162	PL2.25x0.3...	.409	1.288	61	.031	0	y	61	5785.216	18981	123.75	891	1...	H1-1a
246	M137	L3x2.5x5	.407	8.104	61	.036	8.343	y	61	39023.547	44010	1270.778	2447.702	1...	H2-1
247	M441	PL2.25x0.3...	.407	1.288	62	.032	0	y	62	5785.216	18981	123.75	891	1...	H1-1a
248	M138	L3x2.5x5	.406	5.482	61	.030	.834	y	62	39023.547	44010	1270.778	2996.056	1	H2-1
249	M558	L2.5x2.5x5	.406	2.106	62	.003	4.254	y	62	24050.235	39420	1096.767	2551.08	1...	H2-1
250	M360	PL2.25 x 1/...	.403	.865	62	.018	0	y	62	6101.461	15201	78.75	711	1...	H1-1a
251	M626	PL2.25 x 1/...	.403	.865	61	.018	0	y	61	6101.461	15201	78.75	711	1...	H1-1a
252	M557	L2.5x2.5x5	.401	2.106	62	.002	4.254	z	61	24050.235	39420	1096.767	2551.08	1...	H2-1
253	M579	L3x2.5x5	.399	6.317	62	.030	10.965	y	61	39023.547	44010	1270.778	2996.056	1	H2-1
254	M614	PL2.25 x 1/...	.399	.865	61	.014	0	y	61	6101.461	15201	78.75	711	1...	H1-1a
255	M616	PL2.25 x 1/...	.398	.734	61	.012	0	y	61	7942.595	15201	78.75	711	1...	H1-1a
256	M348	PL2.25 x 1/...	.398	.865	62	.014	0	y	62	6101.461	15201	78.75	711	1...	H1-1a
257	M350	PL2.25 x 1/...	.398	.734	62	.012	0	y	62	7942.595	15201	78.75	711	1...	H1-1a
258	M362	PL2.25 x 1/...	.396	.734	62	.015	0	y	62	7942.595	15201	78.75	711	1...	H1-1a
259	M628	PL2.25 x 1/...	.396	.734	61	.015	0	y	61	7942.595	15201	78.75	711	1...	H1-1a
260	M315	L2.5x2.5x5	.388	2.106	61	.001	0	z	61	24050.235	39420	1096.767	2551.08	1...	H2-1
261	M612	PL2.25 x 1/...	.380	.776	61	.014	0	y	61	7267.496	15201	78.75	711	1...	H1-1a
262	M314	L2.5x2.5x5	.380	2.106	61	.003	0	y	61	24050.235	39420	1096.767	2551.08	1...	H2-1
263	M352	PL2.25 x 1/...	.379	.776	62	.014	0	y	62	7267.496	15201	78.75	711	1...	H1-1a
264	M420	PL2.25x0.3...	.377	1.263	62	.026	0	y	62	5785.216	18981	123.75	891	1...	H1-1a
265	M364A	PL2.25 x 1/...	.375	.776	62	.018	0	y	62	7267.496	15201	78.75	711	1...	H1-1a
266	M624	PL2.25 x 1/...	.375	.776	61	.018	0	y	61	7267.496	15201	78.75	711	1...	H1-1a
267	M665A	L3x2.5x6	.373	.371	61	.088	0	z	61	51421.803	52110	1486.645	3490.361	1...	H2-1
268	M661	L3x2.5x6	.373	.379	62	.088	.75	z	62	51421.803	52110	1486.645	3490.361	1...	H2-1
269	M412	PL2.25x0.3...	.372	1.954	61	.006	0	y	61	2317.049	18981	123.75	829.018	1...	H1-1a
270	M660	L3x2.5x6	.371	.371	62	.088	0	z	62	51421.803	52110	1486.645	3490.361	1...	H2-1
271	M664A	L3x2.5x6	.371	.379	61	.088	.75	z	61	51421.803	52110	1486.645	3490.361	1...	H2-1
272	M605	PL2.25x0.3...	.367	1.689	62	.007	1.721	y	61	3268.046	18981	123.75	891	1...	H1-1a
273	M385A	L2.5X1.5X5	.364	1.871	62	.002	0	y	62	11060.999	31113.2...	475.557	1513.097	1...	H2-1
274	M438	PL2.25x0.3...	.364	1.263	62	.029	1.263	y	61	5785.216	18981	123.75	891	1...	H1-1a
275	M381A	L2.5X1.5X5	.363	2.037	61	.002	0	y	61	11060.999	31113.2...	475.557	1513.097	1...	H2-1
276	M343	PL2.25x0.3...	.360	1.689	61	.007	1.721	y	62	3268.046	18981	123.75	891	1...	H1-1a
277	M213A	PL2.25x0.3...	.359	1.263	61	.022	1.263	y	62	5785.216	18981	123.75	891	1...	H1-1a
278	M248	L2.5X1.5X5	.357	2.245	61	.001	0	y	61	11060.999	31113.2...	475.557	1513.097	1...	H2-1
279	M205	L2.5X1.5X5	.350	1.871	61	.001	4.116	y	62	11060.999	31113.2...	475.557	1513.097	1...	H2-1
280	M321	PL2.25 x 1/...	.346	1.211	62	.022	0	y	62	3190.548	15201	78.75	711	1...	H1-1a
281	M596	PL2.25 x 1/...	.346	1.211	61	.022	0	y	61	3190.548	15201	78.75	711	1...	H1-1a
282	M246	L2.5X1.5X5	.345	2.245	61	.001	0	y	62	11060.999	31113.2...	475.557	1513.097	1...	H2-1
283	M231	PL2.25x0.3...	.344	1.263	61	.028	1.263	y	62	5785.216	18981	123.75	891	1...	H1-1a
284	M203	L2.5X1.5X5	.342	1.871	61	.001	0	y	62	11060.999	31113.2...	475.557	1513.097	1...	H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
285	M250	L2.5X1.5X5	.334	2.245	61	.001	0	y	62	11061.282	31113.2...	475.557	1513.1	1...	H2-1
286	M383A	L2.5X1.5X5	.331	1.979	61	.003	3.998	y	62	11725.89	31113.2...	475.557	1519.923	1...	H2-1
287	M240	L2.5X1.5X5	.330	2.037	62	.001	4.116	y	62	11060.999	31113.2...	475.557	1513.097	1...	H2-1
288	M598	PL2.25 x 1/...	.329	1.211	61	.022	1.234	y	61	3190.548	15201	78.75	711	1...	H1-1a
289	M323	PL2.25 x 1/...	.329	1.211	62	.022	1.234	y	62	3190.548	15201	78.75	711	1...	H1-1a
290	M354	PL2.25x0.3...	.323	1.689	61	.009	3.155	y	61	3268.046	18981	123.75	891	1...	H1-1a
291	M242	L2.5X1.5X5	.321	2.037	62	.001	4.116	y	62	11060.999	31113.2...	475.557	1513.097	1...	H2-1
292	M618	PL2.25x0.3...	.315	1.689	62	.009	3.155	y	62	3268.046	18981	123.75	891	1...	H1-1a
293	M219	L2.5X1.5X5	.304	1.871	61	.004	4.116	y	61	11061.282	31113.2...	475.557	1513.1	1...	H2-1
294	M642	L2.5X1.5X5	.303	1.895	61	.001	3.829	y	62	12735.405	31113.2...	475.557	1529.827	1...	H2-1
295	M387A	L2.5X1.5X5	.297	2.019	61	.003	3.998	y	61	11725.89	31113.2...	475.557	1519.923	1...	H2-1
296	M244	L2.5X1.5X5	.285	2.037	62	.001	0	y	61	11061.282	31113.2...	475.557	1513.1	1...	H2-1
297	M279	L2.5X1.5X5	.284	1.895	62	.001	3.829	y	61	12735.405	31113.2...	475.557	1529.827	1...	H2-1
298	M643	L2.5X1.5X5	.280	1.934	61	.001	3.829	y	61	12735.405	31113.2...	475.557	1529.827	1...	H2-1
299	M222	L2.5X1.5X5	.278	2.245	62	.003	4.116	y	61	11061.282	31113.2...	475.557	1513.1	1...	H2-1
300	M654	L6x4x6	.265	.573	61	.096	.281	z	61	91511.923	97470	4257.614	12792.4...	2...	H2-1
301	M651	L6x4x6	.265	.585	62	.096	.877	z	62	91511.923	97470	4257.614	12302.39	1...	H2-1
302	M650	L6x4x6	.259	.585	62	.088	.877	z	62	91511.923	97470	4257.614	12792.4...	1...	H2-1
303	M655	L6x4x6	.258	.573	61	.088	.281	z	61	91511.923	97470	4257.614	12792.4...	1...	H2-1
304	M363A	PL2.25 x 1/...	.250	.865	61	.018	.882	y	62	6101.461	15201	78.75	711	1...	H1-1a
305	M623	PL2.25 x 1/...	.250	.865	62	.018	.882	y	61	6101.461	15201	78.75	711	1...	H1-1a
306	M278	L2.5X1.5X5	.244	1.934	62	.001	3.829	y	62	12735.405	31113.2...	475.557	1529.827	1...	H2-1
307	M365A	PL2.25 x 1/...	.237	.734	61	.015	.734	y	62	7942.595	15201	78.75	711	1...	H1-1a
308	M625	PL2.25 x 1/...	.237	.734	62	.015	.734	y	61	7942.595	15201	78.75	711	1...	H1-1a
309	M611	PL2.25 x 1/...	.237	.865	62	.015	.882	y	61	6101.461	15201	78.75	711	1...	H1-1a
310	M351	PL2.25 x 1/...	.237	.865	61	.015	.882	y	62	6101.461	15201	78.75	711	1...	H1-1a
311	M613	PL2.25 x 1/...	.235	.734	62	.012	.734	y	61	7942.595	15201	78.75	711	1...	H1-1a
312	M353	PL2.25 x 1/...	.235	.734	61	.012	.734	y	62	7942.595	15201	78.75	711	1...	H1-1a
313	M195A	PL2.25x0.3...	.231	1.263	62	.038	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
314	M177	PL2.25x0.3...	.230	1.263	62	.035	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
315	M216A	PL2.25x0.3...	.220	1.288	62	.034	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
316	M423	PL2.25x0.3...	.220	1.288	61	.034	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
317	M474	PL2.25x0.3...	.210	1.263	61	.038	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
318	M459	PL2.25x0.3...	.199	1.288	62	.031	1.263	y	61	5785.216	18981	123.75	891	1...	H1-1b
319	M437	PL2.25x0.3...	.198	1.288	61	.024	0	y	62	5785.216	18981	123.75	891	2...	H1-1b
320	M602	PL2.25 x 1/...	.197	.828	61	.032	.828	y	61	8045.546	15201	78.75	711	2...	H1-1b
321	M327	PL2.25 x 1/...	.197	.828	62	.032	.828	y	62	8045.546	15201	78.75	711	2...	H1-1b
322	M599	PL2.25 x 1/...	.196	.828	61	.033	.828	y	61	8045.546	15201	78.75	711	2...	H1-1b
323	M324	PL2.25 x 1/...	.196	.828	62	.033	.828	y	62	8045.546	15201	78.75	711	2...	H1-1b
324	M180	PL2.25x0.3...	.195	1.288	61	.030	1.263	y	62	5785.216	18981	123.75	891	1.7	H1-1b
325	M456	PL2.25x0.3...	.189	1.263	61	.036	0	y	61	5785.216	18981	123.75	891	1.4	H1-1b
326	M419A	PL2.25x0.3...	.187	1.288	61	.025	1.263	y	61	5785.216	18981	123.75	891	2...	H1-1b
327	M472	PL2.25x0.3...	.187	1.263	61	.031	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
328	M212A	PL2.25x0.3...	.186	1.288	62	.024	1.263	y	62	5785.216	18981	123.75	891	2...	H1-1b
329	M406A	PL2.25x0.3...	.183	1.263	61	.041	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
330	M586	PL2.25 x 1/...	.178	1.211	62	.018	1.234	y	62	3190.548	15201	78.75	711	1...	H1-1b
331	M424	PL2.25x0.3...	.178	1.263	61	.041	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
332	M597	PL2.25 x 1/...	.177	1.274	61	.031	1.274	y	61	3795.659	15201	78.75	711	2...	H1-1b
333	M322	PL2.25 x 1/...	.177	1.274	62	.031	1.274	y	62	3795.659	15201	78.75	711	2...	H1-1b
334	M230	PL2.25x0.3...	.176	1.288	62	.020	1.263	y	62	5785.216	18981	123.75	891	2...	H1-1b
335	M333	PL2.25 x 1/...	.174	1.211	61	.018	0	y	61	3190.548	15201	78.75	711	1...	H1-1b
336	M199	PL2.25x0.3...	.174	1.263	62	.041	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
337	M193A	PL2.25x0.3...	.172	1.263	62	.030	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
338	M217A	PL2.25x0.3...	.172	1.263	62	.040	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
339	M320	PL2.25 x 1/...	.171	1.274	62	.030	1.274	y	62	3795.659	15201	78.75	711	2...	H1-1b
340	M595	PL2.25 x 1/...	.171	1.274	61	.030	1.274	y	61	3795.659	15201	78.75	711	2...	H1-1b
341	M175	PL2.25x0.3...	.170	1.263	62	.027	0	y	62	5785.216	18981	123.75	891	1...	H1-1b



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

July 14, 2016

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
342	M335	PL2.25 x 1/...	.169	1.211	61	.018	1.234	y	61	3190.548	15201	78.75	711	1...	H1-1b
343	M176	PL2.25x0.3...	.168	1.288	62	.032	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
344	M442	PL2.25x0.3...	.168	1.263	62	.037	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
345	M473	PL2.25x0.3...	.166	1.288	61	.032	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
346	M584	PL2.25 x 1/...	.165	1.211	62	.018	1.234	y	62	3190.548	15201	78.75	711	1...	H1-1b
347	M163	PL2.25x0.3...	.164	1.263	61	.036	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
348	M194A	PL2.25x0.3...	.163	1.288	62	.029	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
349	M454	PL2.25x0.3...	.163	1.263	61	.029	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
350	M455	PL2.25x0.3...	.162	1.288	61	.033	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
351	M336	PL2.25 x 1/...	.161	.828	62	.032	1.546	y	62	8045.546	15201	78.75	711	2...	H1-1b
352	M587	PL2.25 x 1/...	.161	.828	61	.032	1.546	y	61	8045.546	15201	78.75	711	2...	H1-1b
353	M590	PL2.25 x 1/...	.161	.828	61	.031	1.546	y	61	8045.546	15201	78.75	711	2...	H1-1b
354	M339	PL2.25 x 1/...	.161	.828	62	.031	1.546	y	62	8045.546	15201	78.75	711	2...	H1-1b
355	M610	PL2.25 x 1/...	.157	1.284	61	.012	1.309	y	61	2761.151	15201	78.75	711	1...	H1-1b
356	M345	PL2.25 x 1/...	.157	1.284	62	.012	1.309	y	62	2761.151	15201	78.75	711	1...	H1-1b
357	M200	PL2.25x0.3...	.155	1.288	62	.030	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
358	M460	PL2.25x0.3...	.154	1.263	62	.036	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
359	M334	PL2.25 x 1/...	.153	1.274	61	.026	1.274	y	61	3795.659	15201	78.75	711	2...	H1-1b
360	M425	PL2.25x0.3...	.151	1.288	61	.030	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
361	M585	PL2.25 x 1/...	.150	1.274	62	.027	1.274	y	62	3795.659	15201	78.75	711	2...	H1-1b
362	M583	PL2.25 x 1/...	.149	1.274	62	.027	2.381	y	61	3795.659	15201	78.75	711	2...	H1-1b
363	M181	PL2.25x0.3...	.148	1.263	61	.035	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
364	M332	PL2.25 x 1/...	.145	1.274	61	.027	2.381	y	62	3795.659	15201	78.75	711	2...	H1-1b
365	M342	PL2.25x0.3...	.145	1.689	62	.008	1.721	y	61	3268.046	18981	123.75	891	1...	H1-1b
366	M439	PL2.25x0.3...	.145	1.288	62	.015	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
367	M361	PL2.25 x 1/...	.144	.776	62	.018	.776	y	62	7267.496	15201	78.75	711	1...	H1-1b
368	M627	PL2.25 x 1/...	.144	.776	61	.018	.776	y	61	7267.496	15201	78.75	711	1...	H1-1b
369	M407A	PL2.25x0.3...	.144	1.288	61	.030	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
370	M615	PL2.25 x 1/...	.144	.776	61	.015	.776	y	61	7267.496	15201	78.75	711	1...	H1-1b
371	M232	PL2.25x0.3...	.144	1.288	61	.009	2.551	y	62	5785.216	18981	123.75	891	1...	H1-1b
372	M349	PL2.25 x 1/...	.143	.776	62	.015	.776	y	62	7267.496	15201	78.75	711	1...	H1-1b
373	M421	PL2.25x0.3...	.143	1.288	62	.014	1.263	y	61	5785.216	18981	123.75	891	1...	H1-1b
374	M617	PL2.25x0.3...	.142	1.689	61	.010	3.155	y	61	3268.046	18981	123.75	891	1...	H1-1b
375	M218A	PL2.25x0.3...	.141	1.288	62	.031	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
376	M164	PL2.25x0.3...	.140	1.288	61	.026	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
377	M461	PL2.25x0.3...	.139	1.288	62	.027	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
378	M443	PL2.25x0.3...	.139	1.288	62	.027	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
379	M340	PL2.25 x 1/...	.139	.74	62	.033	.74	y	62	7911.136	15201	78.75	711	1...	H1-1b
380	M591	PL2.25 x 1/...	.139	.74	61	.033	.74	y	61	7911.136	15201	78.75	711	1...	H1-1b
381	M588	PL2.25 x 1/...	.138	.74	61	.031	1.409	y	61	7911.136	15201	78.75	711	1...	H1-1b
382	M337	PL2.25 x 1/...	.138	.74	62	.032	1.409	y	62	7911.136	15201	78.75	711	1...	H1-1b
383	M606	PL2.25x0.3...	.136	1.689	61	.007	1.721	y	62	3268.046	18981	123.75	891	1...	H1-1b
384	M355	PL2.25x0.3...	.135	1.689	62	.010	3.155	y	62	3268.046	18981	123.75	891	1...	H1-1b
385	M182	PL2.25x0.3...	.134	1.288	61	.027	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
386	M436	PL2.25x0.3...	.133	1.263	61	.019	1.263	y	61	5785.216	18981	123.75	891	1...	H1-1b
387	M603	PL2.25 x 1/...	.133	.74	61	.035	0	y	61	7911.136	15201	78.75	711	1...	H1-1b
388	M328	PL2.25 x 1/...	.133	.74	62	.035	0	y	62	7911.136	15201	78.75	711	1...	H1-1b
389	M325	PL2.25 x 1/...	.132	.74	62	.034	0	y	62	7911.136	15201	78.75	711	1...	H1-1b
390	M600	PL2.25 x 1/...	.132	.74	61	.034	0	y	61	7911.136	15201	78.75	711	1...	H1-1b
391	M418A	PL2.25x0.3...	.131	1.263	62	.021	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
392	M470	PL2.25x0.3...	.131	1.263	61	.023	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
393	M214A	PL2.25x0.3...	.131	1.288	61	.015	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
394	M471	PL2.25x0.3...	.130	1.288	61	.024	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
395	M357	PL2.25 x 1/...	.130	1.284	62	.015	1.309	y	62	2761.151	15201	78.75	711	1...	H1-1b
396	M458	PL2.25x0.3...	.130	1.263	61	.010	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
397	M622	PL2.25 x 1/...	.130	1.284	61	.015	1.309	y	61	2761.151	15201	78.75	711	1...	H1-1b
398	M211A	PL2.25x0.3...	.128	1.263	61	.015	0	y	61	5785.216	18981	123.75	891	1...	H1-1b



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
399	M453	PL2.25x0.3...	.127	1.288	61	.025	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
400	M457	PL2.25x0.3...	.126	1.263	61	.034	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
401	M229	PL2.25x0.3...	.124	1.263	62	.020	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
402	M174	PL2.25x0.3...	.124	1.288	62	.025	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
403	M435	PL2.25x0.3...	.119	1.288	61	.019	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
404	M192A	PL2.25x0.3...	.119	1.288	62	.022	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
405	M418	PL2.25x0.3...	.118	1.995	62	.005	1.995	y	62	2317.049	18981	123.75	836.246	1...	H1-1b
406	M400	PL2.25x0.3...	.118	1.954	62	.004	0	y	62	2317.049	18981	123.75	820.979	1...	H1-1b
407	M422	PL2.25x0.3...	.115	1.263	61	.008	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
408	M191A	PL2.25x0.3...	.113	1.263	62	.022	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
409	M601	PL2.25 x 1/...	.113	.702	61	.020	0	y	61	8386.154	15201	78.75	711	1...	H1-1b
410	M326	PL2.25 x 1/...	.112	.702	62	.020	0	y	62	8386.154	15201	78.75	711	1...	H1-1b
411	M173	PL2.25x0.3...	.112	1.263	62	.019	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
412	M475	PL2.25x0.3...	.111	1.263	61	.033	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
413	M329	PL2.25 x 1/...	.110	.702	62	.018	0	y	62	8386.154	15201	78.75	711	1...	H1-1b
414	M604	PL2.25 x 1/...	.109	.702	61	.018	0	y	61	8386.154	15201	78.75	711	1...	H1-1b
415	M440	PL2.25x0.3...	.109	1.263	61	.009	1.263	y	61	5785.216	18981	123.75	891	1...	H1-1b
416	M210A	PL2.25x0.3...	.109	1.288	62	.018	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
417	M426	PL2.25x0.3...	.109	1.263	61	.024	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
418	M201	PL2.25x0.3...	.109	1.263	62	.024	0	y	62	5785.216	18981	123.75	891	1.4	H1-1b
419	M417A	PL2.25x0.3...	.108	1.288	61	.017	1.263	y	61	5785.216	18981	123.75	891	1...	H1-1b
420	M452	PL2.25x0.3...	.108	1.263	61	.021	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
421	M233	PL2.25x0.3...	.107	1.263	62	.010	1.263	y	62	5785.216	18981	123.75	891	1...	H1-1b
422	M451	PL2.25x0.3...	.107	1.263	61	.019	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
423	M408A	PL2.25x0.3...	.105	1.263	61	.024	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
424	M219A	PL2.25x0.3...	.104	1.263	62	.023	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
425	M358	PL2.25 x 1/...	.104	1.383	61	.014	1.409	y	62	2440.571	15201	78.75	711	1...	H1-1b
426	M228	PL2.25x0.3...	.104	1.288	62	.013	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
427	M215A	PL2.25x0.3...	.102	1.263	62	.005	1.288	y	62	5785.216	18981	123.75	891	1...	H1-1b
428	M307	L2.5x1.25x5	.098	1.221	62	.005	2.467	y	62	16726.443	29003.9...	340.889	1464.212	1...	H2-1
429	M305	L2.5x1.25x5	.096	1.221	62	.001	0	y	61	16726.443	29003.9...	340.889	1464.212	1...	H2-1
430	M165	PL2.25x0.3...	.095	1.263	61	.022	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
431	M462	PL2.25x0.3...	.095	1.263	62	.022	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
432	M399A	L2.5x1.25x5	.095	1.221	61	.002	2.467	y	62	16726.443	29003.9...	340.889	1494.276	1...	H2-1
433	M619	PL2.25 x 1/...	.095	1.383	62	.014	1.409	y	61	2440.571	15201	78.75	711	1...	H1-1b
434	M196A	PL2.25x0.3...	.094	1.263	62	.028	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
435	M444	PL2.25x0.3...	.094	1.263	62	.021	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
436	M469	PL2.25x0.3...	.094	1.263	61	.018	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
437	M468	PL2.25x0.3...	.093	1.288	61	.015	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
438	M648	L2.5x2.5x5	.092	.384	61	.029	.384	z	61	35341.325	39420	1096.767	2551.08	1...	H2-1
439	M172	PL2.25x0.3...	.092	1.288	62	.019	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
440	M183	PL2.25x0.3...	.091	1.263	61	.020	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
441	M427	PL2.25x0.3...	.091	1.263	61	.016	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
442	M359	PL2.25 x 1/...	.090	1.284	62	.010	1.309	y	61	2761.151	15201	78.75	711	1...	H1-1b
443	M190A	PL2.25x0.3...	.090	1.263	62	.016	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
444	M608	PL2.25 x 1/...	.089	1.284	61	.011	1.309	y	62	2761.151	15201	78.75	711	1...	H1-1b
445	M620	PL2.25 x 1/...	.089	1.284	61	.011	1.309	y	62	2761.151	15201	78.75	711	1...	H1-1b
446	M645	L2.5x1.25x5	.089	1.21	61	.020	0	y	61	16897.433	29003.9...	340.889	1494.276	1...	H2-1
447	M202A	PL2.25x0.3...	.089	1.263	62	.016	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
448	M347	PL2.25 x 1/...	.089	1.284	62	.011	1.309	y	61	2761.151	15201	78.75	711	1...	H1-1b
449	M401	PL2.25x0.3...	.088	1.914	61	.003	2.036	y	62	2317.049	18981	123.75	891	1...	H1-1b
450	M589	PL2.25 x 1/...	.088	.702	61	.018	.702	y	61	8386.154	15201	78.75	711	1...	H1-1b
451	M416A	PL2.25x0.3...	.088	1.263	62	.017	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
452	M338	PL2.25 x 1/...	.088	.702	62	.018	.702	y	62	8386.154	15201	78.75	711	1...	H1-1b
453	M374	L2.5x1.25x5	.087	1.221	61	.001	2.467	y	61	16726.443	29003.9...	340.889	1494.276	1...	H2-1
454	M646	L2.5x2.5x5	.087	1.616	62	.027	.384	y	62	35341.325	39420	1096.767	2551.08	1...	H2-1
455	M370	L2.5x1.25x5	.086	1.246	62	.005	0	y	61	16726.006	29003.9...	340.889	1494.276	1...	H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
456	M209A	PL2.25x0.3...	.086	1.263	61	.011	1.263	y	62	5785.216	18981	123.75	891	1...	H1-1b
457	M341	PL2.25 x 1/...	.086	.702	62	.017	.702	y	62	8386.154	15201	78.75	711	1...	H1-1b
458	M178	PL2.25x0.3...	.085	1.263	62	.032	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
459	M607	PL2.25 x 1/...	.085	1.383	62	.009	1.409	y	61	2440.571	15201	78.75	711	1...	H1-1b
460	M592	PL2.25 x 1/...	.085	.702	61	.016	.702	y	61	8386.154	15201	78.75	711	1...	H1-1b
461	M476	PL2.25x0.3...	.085	1.263	61	.013	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
462	M372	L2.5x1.25x5	.085	1.221	61	.002	2.467	y	61	16726.443	29003.9...	340.889	1494.276	1...	H2-1
463	M463	PL2.25x0.3...	.084	1.263	62	.015	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
464	M434	PL2.25x0.3...	.083	1.263	61	.015	1.263	y	61	5785.216	18981	123.75	891	1...	H1-1b
465	M220A	PL2.25x0.3...	.082	1.263	62	.017	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
466	M450	PL2.25x0.3...	.082	1.288	61	.014	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
467	M394A	L2.5x1.25x5	.081	1.18	61	.004	2.337	y	61	17700.827	29003.9...	340.889	1473.698	1...	H2-1
468	M179	PL2.25x0.3...	.081	1.263	62	.010	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
469	M184	PL2.25x0.3...	.081	1.263	61	.017	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
470	M189A	PL2.25x0.3...	.080	1.288	62	.015	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
471	M409A	PL2.25x0.3...	.080	1.263	61	.016	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
472	M378	L2.5x1.25x5	.080	1.221	61	.001	0	y	62	16726.443	29003.9...	340.889	1494.276	1...	H2-1
473	M197A	PL2.25x0.3...	.079	1.263	62	.013	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
474	M376	L2.5x1.25x5	.079	1.221	61	.002	0	y	62	16726.443	29003.9...	340.889	1494.276	1...	H2-1
475	M449	PL2.25x0.3...	.078	1.288	61	.011	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
476	M301	L2.5x1.25x5	.078	1.246	61	.002	2.467	y	61	16726.006	29003.9...	340.889	1464.208	1...	H2-1
477	M433	PL2.25x0.3...	.077	1.288	61	.014	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
478	M227	PL2.25x0.3...	.077	1.263	62	.016	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
479	M346	PL2.25 x 1/...	.076	1.383	61	.009	0	y	61	2440.571	15201	78.75	711	1...	H1-1b
480	M171	PL2.25x0.3...	.076	1.288	62	.013	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
481	M166	PL2.25x0.3...	.075	1.263	61	.014	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
482	M303	L2.5x1.25x5	.075	1.246	61	.002	0	y	62	16726.006	29003.9...	340.889	1464.208	1...	H2-1
483	M445	PL2.25x0.3...	.074	1.263	62	.016	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
484	M413	PL2.25x0.3...	.073	1.995	62	.004	2.036	y	61	2317.049	18981	123.75	891	1...	H1-1b
485	M299	L2.5x1.25x5	.073	1.246	61	.002	0	y	62	16726.006	29003.9...	340.889	1464.208	1...	H2-1
486	M407	PL2.25x0.3...	.072	1.954	61	.003	1.995	y	62	2317.049	18981	123.75	891	1...	H1-1b
487	M395A	L2.5x1.25x5	.072	1.221	61	.003	2.467	y	62	16726.443	29003.9...	340.889	1494.276	1...	H2-1
488	M621	PL2.25 x 1/...	.071	1.383	61	.011	1.409	y	62	2440.571	15201	78.75	711	1...	H1-1b
489	M356	PL2.25 x 1/...	.071	1.383	62	.011	1.409	y	61	2440.571	15201	78.75	711	1...	H1-1b
490	M609	PL2.25 x 1/...	.071	1.409	62	.010	0	y	61	3297.898	15201	78.75	711	1...	H1-1b
491	M389A	L2.5x1.25x5	.071	1.221	62	.003	0	y	62	16726.443	29003.9...	340.889	1464.212	1...	H2-1
492	M297	L2.5x1.25x5	.070	1.246	61	.001	0	y	62	16726.006	29003.9...	340.889	1464.208	1...	H2-1
493	M380	L2.5x1.25x5	.070	1.221	61	.001	2.467	y	61	16726.443	29003.9...	340.889	1494.276	1...	H2-1
494	M389	L2.5x1.25x5	.070	1.246	62	.001	0	y	62	16726.443	29003.9...	340.889	1494.276	1...	H2-1
495	M391A	L2.5x1.25x5	.069	1.221	62	.004	0	y	62	16726.443	29003.9...	340.889	1464.212	1...	H2-1
496	M467	PL2.25x0.3...	.069	1.288	61	.011	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
497	M344	PL2.25 x 1/...	.068	1.409	61	.011	0	y	62	3297.898	15201	78.75	711	1...	H1-1b
498	M397A	L2.5x1.25x5	.068	1.221	61	.002	2.467	y	62	16726.443	29003.9...	340.889	1494.276	1...	H2-1
499	M415A	PL2.25x0.3...	.068	1.288	62	.011	1.263	y	61	5785.216	18981	123.75	891	1...	H1-1b
500	M208A	PL2.25x0.3...	.068	1.288	62	.013	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
501	M226	PL2.25x0.3...	.067	1.288	61	.008	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
502	M466	PL2.25x0.3...	.066	1.288	61	.008	1.288	y	61	5785.216	18981	123.75	891	1...	H1-1b
503	M387	L2.5x1.25x5	.066	1.246	62	.002	0	y	62	16726.443	29003.9...	340.889	1494.276	1...	H2-1
504	M392A	L2.5x1.25x5	.065	1.245	61	.003	0	y	62	16741.29	29003.9...	340.889	1464.356	1...	H2-1
505	M170	PL2.25x0.3...	.065	1.288	62	.011	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
506	M649	L2.5x2.5x5	.065	.99	62	.001	0	z	62	35341.325	39420	1096.767	2551.08	1...	H2-1
507	M291	L2.5x1.25x5	.064	1.246	61	.001	2.467	y	61	16726.356	29003.9...	340.889	1464.212	1...	H2-1
508	M188	PL2.25x0.3...	.062	1.288	62	.009	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
509	M203A	PL2.25x0.3...	.061	1.263	62	.012	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
510	M647	L2.5x2.5x5	.061	.99	61	.001	0	z	62	35341.325	39420	1096.767	2551.08	1...	H2-1
511	M295	L2.5x1.25x5	.060	1.246	61	.001	2.467	y	61	16726.443	29003.9...	340.889	1464.212	1...	H2-1
512	M428	PL2.25x0.3...	.060	1.263	61	.011	0	y	61	5785.216	18981	123.75	891	1...	H1-1b



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

July 14, 2016

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [...]	phi*Mn y...	phi*Mn z...	Cb	Eqn
513	M382	L2.5x1.25x5	.059	1.221	61	.003	0	y	61	16726.006	29003.9...	340.889	1494.276	1...	H2-1
514	M384	L2.5x1.25x5	.059	1.221	61	.001	0	y	62	16726.094	29003.9...	340.889	1494.276	1...	H2-1
515	M207A	PL2.25x0.3...	.059	1.288	61	.006	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
516	M288	L2.5x1.25x5	.059	1.221	62	.002	0	y	62	16726.006	29003.9...	340.889	1464.208	1...	H2-1
517	M398A	L2.5x1.25x5	.059	1.245	61	.004	0	y	61	16741.29	29003.9...	340.889	1494.276	1...	H2-1
518	M390A	L2.5x1.25x5	.059	1.246	61	.004	2.467	y	61	16726.006	29003.9...	340.889	1464.208	1...	H2-1
519	M410A	PL2.25x0.3...	.059	1.263	61	.011	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
520	M414A	PL2.25x0.3...	.058	1.288	62	.011	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
521	M396A	L2.5x1.25x5	.058	1.246	62	.004	0	y	62	16726.006	29003.9...	340.889	1494.276	1...	H2-1
522	M221A	PL2.25x0.3...	.058	1.263	62	.010	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
523	M432	PL2.25x0.3...	.057	1.288	62	.008	1.263	y	61	5785.216	18981	123.75	891	1...	H1-1b
524	M448	PL2.25x0.3...	.057	1.288	61	.007	1.288	y	61	5785.216	18981	123.75	891	1...	H1-1b
525	M375	L2.5x1.25x5	.056	1.246	61	.002	2.467	y	62	16726.006	29003.9...	340.889	1494.276	1...	H2-1
526	M393A	L2.5x1.25x5	.055	1.221	61	.003	2.467	y	61	16726.443	29003.9...	340.889	1464.212	1...	H2-1
527	M446	PL2.25x0.3...	.055	1.263	62	.009	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
528	M167	PL2.25x0.3...	.055	1.263	61	.012	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
529	M373	L2.5x1.25x5	.054	1.246	61	.002	2.467	y	62	16726.006	29003.9...	340.889	1494.276	1...	H2-1
530	M225	PL2.25x0.3...	.054	1.288	61	.010	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
531	M464	PL2.25x0.3...	.054	1.263	62	.011	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
532	M309	L2.5x1.25x5	.054	1.221	62	.003	0	y	61	16726.443	29003.9...	340.889	1464.212	1...	H2-1
533	M400A	L2.5x1.25x5	.053	1.18	61	.006	0	y	61	17700.827	29003.9...	340.889	1494.276	1...	H2-1
534	M187	PL2.25x0.3...	.053	1.288	62	.008	1.288	y	62	5785.216	18981	123.75	891	1...	H1-1b
535	M377	L2.5x1.25x5	.052	1.246	61	.003	0	y	61	16726.006	29003.9...	340.889	1494.276	1...	H2-1
536	M644	L2.5x1.25x5	.052	1.187	61	.006	2.398	y	61	17242.875	29003.9...	340.889	1469.22	1...	H2-1
537	M379	L2.5x1.25x5	.052	1.246	61	.001	2.467	y	62	16726.006	29003.9...	340.889	1494.276	1...	H2-1
538	M185	PL2.25x0.3...	.052	1.263	61	.008	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
539	M306	L2.5x1.25x5	.052	1.246	62	.003	2.467	y	61	16726.006	29003.9...	340.889	1464.208	1...	H2-1
540	M302	L2.5x1.25x5	.052	1.221	61	.001	2.467	y	62	16726.443	29003.9...	340.889	1464.212	1...	H2-1
541	M290	L2.5x1.25x5	.051	1.221	62	.004	0	y	62	16726.006	29003.9...	340.889	1464.208	1...	H2-1
542	M169	PL2.25x0.3...	.050	1.288	62	.005	1.288	y	62	5785.216	18981	123.75	891	1...	H1-1b
543	M310	L2.5x1.25x5	.050	1.246	61	.003	0	y	62	16726.006	29003.9...	340.889	1464.208	1...	H2-1
544	M369	L2.5x1.25x5	.049	1.221	62	.012	2.467	y	61	16726.443	29003.9...	340.889	1494.276	1...	H2-1
545	M406	PL2.25x0.3...	.049	1.995	62	.004	1.995	y	61	2317.049	18981	123.75	891	1...	H1-1b
546	M447	PL2.25x0.3...	.048	1.288	61	.006	0	y	62	5785.216	18981	123.75	891	2...	H1-1b
547	M367	L2.5x1.25x5	.048	1.221	61	.006	2.467	y	61	16726.443	29003.9...	340.889	1494.276	1...	H2-1
548	M413A	PL2.25x0.3...	.047	1.288	62	.004	1.288	y	62	5785.216	18981	123.75	891	1...	H1-1b
549	M293	L2.5x1.25x5	.046	1.246	61	.001	2.467	y	61	16726.443	29003.9...	340.889	1464.212	1...	H2-1
550	M298	L2.5x1.25x5	.046	1.221	61	.002	2.467	y	62	16726.443	29003.9...	340.889	1464.212	1...	H2-1
551	M224	PL2.25x0.3...	.046	1.288	61	.005	2.551	y	62	5785.216	18981	123.75	891	1...	H1-1b
552	M304	L2.5x1.25x5	.046	1.221	61	.002	2.467	y	62	16726.443	29003.9...	340.889	1464.212	1...	H2-1
553	M300	L2.5x1.25x5	.046	1.221	61	.001	2.467	y	62	16726.443	29003.9...	340.889	1464.212	1...	H2-1
554	M429	PL2.25x0.3...	.045	1.263	61	.004	1.288	y	61	5785.216	18981	123.75	891	1...	H1-1b
555	M368	L2.5x1.25x5	.045	1.246	62	.006	0	y	61	16726.006	29003.9...	340.889	1494.276	1...	H2-1
556	M371	L2.5x1.25x5	.045	1.221	62	.004	2.467	y	61	16726.443	29003.9...	340.889	1494.276	1...	H2-1
557	M204A	PL2.25x0.3...	.044	1.263	62	.004	1.288	y	61	5785.216	18981	123.75	891	1...	H1-1b
558	M431	PL2.25x0.3...	.044	1.288	62	.008	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
559	M365	L2.5x1.25x5	.044	1.221	61	.004	2.467	y	61	16726.443	29003.9...	340.889	1494.276	1...	H2-1
560	M206A	PL2.25x0.3...	.044	1.288	61	.008	1.288	y	61	5785.216	18981	123.75	891	2...	H1-1b
561	M386	L2.5x1.25x5	.044	1.221	62	.003	2.467	y	62	16726.006	29003.9...	340.889	1494.276	1...	H2-1
562	M388	L2.5x1.25x5	.043	1.221	62	.002	0	y	61	16726.006	29003.9...	340.889	1494.276	1...	H2-1
563	M287	L2.5x1.25x5	.043	1.246	62	.001	2.467	y	62	16726.443	29003.9...	340.889	1464.212	1...	H2-1
564	M381	L2.5x1.25x5	.043	1.246	62	.001	2.467	y	61	16726.443	29003.9...	340.889	1494.276	1...	H2-1
565	M465	PL2.25x0.3...	.043	1.263	62	.004	1.288	y	61	5785.216	18981	123.75	891	1...	H1-1b
566	M385	L2.5x1.25x5	.042	1.246	62	.001	0	y	62	16726.356	29003.9...	340.889	1494.276	1...	H2-1
567	M363	L2.5x1.25x5	.041	1.221	61	.003	2.467	y	61	16726.443	29003.9...	340.889	1494.276	1...	H2-1
568	M222A	PL2.25x0.3...	.040	1.263	62	.006	0	y	62	5785.216	18981	123.75	891	1...	H1-1b
569	M289	L2.5x1.25x5	.040	1.246	62	.001	2.467	y	61	16726.443	29003.9...	340.889	1464.212	1...	H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

July 14, 2016

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
570	M186	PL2.25x0.3...	.040	1.263	61	.007	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
571	M311	L2.5x1.25x5	.040	1.221	61	.003	0	y	62	16726.443	29003.9...	340.889	1464.212	1...	H2-1
572	M383	L2.5x1.25x5	.040	1.246	61	.001	0	y	62	16726.443	29003.9...	340.889	1494.276	1...	H2-1
573	M395	L2.5x1.25x5	.039	1.18	62	.004	2.337	y	62	17701.021	29003.9...	340.889	1494.276	1...	H2-1
574	M391	L2.5x1.25x5	.039	1.246	62	.003	2.467	y	61	16726.006	29003.9...	340.889	1494.276	1...	H2-1
575	M411A	PL2.25x0.3...	.038	1.263	61	.004	0	y	61	5785.216	18981	123.75	891	1...	H1-1b
576	M168	PL2.25x0.3...	.037	1.288	62	.005	1.288	y	62	5785.216	18981	123.75	891	2...	H1-1b
577	M414	L2.5x1.25x5	.036	.99	61	.002	0	y	62	20199.817	29003.9...	340.889	1494.276	1...	H2-1
578	M286	L2.5x1.25x5	.036	1.246	61	.001	0	y	62	16726.443	29003.9...	340.889	1464.212	1...	H2-1
579	M430	PL2.25x0.3...	.036	1.288	62	.003	1.288	y	62	5785.216	18981	123.75	891	2...	H1-1b
580	M205A	PL2.25x0.3...	.036	1.288	61	.004	1.288	y	61	5785.216	18981	123.75	891	2...	H1-1b
581	M312	L2.5x1.25x5	.036	1.221	62	.003	2.467	y	62	16726.006	29003.9...	340.889	1464.208	1...	H2-1
582	M393	L2.5x1.25x5	.036	1.245	62	.002	0	y	62	16733.87	29003.9...	340.889	1494.276	1...	H2-1
583	M294	L2.5x1.25x5	.036	1.221	61	.001	0	y	62	16726.006	29003.9...	340.889	1464.208	1...	H2-1
584	M308	L2.5x1.25x5	.035	1.246	61	.006	2.467	y	61	16726.006	29003.9...	340.889	1464.208	1...	H2-1
585	M292	L2.5x1.25x5	.035	1.221	62	.001	2.467	y	62	16726.094	29003.9...	340.889	1464.209	1...	H2-1
586	M416	L3x2.5x5	.035	1.838	61	.001	3.5	z	61	32983.482	44010	1270.778	2982.18	1...	H2-1
587	M412A	PL2.25x0.3...	.034	1.288	62	.006	1.288	y	62	5785.216	18981	123.75	891	2...	H1-1b
588	M296	L2.5x1.25x5	.034	1.221	61	.001	2.467	y	62	16726.443	29003.9...	340.889	1464.212	1...	H2-1
589	M223A	PL2.25x0.3...	.034	1.288	61	.006	1.288	y	61	5785.216	18981	123.75	891	3...	H1-1b
590	M284	L2.5x1.25x5	.032	1.221	62	.001	2.467	y	61	16726.443	29003.9...	340.889	1464.212	1...	H2-1
591	M415	L2.5x1.25x5	.030	.99	61	.002	0	y	61	20199.817	29003.9...	340.889	1494.276	1...	H2-1
592	M280	L2.5x1.25x5	.030	1.211	61	.006	0	y	62	17242.875	29003.9...	340.889	1469.22	1...	H2-1
593	M282	L2.5x1.25x5	.030	1.221	62	.001	0	y	61	16733.651	29003.9...	340.889	1464.282	1...	H2-1
594	M392	L2.5x1.25x5	.029	1.221	62	.003	2.467	y	62	16726.443	29003.9...	340.889	1494.276	1...	H2-1
595	M641	L2.5x1.25x5	.027	1.21	62	.019	2.444	y	62	16897.433	29003.9...	340.889	1494.276	1...	H2-1
596	M366	L2.5x1.25x5	.026	1.246	61	.001	0	y	62	16726.006	29003.9...	340.889	1494.276	1...	H2-1
597	M394	L2.5x1.25x5	.026	1.221	62	.002	0	y	62	16733.651	29003.9...	340.889	1494.276	1...	H2-1
598	M411	L3x2.5x5	.026	1.662	61	.003	3.5	z	61	32983.482	44010	1270.778	2982.18	1...	H2-1
599	M283	L2.5x1.25x5	.024	1.245	62	.001	0	y	61	16733.87	29003.9...	340.889	1464.284	1...	H2-1
600	M390	L2.5x1.25x5	.024	1.221	62	.002	0	y	61	16726.443	29003.9...	340.889	1494.276	1...	H2-1
601	M313	L2.5x1.25x5	.024	1.221	61	.001	0	y	61	16726.443	29003.9...	340.889	1464.212	1...	H2-1
602	M285	L2.5x1.25x5	.024	1.246	62	.002	0	y	62	16726.006	29003.9...	340.889	1464.208	1...	H2-1
603	M396	L2.5x1.25x5	.023	.99	62	.001	0	y	61	20199.817	29003.9...	340.889	1494.276	1...	H2-1
604	M364	L2.5x1.25x5	.022	1.221	62	.004	0	y	62	16726.006	29003.9...	340.889	1494.276	1...	H2-1
605	M281	L2.5x1.25x5	.020	1.18	62	.004	0	y	62	17701.021	29003.9...	340.889	1473.7	1...	H2-1
606	M409	L2.5x1.25x5	.020	.99	61	.003	0	y	61	20199.817	29003.9...	340.889	1494.276	1...	H2-1
607	M417	L3x2.5x5	.018	1.838	61	.004	0	z	62	32983.482	44010	1270.778	2982.18	1...	H2-1
608	M397	L2.5x1.25x5	.017	.99	62	.001	2	y	61	20199.817	29003.9...	340.889	1494.276	1...	H2-1
609	M408	L2.5x1.25x5	.016	.99	61	.001	0	y	61	20199.817	29003.9...	340.889	1494.276	1...	H2-1
610	M399	L3x2.5x5	.013	1.662	62	.001	3.5	z	62	32983.482	44010	1270.778	2996.056	1...	H2-1
611	M398	L3x2.5x5	.013	1.838	61	.001	3.5	z	62	32983.482	44010	1270.778	2982.18	1...	H2-1
612	M410	L3x2.5x5	.010	1.662	61	.002	0	z	61	32983.482	44010	1270.778	2982.18	1...	H2-1
613	M404	L3x2.5x5	.009	1.838	61	.001	0	z	62	32983.482	44010	1270.778	2982.18	1...	H2-1
614	M405	L3x2.5x5	.009	1.662	62	.002	0	z	61	32983.482	44010	1270.778	2996.056	1...	H2-1
615	M403	L2.5x1.25x5	.008	.99	62	.001	2	y	62	20199.817	29003.9...	340.889	1494.276	1...	H2-1
616	M402	L2.5x1.25x5	.007	.99	61	.001	0	y	61	20199.817	29003.9...	340.889	1494.276	1...	H2-1



Milvon to West River Catenary Structure Assessment

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-J

STRUCTURE TYPE 1&2 FIELD CONDITION NESC 2012, UI CRITERIA, AND HURRICANE CATEGORY 3 COMPLETE MEMBER RESULTS



Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [...]	phi*Mn y...	phi*Mn z...	Cb	Eqn	
1	M191	6H25	9.999	7.778	77	9.999	3.889	z 77	32380.313	215681.4	21582	40822.49	1	H1-1b
2	M580	6H25	9.999	7.778	76	9.999	3.889	z 76	32380.313	215681.4	21582	40822.49	1	H1-1b
3	M478	PL2.25 x 1/...	8.964	.71	76	9.999	.71	y 80	8091.345	15201	78.75	711	1...	H1-1b
4	M246A	PL2.25 x 1/...	8.958	.71	77	9.999	.71	y 81	8091.345	15201	78.75	711	1...	H1-1b
5	M489	PL2.25 x 1/...	8.859	.71	81	9.999	.71	y 81	8091.345	15201	78.75	711	1...	H1-1b
6	M235	PL2.25 x 1/...	8.847	.71	80	9.999	.71	y 80	8091.345	15201	78.75	711	1...	H1-1b
7	M479	PL2.25 x 1/...	8.598	.722	76	9.999	0	y 80	8057.556	15201	78.75	711	1...	H1-1b
8	M247A	PL2.25 x 1/...	8.588	.722	77	9.999	0	y 81	8057.556	15201	78.75	711	1...	H1-1b
9	M490	PL2.25 x 1/...	7.656	.737	81	9.999	0	y 81	7706.38	15201	78.75	711	1...	H1-1a
10	M236	PL2.25 x 1/...	7.637	.737	81	9.999	0	y 80	7706.38	15201	78.75	711	1...	H1-1a
11	M333	PL2.25 x 1/...	5.609	1.211	77	.077	1.234	y 77	3190.548	15201	78.75	711	1...	H1-1a
12	M584	PL2.25 x 1/...	5.606	1.211	76	.077	1.234	y 76	3190.548	15201	78.75	711	1...	H1-1a
13	M323	PL2.25 x 1/...	5.054	1.211	77	.045	1.234	y 84	3190.548	15201	78.75	711	1...	H1-1a
14	M598	PL2.25 x 1/...	5.051	1.211	76	.045	1.234	y 83	3190.548	15201	78.75	711	1...	H1-1a
15	M334	PL2.25 x 1/...	4.837	1.25	77	.061	1.274	y 83	2931.71	15201	78.75	711	1...	H1-1a
16	M585	PL2.25 x 1/...	4.834	1.25	76	.061	1.274	y 84	2931.71	15201	78.75	711	1...	H1-1a
17	M320	PL2.25 x 1/...	4.550	1.25	77	.063	1.274	y 84	2931.71	15201	78.75	711	1...	H1-1a
18	M595	PL2.25 x 1/...	4.547	1.25	76	.063	1.274	y 83	2931.71	15201	78.75	711	1...	H1-1a
19	M605	PL2.25x0.3...	4.244	1.689	76	.064	1.721	y 81	3268.046	18981	123.75	891	1...	H1-1a
20	M343	PL2.25x0.3...	4.231	1.689	77	.064	1.721	y 80	3268.046	18981	123.75	891	1...	H1-1a
21	M189	L6x4x6	3.264	8.061	81	.260	6.505	z 77	29768.748	97470	4257.614	12648.6...	1	H2-1
22	M629	L6x4x6	3.264	5.939	80	.261	6.929	z 76	29768.748	97470	4257.614	12648.6...	1	H2-1
23	M403A	L4x4x6	3.016	0	80	.278	23.331	z 81	74070.528	77220	3665.399	8238.66	1	H2-1
24	M161	L4x4x6	3.006	27.174	81	.274	3.843	z 80	74070.528	77220	3665.399	8238.66	1	H2-1
25	M404A	L4x4x6	2.976	27.174	81	.207	3.843	z 80	74070.528	77220	3665.399	8238.66	1	H2-1
26	M610	PL2.25 x 1/...	2.962	1.284	76	.084	2.399	y 81	2761.151	15201	78.75	711	1...	H1-1a
27	M160	L4x4x6	2.961	0	80	.208	23.331	z 81	74070.528	77220	3665.399	8238.66	1	H2-1
28	M345	PL2.25 x 1/...	2.958	1.284	77	.084	2.399	y 80	2761.151	15201	78.75	711	1...	H1-1a
29	M362	PL2.25 x 1/...	2.901	.748	77	.985	1.371	y 77	9482.639	15201	78.75	711	1...	H1-1a
30	M628	PL2.25 x 1/...	2.900	.748	76	.985	1.371	y 76	9482.639	15201	78.75	711	1...	H1-1a
31	M402A	L4x4x6	2.871	0	80	.132	23.057	z 76	74070.528	77220	3665.399	4423.313	1	H2-1
32	M158	L4x4x6	2.859	27.174	81	.134	4.117	z 77	74070.528	77220	3665.399	4423.313	1	H2-1
33	M613	PL2.25 x 1/...	2.816	.748	76	.885	.748	y 76	9482.639	15201	78.75	711	2...	H1-1a
34	M353	PL2.25 x 1/...	2.816	.748	77	.884	.748	y 77	9482.639	15201	78.75	711	2...	H1-1a
35	M401A	L4x4x6	2.789	27.174	81	.211	3.294	z 83	74070.528	77220	3665.399	4423.313	1	H2-1
36	M364A	PL2.25 x 1/...	2.774	.79	77	.605	1.477	y 77	8678.101	15201	78.75	711	2...	H1-1a
37	M624	PL2.25 x 1/...	2.774	.79	76	.605	1.477	y 76	8678.101	15201	78.75	711	2...	H1-1a
38	M159	L4x4x6	2.762	0	80	.215	23.88	z 84	74070.528	77220	3665.399	4423.313	1	H2-1
39	M665A	L3x2.5x6	2.733	.379	76	1.116	.386	y 76	51421.803	52110	1486.645	3490.361	1...	H2-1
40	M661	L3x2.5x6	2.733	.371	77	1.116	0	y 77	51421.803	52110	1486.645	3490.361	1...	H2-1
41	M342	PL2.25x0.3...	2.677	1.689	81	.049	1.721	y 81	3268.046	18981	123.75	891	1...	H1-1a
42	M606	PL2.25x0.3...	2.666	1.689	80	.049	1.721	y 80	3268.046	18981	123.75	891	1...	H1-1a
43	M351	PL2.25 x 1/...	2.513	.865	77	.191	.882	y 77	6101.461	15201	78.75	711	1...	H1-1a
44	M611	PL2.25 x 1/...	2.512	.865	76	.191	.882	y 76	6101.461	15201	78.75	711	1...	H1-1a
45	M695	L4x4x6 + P...	2.502	2.13	80	.153	0	y 80	98478.227	102573	3285.904	5053.341	1	H2-1
46	M664A	L3x2.5x6	2.494	.371	76	.717	0	y 76	51421.803	52110	1486.645	3490.361	1...	H2-1
47	M660	L3x2.5x6	2.494	.379	77	.717	.402	y 77	51421.803	52110	1486.645	3490.361	1...	H2-1
48	M690	L4x4x6 + P...	2.492	1.704	81	.152	3.525	y 81	98478.227	102573	3285.904	5053.341	1	H2-1
49	M694	L4x4x6 + P...	2.453	1.704	81	.145	3.602	y 81	98478.227	102573	3285.904	5053.341	1	H2-1
50	M691	L4x4x6 + P...	2.441	2.13	80	.145	0	y 80	98478.227	102573	3285.904	5053.341	1	H2-1
51	M579	L3x2.5x5	2.366	3.814	76	3.515	0	z 76	39023.547	44010	1270.778	2538.866	1...	H2-1
52	M138	L3x2.5x5	2.363	7.985	77	3.515	11.799	z 77	39023.547	44010	1270.778	2578.596	1...	H2-1
53	M693	L4x4x6 + P...	2.350	2.944	80	.522	3.718	y 81	98478.227	102573	3285.904	5053.341	1	H2-1
54	M688	L4x4x6 + P...	2.338	.891	81	.522	0	y 80	98478.227	102573	3285.904	5053.341	1	H2-1
55	M212A	PL2.25x0.3...	2.277	1.263	81	.194	0	y 80	5785.216	18981	123.75	891	1...	H1-1a
56	M692	L4x4x6 + P...	2.269	.891	81	.521	0	y 80	98478.227	102573	3285.904	5053.341	1	H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
57	M360	PL2.25 x 1/...	2.259	.882	77 .347	1.648	y 77	7522.587	15201	78.75	711	2...	H1-1a
58	M626	PL2.25 x 1/...	2.259	.882	76 .347	1.648	y 76	7522.587	15201	78.75	711	2...	H1-1a
59	M419A	PL2.25x0.3...	2.254	1.263	80 .202	2.551	y 76	5785.216	18981	123.75	891	1...	H1-1a
60	M689	L4x4x6 + P...	2.245	2.944	80 .521	3.718	y 81	98478.227	102573	3285.904	5053.341	1	H2-1
61	M625	PL2.25 x 1/...	2.223	.748	76 .898	1.371	y 76	9482.639	15201	78.75	711	1...	H1-1a
62	M365A	PL2.25 x 1/...	2.223	.748	77 .898	1.371	y 77	9482.639	15201	78.75	711	1...	H1-1a
63	M601	PL2.25 x 1/...	2.202	.715	76 .303	1.336	y 76	9526.501	15201	78.75	711	1...	H1-1a
64	M326	PL2.25 x 1/...	2.201	.715	77 .303	1.336	y 77	9526.501	15201	78.75	711	1...	H1-1a
65	M318	PL2.25x0.3...	2.200	1.513	77 .036	2.881	y 81	3985.766	18981	123.75	891	1...	H1-1a
66	M593	PL2.25x0.3...	2.190	1.513	76 .035	2.881	y 80	3985.766	18981	123.75	891	1...	H1-1a
67	M176	PL2.25x0.3...	2.182	1.263	80 .188	1.263	y 80	5785.216	18981	123.75	891	1...	H1-1a
68	M349	PL2.25 x 1/...	2.182	.776	77 .415	.79	y 77	7267.496	15201	78.75	711	1...	H1-1a
69	M615	PL2.25 x 1/...	2.182	.776	76 .415	.79	y 76	7267.496	15201	78.75	711	1...	H1-1a
70	M455	PL2.25x0.3...	2.177	1.263	81 .190	2.551	y 81	5785.216	18981	123.75	891	1...	H1-1a
71	M477	PL2.25 x 1/...	2.176	.682	80 4.519	.682	y 81	8498.759	15201	78.75	711	1...	H1-1a
72	M488	PL2.25 x 1/...	2.171	.682	80 4.521	.682	y 80	8498.759	15201	78.75	711	1...	H1-1a
73	M234	PL2.25 x 1/...	2.156	.682	81 4.521	.682	y 81	8498.759	15201	78.75	711	1...	H1-1a
74	M245A	PL2.25 x 1/...	2.153	.682	81 4.518	.682	y 80	8498.759	15201	78.75	711	1...	H1-1a
75	M657	L4x3x6	2.036	.797	80 .316	0	z 80	64562.919	67230	2238.689	5885.484	1...	H2-1
76	M652	L4x3x6	2.032	.813	81 .315	1.61	z 81	64562.919	67230	2238.689	5885.484	1...	H2-1
77	M229	PL2.25x0.3...	1.981	1.288	81 .962	2.551	y 81	5785.216	18981	123.75	891	1...	H1-1a
78	M436	PL2.25x0.3...	1.965	1.288	80 .965	2.551	y 80	5785.216	18981	123.75	891	1...	H1-1a
79	M491	PL2.25 x 1/...	1.942	.75	80 3.555	0	y 80	7659.688	15201	78.75	711	1...	H1-1a
80	M607	PL2.25 x 1/...	1.925	1.383	76 .112	1.409	y 81	2440.571	15201	78.75	711	2...	H1-1a
81	M350	PL2.25 x 1/...	1.924	.748	77 .602	.748	y 77	9482.639	15201	78.75	711	1...	H1-1a
82	M616	PL2.25 x 1/...	1.924	.748	76 .602	.748	y 76	9482.639	15201	78.75	711	1...	H1-1a
83	M346	PL2.25 x 1/...	1.921	1.383	77 .112	1.409	y 80	2440.571	15201	78.75	711	2...	H1-1a
84	M237	PL2.25 x 1/...	1.917	.75	81 3.555	0	y 81	7659.688	15201	78.75	711	1...	H1-1a
85	M472	PL2.25x0.3...	1.909	1.263	81 .963	2.551	y 81	5785.216	18981	123.75	891	1...	H1-1a
86	M193A	PL2.25x0.3...	1.907	1.263	80 .961	2.551	y 80	5785.216	18981	123.75	891	1...	H1-1a
87	M621	PL2.25 x 1/...	1.904	1.383	76 .104	2.583	y 80	2440.571	15201	78.75	711	2...	H1-1a
88	M356	PL2.25 x 1/...	1.900	1.383	77 .104	2.583	y 81	2440.571	15201	78.75	711	2...	H1-1a
89	M190	L6x4x6	1.891	1.307	77 .720	.684	z 77	44440.683	97470	4257.614	10982.7...	1	H2-1
90	M630	L6x4x6	1.888	4.854	76 .719	5.476	z 76	44440.683	97470	4257.614	10982.7...	1	H2-1
91	M603	PL2.25 x 1/...	1.886	.74	76 .190	1.409	y 76	7911.136	15201	78.75	711	1...	H1-1a
92	M328	PL2.25 x 1/...	1.886	.74	77 .190	1.409	y 77	7911.136	15201	78.75	711	1...	H1-1a
93	M480	PL2.25 x 1/...	1.847	.75	81 3.554	0	y 81	7659.688	15201	78.75	711	1...	H1-1a
94	M331	PL2.25x0.3...	1.834	1.513	77 .048	1.542	y 81	3985.766	18981	123.75	891	1...	H1-1a
95	M599	PL2.25 x 1/...	1.825	.812	76 .071	.828	y 76	6935.675	15201	78.75	711	1...	H1-1a
96	M324	PL2.25 x 1/...	1.824	.812	77 .071	.828	y 77	6935.675	15201	78.75	711	1...	H1-1a
97	M248A	PL2.25 x 1/...	1.822	.766	80 3.552	0	y 80	7295.177	15201	78.75	711	1...	H1-1a
98	M582	PL2.25x0.3...	1.821	1.513	76 .048	1.542	y 80	3985.766	18981	123.75	891	1...	H1-1a
99	M137	L3x2.5x5	1.796	3.814	77 3.548	.358	z 77	39023.547	44010	1270.778	2936.833	3...	H2-1
100	M578	L3x2.5x5	1.795	7.985	76 3.549	11.442	z 76	39023.547	44010	1270.778	2953.353	3...	H2-1
101	M418A	PL2.25x0.3...	1.737	1.288	80 .418	1.288	y 76	5785.216	18981	123.75	891	1...	H1-1a
102	M211A	PL2.25x0.3...	1.736	1.288	81 .417	1.288	y 77	5785.216	18981	123.75	891	1...	H1-1a
103	M175	PL2.25x0.3...	1.723	1.288	80 .405	1.288	y 80	5785.216	18981	123.75	891	1...	H1-1a
104	M454	PL2.25x0.3...	1.722	1.288	81 .406	1.288	y 81	5785.216	18981	123.75	891	1...	H1-1a
105	M198	PL2.25x0.3...	1.722	1.263	81 .123	0	y 77	5785.216	18981	123.75	891	1...	H1-1a
106	M405A	PL2.25x0.3...	1.705	1.263	80 .123	0	y 76	5785.216	18981	123.75	891	1...	H1-1a
107	M656	L4x3x6	1.638	.813	81 .287	.992	z 75	64562.919	67230	2238.689	5885.484	1...	H2-1
108	M653	L4x3x6	1.638	.797	80 .286	0	z 75	64562.919	67230	2238.689	5885.484	1...	H2-1
109	M441	PL2.25x0.3...	1.629	1.263	81 .118	2.551	y 80	5785.216	18981	123.75	891	1...	H1-1a
110	M162	PL2.25x0.3...	1.626	1.263	80 .118	2.551	y 81	5785.216	18981	123.75	891	1...	H1-1a
111	M487	PL2.25 x 1/...	1.610	1.012	65 .056	0	y 80	4338.298	15201	78.75	711	1...	H1-1a
112	M352	PL2.25 x 1/...	1.607	.79	77 .461	.79	y 77	8678.101	15201	78.75	711	1...	H1-1a
113	M612	PL2.25 x 1/...	1.607	.79	76 .461	.79	y 76	8678.101	15201	78.75	711	1...	H1-1a



Company : B&V
Designer : S.Suntum
Job Number : 190704
Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
114	M481	PL2.25 x 1/...	1.601	.78	80	1.256	0	y	80	7249.81	15201	78.75	711	1...H1-1a
115	M438	PL2.25x0.3...	1.598	1.263	81	.360	1.263	y	76	5785.216	18981	123.75	891	1...H1-1a
116	M231	PL2.25x0.3...	1.595	1.263	80	.364	1.263	y	77	5785.216	18981	123.75	891	1...H1-1a
117	M604	PL2.25 x 1/...	1.582	.715	76	.306	.715	y	76	9526.501	15201	78.75	711	1...H1-1a
118	M329	PL2.25 x 1/...	1.581	.715	77	.306	.715	y	77	9526.501	15201	78.75	711	1...H1-1a
119	M527	PL2.25 x 1/...	1.580	1.012	83	.056	2.045	y	81	4338.298	15201	78.75	711	2...H1-1a
120	M474	PL2.25x0.3...	1.577	1.263	80	.324	0	y	81	5785.216	18981	123.75	891	1...H1-1a
121	M249A	PL2.25 x 1/...	1.576	.78	81	1.256	0	y	81	7249.81	15201	78.75	711	1...H1-1a
122	M295A	PL2.25 x 1/...	1.568	1.012	84	.054	2.045	y	80	4338.298	15201	78.75	711	2...H1-1a
123	M255A	PL2.25 x 1/...	1.564	1.012	84	.056	0	y	81	4338.298	15201	78.75	711	2...H1-1a
124	M140	L3x2.5x5	1.562	8.104	80	3.685	.358	z	77	39023.547	44010	1270.778	2526.36	1...H2-1
125	M577	L3x2.5x5	1.559	3.695	81	3.686	11.442	z	76	39023.547	44010	1270.778	2509.574	1...H2-1
126	M195A	PL2.25x0.3...	1.548	1.263	81	.324	0	y	80	5785.216	18981	123.75	891	1...H1-1a
127	M335	PL2.25 x 1/...	1.538	1.234	77	.056	2.262	y	81	4292.344	15201	78.75	711	1...H1-1a
128	M586	PL2.25 x 1/...	1.538	1.234	76	.056	2.262	y	80	4292.344	15201	78.75	711	1...H1-1a
129	M210A	PL2.25x0.3...	1.533	1.288	81	.300	2.551	y	81	5785.216	18981	123.75	891	1...H1-1a
130	M485	PL2.25 x 1/...	1.521	.939	83	.081	.939	y	81	5041.116	15201	78.75	711	1...H1-1a
131	M417A	PL2.25x0.3...	1.519	1.288	80	.300	2.551	y	80	5785.216	18981	123.75	891	1...H1-1a
132	M594	PL2.25x0.3...	1.515	1.31	83	.040	1.513	y	76	3985.766	18981	123.75	891	2...H1-1a
133	M497	PL2.25 x 1/...	1.514	.966	83	.076	0	y	80	4764.921	15201	78.75	711	2...H1-1a
134	M525	PL2.25 x 1/...	1.511	.939	83	.059	.92	y	80	5041.116	15201	78.75	711	1...H1-1a
135	M492	PL2.25 x 1/...	1.508	.78	81	1.255	0	y	81	7249.81	15201	78.75	711	1...H1-1a
136	M319	PL2.25x0.3...	1.508	1.31	84	.039	1.513	y	77	3985.766	18981	123.75	891	2...H1-1a
137	M537	PL2.25 x 1/...	1.502	.966	83	.057	1.952	y	81	4764.921	15201	78.75	711	2...H1-1a
138	M293A	PL2.25 x 1/...	1.501	.939	84	.059	.92	y	80	5041.116	15201	78.75	711	1...H1-1a
139	M253A	PL2.25 x 1/...	1.501	.939	84	.079	.939	y	80	5041.116	15201	78.75	711	1...H1-1a
140	M200	PL2.25x0.3...	1.498	1.263	81	.121	0	y	77	5785.216	18981	123.75	891	1...H1-1a
141	M243A	PL2.25 x 1/...	1.493	.966	84	.076	0	y	81	4764.921	15201	78.75	711	2...H1-1a
142	M283A	PL2.25 x 1/...	1.492	.966	84	.056	.947	y	81	4764.921	15201	78.75	711	2...H1-1a
143	M238	PL2.25 x 1/...	1.481	.78	80	1.253	0	y	80	7249.81	15201	78.75	711	1...H1-1a
144	M407A	PL2.25x0.3...	1.480	1.263	80	.122	0	y	76	5785.216	18981	123.75	891	1...H1-1a
145	M640	L4x3x5	1.458	60.777	66	.141	31.988	y	83	49613.931	56430	1896.028	3386.062	4...H2-1
146	M581	PL2.25x0.3...	1.458	1.31	84	.042	2.881	y	81	3985.766	18981	123.75	891	2...H1-1a
147	M217A	PL2.25x0.3...	1.451	1.263	81	.293	0	y	77	5785.216	18981	123.75	891	1...H1-1a
148	M639	L4x3x5	1.446	60.777	65	.221	42.864	y	75	49613.931	56430	1896.028	3236.218	3...H2-1
149	M495	PL2.25 x 1/...	1.442	.896	83	.116	0	y	80	5537.156	15201	78.75	711	1...H1-1a
150	M330	PL2.25x0.3...	1.440	1.339	83	.042	2.881	y	80	3985.766	18981	123.75	891	2...H1-1a
151	M174	PL2.25x0.3...	1.437	1.288	80	.297	2.551	y	80	5785.216	18981	123.75	891	1...H1-1a
152	M453	PL2.25x0.3...	1.436	1.288	81	.299	2.551	y	81	5785.216	18981	123.75	891	1...H1-1a
153	M535	PL2.25 x 1/...	1.434	.896	83	.067	.878	y	81	5537.156	15201	78.75	711	1...H1-1a
154	M424	PL2.25x0.3...	1.434	1.263	80	.294	0	y	76	5785.216	18981	123.75	891	1...H1-1a
155	M139	L3x2.5x5	1.428	3.695	81	3.607	11.799	z	77	39023.547	44010	1270.778	2996.056	1...H2-1
156	M576	L3x2.5x5	1.425	8.104	80	3.607	0	z	76	39023.547	44010	1270.778	2996.056	1...H2-1
157	M281A	PL2.25 x 1/...	1.424	.896	84	.067	.878	y	80	5537.156	15201	78.75	711	1...H1-1a
158	M241A	PL2.25 x 1/...	1.423	.896	84	.116	0	y	81	5537.156	15201	78.75	711	1...H1-1a
159	M498	PL2.25 x 1/...	1.406	1.012	84	.059	0	y	81	4338.298	15201	78.75	711	1...H1-1a
160	M538	PL2.25 x 1/...	1.406	1.012	84	.055	.992	y	81	4338.298	15201	78.75	711	1...H1-1a
161	M483	PL2.25 x 1/...	1.405	.861	83	.219	0	y	80	5996.873	15201	78.75	711	1...H1-1a
162	M531	PL2.25 x 1/...	1.405	.75	83	.116	.75	y	81	7659.688	15201	78.75	711	1.5H1-1a
163	M627	PL2.25 x 1/...	1.401	.79	76	.437	1.477	y	76	8678.101	15201	78.75	711	1...H1-1a
164	M361	PL2.25 x 1/...	1.401	.79	77	.437	1.477	y	77	8678.101	15201	78.75	711	1...H1-1a
165	M443	PL2.25x0.3...	1.401	1.263	81	.109	0	y	81	5785.216	18981	123.75	891	1...H1-1a
166	M277	PL2.25 x 1/...	1.400	.75	84	.116	.75	y	80	7659.688	15201	78.75	711	1...H1-1a
167	M164	PL2.25x0.3...	1.398	1.263	80	.108	0	y	80	5785.216	18981	123.75	891	1...H1-1a
168	M523	PL2.25 x 1/...	1.392	.861	83	.079	.844	y	81	5996.873	15201	78.75	711	1...H1-1a
169	M284A	PL2.25 x 1/...	1.389	1.012	83	.054	2.045	y	81	4338.298	15201	78.75	711	1...H1-1a
170	M251A	PL2.25 x 1/...	1.386	.861	84	.218	0	y	81	5996.873	15201	78.75	711	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
171	M291A	PL2.25 x 1/...	1.383	.861 84 .079	.844	y	80	5996.873	15201	78.75	711	1...	H1-1a
172	M244A	PL2.25 x 1/...	1.381	1.012 83 .058	0	y	80	4338.298	15201	78.75	711	1...	H1-1a
173	M638	L4x3x6	1.380	55.162 84 .206	31.429	y	75	59061.508	67230	2238.689	3753.774	3...	H2-1
174	M521	PL2.25 x 1/...	1.380	.78 83 .100	1.608	y	80	7249.81	15201	78.75	711	1...	H1-1a
175	M493	PL2.25 x 1/...	1.379	.828 83 .172	.828	y	81	6438.755	15201	78.75	711	1...	H1-1a
176	M533	PL2.25 x 1/...	1.375	.828 83 .093	.811	y	81	6438.755	15201	78.75	711	1...	H1-1a
177	M289A	PL2.25 x 1/...	1.373	.78 84 .100	1.608	y	81	7249.81	15201	78.75	711	1...	H1-1a
178	M279A	PL2.25 x 1/...	1.366	.828 84 .093	.811	y	80	6438.755	15201	78.75	711	1...	H1-1a
179	M496	PL2.25 x 1/...	1.362	.939 84 .077	.939	y	80	5041.116	15201	78.75	711	1...	H1-1a
180	M239A	PL2.25 x 1/...	1.361	.828 84 .172	.828	y	80	6438.755	15201	78.75	711	1...	H1-1a
181	M536	PL2.25 x 1/...	1.361	.939 84 .062	.92	y	81	5041.116	15201	78.75	711	1...	H1-1a
182	M486	PL2.25 x 1/...	1.354	.966 84 .080	0	y	81	4764.921	15201	78.75	711	1...	H1-1a
183	M460	PL2.25x0.3...	1.353	1.263 81 .283	0	y	81	5785.216	18981	123.75	891	1...	H1-1a
184	M526	PL2.25 x 1/...	1.353	.966 84 .059	.947	y	81	4764.921	15201	78.75	711	1...	H1-1a
185	M181	PL2.25x0.3...	1.351	1.263 80 .282	0	y	80	5785.216	18981	123.75	891	1...	H1-1a
186	M282A	PL2.25 x 1/...	1.346	.939 83 .061	.92	y	80	5041.116	15201	78.75	711	1...	H1-1a
187	M242A	PL2.25 x 1/...	1.337	.939 83 .077	.939	y	81	5041.116	15201	78.75	711	1...	H1-1a
188	M294A	PL2.25 x 1/...	1.337	.966 83 .057	.947	y	80	4764.921	15201	78.75	711	1...	H1-1a
189	M254A	PL2.25 x 1/...	1.330	.966 83 .078	0	y	80	4764.921	15201	78.75	711	1...	H1-1a
190	M348	PL2.25 x 1/...	1.329	.882 77 .252	.882	y	77	7522.587	15201	78.75	711	2...	H1-1a
191	M614	PL2.25 x 1/...	1.329	.882 76 .252	.882	y	76	7522.587	15201	78.75	711	2...	H1-1a
192	M202A	PL2.25x0.3...	1.326	1.263 81 .043	2.551	y	80	5785.216	18981	123.75	891	1...	H1-1a
193	M219A	PL2.25x0.3...	1.319	1.263 81 .070	0	y	81	5785.216	18981	123.75	891	1...	H1-1a
194	M620	PL2.25 x 1/...	1.317	1.284 76 .101	2.399	y	80	2761.151	15201	78.75	711	2...	H1-1a
195	M359	PL2.25 x 1/...	1.313	1.284 77 .101	2.399	y	81	2761.151	15201	78.75	711	2...	H1-1a
196	M409A	PL2.25x0.3...	1.308	1.263 80 .041	2.551	y	81	5785.216	18981	123.75	891	1...	H1-1a
197	M426	PL2.25x0.3...	1.303	1.263 81 .070	0	y	80	5785.216	18981	123.75	891	1...	H1-1a
198	M529	PL2.25 x 1/...	1.300	.696 83 .099	1.434	y	80	8429.868	15201	78.75	711	1...	H1-1a
199	M428	PL2.25x0.3...	1.296	1.263 81 .037	2.551	y	80	5785.216	18981	123.75	891	1...	H1-1a
200	M363A	PL2.25 x 1/...	1.294	.865 77 .188	1.648	y	77	6101.461	15201	78.75	711	1...	H1-1a
201	M221A	PL2.25x0.3...	1.294	1.263 81 .038	2.551	y	81	5785.216	18981	123.75	891	1...	H1-1a
202	M623	PL2.25 x 1/...	1.294	.865 76 .188	1.648	y	76	6101.461	15201	78.75	711	1...	H1-1a
203	M484	PL2.25 x 1/...	1.293	.896 84 .114	0	y	80	5537.156	15201	78.75	711	1...	H1-1a
204	M275	PL2.25 x 1/...	1.292	.696 84 .099	1.434	y	81	8429.868	15201	78.75	711	1...	H1-1a
205	M434	PL2.25x0.3...	1.292	1.263 81 .060	2.551	y	80	5785.216	18981	123.75	891	1...	H1-1a
206	M524	PL2.25 x 1/...	1.291	.896 84 .069	.878	y	80	5537.156	15201	78.75	711	1...	H1-1a
207	M227	PL2.25x0.3...	1.287	1.263 80 .061	2.551	y	81	5785.216	18981	123.75	891	1...	H1-1a
208	M411A	PL2.25x0.3...	1.284	1.263 81 .041	0	y	81	5785.216	18981	123.75	891	1...	H1-1a
209	M204A	PL2.25x0.3...	1.282	1.263 81 .042	0	y	80	5785.216	18981	123.75	891	1...	H1-1a
210	M519	PL2.25 x 1/...	1.282	.722 83 .100	1.489	y	80	8057.556	15201	78.75	711	1...	H1-1a
211	M292A	PL2.25 x 1/...	1.277	.896 83 .069	.878	y	81	5537.156	15201	78.75	711	1...	H1-1a
212	M287A	PL2.25 x 1/...	1.274	.722 84 .100	1.489	y	81	8057.556	15201	78.75	711	1...	H1-1a
213	M520	PL2.25 x 1/...	1.273	.75 84 .120	.75	y	80	7659.688	15201	78.75	711	1...	H1-1a
214	M252A	PL2.25 x 1/...	1.270	.896 83 .114	0	y	80	5537.156	15201	78.75	711	1...	H1-1a
215	M430	PL2.25x0.3...	1.267	1.263 81 .038	0	y	81	5785.216	18981	123.75	891	1...	H1-1a
216	M223A	PL2.25x0.3...	1.264	1.263 80 .040	0	y	80	5785.216	18981	123.75	891	1...	H1-1a
217	M432	PL2.25x0.3...	1.263	1.263 81 .047	0	y	81	5785.216	18981	123.75	891	1...	H1-1a
218	M288A	PL2.25 x 1/...	1.261	.75 83 .120	.75	y	81	7659.688	15201	78.75	711	1...	H1-1a
219	M651	L6x4x6	1.260	.573 81 .495	.281	z	77	91511.923	97470	4257.614	12792.4...	1...	H2-1
220	M516	PL2.25x0.3...	1.260	1.485 83 .081	0	y	76	4018.088	18981	123.75	891	1...	H1-1a
221	M470	PL2.25x0.3...	1.260	1.263 80 .060	2.551	y	81	5785.216	18981	123.75	891	1...	H1-1a
222	M494	PL2.25 x 1/...	1.259	.861 84 .216	0	y	81	5996.873	15201	78.75	711	1...	H1-1a
223	M225	PL2.25x0.3...	1.259	1.263 80 .048	0	y	80	5785.216	18981	123.75	891	1...	H1-1a
224	M654	L6x4x6	1.258	.585 80 .495	.877	z	76	91511.923	97470	4257.614	12723.1...	1...	H2-1
225	M415A	PL2.25x0.3...	1.258	1.263 81 .053	0	y	81	5785.216	18981	123.75	891	1...	H1-1a
226	M592	PL2.25 x 1/...	1.258	.715 76 .386	.715	y	76	9526.501	15201	78.75	711	1...	H1-1a
227	M341	PL2.25 x 1/...	1.258	.715 77 .386	.715	y	77	9526.501	15201	78.75	711	1...	H1-1a



Company : B&V
Designer : S.Suntum
Job Number : 190704
Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Table with columns: Member, Shape, Code Check, Loc[ft], LC Shear, Loc[ft], Dir LC, phi*Pnc [lb], phi*Pnt [lb], phi*Mn y, phi*Mn z, Cb, Egn. Rows 228-284.



Company : B&V
Designer : S.Suntum
Job Number : 190704
Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Table with columns: Member, Shape, Code Check, Loc[ft], LC Shear, Loc[ft], Dir, LC, phi*Pnc [lb], phi*Pnt, phi*Mn y, phi*Mn z, Cb, Eqn. Rows 285-341.



Company : B&V
Designer : S.Suntum
Job Number : 190704
Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Table with columns: Member, Shape, Code Check, Loc[ft], LC Shear, Loc[ft], Dir, LC, phi*Pnc [lb], phi*Pnt [lb], phi*Mn y, phi*Mn z, Cb, Egn. Rows 342-398.



Company : B&V
Designer : S.Suntum
Job Number : 190704
Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
399	M459	PL2.25x0.3...	.818	1.288	81 .263	1.288	y 81	5785.216	18981	123.75	891	1...	H1-1a
400	M307A	PL2.25x0.3...	.817	1.146	83 .064	2.315	y 81	6766.395	18981	123.75	891	1...	H1-1a
401	M253	L2.5X1.5X5	.816	1.913	77 .068	4.116	y 83	11061.282	31113.2...	475.557	1513.1	1...	H2-1
402	M180	PL2.25x0.3...	.815	1.288	80 .263	1.288	y 80	5785.216	18981	123.75	891	1...	H1-1a
403	M213A	PL2.25x0.3...	.815	1.263	81 .304	1.263	y 77	5785.216	18981	123.75	891	1...	H1-1a
404	M257	L2.5X1.5X5	.809	1.913	77 .010	4.116	y 83	11060.999	31113.2...	475.557	1513.097	1...	H2-1
405	M267	PL2.25x0.3...	.809	1.146	83 .048	0	y 80	6766.395	18981	123.75	891	1...	H1-1a
406	M255	L2.5X1.5X5	.804	1.913	77 .051	0	y 83	11060.999	31113.2...	475.557	1513.097	1...	H2-1
407	M355	PL2.25x0.3...	.803	1.689	77 .048	3.155	y 80	3268.046	18981	123.75	891	2...	H1-1a
408	M220	L2.5X1.5X5	.789	2.287	84 .007	0	y 83	11060.999	31113.2...	475.557	1581.505	1...	H2-1
409	M212	L2.5X1.5X5	.785	2.287	84 .066	4.116	y 83	11060.999	31113.2...	475.557	1581.505	1...	H2-1
410	M549	PL2.25x0.3...	.783	1.099	84 .059	2.221	y 80	7355.297	18981	123.75	891	1...	H1-1a
411	M509	PL2.25x0.3...	.781	1.099	84 .046	1.099	y 80	7355.297	18981	123.75	891	1...	H1-1a
412	M214	L2.5X1.5X5	.776	2.287	84 .056	0	y 83	11060.999	31113.2...	475.557	1581.505	1...	H2-1
413	M297A	PL2.25x0.3...	.773	1.099	83 .060	2.221	y 81	7355.297	18981	123.75	891	1...	H1-1a
414	M259	L2.5X1.5X5	.771	1.913	77 .023	4.116	y 84	11061.282	31113.2...	475.557	1513.1	1...	H2-1
415	M202	L2.5X1.5X5	.766	2.083	84 .007	0	y 84	12372.939	31113.2...	475.557	1596.565	1...	H2-1
416	M177	PL2.25x0.3...	.766	1.263	80 .307	1.263	y 80	5785.216	18981	123.75	891	1...	H1-1a
417	M257A	PL2.25x0.3...	.764	1.099	83 .046	1.099	y 81	7355.297	18981	123.75	891	1...	H1-1a
418	M213	L2.5X1.5X5	.757	1.829	83 .057	0	y 84	11061.282	31113.2...	475.557	1581.509	1...	H2-1
419	M456	PL2.25x0.3...	.756	1.263	81 .314	1.263	y 81	5785.216	18981	123.75	891	1...	H1-1a
420	M248	L2.5X1.5X5	.753	2.204	76 .106	0	y 84	11060.999	31113.2...	475.557	1513.097	1...	H2-1
421	M539	PL2.25x0.3...	.751	1.055	84 .059	1.033	y 81	7936.788	18981	123.75	891	2...	H1-1a
422	M499	PL2.25x0.3...	.750	1.055	84 .049	0	y 80	7936.788	18981	123.75	891	2...	H1-1a
423	M179	PL2.25x0.3...	.742	1.288	77 .027	0	y 77	5785.216	18981	123.75	891	3...	H1-1a
424	M305A	PL2.25x0.3...	.740	1.055	83 .058	2.131	y 81	7936.788	18981	123.75	891	2...	H1-1a
425	M265	PL2.25x0.3...	.740	1.055	83 .048	0	y 81	7936.788	18981	123.75	891	1...	H1-1a
426	M246	L2.5X1.5X5	.730	2.204	76 .088	4.116	y 83	11060.999	31113.2...	475.557	1513.097	1...	H2-1
427	M650	L6x4x6	.716	.585	77 .384	.877	z 77	91511.923	97470	4257.614	12792.4...	1...	H2-1
428	M250	L2.5X1.5X5	.716	2.204	76 .102	0	y 84	11061.282	31113.2...	475.557	1513.1	1...	H2-1
429	M406A	PL2.25x0.3...	.715	1.263	81 .145	1.263	y 81	5785.216	18981	123.75	891	1...	H1-1a
430	M655	L6x4x6	.715	.573	76 .384	.281	z 76	91511.923	97470	4257.614	12792.4...	1...	H2-1
431	M199	PL2.25x0.3...	.713	1.263	80 .145	1.263	y 80	5785.216	18981	123.75	891	1...	H1-1a
432	M442	PL2.25x0.3...	.703	1.263	80 .148	1.263	y 80	5785.216	18981	123.75	891	1...	H1-1a
433	M425	PL2.25x0.3...	.699	1.263	81 .124	1.263	y 81	5785.216	18981	123.75	891	1...	H1-1a
434	M385A	L2.5X1.5X5	.698	1.83	84 .048	4.116	y 84	11060.999	31113.2...	475.557	1581.505	1...	H2-1
435	M218A	PL2.25x0.3...	.697	1.263	80 .125	1.263	y 80	5785.216	18981	123.75	891	1...	H1-1a
436	M163	PL2.25x0.3...	.696	1.263	81 .148	1.263	y 81	5785.216	18981	123.75	891	1...	H1-1a
437	M461	PL2.25x0.3...	.684	1.263	80 .126	1.263	y 80	5785.216	18981	123.75	891	1...	H1-1a
438	M207	L2.5X1.5X5	.677	1.829	83 .037	4.116	y 84	11061.282	31113.2...	475.557	1581.509	1...	H2-1
439	M182	PL2.25x0.3...	.677	1.263	81 .126	1.263	y 81	5785.216	18981	123.75	891	1...	H1-1a
440	M609	PL2.25 x 1/...	.661	1.409	76 .051	1.409	y 76	3297.898	15201	78.75	711	2...	H1-1a
441	M344	PL2.25 x 1/...	.661	1.409	77 .051	1.409	y 77	3297.898	15201	78.75	711	2...	H1-1a
442	M215	L2.5X1.5X5	.660	1.83	83 .034	0	y 84	11060.999	31113.2...	475.557	1581.505	1...	H2-1
443	M217	L2.5X1.5X5	.653	1.83	83 .009	4.116	y 84	11060.999	31113.2...	475.557	1581.505	1...	H2-1
444	M211	L2.5X1.5X5	.641	1.83	83 .041	4.116	y 84	11060.999	31113.2...	475.557	1581.505	1...	H2-1
445	M244	L2.5X1.5X5	.634	2.204	76 .084	0	y 84	11061.282	31113.2...	475.557	1513.1	1...	H2-1
446	M475	PL2.25x0.3...	.631	1.288	76 .033	0	y 65	5785.216	18981	123.75	891	1...	H1-1a
447	M439	PL2.25x0.3...	.622	1.288	80 .061	1.263	y 76	5785.216	18981	123.75	891	1...	H1-1a
448	M209	L2.5X1.5X5	.616	1.83	83 .060	4.116	y 84	11060.999	31113.2...	475.557	1581.505	1...	H2-1
449	M408A	PL2.25x0.3...	.616	1.263	81 .043	1.288	y 81	5785.216	18981	123.75	891	1...	H1-1a
450	M201	PL2.25x0.3...	.614	1.263	80 .044	1.288	y 80	5785.216	18981	123.75	891	1...	H1-1a
451	M419	PL2.25x0.3...	.606	1.995	65 .072	0	y 83	2317.049	18981	123.75	847.87	1...	H1-1a
452	M232	PL2.25x0.3...	.606	1.288	81 .051	1.288	y 80	5785.216	18981	123.75	891	1...	H1-1a
453	M444	PL2.25x0.3...	.598	1.263	72 .047	1.288	y 80	5785.216	18981	123.75	891	1...	H1-1a
454	M165	PL2.25x0.3...	.590	1.263	81 .046	1.288	y 81	5785.216	18981	123.75	891	1...	H1-1a
455	M463	PL2.25x0.3...	.585	1.263	72 .037	1.288	y 80	5785.216	18981	123.75	891	1...	H1-1a



Company : B&V
Designer : S.Suntum
Job Number : 190704
Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Table with columns: Member, Shape, Code Check, Loc[ft], LC Shear, Loc[ft], Dir, LC, phi*Pnc [lb], phi*Pnt [lb], phi*Mn y, phi*Mn z, Cb, Egn. Rows 456-512.



Company : B&V
Designer : S.Suntum
Job Number : 190704
Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Table with columns: Member, Shape, Code Check, Loc[ft], LC Shear, Loc[ft], Dir, LC, phi*Pnc [lb], phi*Pnt, phi*Mn y, phi*Mn z, Cb, Eqn. Rows 513-569.



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 1 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y [lb-ft]	phi*Mn z [lb-ft]	Cb	Eqn
570	M305	L2.5x1.25x5	.267	1.246	76 .016	2.467	z 84	16726.443	29003.9...	340.889	1464.212	1...	H2-1
571	M298	L2.5x1.25x5	.267	1.221	77 .023	0	z 84	16726.443	29003.9...	340.889	1464.212	1...	H2-1
572	M364	L2.5x1.25x5	.266	1.221	76 .065	2.467	z 83	16726.006	29003.9...	340.889	1494.276	1...	H2-1
573	M366	L2.5x1.25x5	.266	1.221	76 .048	2.467	z 83	16726.006	29003.9...	340.889	1494.276	1...	H2-1
574	M292	L2.5x1.25x5	.266	1.221	77 .025	0	z 83	16726.094	29003.9...	340.889	1464.209	1...	H2-1
575	M307	L2.5x1.25x5	.265	1.246	76 .007	0	y 75	16726.443	29003.9...	340.889	1464.212	1...	H2-1
576	M296	L2.5x1.25x5	.265	1.221	77 .027	2.467	z 84	16726.443	29003.9...	340.889	1464.212	1...	H2-1
577	M294	L2.5x1.25x5	.261	1.221	77 .018	2.467	z 84	16726.006	29003.9...	340.889	1464.208	1...	H2-1
578	M645	L2.5x1.25x5	.256	1.21	76 .032	0	z 83	16897.433	29003.9...	340.889	1494.276	1...	H2-1
579	M287	L2.5x1.25x5	.251	1.246	76 .007	0	z 84	16726.443	29003.9...	340.889	1464.212	1...	H2-1
580	M289	L2.5x1.25x5	.249	1.246	76 .021	0	z 84	16726.443	29003.9...	340.889	1464.212	1...	H2-1
581	M309	L2.5x1.25x5	.245	1.246	76 .014	2.467	z 83	16726.443	29003.9...	340.889	1464.212	1...	H2-1
582	M644	L2.5x1.25x5	.244	1.187	76 .009	2.398	z 84	17242.875	29003.9...	340.889	1469.22	1...	H2-1
583	M313	L2.5x1.25x5	.240	1.246	76 .008	0	z 84	16726.443	29003.9...	340.889	1464.212	1...	H2-1
584	M281	L2.5x1.25x5	.238	1.18	76 .007	2.337	z 84	17701.021	29003.9...	340.889	1473.7	1...	H2-1
585	M308	L2.5x1.25x5	.238	1.221	77 .008	2.467	y 75	16726.006	29003.9...	340.889	1464.208	1...	H2-1
586	M375	L2.5x1.25x5	.233	1.246	77 .122	2.467	z 83	16726.006	29003.9...	340.889	1494.276	1...	H2-1
587	M371	L2.5x1.25x5	.231	1.246	77 .020	0	z 83	16726.443	29003.9...	340.889	1494.276	1...	H2-1
588	M373	L2.5x1.25x5	.231	1.246	77 .008	2.467	z 83	16726.006	29003.9...	340.889	1494.276	1...	H2-1
589	M369	L2.5x1.25x5	.227	1.246	77 .024	2.467	z 83	16726.443	29003.9...	340.889	1494.276	1...	H2-1
590	M311	L2.5x1.25x5	.224	1.246	76 .003	0	y 75	16726.443	29003.9...	340.889	1464.212	1...	H2-1
591	M418	PL2.25x0.3...	.220	1.995	84 .059	1.995	y 83	2317.049	18981	123.75	891	1...	H1-1b
592	M300	L2.5x1.25x5	.211	1.221	77 .021	2.467	z 84	16726.443	29003.9...	340.889	1464.212	1...	H2-1
593	M306	L2.5x1.25x5	.207	1.221	77 .021	0	z 83	16726.006	29003.9...	340.889	1464.208	1...	H2-1
594	M304	L2.5x1.25x5	.205	1.221	77 .016	0	z 83	16726.443	29003.9...	340.889	1464.212	1...	H2-1
595	M302	L2.5x1.25x5	.202	1.221	77 .004	2.467	z 84	16726.443	29003.9...	340.889	1464.212	1...	H2-1
596	M413	PL2.25x0.3...	.184	2.036	83 .100	1.995	y 84	2317.049	18981	123.75	891	1...	H1-1b
597	M406	PL2.25x0.3...	.168	2.036	84 .061	1.995	y 83	2317.049	18981	123.75	891	2...	H1-1b
598	M400	PL2.25x0.3...	.157	2.036	83 .032	1.995	y 83	2317.049	18981	123.75	891	1...	H1-1b
599	M649	L2.5x2.5x5	.065	.99	84 .067	2	y 80	35341.325	39420	1096.767	2551.08	1...	H2-1
600	M647	L2.5x2.5x5	.064	.99	83 .012	2	z 81	35341.325	39420	1096.767	2551.08	1...	H2-1
601	M411	L3x2.5x5	.041	1.732	83 .030	3.5	z 84	32983.482	44010	1270.778	2982.18	1...	H2-1
602	M416	L3x2.5x5	.041	1.768	83 .021	0	z 83	32983.482	44010	1270.778	2982.18	1...	H2-1
603	M414	L2.5x1.25x5	.040	.99	83 .006	2	y 77	20199.817	29003.9...	340.889	1494.276	1...	H2-1
604	M396	L2.5x1.25x5	.034	.99	83 .006	2	y 77	20199.817	29003.9...	340.889	1494.276	1...	H2-1
605	M404	L3x2.5x5	.034	1.768	84 .018	0	z 84	32983.482	44010	1270.778	2996.056	1...	H2-1
606	M410	L3x2.5x5	.033	1.732	83 .021	0	z 84	32983.482	44010	1270.778	2982.18	1...	H2-1
607	M415	L2.5x1.25x5	.031	.99	65 .058	0	z 84	20199.817	29003.9...	340.889	1494.276	1...	H2-1
608	M398	L3x2.5x5	.030	1.768	83 .008	3.5	z 83	32983.482	44010	1270.778	2982.18	1...	H2-1
609	M408	L2.5x1.25x5	.030	.99	84 .002	2	y 76	20199.817	29003.9...	340.889	1494.276	1...	H2-1
610	M403	L2.5x1.25x5	.030	.99	84 .039	0	z 84	20199.817	29003.9...	340.889	1494.276	1...	H2-1
611	M409	L2.5x1.25x5	.029	.99	83 .054	0	z 84	20199.817	29003.9...	340.889	1494.276	1...	H2-1
612	M402	L2.5x1.25x5	.027	.99	84 .006	2	y 76	20199.817	29003.9...	340.889	1494.276	1...	H2-1
613	M417	L3x2.5x5	.027	1.768	83 .014	0	z 83	32983.482	44010	1270.778	2982.18	1...	H2-1
614	M397	L2.5x1.25x5	.026	.99	83 .011	0	z 83	20199.817	29003.9...	340.889	1494.276	1...	H2-1
615	M405	L3x2.5x5	.025	1.768	83 .015	3.5	z 84	32983.482	44010	1270.778	2982.18	1...	H2-1
616	M399	L3x2.5x5	.025	1.768	83 .006	0	z 83	32983.482	44010	1270.778	2982.18	1...	H2-1



Milvon to West River Catenary Structure Assessment

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-K
STRUCTURE TYPE 3 AS DESIGNED NESC 1961
COMPLETE MEMBER RESULTS



Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
1	M192	PL2.25X5_...	3.392	20.41855	.019	27.69	y 55	1685.965	18984.3...	123.597	889.893	1...	H1-1a	
2	M193	PL2.25X5_...	3.355	20.41855	.019	27.69	y 55	1685.965	18984.3...	123.597	889.893	1...	H1-1a	
3	M95	PL2.25X5_...	3.309	20.41856	.018	0	y 56	1685.965	18984.3...	123.597	889.893	1...	H1-1a	
4	M96	PL2.25X5_...	3.245	20.41856	.019	0	y 56	1685.965	18984.3...	123.597	889.893	1...	H1-1a	
5	M182	L2.5x2.5x5	2.657	17.22955	.156	0	y 55	7631.025	39420	1096.767	2551.08	1	H2-1	
6	M183	L2.5x2.5x5	2.652	0	55	.175	17.229	y 55	7631.025	39420	1096.767	2551.08	1	H2-1
7	M187	L2.5x2.5x5	2.626	0	55	.154	17.229	y 55	7631.025	39420	1096.767	2551.08	1	H2-1
8	M188	L2.5x2.5x5	2.621	17.22955	.173	0	y 55	7631.025	39420	1096.767	2551.08	1	H2-1	
9	M184	L2.5x2.5x5	2.592	17.22955	.044	17.229	y 55	7631.025	39420	1096.767	2284.685	1...	H2-1	
10	M86	L2.5x2.5x5	2.591	0	56	.152	17.229	y 56	7631.025	39420	1096.767	2551.08	1	H2-1
11	M87	L2.5x2.5x5	2.586	17.22956	.171	0	y 56	7631.025	39420	1096.767	2551.08	1	H2-1	
12	M189	L2.5x2.5x5	2.565	0	55	.043	0	y 55	7631.025	39420	1096.767	2283.117	1...	H2-1
13	M185	L2.5x2.5x5	2.543	0	55	.114	0	y 55	7631.025	39420	1096.767	2449.65	1...	H2-1
14	M91	L2.5x2.5x5	2.542	17.22956	.150	0	y 56	7631.025	39420	1096.767	2551.08	1	H2-1	
15	M92	L2.5x2.5x5	2.537	0	56	.167	17.229	y 56	7631.025	39420	1096.767	2551.08	1	H2-1
16	M88	L2.5x2.5x5	2.530	0	56	.043	0	y 56	7631.025	39420	1096.767	2283.157	1...	H2-1
17	M190	L2.5x2.5x5	2.515	17.30355	.112	17.303	y 55	7631.025	39420	1096.767	2455.135	1...	H2-1	
18	M89	L2.5x2.5x5	2.480	17.30356	.111	17.303	y 56	7631.025	39420	1096.767	2455.141	1...	H2-1	
19	M93	L2.5x2.5x5	2.479	17.22956	.042	17.229	y 56	7631.025	39420	1096.767	2284.682	1...	H2-1	
20	M238	L2.5x2.5x5	2.432	0	56	.108	0	y 56	7631.025	39420	1096.767	2449.669	1...	H2-1
21	M176	PL2.25X5_...	2.391	27.91656	.002	28.486	y 55	1625.425	18984.3...	123.597	889.893	1...	H1-1a	
22	M80	PL2.25X5_...	2.359	28.48655	.003	0	y 56	1625.425	18984.3...	123.597	889.893	1...	H1-1a	
23	M175	PL2.25X5_...	2.274	28.48656	.003	0	y 56	1625.425	18984.3...	123.597	867.113	1...	H1-1a	
24	M79	PL2.25X5_...	2.265	28.48655	.003	0	y 56	1625.425	18984.3...	123.597	889.893	1...	H1-1a	
25	M181	L2.5x2.5x5	1.664	0	55	.022	0	y 55	7631.025	39420	1096.767	2231.824	1...	H2-1
26	M186	L2.5x2.5x5	1.646	17.23	55	.022	17.23	y 55	7631.025	39420	1096.767	2231.911	1...	H2-1
27	M179	L2.5x2.5x5	1.636	13.18255	.076	0	y 55	7631.025	39420	1096.767	2454.695	1...	H2-1	
28	M85	L2.5x2.5x5	1.624	17.23	56	.021	17.23	y 56	7631.025	39420	1096.767	2231.934	1...	H2-1
29	M180	L2.5x2.5x5	1.620	0	55	.075	13.182	y 55	7631.025	39420	1096.767	2449.217	1...	H2-1
30	M83	L2.5x2.5x5	1.598	0	56	.073	13.182	y 56	7631.025	39420	1096.767	2449.217	1...	H2-1
31	M90	L2.5x2.5x5	1.592	0	56	.021	0	y 56	7631.025	39420	1096.767	2231.78	1...	H2-1
32	M84	L2.5x2.5x5	1.566	13.18256	.073	0	y 56	7631.025	39420	1096.767	2454.694	1...	H2-1	
33	M3	L5x5x8	1.170	345....	56	.067	349....	y 55	127826.437	129330	7731.399	10928.3...	1	H2-1
34	M4	L5x5x8	1.146	26.31	56	.071	22.552	y 56	127826.437	129330	7731.399	10928.3...	1	H2-1
35	M2	L5x5x8	1.111	345....	55	.069	349....	y 55	127826.437	129330	7731.399	10928.3...	1	H2-1
36	M98	L5x5x8	1.110	26.31	55	.069	22.552	y 56	127826.437	129330	7731.399	15088.6...	2...	H2-1
37	M1	L5x5x8	1.110	26.31	55	.068	22.552	y 56	127826.437	129330	7731.399	10928.3...	1	H2-1
38	M97	L5x5x8	1.095	345....	55	.068	349....	y 55	127826.437	129330	7731.399	15499.4...	2...	H2-1
39	M334	L2.5X1.5X5	1.083	27.22955	.002	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1	
40	M99	L5x5x8	1.082	26.31	55	.067	22.552	y 56	127826.437	129330	7731.399	15077.0...	2...	H2-1
41	M605	6H25	1.080	43.92155	.289	41.725	y 55	32380.313	215681.4	21582	40822.49	1	H1-1b	
42	M535	6H25	1.080	43.92156	.289	41.725	y 56	32380.313	215681.4	21582	40822.49	1	H1-1b	
43	M338	L2.5X1.5X5	1.067	27.22955	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1	
44	M341	L2.5X1.5X5	1.061	27.23	55	.002	49.922	y 56	10829.35	31113.2...	475.557	1510.593	1...	H2-1
45	M310	L2.5X1.5X5	1.055	22.21456	.002	0	y 55	11300.048	31113.2...	475.557	1515.611	1...	H2-1	
46	M100	L5x5x8	1.044	345....	56	.070	349....	y 55	127826.437	129330	7731.399	15300.0...	2...	H2-1
47	M342	L2.5X1.5X5	1.044	27.23	55	.002	0	y 55	10829.35	31113.2...	475.557	1510.593	1...	H2-1
48	M603	L6x4x6	1.036	71.27355	.037	71.273	y 55	28958.752	97470	4257.614	12612.4...	1	H2-1	
49	M533	L6x4x6	1.036	96.72756	.037	96.727	y 56	28958.752	97470	4257.614	12612.4...	1	H2-1	
50	M496	PL2.25X6	1.018	9.647	55	.040	9.848	y 56	16077.927	22788	177.75	1068.75	1...	H1-1a
51	M295	L2.5X1.5X5	1.014	22.21356	.002	0	y 55	11300.937	31113.2...	475.557	1515.62	1...	H2-1	
52	M403	PL2.25X6	1.005	9.647	56	.039	9.848	y 55	16077.927	22788	177.75	1068.75	1...	H1-1a
53	M462	PL2.25X6	.982	9.647	55	.039	19.896	y 55	16077.927	22788	177.75	1068.75	1...	H1-1a
54	M325	L2.5X1.5X5	.967	27.22955	.002	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1	
55	M361	PL2.25X6	.963	9.647	56	.040	19.896	y 56	16077.927	22788	177.75	1068.75	1...	H1-1a
56	M302	L2.5X1.5X5	.953	22.21456	.001	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1	



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
57	M306	L2.5X1.5X5	.951	22.21456	.001	0	y 55	11300.048	31113.2...	475.557	1515.611	1...	H2-1
58	M196	L5x3.5x6	.941	46.06355	.102	713...	y 56	74532.516	82350	3178.657	7145.709	1	H2-1
59	M321	L2.5X1.5X5	.940	27.22955	.002	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
60	M446	PL2.25X6	.931	9.87555	.039	0	y 55	15797.641	22788	177.75	1068.75	1...	H1-1a
61	M197	L5x3.5x6	.929	713...	.100	713...	y 55	74532.516	82350	3178.657	7145.709	1	H2-1
62	M379	PL2.25X6	.914	9.87556	.038	0	y 56	15797.641	22788	177.75	1068.75	1...	H1-1a
63	M480	PL2.25X6	.909	9.87555	.037	0	y 55	15797.641	22788	177.75	1068.75	1...	H1-1a
64	M337	L2.5X1.5X5	.904	27.22955	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
65	M330	L2.5X1.5X5	.898	27.22955	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
66	M421	PL2.25X6	.898	9.87556	.037	0	y 56	15797.641	22788	177.75	1068.75	1...	H1-1a
67	M333	L2.5X1.5X5	.896	27.22955	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
68	M323	L2.5X1.5X5	.891	22.21456	.002	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
69	M479	PL2.25X6	.890	9.64756	.046	9.848	y 55	16077.927	22788	177.75	1068.75	1...	H1-1a
70	M420	PL2.25X6	.875	9.64755	.046	9.848	y 56	16077.927	22788	177.75	1068.75	1...	H1-1a
71	M445	PL2.25X6	.867	9.64756	.038	9.848	y 55	16077.927	22788	177.75	1068.75	1...	H1-1a
72	M464	PL2.25X6	.851	10.10955	.034	0	y 55	15509.834	22788	177.75	1068.75	1...	H1-1a
73	M329	L2.5X1.5X5	.848	27.22955	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
74	M498	PL2.25X6	.848	10.10955	.034	0	y 55	15509.834	22788	177.75	1068.75	1...	H1-1a
75	M378	PL2.25X6	.847	9.64755	.038	19.896	y 55	16077.927	22788	177.75	1068.75	1...	H1-1a
76	M301	L2.5X1.5X5	.839	22.21456	.001	0	y 55	11300.048	31113.2...	475.557	1515.611	1...	H2-1
77	M296	L2.5X1.5X5	.837	22.21356	.002	48.869	y 56	11300.937	31113.2...	475.557	1515.62	1...	H2-1
78	M405	PL2.25X6	.837	10.10956	.034	0	y 56	15509.834	22788	177.75	1068.75	1...	H1-1a
79	M363	PL2.25X6	.835	10.10956	.034	0	y 56	15509.834	22788	177.75	1068.75	1...	H1-1a
80	M305	L2.5X1.5X5	.830	22.21456	.001	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...	H2-1
81	M463	PL2.25X6	.826	9.87556	.038	10.081	y 55	15797.641	22788	177.75	1068.75	1...	H1-1a
82	M195	L5x3.5x7	.822	46.18255	.057	508	z 55	86264.621	95238.2...	3723.225	7996.164	1	H2-1
83	M194	L5x3.5x7	.821	715...	.090	538...	y 56	86264.621	95238.2...	3723.225	7996.164	1	H2-1
84	M362	PL2.25X6	.807	9.87555	.038	10.081	y 56	15797.641	22788	177.75	1068.75	1...	H1-1a
85	M482	PL2.25X6	.804	10.34855	.026	0	y 55	15215.026	22788	177.75	1068.75	1...	H1-1a
86	M497	PL2.25X6	.795	9.87556	.036	10.081	y 55	15797.641	22788	177.75	1068.75	1...	H1-1a
87	M423	PL2.25X6	.794	10.34856	.025	0	y 56	15215.026	22788	177.75	1068.75	1...	H1-1a
88	M317	L2.5X1.5X5	.794	27.22955	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
89	M312	L2.5X1.5X5	.794	27.22955	.002	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
90	M448	PL2.25X6	.790	10.34855	.025	0	y 55	15215.026	22788	177.75	1068.75	1...	H1-1a
91	M319	L2.5X1.5X5	.789	22.21456	.002	0	y 55	11300.048	31113.2...	475.557	1515.611	1...	H2-1
92	M404	PL2.25X6	.781	9.87555	.035	10.081	y 56	15797.641	22788	177.75	1068.75	1...	H1-1a
93	M316	L2.5X1.5X5	.780	22.21456	.001	0	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
94	M381	PL2.25X6	.775	10.34856	.025	0	y 56	15215.026	22788	177.75	1068.75	1...	H1-1a
95	M447	PL2.25X6	.752	10.10956	.031	0	y 56	15509.834	22788	177.75	1068.75	1...	H1-1a
96	M466	PL2.25X6	.744	10.59255	.018	0	y 55	14913.763	22788	177.75	1068.75	1...	H1-1a
97	M500	PL2.25X6	.740	10.59255	.018	0	y 55	14913.763	22788	177.75	1068.75	1...	H1-1a
98	M481	PL2.25X6	.736	10.10956	.030	0	y 56	15509.834	22788	177.75	1068.75	1...	H1-1a
99	M380	PL2.25X6	.734	10.10955	.031	0	y 55	15509.834	22788	177.75	1068.75	1...	H1-1a
100	M407	PL2.25X6	.732	10.59256	.017	0	y 56	14913.763	22788	177.75	1068.75	1...	H1-1a
101	M326	L2.5X1.5X5	.731	27.22955	.002	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
102	M365	PL2.25X6	.730	10.59256	.017	0	y 56	14913.763	22788	177.75	1068.75	1...	H1-1a
103	M119	PL2.25X6	.725	15.46155	.030	0	y 55	9570.668	22788	177.75	1068.75	1...	H1-1a
104	M422	PL2.25X6	.723	10.10955	.029	0	y 55	15509.834	22788	177.75	1068.75	1...	H1-1a
105	M308	L2.5X1.5X5	.719	27.22955	.002	49.92	y 55	10830.232	31113.2...	475.557	1510.603	1...	H2-1
106	M23	PL2.25X6	.716	15.46156	.030	0	y 56	9570.668	22788	177.75	1068.75	1...	H1-1a
107	M336	L2.5X1.5X5	.702	22.21456	.002	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
108	M499	PL2.25X6	.702	10.34856	.023	0	y 56	15215.026	22788	177.75	1068.75	1...	H1-1a
109	M465	PL2.25X6	.699	10.34856	.024	0	y 56	15215.026	22788	177.75	1068.75	1...	H1-1a
110	M450	PL2.25X6	.697	10.8455	.013	0	y 55	14606.605	22788	177.75	1068.75	1...	H1-1a
111	M484	PL2.25X6	.693	10.8455	.014	0	y 55	14606.605	22788	177.75	1068.75	1...	H1-1a
112	M345	L2.5X1.5X5	.692	26.65255	.002	0	y 55	12161.091	31113.2...	475.557	1524.092	1...	H2-1
113	M406	PL2.25X6	.690	10.34855	.022	0	y 55	15215.026	22788	177.75	1068.75	1...	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
114	M320	L2.5X1.5X5	.689	22.21456	.001	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...	H2-1
115	M346	L2.5X1.5X5	.687	26.65255	.001	0	y 55	12161.091	31113.2...	475.557	1524.092	1...	H2-1
116	M155	PL2.25X6	.685	15.46156	.027	0	y 56	9570.668	22788	177.75	1068.75	1...	H1-1a
117	M600	L3x2.5x5	.685	72.9455	.058	108...	z 55	40948.468	44010	1270.778	2996.056	1	H2-1
118	M530	L3x2.5x5	.685	68.64956	.058	32.894	z 56	40948.468	44010	1270.778	2996.056	1	H2-1
119	M425	PL2.25X6	.684	10.8456	.013	0	y 56	14606.605	22788	177.75	1068.75	1...	H1-1a
120	M383	PL2.25X6	.683	10.8456	.013	0	y 56	14606.605	22788	177.75	1068.75	1...	H1-1a
121	M364	PL2.25X6	.682	10.34855	.023	0	y 55	15215.026	22788	177.75	1068.75	1...	H1-1a
122	M291	L2.5X1.5X5	.680	19.6256	.002	46.247	y 56	12586.181	31113.2...	475.557	1528.342	1...	H2-1
123	M529	L3x2.5x5	.679	72.9456	.057	108...	z 56	40948.468	44010	1270.778	2996.056	1	H2-1
124	M599	L3x2.5x5	.679	68.64955	.057	32.894	z 55	40948.468	44010	1270.778	2996.056	1	H2-1
125	M59	PL2.25X6	.674	15.46155	.027	15.152	y 56	9570.668	22788	177.75	1068.75	1...	H1-1a
126	M322	L2.5X1.5X5	.661	27.22955	.002	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
127	M304	L2.5X1.5X5	.659	27.22955	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
128	M449	PL2.25X6	.659	10.59256	.017	0	y 56	14913.763	22788	177.75	1068.75	1...	H1-1a
129	M468	PL2.25X6	.657	11.09255	.010	0	y 55	14294.129	22788	177.75	1068.75	2...	H1-1a
130	M502	PL2.25X6	.655	11.09255	.010	0	y 55	14294.129	22788	177.75	1068.75	2...	H1-1a
131	M483	PL2.25X6	.648	10.59256	.016	0	y 56	14913.763	22788	177.75	1068.75	1...	H1-1a
132	M409	PL2.25X6	.647	11.09256	.009	0	y 56	14294.129	22788	177.75	1068.75	1...	H1-1a
133	M315	L2.5X1.5X5	.646	22.21456	.001	0	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
134	M367	PL2.25X6	.644	11.09256	.009	0	y 56	14294.129	22788	177.75	1068.75	1...	H1-1a
135	M382	PL2.25X6	.643	10.59255	.016	0	y 55	14913.763	22788	177.75	1068.75	1...	H1-1a
136	M424	PL2.25X6	.638	10.81355	.015	10.813	y 56	14385.86	22788	177.75	1068.75	1...	H1-1a
137	M327	L2.5X1.5X5	.631	22.21456	.002	0	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
138	M452	PL2.25X6	.624	11.34855	.006	0	y 55	13976.916	22788	177.75	1068.75	2...	H1-1a
139	M486	PL2.25X6	.621	11.34855	.006	0	y 55	13976.916	22788	177.75	1068.75	2...	H1-1a
140	M331	L2.5X1.5X5	.620	22.21456	.001	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...	H2-1
141	M467	PL2.25X6	.617	10.8456	.013	0	y 56	14606.605	22788	177.75	1068.75	1...	H1-1a
142	M427	PL2.25X6	.614	11.34856	.006	0	y 56	13976.916	22788	177.75	1068.75	2...	H1-1a
143	M478	PL2.25X6	.612	14.07155	.007	13.784	y 55	10563.787	22788	177.75	1068.75	1...	H1-1a
144	M385	PL2.25X6	.612	11.34856	.006	0	y 56	13976.916	22788	177.75	1068.75	2...	H1-1a
145	M476	PL2.25X6	.611	13.57955	.006	13.579	y 55	10970.502	22788	177.75	1068.75	1...	H1-1a
146	M318	L2.5X1.5X5	.607	27.22955	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
147	M311	L2.5X1.5X5	.607	27.22955	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
148	M512	PL2.25X6	.606	14.07155	.007	13.784	y 55	10563.787	22788	177.75	1068.75	1...	H1-1a
149	M501	PL2.25X6	.605	10.8456	.012	0	y 56	14606.605	22788	177.75	1068.75	1...	H1-1a
150	M470	PL2.25X6	.605	11.84955	.004	0	y 55	13156.803	22788	177.75	1068.75	2...	H1-1a
151	M454	PL2.25X6	.603	12.11755	.003	12.117	y 55	12838.818	22788	177.75	1068.75	1...	H1-1a
152	M366	PL2.25X6	.602	10.8456	.012	0	y 55	14606.605	22788	177.75	1068.75	1...	H1-1a
153	M504	PL2.25X6	.601	11.84955	.003	0	y 55	13156.803	22788	177.75	1068.75	2...	H1-1a
154	M472	PL2.25X6	.601	12.38855	.004	12.388	y 55	12517.851	22788	177.75	1068.75	1...	H1-1a
155	M488	PL2.25X6	.599	12.11755	.003	12.117	y 55	12838.818	22788	177.75	1068.75	1...	H1-1a
156	M377	PL2.25X6	.599	14.07156	.007	13.784	y 56	10563.787	22788	177.75	1068.75	1...	H1-1a
157	M408	PL2.25X6	.599	11.06655	.012	0	y 55	14086.36	22788	177.75	1068.75	1...	H1-1a
158	M456	PL2.25X6	.599	12.66355	.005	12.663	y 55	12194.533	22788	177.75	1068.75	1...	H1-1a
159	M419	PL2.25X6	.598	14.07156	.007	13.784	y 56	10563.787	22788	177.75	1068.75	1...	H1-1a
160	M474	PL2.25X6	.597	12.9455	.006	12.94	y 55	11869.483	22788	177.75	1068.75	1...	H1-1a
161	M506	PL2.25X6	.597	12.38855	.005	12.388	y 55	12517.851	22788	177.75	1068.75	1...	H1-1a
162	M458	PL2.25X6	.596	13.21955	.006	13.219	y 55	11543.305	22788	177.75	1068.75	1...	H1-1a
163	M490	PL2.25X6	.595	12.66355	.006	12.663	y 55	12194.533	22788	177.75	1068.75	1...	H1-1a
164	M508	PL2.25X6	.593	12.9455	.006	12.94	y 55	11869.483	22788	177.75	1068.75	1...	H1-1a
165	M411	PL2.25X6	.593	11.84956	.003	0	y 56	13156.803	22788	177.75	1068.75	2...	H1-1a
166	M492	PL2.25X6	.592	13.21955	.007	13.219	y 55	11543.305	22788	177.75	1068.75	1...	H1-1a
167	M510	PL2.25X6	.591	13.50155	.007	13.501	y 55	11216.586	22788	177.75	1068.75	1...	H1-1a
168	M369	PL2.25X6	.591	11.84956	.003	0	y 56	13156.803	22788	177.75	1068.75	2...	H1-1a
169	M429	PL2.25X6	.591	12.11756	.003	12.117	y 56	12838.818	22788	177.75	1068.75	1...	H1-1a
170	M387	PL2.25X6	.589	12.11756	.003	12.117	y 56	12838.818	22788	177.75	1068.75	1...	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt	phi*Mn y	phi*Mn z	Cb	Eqn	
171	M413	PL2.25X6	.588	12.388	56	.004	12.388	y 56	12517.851	22788	177.75	1068.75	1...H1-1a
172	M371	PL2.25X6	.587	12.388	56	.004	12.388	y 56	12517.851	22788	177.75	1068.75	1...H1-1a
173	M431	PL2.25X6	.587	12.663	56	.005	12.663	y 56	12194.533	22788	177.75	1068.75	1...H1-1a
174	M389	PL2.25X6	.586	12.663	56	.005	12.663	y 56	12194.533	22788	177.75	1068.75	1...H1-1a
175	M415	PL2.25X6	.585	12.94	56	.006	12.94	y 56	11869.483	22788	177.75	1068.75	1...H1-1a
176	M604	L6x4x6	.585	58.667	55	.134	58.667	y 55	43003.777	97470	4257.614	12792.4...	1 H2-1
177	M373	PL2.25X6	.584	12.94	56	.005	12.94	y 56	11869.483	22788	177.75	1068.75	1...H1-1a
178	M433	PL2.25X6	.584	13.219	56	.006	13.219	y 56	11543.305	22788	177.75	1068.75	1...H1-1a
179	M391	PL2.25X6	.584	13.219	56	.006	13.219	y 56	11543.305	22788	177.75	1068.75	1...H1-1a
180	M534	L6x4x6	.584	73.333	56	.134	73.333	y 55	43003.777	97470	4257.614	12792.4...	1 H2-1
181	M417	PL2.25X6	.583	13.501	56	.007	13.501	y 56	11216.586	22788	177.75	1068.75	1...H1-1a
182	M375	PL2.25X6	.583	13.501	56	.006	13.501	y 56	11216.586	22788	177.75	1068.75	1...H1-1a
183	M451	PL2.25X6	.581	11.092	56	.010	0	y 56	14294.129	22788	177.75	1068.75	1...H1-1a
184	M494	PL2.25X6	.581	13.785	55	.007	13.504	y 55	10889.896	22788	177.75	1068.75	1...H1-1a
185	M531	L3x2.5x5	.577	68.649	55	.049	32.894	z 55	40948.468	44010	1270.778	2996.056	1 H2-1
186	M601	L3x2.5x5	.577	72.94	56	.048	108....	z 56	40948.468	44010	1270.778	2996.056	1 H2-1
187	M602	L3x2.5x5	.576	68.649	56	.048	32.894	z 56	40948.468	44010	1270.778	2996.056	1 H2-1
188	M532	L3x2.5x5	.576	72.94	55	.047	108....	z 55	40948.468	44010	1270.778	2996.056	1 H2-1
189	M485	PL2.25X6	.575	11.323	56	.009	0	y 56	13781.235	22788	177.75	1068.75	1...H1-1a
190	M460	PL2.25X6	.575	14.066	55	.006	13.785	y 55	11054.352	22788	177.75	1068.75	1...H1-1a
191	M435	PL2.25X6	.573	13.785	56	.007	13.504	y 56	10889.896	22788	177.75	1068.75	1.4H1-1a
192	M393	PL2.25X6	.572	13.785	56	.007	13.504	y 56	10889.896	22788	177.75	1068.75	1...H1-1a
193	M426	PL2.25X6	.570	11.323	55	.008	0	y 55	13781.235	22788	177.75	1068.75	1...H1-1a
194	M384	PL2.25X6	.567	11.092	55	.009	0	y 55	14294.129	22788	177.75	1068.75	1...H1-1a
195	M332	L2.5X1.5X5	.562	22.214	56	.001	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...H2-1
196	M513	PL2.25X6	.562	14.36	55	.008	14.067	y 55	10238.793	22788	177.75	1068.75	1...H1-1a
197	M521	PL2.25X6	.558	14.36	55	.008	14.067	y 55	10238.793	22788	177.75	1068.75	1...H1-1a
198	M469	PL2.25X6	.552	11.348	56	.007	0	y 56	13976.916	22788	177.75	1068.75	1...H1-1a
199	M441	PL2.25X6	.551	14.36	56	.008	14.067	y 56	10238.793	22788	177.75	1068.75	1...H1-1a
200	M399	PL2.25X6	.550	14.36	56	.008	14.067	y 56	10238.793	22788	177.75	1068.75	1...H1-1a
201	M503	PL2.25X6	.549	11.584	56	.006	0	y 56	13471.16	22788	177.75	1068.75	1...H1-1a
202	M410	PL2.25X6	.544	11.584	55	.005	0	y 55	13471.16	22788	177.75	1068.75	1...H1-1a
203	M368	PL2.25X6	.542	11.584	55	.006	0	y 55	13471.16	22788	177.75	1068.75	1...H1-1a
204	M292	L2.5X1.5X5	.532	19.62	56	.001	46.247	y 55	12586.181	31113.2...	475.557	1528.342	1...H2-1
205	M453	PL2.25X6	.530	11.849	56	.004	0	y 56	13156.803	22788	177.75	1068.75	2...H1-1a
206	M340	L2.5X1.5X5	.530	22.214	56	.002	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...H2-1
207	M487	PL2.25X6	.527	11.849	56	.004	11.849	y 55	13156.803	22788	177.75	1068.75	1...H1-1a
208	M298	L2.5X1.5X5	.525	27.229	55	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
209	M309	L2.5X1.5X5	.525	22.214	56	.002	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...H2-1
210	M428	PL2.25X6	.523	11.849	55	.003	11.849	y 56	13156.803	22788	177.75	1068.75	1...H1-1a
211	M386	PL2.25X6	.521	11.849	55	.004	0	y 55	13156.803	22788	177.75	1068.75	1...H1-1a
212	M471	PL2.25X6	.520	12.117	56	.003	0	y 55	12838.818	22788	177.75	1068.75	1...H1-1a
213	M455	PL2.25X6	.518	12.388	56	.004	0	y 55	12517.851	22788	177.75	1068.75	1...H1-1a
214	M477	PL2.25X6	.518	13.716	56	.007	27.711	y 55	10812.25	22788	177.75	1068.75	1...H1-1a
215	M328	L2.5X1.5X5	.517	22.214	56	.002	0	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
216	M473	PL2.25X6	.517	12.663	56	.004	0	y 55	12194.533	22788	177.75	1068.75	1...H1-1a
217	M457	PL2.25X6	.517	12.94	56	.005	0	y 55	11869.483	22788	177.75	1068.75	1...H1-1a
218	M475	PL2.25X6	.515	13.219	56	.006	0	y 55	11543.305	22788	177.75	1068.75	1...H1-1a
219	M511	PL2.25X6	.513	13.785	56	.008	27.851	y 55	10889.896	22788	177.75	1068.75	1...H1-1a
220	M505	PL2.25X6	.512	12.117	56	.003	12.117	y 55	12838.818	22788	177.75	1068.75	2...H1-1a
221	M489	PL2.25X6	.511	12.388	56	.004	0	y 55	12517.851	22788	177.75	1068.75	1...H1-1a
222	M507	PL2.25X6	.510	12.663	56	.005	0	y 55	12194.533	22788	177.75	1068.75	1...H1-1a
223	M491	PL2.25X6	.510	12.94	56	.006	0	y 55	11869.483	22788	177.75	1068.75	1...H1-1a
224	M509	PL2.25X6	.509	13.219	56	.006	26.708	y 55	11543.305	22788	177.75	1068.75	1...H1-1a
225	M520	PL2.25X6	.508	15.235	55	.006	15.235	y 55	9275.508	22788	177.75	1068.75	1...H1-1a
226	M459	PL2.25X6	.508	13.776	56	.007	27.277	y 55	11367.005	22788	177.75	1068.75	1...H1-1a
227	M493	PL2.25X6	.507	13.501	56	.007	27.277	y 55	11216.586	22788	177.75	1068.75	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
228	M370	PL2.25X6	.506	12.11755	.003	0	y 56	12838.818	22788	177.75	1068.75	2...H1-1a
229	M376	PL2.25X6	.506	13.78555	.007	27.851	y 56	10889.896	22788	177.75	1068.75	1...H1-1a
230	M388	PL2.25X6	.505	12.38855	.003	0	y 56	12517.851	22788	177.75	1068.75	1...H1-1a
231	M418	PL2.25X6	.504	13.78555	.008	27.851	y 56	10889.896	22788	177.75	1068.75	1...H1-1a
232	M372	PL2.25X6	.504	12.66355	.004	0	y 56	12194.533	22788	177.75	1068.75	1...H1-1a
233	M412	PL2.25X6	.504	12.11755	.003	12.117	y 56	12838.818	22788	177.75	1068.75	2...H1-1a
234	M390	PL2.25X6	.504	12.9455	.005	0	y 56	11869.483	22788	177.75	1068.75	1...H1-1a
235	M461	PL2.25X6	.504	14.07156	.008	28.43	y 55	10563.787	22788	177.75	1068.75	1...H1-1a
236	M374	PL2.25X6	.503	13.21955	.006	26.708	y 56	11543.305	22788	177.75	1068.75	1...H1-1a
237	M430	PL2.25X6	.502	12.38855	.003	0	y 56	12517.851	22788	177.75	1068.75	1...H1-1a
238	M356	PL2.25X5	.501	23.93856	.004	0	y 56	2210.434	18984.3...	123.597	871.698	1...H1-1a
239	M528	PL2.25X6	.501	15.23555	.006	14.924	y 55	9275.508	22788	177.75	1068.75	1...H1-1a
240	M392	PL2.25X6	.501	13.50155	.006	27.277	y 56	11216.586	22788	177.75	1068.75	1...H1-1a
241	M414	PL2.25X6	.501	12.66355	.004	0	y 56	12194.533	22788	177.75	1068.75	1...H1-1a
242	M432	PL2.25X6	.501	12.9455	.005	0	y 56	11869.483	22788	177.75	1068.75	1...H1-1a
243	M416	PL2.25X6	.500	13.21955	.006	26.708	y 56	11543.305	22788	177.75	1068.75	1...H1-1a
244	M434	PL2.25X6	.498	13.50155	.007	27.277	y 56	11216.586	22788	177.75	1068.75	1...H1-1a
245	M495	PL2.25X6	.497	14.07156	.009	28.43	y 55	10563.787	22788	177.75	1068.75	1...H1-1a
246	M394	PL2.25X6	.490	14.07155	.008	28.43	y 56	10563.787	22788	177.75	1068.75	1...H1-1a
247	M436	PL2.25X6	.488	14.07155	.009	28.43	y 56	10563.787	22788	177.75	1068.75	1...H1-1a
248	M297	L2.5X1.5X5	.486	27.22955	.002	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
249	M398	PL2.25X6	.485	15.23556	.006	15.235	y 56	9275.508	22788	177.75	1068.75	1...H1-1a
250	M440	PL2.25X6	.482	15.23556	.006	14.924	y 56	9275.508	22788	177.75	1068.75	1...H1-1a
251	M608	L3x2.5x6	.480	4.54555	.114	9	z 55	51421.803	52110	1486.645	3490.361	1...H2-1
252	M538	L3x2.5x6	.480	4.45556	.114	0	z 56	51421.803	52110	1486.645	3490.361	1...H2-1
253	M539	L3x2.5x6	.479	4.54556	.114	9	z 56	51421.803	52110	1486.645	3490.361	1...H2-1
254	M609	L3x2.5x6	.478	4.45555	.114	0	z 55	51421.803	52110	1486.645	3490.361	1...H2-1
255	M518	PL2.25X6	.454	14.63255	.008	14.333	y 55	9936.561	22788	177.75	1068.75	1...H1-1a
256	M526	PL2.25X6	.452	14.63255	.009	14.333	y 55	9936.561	22788	177.75	1068.75	1...H1-1a
257	M438	PL2.25X6	.449	14.63256	.008	14.333	y 56	9936.561	22788	177.75	1068.75	1...H1-1a
258	M307	L2.5X1.5X5	.445	27.22955	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
259	M396	PL2.25X6	.445	14.63256	.008	14.333	y 56	9936.561	22788	177.75	1068.75	1...H1-1a
260	M546	PL2.25X6	.437	15.18156	.011	29.469	y 55	9410.524	22788	177.75	1068.75	1...H1-1a
261	M617	PL2.25X6	.433	15.18155	.011	29.469	y 56	9410.524	22788	177.75	1068.75	1...H1-1a
262	M616	PL2.25X6	.432	15.18155	.011	29.469	y 56	9410.524	22788	177.75	1068.75	1...H1-1a
263	M519	PL2.25X6	.431	14.95856	.008	30.221	y 55	9575.237	22788	177.75	1068.75	1...H1-1a
264	M174	L2.5x2.5x5	.430	25.26256	.001	51.04	z 56	24053.796	39420	1096.767	2551.08	1...H2-1
265	M173	L2.5x2.5x5	.428	25.77856	.001	51.04	z 56	24053.796	39420	1096.767	2551.08	1...H2-1
266	M547	PL2.25X6	.428	15.18156	.011	29.469	y 55	9410.524	22788	177.75	1068.75	1...H1-1a
267	M527	PL2.25X6	.425	14.95856	.008	30.221	y 55	9575.237	22788	177.75	1068.75	1...H1-1a
268	M353	PL2.25X5	.424	23.93856	.004	0	y 56	2210.434	18984.3...	123.597	827.256	1...H1-1a
269	M357	PL2.25X5	.422	22.96156	.005	0	y 56	2210.434	18984.3...	123.597	876.688	1...H1-1a
270	M77	L2.5x2.5x5	.419	25.26255	.001	0	z 55	24053.796	39420	1096.767	2551.08	1...H2-1
271	M397	PL2.25X6	.417	14.95855	.008	30.221	y 56	9575.237	22788	177.75	1068.75	1...H1-1a
272	M439	PL2.25X6	.415	14.95855	.008	30.221	y 56	9575.237	22788	177.75	1068.75	1...H1-1a
273	M78	L2.5x2.5x5	.415	25.77855	.001	51.04	z 55	24053.796	39420	1096.767	2551.08	1...H2-1
274	M517	PL2.25X6	.413	14.3656	.008	29.012	y 55	10238.793	22788	177.75	1068.75	1...H1-1a
275	M525	PL2.25X6	.405	14.3656	.008	29.012	y 55	10238.793	22788	177.75	1068.75	1...H1-1a
276	M514	PL2.25X6	.404	14.63256	.008	29.563	y 55	9936.561	22788	177.75	1068.75	1...H1-1a
277	M515	PL2.25X6	.402	14.95855	.008	14.653	y 55	9575.237	22788	177.75	1068.75	1...H1-1a
278	M395	PL2.25X6	.402	14.3655	.008	29.012	y 56	10238.793	22788	177.75	1068.75	1...H1-1a
279	M523	PL2.25X6	.401	14.95855	.009	14.653	y 55	9575.237	22788	177.75	1068.75	1...H1-1a
280	M303	L2.5X1.5X5	.401	27.22955	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
281	M619	PL2.25X6	.400	15.18156	.011	29.469	y 55	9410.524	22788	177.75	1068.75	1...H1-1a
282	M437	PL2.25X6	.399	14.3655	.008	29.012	y 56	10238.793	22788	177.75	1068.75	1...H1-1a
283	M522	PL2.25X6	.397	14.63256	.009	29.563	y 55	9936.561	22788	177.75	1068.75	1...H1-1a
284	M549	PL2.25X6	.395	15.18155	.011	29.469	y 56	9410.524	22788	177.75	1068.75	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
285	M443	PL2.25X6	.395	14.95856	.008	14.653	y 56	9575.237	22788	177.75	1068.75	1...H1-1a
286	M400	PL2.25X6	.393	14.63255	.008	29.563	y 56	9936.561	22788	177.75	1068.75	1...H1-1a
287	M548	PL2.25X6	.393	15.18155	.010	29.469	y 56	9410.523	22788	177.75	1068.75	1...H1-1a
288	M401	PL2.25X6	.391	14.95856	.008	14.653	y 56	9575.237	22788	177.75	1068.75	1...H1-1a
289	M648	PL2.25X5	.390	10.21755	.032	0	y 55	10629.797	18984.3	123.597	889.893	1...H1-1a
290	M442	PL2.25X6	.390	14.63255	.009	29.563	y 56	9936.561	22788	177.75	1068.75	1...H1-1a
291	M578	PL2.25X5	.390	10.21756	.032	0	y 56	10629.797	18984.3	123.597	889.893	1...H1-1a
292	M580	PL2.25X5	.389	10.21756	.027	0	y 56	10629.797	18984.3	123.597	889.893	1...H1-1a
293	M650	PL2.25X5	.389	10.21755	.027	0	y 55	10629.797	18984.3	123.597	889.893	1...H1-1a
294	M618	PL2.25X6	.389	15.18156	.010	29.469	y 55	9410.523	22788	177.75	1068.75	1...H1-1a
295	M642	L6x4x6	.388	6.74	55 .121	6.74	z 55	91550.116	97470	4257.614	12792.4	1...H2-1
296	M572	L6x4x6	.387	6.878	56 .121	6.878	z 56	91550.116	97470	4257.614	12792.4	1...H2-1
297	M573	L6x4x6	.380	6.878	56 .131	6.878	z 56	91550.116	97470	4257.614	12792.4	2...H2-1
298	M643	L6x4x6	.379	6.74	55 .131	6.74	z 55	91550.116	97470	4257.614	12698.6	1...H2-1
299	M588	PL2.25X5	.364	8.823	56 .024	0	y 56	12342.035	18984.3	123.597	889.893	1...H1-1a
300	M658	PL2.25X5	.364	8.823	55 .024	0	y 55	12342.035	18984.3	123.597	889.893	1...H1-1a
301	M656	PL2.25X5	.362	8.823	55 .029	0	y 55	12342.035	18984.3	123.597	889.893	1...H1-1a
302	M586	PL2.25X5	.362	8.823	56 .029	0	y 56	12342.035	18984.3	123.597	889.893	1...H1-1a
303	M339	L2.5X1.5X5	.356	24.68255	.001	48.871	y 55	11300.048	31113.2	475.557	1515.611	1...H2-1
304	M596	PL2.25X5	.353	7.863	56 .018	0	y 56	13465.981	18984.3	123.597	889.893	1...H1-1a
305	M324	L2.5X1.5X5	.353	22.21456	.002	48.871	y 56	11300.048	31113.2	475.557	1515.611	1...H2-1
306	M666	PL2.25X5	.353	7.863	55 .018	0	y 55	13465.981	18984.3	123.597	889.893	1...H1-1a
307	M664	PL2.25X5	.353	7.863	55 .022	0	y 55	13465.981	18984.3	123.597	889.893	1...H1-1a
308	M594	PL2.25X5	.352	7.863	56 .023	0	y 56	13465.981	18984.3	123.597	889.893	1...H1-1a
309	M41	PL2.25X6	.345	15.46156	.028	15.152	y 56	9570.668	22788	177.75	1068.75	1...H1-1a
310	M5	PL2.25X6	.342	15.46155	.029	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1a
311	M137	PL2.25X6	.341	15.46155	.028	15.152	y 55	9570.668	22788	177.75	1068.75	1...H1-1a
312	M101	PL2.25X6	.339	15.46156	.029	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1a
313	M294	L2.5X1.5X5	.328	27.23	55 .001	0	y 56	10829.35	31113.2	475.557	1510.593	1...H2-1
314	M344	L2.5X1.5X5	.319	22.21356	.001	48.869	y 55	11300.937	31113.2	475.557	1515.62	1...H2-1
315	M335	L2.5X1.5X5	.316	24.68255	.001	0	y 56	11300.048	31113.2	475.557	1515.611	1...H2-1
316	M293	L2.5X1.5X5	.312	24.70956	.002	49.922	y 56	10829.35	31113.2	475.557	1510.593	1...H2-1
317	M555	L6x4x6	.311	9.414	56 .166	7.685	z 56	90666.49	97470	4257.614	12792.4	1...H2-1
318	M354	PL2.25X5	.310	22.47355	.004	24.427	y 56	2210.434	18984.3	123.597	889.893	1...H1-1a
319	M625	L6x4x6	.308	9.414	56 .164	11.336	z 55	90666.49	97470	4257.614	12421.2	1...H2-1
320	M624	L6x4x6	.301	9.606	55 .152	7.685	z 56	90666.49	97470	4257.614	12792.4	1...H2-1
321	M554	L6x4x6	.299	9.414	56 .154	11.336	z 55	90666.49	97470	4257.614	12312.4	1...H2-1
322	M343	L2.5X1.5X5	.296	24.68155	.002	0	y 55	11300.937	31113.2	475.557	1515.62	1...H2-1
323	M360	PL2.25X5	.295	22.96156	.005	24.427	y 55	2210.434	18984.3	123.597	836.8	1...H1-1a
324	M649	PL2.25X5	.276	10.21756	.031	10.217	y 55	10629.797	18984.3	123.597	889.893	1...H1-1a
325	M579	PL2.25X5	.276	10.21755	.031	10.217	y 56	10629.797	18984.3	123.597	889.893	1...H1-1a
326	M581	PL2.25X5	.271	10.21755	.027	10.217	y 56	10629.797	18984.3	123.597	889.893	1...H1-1a
327	M651	PL2.25X5	.270	10.21756	.027	10.217	y 55	10629.797	18984.3	123.597	889.893	1...H1-1a
328	M556	PL2.25X5	.266	14.76356	.026	14.763	y 56	7706.669	18984.3	123.597	889.893	2...H1-1b
329	M626	PL2.25X5	.266	14.76355	.026	14.763	y 55	7706.669	18984.3	123.597	889.893	2...H1-1b
330	M665	PL2.25X5	.262	7.863	55 .021	7.863	y 55	13465.981	18984.3	123.597	889.893	1...H1-1a
331	M595	PL2.25X5	.262	7.863	56 .021	7.863	y 56	13465.981	18984.3	123.597	889.893	1...H1-1a
332	M597	PL2.25X5	.262	7.863	56 .017	7.863	y 56	13465.981	18984.3	123.597	889.893	1...H1-1a
333	M667	PL2.25X5	.262	7.863	55 .018	7.863	y 55	13465.981	18984.3	123.597	889.893	1...H1-1a
334	M627	PL2.25X5	.261	14.76355	.026	14.763	y 55	7706.669	18984.3	123.597	889.893	2...H1-1b
335	M557	PL2.25X5	.261	14.76356	.026	14.763	y 56	7706.669	18984.3	123.597	889.893	2...H1-1b
336	M623	PL2.25X6	.258	18.73356	.008	35.664	y 56	6236.681	22788	177.75	1068.75	1...H1-1a
337	M574	PL2.25X5	.253	9.809	56 .033	9.809	y 56	12655.735	18984.3	123.597	889.893	2...H1-1b
338	M644	PL2.25X5	.253	9.809	55 .033	9.809	y 55	12655.735	18984.3	123.597	889.893	2...H1-1b
339	M645	PL2.25X5	.251	9.809	55 .031	9.809	y 55	12655.735	18984.3	123.597	889.893	2...H1-1b
340	M575	PL2.25X5	.251	9.809	56 .031	9.809	y 56	12655.735	18984.3	123.597	889.893	2...H1-1b
341	M553	PL2.25X6	.249	18.73355	.008	18.733	y 56	6236.681	22788	177.75	1068.75	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Ean
342	M629	PL2.25X5	.231	14.76356	.025	27.577	y 55	7706.669	18984.3...	123.597	889.893	2...H1-1b
343	M635	PL2.25X5	.231	12.58555	.027	0	y 55	7956.557	18984.3...	123.597	889.893	1...H1-1b
344	M558	PL2.25X5	.230	14.76355	.024	27.577	y 56	7706.669	18984.3...	123.597	889.893	2...H1-1b
345	M564	PL2.25X5	.230	12.58556	.027	0	y 56	7956.557	18984.3...	123.597	889.893	1...H1-1b
346	M559	PL2.25X5	.230	14.76355	.025	27.577	y 56	7706.669	18984.3...	123.597	889.893	2...H1-1b
347	M565	PL2.25X5	.230	12.58556	.027	0	y 56	7956.557	18984.3...	123.597	889.893	1...H1-1b
348	M628	PL2.25X5	.230	14.76356	.023	27.577	y 55	7706.669	18984.3...	123.597	889.893	2...H1-1b
349	M634	PL2.25X5	.230	12.58555	.027	0	y 55	7956.557	18984.3...	123.597	889.893	1...H1-1b
350	M576	PL2.25X5	.222	9.80956	.031	18.322	y 56	12655.735	18984.3...	123.597	889.893	2...H1-1b
351	M646	PL2.25X5	.222	9.80955	.031	18.322	y 55	12655.735	18984.3...	123.597	889.893	2...H1-1b
352	M647	PL2.25X5	.221	9.80955	.029	18.322	y 55	12655.735	18984.3...	123.597	889.893	2...H1-1b
353	M577	PL2.25X5	.221	9.80956	.029	18.322	y 56	12655.735	18984.3...	123.597	889.893	2...H1-1b
354	M637	PL2.25X5	.192	12.58556	.024	0	y 56	7956.557	18984.3...	123.597	889.893	1...H1-1b
355	M566	PL2.25X5	.191	12.58555	.026	12.585	y 56	7956.557	18984.3...	123.597	889.893	1...H1-1b
356	M567	PL2.25X5	.191	12.58555	.024	0	y 55	7956.557	18984.3...	123.597	889.893	1...H1-1b
357	M636	PL2.25X5	.190	12.58556	.026	12.585	y 55	7956.557	18984.3...	123.597	889.893	1...H1-1b
358	M655	PL2.25X5	.190	8.25255	.030	8.252	y 55	12967.011	18984.3...	123.597	889.893	1...H1-1b
359	M585	PL2.25X5	.190	8.25256	.030	8.252	y 56	12967.011	18984.3...	123.597	889.893	1...H1-1b
360	M584	PL2.25X5	.188	8.25256	.028	8.252	y 56	12967.011	18984.3...	123.597	889.893	1...H1-1b
361	M654	PL2.25X5	.188	8.25255	.028	8.252	y 55	12967.011	18984.3...	123.597	889.893	1...H1-1b
362	M583	PL2.25X5	.187	8.25256	.031	0	y 56	12967.011	18984.3...	123.597	889.893	1...H1-1b
363	M653	PL2.25X5	.187	8.25255	.031	0	y 55	12967.011	18984.3...	123.597	889.893	1...H1-1b
364	M652	PL2.25X5	.186	8.25255	.030	0	y 55	12967.011	18984.3...	123.597	889.893	1...H1-1b
365	M582	PL2.25X5	.186	8.25256	.030	0	y 56	12967.011	18984.3...	123.597	889.893	1...H1-1b
366	M657	PL2.25X5	.185	8.82355	.027	8.823	y 55	12342.035	18984.3...	123.597	889.893	1.4 H1-1b
367	M587	PL2.25X5	.184	8.82356	.027	8.823	y 56	12342.035	18984.3...	123.597	889.893	1.4 H1-1b
368	M589	PL2.25X5	.184	8.82356	.024	8.823	y 56	12342.035	18984.3...	123.597	889.893	1...H1-1b
369	M659	PL2.25X5	.184	8.82355	.024	8.823	y 55	12342.035	18984.3...	123.597	889.893	1...H1-1b
370	M289	L2.5X1.5X5	.168	22.73556	.001	45.934	y 56	12740.431	31113.2...	475.557	1529.877	1...H2-1
371	M134	PL2.25X6	.167	15.3156	.015	15.31	y 55	9398.326	22788	177.75	1068.75	1...H1-1b
372	M347	L2.5X1.5X5	.165	23.20155	.001	0	y 55	12738.921	31113.2...	475.557	1529.862	1...H2-1
373	M42	PL2.25X6	.161	15.15256	.027	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
374	M516	PL2.25X6	.161	15.23556	.008	0	y 55	9275.508	22788	177.75	1068.75	1...H1-1b
375	M38	PL2.25X6	.161	15.3155	.014	15.31	y 56	9398.326	22788	177.75	1068.75	1...H1-1b
376	M348	L2.5X1.5X5	.159	23.20155	.001	45.937	y 55	12738.921	31113.2...	475.557	1529.862	1...H2-1
377	M138	PL2.25X6	.157	15.15255	.028	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
378	M524	PL2.25X6	.157	15.23556	.008	30.782	y 55	9275.508	22788	177.75	1068.75	1...H1-1b
379	M6	PL2.25X6	.155	15.15255	.031	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
380	M116	PL2.25X6	.155	15.3156	.016	15.31	y 55	9398.326	22788	177.75	1068.75	1...H1-1b
381	M120	PL2.25X6	.155	15.15255	.031	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
382	M20	PL2.25X6	.153	15.3155	.016	15.31	y 56	9398.326	22788	177.75	1068.75	1...H1-1b
383	M102	PL2.25X6	.152	15.15256	.031	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
384	M24	PL2.25X6	.150	15.15256	.030	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
385	M402	PL2.25X6	.149	15.23555	.008	0	y 56	9275.508	22788	177.75	1068.75	1...H1-1b
386	M444	PL2.25X6	.149	15.23555	.008	30.782	y 56	9275.508	22788	177.75	1068.75	1...H1-1b
387	M622	PL2.25X6	.145	18.73355	.012	35.664	y 55	6236.68	22788	177.75	1068.75	1...H1-1b
388	M551	PL2.25X6	.144	18.73355	.009	35.664	y 55	6236.68	22788	177.75	1068.75	1...H1-1b
389	M552	PL2.25X6	.141	18.73356	.011	35.664	y 56	6236.68	22788	177.75	1068.75	1...H1-1b
390	M550	PL2.25X6	.139	18.73356	.011	35.664	y 56	6236.68	22788	177.75	1068.75	1...H1-1b
391	M621	PL2.25X6	.139	18.73356	.009	35.664	y 56	6236.68	22788	177.75	1068.75	1...H1-1b
392	M206	L2.5x1.25x5	.137	14.65356	.002	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1...H2-1
393	M156	PL2.25X6	.136	15.15256	.028	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
394	M620	PL2.25X6	.135	18.73355	.011	35.664	y 55	6236.68	22788	177.75	1068.75	1...H1-1b
395	M571	PL2.25X5	.135	14.09256	.013	0	y 55	8747.18	18984.3...	123.597	889.893	1...H1-1b
396	M641	PL2.25X5	.134	14.09255	.013	0	y 56	8747.18	18984.3...	123.597	889.893	1...H1-1b
397	M231	L2.5x1.25x5	.132	14.95255	.004	0	y 56	16726.289	29003.9...	340.89	1464.21	1...H2-1
398	M60	PL2.25X6	.131	15.15255	.028	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b



Company : Black & Veatch
Designer : DPBrankovich
Job Number : Project 190407 Calculation File: 51.2400.03
Model Name : Catenary Structure Type 3

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn			
399	M233	L2.5x1.25x5	.130	14.952	55	.003	0	y	55	16726.253	29003.9...	340.89	1464.209	1...	H2-1
400	M638	PL2.25X5_...	.130	13.831	55	.018	0	y	55	6743.48	18984.3...	123.597	889.893	1...	H1-1b
401	M568	PL2.25X5_...	.130	13.831	56	.018	0	y	56	6743.48	18984.3...	123.597	889.893	1...	H1-1b
402	M56	PL2.25X6	.129	15.31	56	.026	0	y	56	9398.326	22788	177.75	1068.75	1...	H1-1b
403	M591	PL2.25X5_...	.128	7.482	56	.020	0	y	56	13874.755	18984.3...	123.597	889.893	1...	H1-1b
404	M661	PL2.25X5_...	.128	7.482	55	.020	0	y	55	13874.755	18984.3...	123.597	889.893	1...	H1-1b
405	M290	L2.5x1.5x5	.126	22.735	56	.001	0	y	56	12740.431	31113.2...	475.557	1529.877	1...	H2-1
406	M74	PL2.25X6	.125	15.31	56	.025	0	y	56	9398.326	22788	177.75	1068.75	1...	H1-1b
407	M660	PL2.25X5_...	.125	7.482	55	.022	0	y	55	13874.755	18984.3...	123.597	889.893	1...	H1-1b
408	M570	PL2.25X5_...	.125	13.831	56	.015	0	y	56	6743.48	18984.3...	123.597	889.893	1...	H1-1b
409	M590	PL2.25X5_...	.125	7.482	56	.022	0	y	56	13874.755	18984.3...	123.597	889.893	1...	H1-1b
410	M640	PL2.25X5_...	.124	13.831	55	.014	0	y	55	6743.48	18984.3...	123.597	889.893	1...	H1-1b
411	M260	L2.5x1.25x5	.124	14.952	55	.002	0	y	55	16726.289	29003.9...	340.89	1464.21	1...	H2-1
412	M639	PL2.25X5_...	.124	14.092	55	.015	14.092	y	55	8747.18	18984.3...	123.597	889.893	1...	H1-1b
413	M569	PL2.25X5_...	.123	14.092	56	.015	14.092	y	56	8747.18	18984.3...	123.597	889.893	1...	H1-1b
414	M210	L2.5x1.25x5	.123	14.653	56	.002	0	y	55	16726.253	29003.9...	340.89	1464.209	1...	H2-1
415	M355	PL2.25X5_...	.122	23.938	55	.004	24.427	y	56	2210.434	18984.3...	123.597	889.893	1...	H1-1b
416	M213	L2.5x1.25x5	.121	14.952	55	.002	0	y	56	16726.253	29003.9...	340.89	1464.209	1...	H2-1
417	M359	PL2.25X5_...	.121	22.961	55	.005	0	y	55	2210.434	18984.3...	123.597	870.842	1...	H1-1b
418	M208	L2.5x1.25x5	.118	14.653	56	.001	29.605	y	55	16726.289	29003.9...	340.89	1464.21	1...	H2-1
419	M631	PL2.25X5_...	.117	16.36	55	.015	16.36	y	55	6681.76	18984.3...	123.597	889.893	1...	H1-1b
420	M561	PL2.25X5_...	.117	16.36	56	.015	16.36	y	56	6681.76	18984.3...	123.597	889.893	1...	H1-1b
421	M214	L2.5x1.25x5	.114	14.653	56	.002	29.605	y	55	16726.289	29003.9...	340.89	1464.21	1...	H2-1
422	M236	L2.5x1.25x5	.113	14.952	55	.004	0	y	56	16726.289	29003.9...	340.89	1464.21	1...	H2-1
423	M593	PL2.25X5_...	.113	7.482	56	.018	7.482	y	56	13874.755	18984.3...	123.597	889.893	1...	H1-1b
424	M663	PL2.25X5_...	.113	7.482	55	.018	7.482	y	55	13874.755	18984.3...	123.597	889.893	1...	H1-1b
425	M177	L2.5x2.5x5	.112	11.879	55	.001	0	y	55	35341.325	39420	1096.767	2551.08	1...	H2-1
426	M258	L2.5x1.25x5	.111	14.952	55	.003	0	y	55	16726.289	29003.9...	340.89	1464.21	1...	H2-1
427	M278	L2.5x1.25x5	.111	14.952	55	.003	29.605	y	56	16726.289	29003.9...	340.89	1464.21	1...	H2-1
428	M178	L2.5x2.5x5	.110	8	55	.019	8	z	55	35341.325	39420	1096.767	2551.08	1...	H2-1
429	M170	PL2.25X6	.110	15.31	55	.026	0	y	55	9398.326	22788	177.75	1068.75	1...	H1-1b
430	M662	PL2.25X5_...	.110	7.482	55	.021	7.482	y	55	13874.755	18984.3...	123.597	889.893	1...	H1-1b
431	M592	PL2.25X5_...	.110	7.482	56	.021	7.482	y	56	13874.755	18984.3...	123.597	889.893	1...	H1-1b
432	M81	L2.5x2.5x5	.110	11.879	56	.001	0	z	55	35341.325	39420	1096.767	2551.08	1...	H2-1
433	M358	PL2.25X5_...	.110	23.938	55	.004	24.427	y	56	2210.434	18984.3...	123.597	844.74	1...	H1-1b
434	M152	PL2.25X6	.107	15.31	55	.027	0	y	55	9398.326	22788	177.75	1068.75	1...	H1-1b
435	M82	L2.5x2.5x5	.106	8	56	.020	8	z	56	35341.325	39420	1096.767	2551.08	1...	H2-1
436	M255	L2.5x1.25x5	.103	14.653	56	.001	0	y	55	16726.289	29003.9...	340.89	1464.21	1...	H2-1
437	M167	PL2.25X6	.103	15.152	55	.022	0	y	55	9570.668	22788	177.75	1068.75	1...	H1-1b
438	M241	L2.5x1.25x5	.102	14.952	55	.002	0	y	56	16726.253	29003.9...	340.89	1464.209	1...	H2-1
439	M71	PL2.25X6	.101	15.152	56	.021	0	y	56	9570.668	22788	177.75	1068.75	1...	H1-1b
440	M151	PL2.25X6	.099	15.152	55	.022	0	y	55	9570.668	22788	177.75	1068.75	1...	H1-1b
441	M149	PL2.25X6	.099	15.152	55	.021	0	y	55	9570.668	22788	177.75	1068.75	1...	H1-1b
442	M212	L2.5x1.25x5	.098	14.653	56	.002	29.605	y	56	16726.289	29003.9...	340.89	1464.21	1...	H2-1
443	M560	PL2.25X5_...	.098	16.057	56	.012	16.36	y	55	4996.593	18984.3...	123.597	889.893	1...	H1-1b
444	M55	PL2.25X6	.098	15.152	56	.021	0	y	56	9570.668	22788	177.75	1068.75	1...	H1-1b
445	M633	PL2.25X5_...	.098	16.057	56	.011	16.36	y	55	4996.593	18984.3...	123.597	889.893	1...	H1-1b
446	M169	PL2.25X6	.097	15.152	55	.023	0	y	55	9570.668	22788	177.75	1068.75	1...	H1-1b
447	M630	PL2.25X5_...	.097	16.057	55	.012	16.36	y	56	4996.593	18984.3...	123.597	889.893	1...	H1-1b
448	M563	PL2.25X5_...	.097	16.36	56	.012	16.36	y	56	6681.76	18984.3...	123.597	889.893	1...	H1-1b
449	M121	PL2.25X6	.096	15.152	55	.022	0	y	55	9570.668	22788	177.75	1068.75	1...	H1-1b
450	M53	PL2.25X6	.093	15.152	56	.020	0	y	56	9570.668	22788	177.75	1068.75	1...	H1-1b
451	M133	PL2.25X6	.093	15.152	55	.016	15.152	y	55	9570.668	22788	177.75	1068.75	1...	H1-1b
452	M73	PL2.25X6	.093	15.152	56	.022	0	y	56	9570.668	22788	177.75	1068.75	1...	H1-1b
453	M253	L2.5x1.25x5	.093	14.653	56	.003	0	y	55	16726.253	29003.9...	340.89	1464.209	1...	H2-1
454	M632	PL2.25X5_...	.092	16.36	56	.011	29.994	y	55	6681.76	18984.3...	123.597	889.893	1...	H1-1b
455	M562	PL2.25X5_...	.092	16.36	55	.011	29.994	y	56	6681.76	18984.3...	123.597	889.893	1...	H1-1b



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
456	M25	PL2.25X6	.092	15.15256	.021	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
457	M228	L2.5x1.25x5	.092	14.65356	.002	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1...H2-1
458	M37	PL2.25X6	.090	15.15256	.016	15.152	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
459	M257	L2.5x1.25x5	.089	14.65356	.003	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1...H2-1
460	M243	L2.5x1.25x5	.088	14.80255	.012	0	y 55	16910.982	29003.9...	340.89	1465.996	1...H2-1
461	M259	L2.5x1.25x5	.088	14.65356	.001	29.605	y 56	16726.253	29003.9...	340.89	1464.209	1...H2-1
462	M232	L2.5x1.25x5	.088	14.65356	.004	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1...H2-1
463	M150	PL2.25X6	.088	15.46155	.022	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
464	M103	PL2.25X6	.088	15.46155	.022	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
465	M168	PL2.25X6	.087	15.46155	.021	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
466	M7	PL2.25X6	.087	15.15256	.021	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
467	M115	PL2.25X6	.085	15.46155	.015	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
468	M72	PL2.25X6	.085	15.46156	.020	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
469	M139	PL2.25X6	.084	15.15256	.020	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
470	M19	PL2.25X6	.084	15.46156	.015	15.152	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
471	M43	PL2.25X6	.084	15.15255	.020	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
472	M54	PL2.25X6	.083	15.46156	.021	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
473	M239	L2.5x1.25x5	.081	14.95355	.007	29.607	y 55	16724.92	29003.9...	340.89	1464.196	1...H2-1
474	M270	L2.5x1.25x5	.081	14.95255	.002	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1...H2-1
475	M268	L2.5x1.25x5	.081	14.95255	.003	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1...H2-1
476	M277	L2.5x1.25x5	.081	14.65356	.003	0	y 56	16726.289	29003.9...	340.89	1464.21	1...H2-1
477	M157	PL2.25X6	.077	15.46156	.020	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
478	M148	PL2.25X6	.077	15.46155	.018	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
479	M166	PL2.25X6	.076	15.46155	.017	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
480	M52	PL2.25X6	.075	15.46156	.017	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
481	M283	L2.5x1.25x5	.074	14.95255	.002	29.605	y 55	16726.253	29003.9...	340.89	1464.209	1...H2-1
482	M70	PL2.25X6	.073	15.46156	.016	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
483	M113	PL2.25X6	.073	15.15256	.012	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
484	M171	PL2.25X6	.073	14.99755	.017	0	y 55	9741.485	22788	177.75	1068.75	1...H1-1b
485	M61	PL2.25X6	.072	15.15255	.019	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
486	M172	PL2.25X6	.072	15.15255	.003	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
487	M114	PL2.25X6	.072	15.15255	.014	15.152	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
488	M252	L2.5x1.25x5	.071	14.95256	.001	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1...H2-1
489	M104	PL2.25X6	.071	15.15255	.016	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
490	M132	PL2.25X6	.070	15.15256	.013	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
491	M18	PL2.25X6	.070	15.15256	.013	15.152	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
492	M209	L2.5x1.25x5	.070	14.95256	.002	0	y 55	16726.289	29003.9...	340.89	1464.21	1...H2-1
493	M279	L2.5x1.25x5	.070	14.65356	.002	0	y 55	16726.253	29003.9...	340.89	1464.209	1...H2-1
494	M165	PL2.25X6	.068	15.46155	.015	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
495	M69	PL2.25X6	.067	15.46156	.014	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
496	M8	PL2.25X6	.067	15.15256	.016	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
497	M17	PL2.25X6	.067	15.15255	.011	15.152	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
498	M122	PL2.25X6	.067	15.15255	.016	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
499	M280	L2.5x1.25x5	.067	14.95255	.001	0	y 56	16726.289	29003.9...	340.89	1464.21	1...H2-1
500	M256	L2.5x1.25x5	.066	14.95256	.001	0	y 56	16726.253	29003.9...	340.89	1464.209	1...H2-1
501	M36	PL2.25X6	.066	15.46156	.012	15.152	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
502	M285	L2.5x1.25x5	.065	14.95155	.002	29.603	y 56	16727.658	29003.9...	340.89	1464.223	1...H2-1
503	M226	L2.5x1.25x5	.065	14.65356	.002	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1...H2-1
504	M147	PL2.25X6	.065	15.46155	.014	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
505	M207	L2.5x1.25x5	.065	14.95256	.003	0	y 55	16726.253	29003.9...	340.89	1464.209	1...H2-1
506	M26	PL2.25X6	.065	15.15256	.016	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
507	M287	L2.5x1.25x5	.064	14.16255	.004	28.04	y 55	17701.112	29003.9...	340.89	1473.699	1...H2-1
508	M62	PL2.25X6	.064	15.15255	.015	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
509	M117	PL2.25X6	.064	14.99756	.007	0	y 56	9741.485	22788	177.75	1068.75	1...H1-1b
510	M130	PL2.25X6	.064	15.15256	.010	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
511	M158	PL2.25X6	.064	15.15256	.015	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
512	M223	L2.5x1.25x5	.064	14.95255	.002	29.605	y 56	16726.253	29003.9...	340.89	1464.209	1...H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
513	M275	L2.5x1.25x5	.063	14.65356	.003	0	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
514	M51	PL2.25X6	.063	15.46156	.013	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
515	M203	L2.5x1.25x5	.063	14.65356	.005	0	y 56	16726.253	29003.9...	340.89	1464.209	1... H2-1
516	M199	L2.5x1.25x5	.062	13.87856	.001	28.04	y 55	17701.112	29003.9...	340.89	1473.699	1... H2-1
517	M131	PL2.25X6	.061	15.46156	.013	15.152	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
518	M21	PL2.25X6	.061	14.99755	.006	0	y 55	9741.485	22788	177.75	1068.75	1... H1-1b
519	M35	PL2.25X6	.061	15.15256	.012	15.152	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
520	M254	L2.5x1.25x5	.060	14.95256	.001	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
521	M146	PL2.25X6	.060	15.46155	.012	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
522	M50	PL2.25X6	.059	15.46156	.011	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
523	M282	L2.5x1.25x5	.059	14.65355	.003	0	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
524	M211	L2.5x1.25x5	.058	14.95256	.003	0	y 55	16726.289	29003.9...	340.89	1464.21	1... H2-1
525	M34	PL2.25X6	.058	15.15255	.010	15.152	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
526	M218	L2.5x1.25x5	.058	14.95255	.002	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
527	M265	L2.5x1.25x5	.058	14.65356	.002	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
528	M123	PL2.25X6	.058	15.15255	.011	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
529	M140	PL2.25X6	.058	15.15256	.014	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
530	M135	PL2.25X6	.057	14.99756	.007	14.997	y 55	9741.485	22788	177.75	1068.75	1... H1-1b
531	M39	PL2.25X6	.057	14.99755	.007	14.997	y 56	9741.485	22788	177.75	1068.75	1... H1-1b
532	M44	PL2.25X6	.057	15.15255	.014	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
533	M112	PL2.25X6	.057	15.46156	.011	15.152	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
534	M164	PL2.25X6	.056	15.46155	.011	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
535	M273	L2.5x1.25x5	.056	14.65356	.001	0	y 55	16726.253	29003.9...	340.89	1464.209	1... H2-1
536	M201	L2.5x1.25x5	.055	14.64856	.006	0	y 56	16732.493	29003.9...	340.89	1464.27	1... H2-1
537	M68	PL2.25X6	.054	15.46156	.011	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
538	M27	PL2.25X6	.054	15.15256	.011	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
539	M105	PL2.25X6	.054	15.15255	.012	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
540	M16	PL2.25X6	.053	15.46155	.011	15.152	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
541	M111	PL2.25X6	.053	15.46156	.008	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
542	M163	PL2.25X6	.053	15.46155	.009	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
543	M67	PL2.25X6	.052	15.46156	.008	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
544	M240	L2.5x1.25x5	.052	14.65255	.006	29.603	y 55	16727.658	29003.9...	340.89	1464.223	1... H2-1
545	M9	PL2.25X6	.052	15.15256	.011	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
546	M237	L2.5x1.25x5	.052	14.65355	.005	0	y 56	16726.253	29003.9...	340.89	1464.209	1... H2-1
547	M129	PL2.25X6	.052	15.46156	.008	15.152	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
548	M45	PL2.25X6	.051	15.15255	.011	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
549	M216	L2.5x1.25x5	.051	14.95255	.001	0	y 55	16726.289	29003.9...	340.89	1464.21	1... H2-1
550	M141	PL2.25X6	.051	15.15256	.011	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
551	M154	PL2.25X6	.049	15.15255	.005	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
552	M145	PL2.25X6	.049	15.46155	.008	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
553	M75	PL2.25X6	.048	14.99756	.015	0	y 56	9741.485	22788	177.75	1068.75	1... H1-1b
554	M57	PL2.25X6	.048	14.99755	.014	0	y 56	9741.485	22788	177.75	1068.75	1... H1-1b
555	M269	L2.5x1.25x5	.048	14.65356	.001	0	y 55	16726.253	29003.9...	340.89	1464.209	1... H2-1
556	M33	PL2.25X6	.048	15.46155	.008	15.152	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
557	M15	PL2.25X6	.048	15.46155	.008	15.152	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
558	M286	L2.5x1.25x5	.048	14.65355	.002	29.605	y 55	16726.253	29003.9...	340.89	1464.209	1... H2-1
559	M220	L2.5x1.25x5	.047	14.95255	.003	0	y 56	16726.253	29003.9...	340.89	1464.209	1... H2-1
560	M159	PL2.25X6	.047	15.15256	.010	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
561	M49	PL2.25X6	.047	15.46156	.008	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
562	M153	PL2.25X6	.047	14.99755	.015	0	y 55	9741.485	22788	177.75	1068.75	1... H1-1b
563	M250	L2.5x1.25x5	.046	14.95255	.001	29.605	y 55	16726.289	29003.9...	340.89	1464.21	1... H2-1
564	M128	PL2.25X6	.046	15.46156	.006	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
565	M63	PL2.25X6	.046	15.15255	.010	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
566	M251	L2.5x1.25x5	.046	11.87956	.001	0	y 55	20199.84	29003.9...	340.89	1494.275	1... H2-1
567	M234	L2.5x1.25x5	.045	14.65355	.001	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
568	M76	PL2.25X6	.045	15.15256	.004	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
569	M267	L2.5x1.25x5	.045	14.65356	.004	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y [lb-ft]	phi*Mn z [lb-ft]	Cb	Eqn
570	M288	L2.5x1.25x5	.045	14.23255	.006	0	y 55	17255.868	29003.9...	340.89	1469.345	1... H2-1
571	M229	L2.5x1.25x5	.044	14.95256	.003	0	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
572	M227	L2.5x1.25x5	.044	14.95256	.002	0	y 56	16726.253	29003.9...	340.89	1464.209	1... H2-1
573	M274	L2.5x1.25x5	.044	14.95256	.002	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
574	M118	PL2.25X6	.044	15.15255	.003	15.152	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
575	M242	L2.5x1.25x5	.044	13.87855	.002	0	y 56	17701.112	29003.9...	340.89	1473.699	1... H2-1
576	M110	PL2.25X6	.043	15.46156	.007	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
577	M263	L2.5x1.25x5	.043	14.95255	.003	29.605	y 55	16726.253	29003.9...	340.89	1464.209	1... H2-1
578	M284	L2.5x1.25x5	.043	14.65455	.002	29.607	y 55	16724.92	29003.9...	340.89	1464.196	1... H2-1
579	M205	L2.5x1.25x5	.042	11.87955	.001	0	y 56	20199.84	29003.9...	340.89	1494.275	1... H2-1
580	M32	PL2.25X6	.041	15.46155	.006	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
581	M106	PL2.25X6	.041	15.15255	.007	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
582	M22	PL2.25X6	.041	15.15256	.003	15.152	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
583	M58	PL2.25X6	.040	15.15256	.004	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
584	M109	PL2.25X6	.040	15.46156	.004	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
585	M222	L2.5x1.25x5	.040	14.65355	.004	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
586	M230	L2.5x1.25x5	.040	14.65356	.001	0	y 55	16726.253	29003.9...	340.89	1464.209	1... H2-1
587	M248	L2.5x1.25x5	.040	14.65256	.002	29.603	y 55	16727.658	29003.9...	340.89	1464.223	1... H2-1
588	M144	PL2.25X6	.040	15.46155	.005	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
589	M14	PL2.25X6	.040	15.46155	.006	15.152	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
590	M48	PL2.25X6	.040	15.46156	.005	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
591	M40	PL2.25X6	.039	15.15256	.004	15.461	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
592	M162	PL2.25X6	.039	15.46155	.005	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
593	M124	PL2.25X6	.039	15.15255	.007	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
594	M136	PL2.25X6	.039	15.15255	.004	15.461	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
595	M215	L2.5x1.25x5	.038	11.87955	.002	0	y 56	20199.84	29003.9...	340.89	1494.275	1... H2-1
596	M314	L3x2.5x5	.038	22.05656	.002	41.991	z 56	32987.716	44010	1270.778	2996.056	1... H2-1
597	M10	PL2.25X6	.038	15.15256	.006	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
598	M66	PL2.25X6	.038	15.46156	.004	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
599	M202	L2.5x1.25x5	.038	14.95156	.006	0	y 56	16727.658	29003.9...	340.89	1464.223	1... H2-1
600	M244	L2.5x1.25x5	.037	14.53255	.005	0	y 56	17244.126	29003.9...	340.89	1469.231	1... H2-1
601	M28	PL2.25X6	.037	15.15256	.007	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
602	M246	L2.5x1.25x5	.037	14.64756	.002	29.593	y 55	16733.861	29003.9...	340.89	1464.283	1... H2-1
603	M64	PL2.25X6	.037	15.15255	.007	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
604	M224	L2.5x1.25x5	.036	14.65355	.001	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
605	M127	PL2.25X6	.036	15.46156	.004	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
606	M160	PL2.25X6	.036	15.15256	.007	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
607	M13	PL2.25X6	.035	15.46155	.004	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
608	M142	PL2.25X6	.034	15.15256	.006	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
609	M46	PL2.25X6	.033	15.15255	.006	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
610	M219	L2.5x1.25x5	.033	14.65355	.002	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
611	M31	PL2.25X6	.033	15.46155	.004	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
612	M266	L2.5x1.25x5	.033	14.95256	.002	0	y 56	16726.253	29003.9...	340.89	1464.209	1... H2-1
613	M217	L2.5x1.25x5	.032	14.65355	.002	29.605	y 55	16726.253	29003.9...	340.89	1464.209	1... H2-1
614	M261	L2.5x1.25x5	.032	11.87956	.001	0	y 56	20199.84	29003.9...	340.89	1494.275	1... H2-1
615	M198	L2.5x1.25x5	.032	14.81256	.011	0	y 56	16898.761	29003.9...	340.89	1465.878	1... H2-1
616	M262	L2.5x1.25x5	.031	14.65355	.002	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
617	M125	PL2.25X6	.029	15.15255	.003	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
618	M221	L2.5x1.25x5	.029	14.95255	.002	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
619	M161	PL2.25X6	.029	15.46155	.003	15.461	y 55	9570.668	22788	177.75	1068.75	2... H1-1b
620	M65	PL2.25X6	.029	15.46156	.003	15.461	y 56	9570.668	22788	177.75	1068.75	2... H1-1b
621	M264	L2.5x1.25x5	.029	14.65355	.002	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
622	M249	L2.5x1.25x5	.029	14.95256	.003	0	y 56	16726.253	29003.9...	340.89	1464.209	1... H2-1
623	M126	PL2.25X6	.029	15.46156	.002	30.614	y 55	9570.668	22788	177.75	1068.75	2... H1-1b
624	M247	L2.5x1.25x5	.028	14.94756	.002	0	y 56	16732.493	29003.9...	340.89	1464.27	1... H2-1
625	M143	PL2.25X6	.028	15.46155	.004	0	y 56	9570.668	22788	177.75	1068.75	2... H1-1b
626	M108	PL2.25X6	.028	15.46156	.003	15.461	y 56	9570.668	22788	177.75	1068.75	2... H1-1b



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.03
 Model Name : Catenary Structure Type 3

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [...]	phi*Mn y...	phi*Mn z...	Cb	Eqn			
627	M47	PL2.25X6	.027	15.461	56	.003	0	y	55	9570.668	22788	177.75	1068.75	2...	H1-1b
628	M200	L2.5x1.25x5	.026	14.946	56	.003	29.593	y	55	16733.861	29003.9...	340.89	1464.283	1...	H2-1
629	M107	PL2.25X6	.026	15.152	55	.003	0	y	55	9570.668	22788	177.75	1068.75	1...	H1-1b
630	M29	PL2.25X6	.026	15.152	56	.003	0	y	56	9570.668	22788	177.75	1068.75	1...	H1-1b
631	M276	L2.5x1.25x5	.026	14.952	56	.001	29.605	y	56	16726.253	29003.9...	340.89	1464.209	1...	H2-1
632	M272	L2.5x1.25x5	.026	14.952	56	.002	29.605	y	56	16726.289	29003.9...	340.89	1464.21	1...	H2-1
633	M245	L2.5x1.25x5	.025	14.162	56	.004	0	y	56	17701.112	29003.9...	340.89	1473.699	1...	H2-1
634	M12	PL2.25X6	.025	15.461	55	.003	15.461	y	55	9570.668	22788	177.75	1068.75	3...	H1-1b
635	M11	PL2.25X6	.025	15.152	56	.003	0	y	56	9570.668	22788	177.75	1068.75	1...	H1-1b
636	M30	PL2.25X6	.024	15.461	55	.002	30.614	y	56	9570.668	22788	177.75	1068.75	2...	H1-1b
637	M299	L3x2.5x5	.023	19.935	56	.001	0	z	56	32987.716	44010	1270.778	2996.056	1...	H2-1
638	M204	L2.5x1.25x5	.022	14.952	56	.002	29.605	y	56	16726.289	29003.9...	340.89	1464.21	1...	H2-1
639	M351	L3x2.5x5	.020	19.935	56	.003	0	z	56	32987.716	44010	1270.778	2996.056	1...	H2-1
640	M300	L3x2.5x5	.019	22.056	55	.001	0	z	56	32987.716	44010	1270.778	2982.261	1...	H2-1
641	M349	L3x2.5x5	.018	19.935	55	.002	0	z	55	32987.716	44010	1270.778	2982.261	1...	H2-1
642	M350	L3x2.5x5	.018	22.056	56	.002	0	z	56	32987.716	44010	1270.778	2996.056	1...	H2-1
643	M313	L3x2.5x5	.017	22.056	56	.002	0	z	55	32987.716	44010	1270.778	2996.056	1...	H2-1
644	M225	L2.5x1.25x5	.014	11.879	55	.000	0	y	56	20199.84	29003.9...	340.89	1494.275	1...	H2-1
645	M191	PL5x0.3125	.014	11.879	56	.001	0	y	55	4987.327	42187.5	274.658	3911.694	1...	H1-1b
646	M94	PL5x0.3125	.014	12.121	55	.001	0	y	56	4987.327	42187.5	274.658	3911.694	1...	H1-1b
647	M271	L2.5x1.25x5	.012	11.879	56	.000	0	y	55	20199.84	29003.9...	340.89	1494.275	1...	H2-1
648	M281	L2.5x1.25x5	.012	12.121	56	.002	0	y	55	20199.84	29003.9...	340.89	1494.275	1...	H2-1
649	M235	L2.5x1.25x5	.010	11.879	55	.001	0	y	55	20199.84	29003.9...	340.89	1494.275	1...	H2-1
650	M352	L3x2.5x5	.004	19.935	55	.003	41.991	z	56	32987.716	44010	1270.778	2982.261	1...	H2-1



Milvon to West River Catenary Structure Assessment

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-L
STRUCTURE TYPE 3 FIELD CONDITION NESC 1961
COMPLETE MEMBER RESULTS



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.03
 Model Name : Catenary Structure Type 3

Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
1	M496	PL2.25X5	1.459	9.647	55 .044	9.848	y 56	11695.943	18981	123.75	891	1...	H1-1a
2	M403	PL2.25X5	1.428	9.647	56 .043	9.848	y 55	11695.944	18981	123.75	891	1...	H1-1a
3	M462	PL2.25X5	1.408	9.647	55 .044	19.896	y 55	11695.943	18981	123.75	891	1...	H1-1a
4	M361	PL2.25X5	1.382	9.647	56 .043	19.896	y 56	11695.943	18981	123.75	891	1...	H1-1a
5	M446	PL2.25X5	1.369	9.875	55 .043	0	y 55	11413.851	18981	123.75	891	1...	H1-1a
6	M379	PL2.25X5	1.346	9.875	56 .042	0	y 56	11413.851	18981	123.75	891	1...	H1-1a
7	M480	PL2.25X5	1.339	9.875	55 .041	0	y 55	11413.851	18981	123.75	891	1...	H1-1a
8	M3	L5x5x8	1.322	345....	56 .072	368....	z 56	127826.437	129330	7731.399	10928.3...	1	H2-1
9	M421	PL2.25X5	1.313	9.875	56 .040	0	y 56	11413.851	18981	123.75	891	1...	H1-1a
10	M4	L5x5x8	1.310	26.31	56 .079	22.552	y 56	127826.437	129330	7731.399	10928.3...	1	H2-1
11	M2	L5x5x8	1.287	345....	55 .078	349....	y 55	127826.437	129330	7731.399	10928.3...	1	H2-1
12	M1	L5x5x8	1.278	26.31	55 .071	3.759	z 55	127826.437	129330	7731.399	10928.3...	1	H2-1
13	M498	PL2.25X5	1.275	10.109	55 .038	0	y 55	11126.204	18981	123.75	891	1...	H1-1a
14	M464	PL2.25X5	1.268	10.109	55 .037	0	y 55	11126.204	18981	123.75	891	1...	H1-1a
15	M479	PL2.25X5	1.263	9.647	56 .052	9.848	y 55	11695.943	18981	123.75	891	1...	H1-1a
16	M363	PL2.25X5	1.246	10.109	56 .036	0	y 56	11126.204	18981	123.75	891	1...	H1-1a
17	M405	PL2.25X5	1.245	10.109	56 .037	0	y 56	11126.204	18981	123.75	891	1...	H1-1a
18	M445	PL2.25X5	1.237	9.848	56 .042	9.848	y 55	11130.129	18981	123.75	891	1...	H1-1a
19	M420	PL2.25X5	1.228	9.647	55 .050	9.848	y 56	11695.943	18981	123.75	891	1...	H1-1a
20	M99	L5x5x8	1.225	26.31	55 .071	3.759	z 55	127826.437	129330	7731.399	15119.54	2...	H2-1
21	M482	PL2.25X5	1.222	10.348	55 .028	0	y 55	10833.703	18981	123.75	891	1...	H1-1a
22	M378	PL2.25X5	1.215	9.848	55 .042	9.848	y 56	11130.129	18981	123.75	891	1...	H1-1a
23	M463	PL2.25X5	1.208	10.081	56 .041	10.081	y 55	10862.07	18981	123.75	891	1...	H1-1a
24	M423	PL2.25X5	1.199	10.348	56 .028	0	y 56	10833.703	18981	123.75	891	1...	H1-1a
25	M310	L2.5X1.5X5	1.191	22.214	56 .004	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...	H2-1
26	M334	L2.5X1.5X5	1.191	27.229	55 .002	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
27	M448	PL2.25X5	1.191	10.348	55 .027	0	y 55	10833.703	18981	123.75	891	1...	H1-1a
28	M362	PL2.25X5	1.190	10.081	55 .041	10.081	y 56	10862.07	18981	123.75	891	1...	H1-1a
29	M97	L5x5x8	1.190	345....	56 .072	368....	z 56	127826.437	129330	7731.399	15288.1...	2...	H2-1
30	M338	L2.5X1.5X5	1.182	27.229	55 .002	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
31	M341	L2.5X1.5X5	1.173	27.23	55 .001	49.922	y 55	10829.35	31113.2...	475.557	1510.593	1...	H2-1
32	M381	PL2.25X5	1.170	10.348	56 .027	0	y 56	10833.703	18981	123.75	891	1...	H1-1a
33	M497	PL2.25X5	1.165	9.875	56 .039	10.081	y 55	11413.851	18981	123.75	891	1...	H1-1a
34	M98	L5x5x8	1.162	26.31	56 .079	22.552	y 56	127826.437	129330	7731.399	15616.73	3...	H2-1
35	M100	L5x5x8	1.161	345....	55 .078	349....	y 55	127826.437	129330	7731.399	15505.1...	2...	H2-1
36	M196	L5x3.5x6	1.155	46.063	55 .096	713....	y 56	74532.516	82350	3178.657	7145.709	1	H2-1
37	M500	PL2.25X5	1.141	10.592	55 .019	0	y 55	10537.06	18981	123.75	891	1...	H1-1a
38	M466	PL2.25X5	1.140	10.813	55 .019	0	y 55	10022.861	18981	123.75	891	1...	H1-1a
39	M197	L5x3.5x6	1.135	713....	55 .084	399....	y 56	74532.516	82350	3178.657	7145.709	1	H2-1
40	M404	PL2.25X5	1.135	9.875	55 .038	10.081	y 56	11413.851	18981	123.75	891	1...	H1-1a
41	M342	L2.5X1.5X5	1.131	27.23	55 .001	49.922	y 56	10829.35	31113.2...	475.557	1510.593	1...	H2-1
42	M365	PL2.25X5	1.123	10.813	56 .019	0	y 56	10022.861	18981	123.75	891	1...	H1-1a
43	M407	PL2.25X5	1.123	10.813	56 .019	0	y 56	10022.861	18981	123.75	891	1...	H1-1a
44	M447	PL2.25X5	1.114	10.109	56 .034	0	y 56	11126.204	18981	123.75	891	1...	H1-1a
45	M119	PL2.25X5	1.105	15.461	55 .034	0	y 55	5785.218	18981	123.75	891	1...	H1-1a
46	M295	L2.5X1.5X5	1.104	22.213	56 .001	48.869	y 56	11300.937	31113.2...	475.557	1515.62	1...	H2-1
47	M23	PL2.25X5	1.099	15.461	56 .033	0	y 56	5785.218	18981	123.75	891	1...	H1-1a
48	M481	PL2.25X5	1.096	10.109	56 .033	0	y 56	11126.204	18981	123.75	891	1...	H1-1a
49	M380	PL2.25X5	1.093	10.109	55 .033	0	y 55	11126.204	18981	123.75	891	1...	H1-1a
50	M450	PL2.25X5	1.091	11.066	55 .014	0	y 55	9734.36	18981	123.75	891	1...	H1-1a
51	M484	PL2.25X5	1.089	11.066	55 .015	0	y 55	9734.36	18981	123.75	891	1...	H1-1a
52	M535	6H25	1.080	43.921	56 .289	41.725	y 56	32380.313	215681.4	21582	40822.49	1	H1-1b
53	M605	6H25	1.080	43.921	55 .289	41.725	y 55	32380.313	215681.4	21582	40822.49	1	H1-1b
54	M499	PL2.25X5	1.079	10.564	56 .025	0	y 56	10307.552	18981	123.75	891	1...	H1-1a
55	M325	L2.5X1.5X5	1.077	27.229	55 .003	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
56	M383	PL2.25X5	1.075	11.066	56 .014	0	y 56	9734.36	18981	123.75	891	1...	H1-1a



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.03
 Model Name : Catenary Structure Type 3

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt	phi*Mn y	phi*Mn z	Cb	Eqn	
57	M425	PL2.25X5	1.074	11.066	56	.014	0	y 56	9734.36	18981	123.75	891	1...H1-1a
58	M422	PL2.25X5	1.068	10.32	55	.031	0	y 55	10587.579	18981	123.75	891	1...H1-1a
59	M476	PL2.25X5	1.059	13.579	55	.007	13.579	y 55	6865.515	18981	123.75	891	1...H1-1a
60	M406	PL2.25X5	1.056	10.564	55	.024	10.564	y 56	10307.552	18981	123.75	891	1...H1-1a
61	M502	PL2.25X5	1.051	11.323	55	.011	0	y 55	9442.879	18981	123.75	891	2...H1-1a
62	M468	PL2.25X5	1.050	11.323	55	.010	0	y 55	9442.879	18981	123.75	891	1...H1-1a
63	M302	L2.5X1.5X5	1.048	22.214	56	.001	0	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
64	M465	PL2.25X5	1.045	10.348	56	.025	0	y 56	10833.703	18981	123.75	891	1...H1-1a
65	M306	L2.5X1.5X5	1.044	22.214	56	.001	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...H2-1
66	M155	PL2.25X5	1.041	15.461	56	.031	0	y 56	5785.218	18981	123.75	891	1...H1-1a
67	M409	PL2.25X5	1.037	11.323	56	.010	0	y 56	9442.879	18981	123.75	891	1...H1-1a
68	M603	L6x4x6	1.036	71.273	55	.037	71.273	y 55	28958.752	97470	4257.614	12612.4...	1 H2-1
69	M533	L6x4x6	1.036	96.727	56	.037	96.727	y 55	28958.752	97470	4257.614	12612.4...	1 H2-1
70	M367	PL2.25X5	1.033	11.323	56	.010	0	y 56	9442.879	18981	123.75	891	1...H1-1a
71	M321	L2.5X1.5X5	1.033	27.229	55	.003	0	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
72	M494	PL2.25X5	1.031	13.785	55	.007	13.785	y 55	6796.946	18981	123.75	891	1...H1-1a
73	M59	PL2.25X5	1.029	15.461	55	.030	15.152	y 56	5785.218	18981	123.75	891	1...H1-1a
74	M364	PL2.25X5	1.026	10.564	55	.025	0	y 55	10307.552	18981	123.75	891	1...H1-1a
75	M510	PL2.25X5	1.023	13.501	55	.008	13.501	y 55	7080.374	18981	123.75	891	1...H1-1a
76	M512	PL2.25X5	1.022	14.071	55	.008	13.784	y 55	6528.15	18981	123.75	891	1...H1-1a
77	M478	PL2.25X5	1.021	14.071	55	.007	0	y 56	6528.15	18981	123.75	891	1...H1-1a
78	M486	PL2.25X5	1.017	11.584	55	.007	0	y 55	9149.226	18981	123.75	891	2...H1-1a
79	M452	PL2.25X5	1.017	11.584	55	.007	0	y 55	9149.226	18981	123.75	891	2...H1-1a
80	M492	PL2.25X5	1.016	13.219	55	.007	13.219	y 55	7379.277	18981	123.75	891	1...H1-1a
81	M483	PL2.25X5	1.015	10.813	56	.017	0	y 56	10022.861	18981	123.75	891	1...H1-1a
82	M458	PL2.25X5	1.015	13.219	55	.007	13.219	y 55	7379.277	18981	123.75	891	1...H1-1a
83	M393	PL2.25X5	1.012	13.785	56	.006	13.785	y 56	6796.946	18981	123.75	891	1...H1-1a
84	M435	PL2.25X5	1.011	13.785	56	.007	13.785	y 56	6796.946	18981	123.75	891	1...H1-1a
85	M449	PL2.25X5	1.011	10.813	56	.018	0	y 56	10022.861	18981	123.75	891	1.5 H1-1a
86	M508	PL2.25X5	1.011	12.94	55	.007	12.94	y 55	7674.832	18981	123.75	891	1...H1-1a
87	M474	PL2.25X5	1.011	12.94	55	.006	12.94	y 55	7674.832	18981	123.75	891	1...H1-1a
88	M460	PL2.25X5	1.009	14.066	55	.007	14.066	y 55	6937.777	18981	123.75	891	1...H1-1a
89	M490	PL2.25X5	1.007	12.663	55	.006	12.663	y 55	7968.15	18981	123.75	891	1...H1-1a
90	M456	PL2.25X5	1.006	12.663	55	.005	12.663	y 55	7968.15	18981	123.75	891	1...H1-1a
91	M506	PL2.25X5	1.005	12.388	55	.005	12.388	y 55	8262.932	18981	123.75	891	1...H1-1a
92	M488	PL2.25X5	1.004	12.117	55	.003	12.117	y 55	8558.51	18981	123.75	891	1...H1-1a
93	M504	PL2.25X5	1.004	11.849	55	.004	0	y 55	8854.184	18981	123.75	891	2...H1-1a
94	M375	PL2.25X5	1.004	13.501	56	.006	13.501	y 56	7080.374	18981	123.75	891	1...H1-1a
95	M427	PL2.25X5	1.003	11.584	56	.006	0	y 56	9149.226	18981	123.75	891	2...H1-1a
96	M472	PL2.25X5	1.003	12.388	55	.004	12.388	y 55	8262.932	18981	123.75	891	1...H1-1a
97	M417	PL2.25X5	1.003	13.501	56	.008	13.501	y 56	7080.374	18981	123.75	891	1...H1-1a
98	M377	PL2.25X5	1.003	14.071	56	.007	13.784	y 56	6528.15	18981	123.75	891	1...H1-1a
99	M454	PL2.25X5	1.002	12.117	55	.003	12.117	y 55	8558.51	18981	123.75	891	1...H1-1a
100	M419	PL2.25X5	1.002	14.071	56	.008	13.784	y 56	6528.15	18981	123.75	891	1...H1-1a
101	M470	PL2.25X5	1.002	11.849	55	.004	0	y 55	8854.184	18981	123.75	891	2...H1-1a
102	M385	PL2.25X5	1.001	11.584	56	.007	0	y 56	9149.226	18981	123.75	891	2...H1-1a
103	M337	L2.5X1.5X5	1.000	27.229	55	.001	0	y 55	10830.232	31113.2...	475.557	1510.603	1...H2-1
104	M391	PL2.25X5	.997	13.219	56	.006	13.219	y 56	7379.277	18981	123.75	891	1...H1-1a
105	M433	PL2.25X5	.997	13.219	56	.007	13.219	y 56	7379.277	18981	123.75	891	1...H1-1a
106	M382	PL2.25X5	.995	10.813	55	.019	0	y 55	10022.861	18981	123.75	891	1...H1-1a
107	M424	PL2.25X5	.995	10.813	55	.017	10.813	y 56	10022.861	18981	123.75	891	1...H1-1a
108	M373	PL2.25X5	.991	12.94	56	.006	12.94	y 56	7674.832	18981	123.75	891	1...H1-1a
109	M415	PL2.25X5	.991	12.94	56	.007	12.94	y 56	7674.832	18981	123.75	891	1...H1-1a
110	M333	L2.5X1.5X5	.987	27.229	55	.002	0	y 55	10830.232	31113.2...	475.557	1510.603	1...H2-1
111	M389	PL2.25X5	.987	12.663	56	.005	12.663	y 56	7968.15	18981	123.75	891	1...H1-1a
112	M431	PL2.25X5	.986	12.663	56	.006	12.663	y 56	7968.15	18981	123.75	891	1...H1-1a
113	M413	PL2.25X5	.984	12.388	56	.005	12.388	y 56	8262.932	18981	123.75	891	1...H1-1a



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.03
 Model Name : Catenary Structure Type 3

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
114	M371	PL2.25X5	.984	12.388	56	.004	12.388	y 56	8262.932	18981	123.75	891	1...H1-1a
115	M429	PL2.25X5	.984	12.117	56	.003	12.117	y 56	8558.51	18981	123.75	891	1...H1-1a
116	M387	PL2.25X5	.983	12.117	56	.002	12.117	y 55	8558.51	18981	123.75	891	1...H1-1a
117	M411	PL2.25X5	.983	11.849	56	.004	11.849	y 55	8854.184	18981	123.75	891	2...H1-1a
118	M369	PL2.25X5	.982	11.849	56	.004	11.849	y 55	8854.184	18981	123.75	891	2...H1-1a
119	M323	L2.5X1.5X5	.979	22.214	56	.003	0	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
120	M195	L5x3.5x7	.971	46.182	55	.069	508	z 55	86264.635	95238.2...	3723.228	7996.163	1 H2-1
121	M501	PL2.25X5	.968	11.066	56	.014	0	y 56	9734.36	18981	123.75	891	1...H1-1a
122	M467	PL2.25X5	.968	11.066	56	.014	0	y 56	9734.36	18981	123.75	891	1...H1-1a
123	M330	L2.5X1.5X5	.968	27.229	55	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
124	M345	L2.5X1.5X5	.967	26.652	55	.004	0	y 55	12161.091	31113.2...	475.557	1524.092	1...H2-1
125	M194	L5x3.5x7	.964	715...	55	.122	538...	y 56	86264.635	95238.2...	3723.228	7996.163	1 H2-1
126	M366	PL2.25X5	.953	11.066	55	.014	0	y 55	9734.36	18981	123.75	891	1...H1-1a
127	M408	PL2.25X5	.948	11.066	55	.012	0	y 55	9734.36	18981	123.75	891	1...H1-1a
128	M346	L2.5X1.5X5	.946	26.652	55	.002	47.116	y 55	12161.091	31113.2...	475.557	1524.092	1...H2-1
129	M485	PL2.25X5	.934	11.323	56	.010	0	y 56	9442.879	18981	123.75	891	1...H1-1a
130	M451	PL2.25X5	.931	11.323	56	.010	0	y 56	9442.879	18981	123.75	891	1...H1-1a
131	M291	L2.5X1.5X5	.931	19.62	56	.003	46.247	y 56	12586.181	31113.2...	475.557	1528.342	1...H2-1
132	M384	PL2.25X5	.916	11.323	55	.011	0	y 55	9442.879	18981	123.75	891	1...H1-1a
133	M426	PL2.25X5	.916	11.323	55	.008	0	y 55	9442.879	18981	123.75	891	1...H1-1a
134	M503	PL2.25X5	.905	11.584	56	.007	0	y 56	9149.226	18981	123.75	891	1...H1-1a
135	M469	PL2.25X5	.903	11.584	56	.007	0	y 56	9149.226	18981	123.75	891	1...H1-1a
136	M329	L2.5X1.5X5	.902	27.229	55	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
137	M477	PL2.25X5	.895	13.716	56	.007	0	y 55	6731.711	18981	123.75	891	1...H1-1a
138	M511	PL2.25X5	.892	13.785	56	.008	27.851	y 55	6796.946	18981	123.75	891	1...H1-1a
139	M296	L2.5X1.5X5	.889	22.213	56	.001	48.869	y 55	11300.937	31113.2...	475.557	1515.62	1...H2-1
140	M461	PL2.25X5	.889	14.071	56	.007	14.071	y 56	6528.15	18981	123.75	891	1...H1-1a
141	M368	PL2.25X5	.888	11.584	55	.008	0	y 55	9149.226	18981	123.75	891	1...H1-1a
142	M410	PL2.25X5	.888	11.584	55	.005	11.584	y 56	9149.226	18981	123.75	891	1...H1-1a
143	M495	PL2.25X5	.887	14.071	56	.008	28.43	y 55	6528.15	18981	123.75	891	1...H1-1a
144	M493	PL2.25X5	.885	13.501	56	.007	27.277	y 55	7080.374	18981	123.75	891	1...H1-1a
145	M301	L2.5X1.5X5	.882	22.214	56	.001	0	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
146	M487	PL2.25X5	.881	11.849	56	.004	0	y 56	8854.184	18981	123.75	891	1...H1-1a
147	M475	PL2.25X5	.881	13.219	56	.006	0	y 55	7379.277	18981	123.75	891	1...H1-1a
148	M453	PL2.25X5	.880	11.849	56	.004	0	y 56	8854.184	18981	123.75	891	2...H1-1a
149	M509	PL2.25X5	.879	13.219	56	.007	0	y 55	7379.277	18981	123.75	891	1...H1-1a
150	M376	PL2.25X5	.877	13.785	55	.006	27.851	y 56	6796.946	18981	123.75	891	1...H1-1a
151	M457	PL2.25X5	.875	12.94	56	.006	0	y 55	7674.832	18981	123.75	891	1...H1-1a
152	M491	PL2.25X5	.873	12.94	56	.006	0	y 55	7674.832	18981	123.75	891	1...H1-1a
153	M459	PL2.25X5	.872	13.776	56	.007	13.776	y 56	7215.985	18981	123.75	891	1...H1-1a
154	M394	PL2.25X5	.871	14.071	55	.007	28.43	y 56	6528.15	18981	123.75	891	1...H1-1a
155	M473	PL2.25X5	.871	12.663	56	.005	0	y 55	7968.15	18981	123.75	891	1...H1-1a
156	M305	L2.5X1.5X5	.870	22.214	56	.001	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...H2-1
157	M392	PL2.25X5	.869	13.501	55	.006	27.277	y 56	7080.374	18981	123.75	891	1...H1-1a
158	M418	PL2.25X5	.869	13.785	55	.008	27.851	y 56	6796.946	18981	123.75	891	1...H1-1a
159	M507	PL2.25X5	.868	12.663	56	.005	0	y 55	7968.15	18981	123.75	891	1...H1-1a
160	M455	PL2.25X5	.868	12.388	56	.004	0	y 55	8262.932	18981	123.75	891	1...H1-1a
161	M471	PL2.25X5	.866	12.117	56	.003	0	y 55	8558.51	18981	123.75	891	2...H1-1a
162	M386	PL2.25X5	.866	11.849	55	.005	0	y 55	8854.184	18981	123.75	891	1...H1-1a
163	M428	PL2.25X5	.865	11.849	55	.004	11.849	y 56	8854.184	18981	123.75	891	1...H1-1a
164	M489	PL2.25X5	.864	12.388	56	.004	0	y 55	8262.932	18981	123.75	891	1...H1-1a
165	M374	PL2.25X5	.863	13.219	55	.006	0	y 56	7379.277	18981	123.75	891	1...H1-1a
166	M436	PL2.25X5	.863	14.071	55	.008	28.43	y 56	6528.15	18981	123.75	891	1...H1-1a
167	M505	PL2.25X5	.863	12.117	56	.003	12.117	y 55	8558.51	18981	123.75	891	2...H1-1a
168	M434	PL2.25X5	.861	13.501	55	.008	27.277	y 56	7080.374	18981	123.75	891	1...H1-1a
169	M317	L2.5X1.5X5	.861	27.229	55	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
170	M390	PL2.25X5	.858	12.94	55	.005	0	y 56	7674.832	18981	123.75	891	1...H1-1a



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.03
 Model Name : Catenary Structure Type 3

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
171	M416	PL2.25X5	.855	13.21955	.007	26.708	y 56	7379.277	18981	123.75	891	1...H1-1a
172	M372	PL2.25X5	.853	12.66355	.004	0	y 56	7968.15	18981	123.75	891	1...H1-1a
173	M388	PL2.25X5	.850	12.38855	.004	0	y 56	8262.932	18981	123.75	891	1...H1-1a
174	M432	PL2.25X5	.850	12.9455	.006	0	y 56	7674.832	18981	123.75	891	1...H1-1a
175	M370	PL2.25X5	.848	12.11755	.003	0	y 55	8558.51	18981	123.75	891	2...H1-1a
176	M412	PL2.25X5	.846	12.11755	.003	12.117	y 56	8558.51	18981	123.75	891	1...H1-1a
177	M316	L2.5X1.5X5	.845	22.21456	.001	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
178	M414	PL2.25X5	.845	12.66355	.005	0	y 56	7968.15	18981	123.75	891	1...H1-1a
179	M430	PL2.25X5	.841	12.38855	.004	0	y 56	8262.932	18981	123.75	891	1...H1-1a
180	M319	L2.5X1.5X5	.840	22.21456	.002	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...H2-1
181	M312	L2.5X1.5X5	.836	27.22955	.002	0	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
182	M308	L2.5X1.5X5	.765	27.22955	.004	49.92	y 55	10830.232	31113.2...	475.557	1510.603	1...H2-1
183	M336	L2.5X1.5X5	.765	22.21456	.002	0	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
184	M326	L2.5X1.5X5	.761	27.22955	.002	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
185	M292	L2.5X1.5X5	.748	19.6256	.002	0	y 55	12586.181	31113.2...	475.557	1528.342	1...H2-1
186	M520	PL2.25X6	.739	15.23555	.008	15.235	y 55	9181.303	22781.25	177.98	1067.87	1...H1-1a
187	M528	PL2.25X6	.724	15.23555	.008	15.235	y 55	9181.303	22781.25	177.98	1067.87	1...H1-1a
188	M320	L2.5X1.5X5	.713	22.21456	.001	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...H2-1
189	M398	PL2.25X6	.712	15.23556	.009	15.235	y 56	9181.303	22781.25	177.98	1067.87	1...H1-1a
190	M440	PL2.25X6	.698	15.23556	.008	15.235	y 56	9181.303	22781.25	177.98	1067.87	1...H1-1a
191	M322	L2.5X1.5X5	.690	27.22955	.003	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
192	M304	L2.5X1.5X5	.689	27.22955	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
193	M513	PL2.25X6	.685	14.3655	.008	0	y 56	10145.853	22781.25	177.98	1067.87	1...H1-1a
194	M600	L3x2.5x5	.683	72.9455	.064	108....	z 55	40948.468	44010	1270.778	2996.056	1 H2-1
195	M530	L3x2.5x5	.683	68.64956	.064	32.894	z 56	40948.468	44010	1270.778	2996.056	1 H2-1
196	M315	L2.5X1.5X5	.682	22.21456	.001	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
197	M521	PL2.25X6	.679	14.3655	.009	14.067	y 55	10145.853	22781.25	177.98	1067.87	1...H1-1a
198	M529	L3x2.5x5	.678	72.9456	.061	108....	z 56	40948.468	44010	1270.778	2996.056	1 H2-1
199	M599	L3x2.5x5	.677	68.64955	.061	32.894	z 55	40948.468	44010	1270.778	2996.056	1 H2-1
200	M526	PL2.25X6	.672	14.63255	.009	14.333	y 55	9843.112	22781.25	177.98	1067.87	1...H1-1a
201	M399	PL2.25X6	.672	14.3656	.007	14.067	y 56	10145.853	22781.25	177.98	1067.87	1...H1-1a
202	M518	PL2.25X6	.669	14.63255	.008	14.333	y 55	9843.112	22781.25	177.98	1067.87	1...H1-1a
203	M441	PL2.25X6	.668	14.3656	.009	14.067	y 56	10145.853	22781.25	177.98	1067.87	1...H1-1a
204	M438	PL2.25X6	.657	14.63256	.009	14.333	y 56	9843.112	22781.25	177.98	1067.87	1...H1-1a
205	M396	PL2.25X6	.655	14.63256	.008	14.333	y 56	9843.112	22781.25	177.98	1067.87	1...H1-1a
206	M327	L2.5X1.5X5	.645	22.21456	.002	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
207	M356	PL2.25X5	.635	23.93856	.004	0	y 56	2210.434	18984.3...	123.597	885.597	1...H1-1a
208	M523	PL2.25X6	.632	14.95855	.010	14.653	y 55	9481.313	22781.25	177.98	1067.87	1...H1-1a
209	M331	L2.5X1.5X5	.630	22.21456	.002	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...H2-1
210	M515	PL2.25X6	.625	14.95855	.010	14.958	y 55	9481.312	22781.25	177.98	1067.87	1...H1-1a
211	M311	L2.5X1.5X5	.624	27.22955	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
212	M443	PL2.25X6	.613	14.95856	.010	14.653	y 56	9481.313	22781.25	177.98	1067.87	1...H1-1a
213	M401	PL2.25X6	.609	14.95856	.010	14.958	y 56	9481.312	22781.25	177.98	1067.87	1...H1-1a
214	M519	PL2.25X6	.598	14.95856	.009	0	y 55	9481.312	22781.25	177.98	1067.87	1...H1-1a
215	M527	PL2.25X6	.597	14.95856	.010	30.221	y 55	9481.312	22781.25	177.98	1067.87	1...H1-1a
216	M318	L2.5X1.5X5	.593	27.22955	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
217	M648	PL2.25X4	.592	10.21755	.029	0	y 55	6269.147	15201	78.75	711	1...H1-1a
218	M578	PL2.25X4	.591	10.21756	.029	0	y 56	6269.147	15201	78.75	711	1...H1-1a
219	M580	PL2.25X4	.589	10.21756	.024	0	y 56	6269.147	15201	78.75	711	1...H1-1a
220	M650	PL2.25X4	.588	10.21755	.024	0	y 55	6269.147	15201	78.75	711	1...H1-1a
221	M517	PL2.25X6	.587	14.3656	.008	14.36	y 56	10145.853	22781.25	177.98	1067.87	1...H1-1a
222	M604	L6x4x6	.586	58.66755	.135	58.667	y 55	43003.777	97470	4257.614	12792.4...	1 H2-1
223	M525	PL2.25X6	.586	14.3656	.010	29.012	y 55	10145.853	22781.25	177.98	1067.87	1...H1-1a
224	M534	L6x4x6	.583	73.33356	.134	73.333	y 56	43003.777	97470	4257.614	12792.4...	1 H2-1
225	M397	PL2.25X6	.582	14.95855	.009	0	y 56	9481.312	22781.25	177.98	1067.87	1...H1-1a
226	M617	PL2.25X5	.582	15.18155	.011	29.469	y 56	5674.836	18981	123.75	891	1...H1-1a
227	M514	PL2.25X6	.580	14.63256	.009	29.563	y 55	9843.112	22781.25	177.98	1067.87	1...H1-1a



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.03
 Model Name : Catenary Structure Type 3

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear	...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
228	M522	PL2.25X6	.579	14.632	56	.010	29.563	y	55	9843.112	22781.25	177.98	1067.87	1...	H1-1a
229	M546	PL2.25X5	.579	15.181	56	.009	29.469	y	55	5674.836	18981	123.75	891	1...	H1-1a
230	M439	PL2.25X6	.578	14.958	55	.010	30.221	y	56	9481.312	22781.25	177.98	1067.87	1...	H1-1a
231	M531	L3x2.5x5	.576	68.649	55	.053	32.894	z	55	40948.468	44010	1270.778	2996.056	1	H2-1
232	M395	PL2.25X6	.575	14.36	55	.008	29.012	y	56	10145.853	22781.25	177.98	1067.87	1...	H1-1a
233	M602	L3x2.5x5	.575	68.649	56	.050	32.894	z	56	40948.468	44010	1270.778	2996.056	1	H2-1
234	M601	L3x2.5x5	.575	72.94	56	.052	108....	z	56	40948.468	44010	1270.778	2996.056	1	H2-1
235	M532	L3x2.5x5	.574	72.94	55	.050	108....	z	55	40948.468	44010	1270.778	2996.056	1	H2-1
236	M547	PL2.25X5	.573	15.181	56	.011	29.469	y	55	5674.836	18981	123.75	891	1...	H1-1a
237	M616	PL2.25X5	.570	15.181	55	.009	29.469	y	55	5674.836	18981	123.75	891	1...	H1-1a
238	M437	PL2.25X6	.570	14.36	55	.010	29.012	y	56	10145.853	22781.25	177.98	1067.87	1...	H1-1a
239	M400	PL2.25X6	.568	14.632	55	.009	29.563	y	56	9843.112	22781.25	177.98	1067.87	1...	H1-1a
240	M332	L2.5X1.5X5	.562	22.214	56	.001	0	y	55	11300.048	31113.2...	475.557	1515.611	1...	H2-1
241	M442	PL2.25X6	.562	14.632	55	.010	29.563	y	56	9843.112	22781.25	177.98	1067.87	1...	H1-1a
242	M353	PL2.25X5_...	.547	23.938	56	.005	0	y	56	2210.434	18984.3...	123.597	846.32	1...	H1-1a
243	M625	L4x3x6	.543	9.414	56	.176	11.336	z	55	64643.067	67230	2238.689	5885.484	1...	H2-1
244	M357	PL2.25X5_...	.541	23.45	56	.007	0	y	56	2210.434	18984.3...	123.597	841.789	1...	H1-1a
245	M340	L2.5X1.5X5	.539	22.214	56	.002	0	y	56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
246	M174	L2.5x2.5x5	.539	0	56	.004	0	z	55	24053.796	39420	1096.767	2551.08	1...	H2-1
247	M173	L2.5x2.5x5	.537	51.04	56	.003	51.04	z	55	24053.796	39420	1096.767	2551.08	2...	H2-1
248	M624	L4x3x6	.537	9.606	55	.164	7.685	z	56	64643.067	67230	2238.689	5885.484	2...	H2-1
249	M619	PL2.25X5	.532	15.181	56	.011	29.469	y	55	5674.836	18981	123.75	891	1...	H1-1a
250	M298	L2.5X1.5X5	.531	27.229	55	.001	49.92	y	56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
251	M555	L4x3x6	.530	9.414	56	.178	7.685	z	56	64643.067	67230	2238.689	5885.484	1...	H2-1
252	M554	L4x3x6	.524	9.414	56	.167	11.336	z	55	64643.067	67230	2238.689	5885.484	1...	H2-1
253	M328	L2.5X1.5X5	.523	22.214	56	.002	0	y	56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
254	M77	L2.5x2.5x5	.521	0	55	.003	0	z	56	24053.796	39420	1096.767	2551.08	1...	H2-1
255	M549	PL2.25X5	.519	15.181	55	.011	29.469	y	56	5674.836	18981	123.75	891	1...	H1-1a
256	M294	L2.5X1.5X5	.518	27.23	55	.001	0	y	56	10829.35	31113.2...	475.557	1510.593	1...	H2-1
257	M78	L2.5x2.5x5	.516	51.04	55	.004	51.04	z	56	24053.796	39420	1096.767	2551.08	2...	H2-1
258	M588	PL2.25X4	.516	8.823	56	.023	0	y	56	7875.296	15201	78.75	711	1...	H1-1a
259	M658	PL2.25X4	.515	8.823	55	.023	0	y	55	7875.296	15201	78.75	711	1...	H1-1a
260	M656	PL2.25X4	.513	8.823	55	.027	0	y	55	7875.296	15201	78.75	711	1...	H1-1a
261	M586	PL2.25X4	.513	8.823	56	.027	0	y	56	7875.296	15201	78.75	711	1...	H1-1a
262	M548	PL2.25X5	.512	15.181	55	.008	29.469	y	56	5674.836	18981	123.75	891	1...	H1-1a
263	M344	L2.5X1.5X5	.501	22.213	56	.001	48.869	y	55	11300.937	31113.2...	475.557	1515.62	1...	H2-1
264	M618	PL2.25X5	.500	15.181	56	.008	29.469	y	55	5674.836	18981	123.75	891	1...	H1-1a
265	M309	L2.5X1.5X5	.499	22.214	56	.002	0	y	55	11300.048	31113.2...	475.557	1515.611	1...	H2-1
266	M596	PL2.25X4	.486	7.863	56	.017	0	y	56	8996.512	15201	78.75	711	1...	H1-1a
267	M666	PL2.25X4	.486	7.863	55	.018	0	y	55	8996.512	15201	78.75	711	1...	H1-1a
268	M664	PL2.25X4	.485	7.863	55	.021	0	y	55	8996.512	15201	78.75	711	1...	H1-1a
269	M594	PL2.25X4	.485	7.863	56	.021	0	y	56	8996.512	15201	78.75	711	1...	H1-1a
270	M608	L3x2.5x6	.484	4.545	55	.115	9	z	55	51421.803	52110	1486.645	3490.361	1...	H2-1
271	M538	L3x2.5x6	.484	4.455	56	.115	0	z	56	51421.803	52110	1486.645	3490.361	1...	H2-1
272	M539	L3x2.5x6	.483	4.545	56	.115	9	z	56	51421.803	52110	1486.645	3490.361	1...	H2-1
273	M609	L3x2.5x6	.483	4.455	55	.115	0	z	55	51421.803	52110	1486.645	3490.361	1...	H2-1
274	M297	L2.5X1.5X5	.470	27.229	55	.002	0	y	56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
275	M293	L2.5X1.5X5	.460	27.23	55	.001	0	y	56	10829.35	31113.2...	475.557	1510.593	1...	H2-1
276	M360	PL2.25X5_...	.439	23.938	56	.006	24.427	y	55	2210.434	18984.3...	123.597	826.69	1...	H1-1a
277	M649	PL2.25X4	.419	10.217	56	.027	10.217	y	55	6269.147	15201	78.75	711	1...	H1-1a
278	M579	PL2.25X4	.419	10.217	55	.027	10.217	y	56	6269.147	15201	78.75	711	1...	H1-1a
279	M343	L2.5X1.5X5	.417	24.681	55	.002	0	y	55	11300.937	31113.2...	475.557	1515.62	1...	H2-1
280	M581	PL2.25X4	.409	10.217	55	.025	10.217	y	56	6269.147	15201	78.75	711	1...	H1-1a
281	M307	L2.5X1.5X5	.409	27.229	55	.002	49.92	y	56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
282	M651	PL2.25X4	.408	10.217	56	.024	10.217	y	55	6269.147	15201	78.75	711	1...	H1-1a
283	M41	PL2.25X5	.404	15.461	56	.031	15.152	y	56	5785.218	18981	123.75	891	1...	H1-1a
284	M137	PL2.25X5	.401	15.461	55	.031	15.152	y	55	5785.218	18981	123.75	891	1...	H1-1a



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.03
 Model Name : Catenary Structure Type 3

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt	phi*Mn y	phi*Mn z	Cb	Eqn	
285	M134	PL2.25X5	.399	15.31	56	.020	15.31	y 55	5666.526	18981	123.75	891	1...H1-1a
286	M5	PL2.25X5	.397	15.461	55	.033	0	y 56	5785.218	18981	123.75	891	1...H1-1a
287	M101	PL2.25X5	.395	15.461	56	.033	0	y 55	5785.218	18981	123.75	891	1...H1-1a
288	M623	PL2.25X5	.394	18.733	56	.008	19.093	y 55	3742.008	18981	123.75	891	1...H1-1a
289	M339	L2.5X1.5X5	.393	24.682	55	.001	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...H2-1
290	M642	L6x4x6	.388	6.74	55	.122	6.74	z 55	91550.116	97470	4257.614	12792.4...	1...H2-1
291	M524	PL2.25X6	.386	15.235	56	.010	30.782	y 55	9181.303	22781.25	177.98	1067.87	1...H1-1a
292	M572	L6x4x6	.386	6.878	56	.122	6.878	z 56	91550.116	97470	4257.614	12792.4...	1...H2-1
293	M516	PL2.25X6	.385	15.235	56	.011	30.782	y 55	9181.303	22781.25	177.98	1067.87	1...H1-1a
294	M38	PL2.25X5	.382	15.31	55	.019	15.31	y 56	5666.526	18981	123.75	891	1...H1-1a
295	M573	L6x4x6	.378	6.878	56	.132	6.878	z 56	91550.116	97470	4257.614	12792.4...	2...H2-1
296	M643	L6x4x6	.376	6.74	55	.132	6.74	z 55	91550.116	97470	4257.614	12691.6...	1...H2-1
297	M354	PL2.25X5	.373	22.473	55	.004	24.427	y 56	2210.434	18984.3...	123.597	871.145	1...H1-1a
298	M553	PL2.25X5	.370	18.733	55	.008	18.733	y 56	3742.008	18981	123.75	891	1...H1-1a
299	M402	PL2.25X6	.366	15.235	55	.010	0	y 56	9181.303	22781.25	177.98	1067.87	1...H1-1a
300	M657	PL2.25X4	.359	8.823	56	.025	8.823	y 55	7875.296	15201	78.75	711	1...H1-1a
301	M444	PL2.25X6	.359	15.235	55	.010	30.782	y 56	9181.303	22781.25	177.98	1067.87	1...H1-1a
302	M587	PL2.25X4	.359	8.823	55	.025	8.823	y 56	7875.296	15201	78.75	711	1...H1-1a
303	M589	PL2.25X4	.357	8.823	55	.023	8.823	y 56	7875.296	15201	78.75	711	1...H1-1a
304	M659	PL2.25X4	.356	8.823	56	.022	8.823	y 55	7875.296	15201	78.75	711	1...H1-1a
305	M116	PL2.25X5	.356	15.31	56	.022	15.31	y 55	5666.526	18981	123.75	891	1...H1-1a
306	M20	PL2.25X5	.352	15.31	55	.021	15.31	y 56	5666.526	18981	123.75	891	1...H1-1a
307	M303	L2.5X1.5X5	.352	27.229	55	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
308	M335	L2.5X1.5X5	.344	24.682	55	.001	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...H2-1
309	M665	PL2.25X4	.340	7.863	56	.020	7.863	y 55	8996.512	15201	78.75	711	1...H1-1a
310	M622	PL2.25X5	.340	18.733	55	.009	35.664	y 55	3742.008	18981	123.75	891	1...H1-1a
311	M595	PL2.25X4	.340	7.863	55	.020	7.863	y 56	8996.512	15201	78.75	711	1...H1-1a
312	M551	PL2.25X5	.339	18.733	55	.008	35.664	y 55	3742.008	18981	123.75	891	1...H1-1a
313	M597	PL2.25X4	.338	7.863	55	.017	7.863	y 56	8996.512	15201	78.75	711	1...H1-1a
314	M667	PL2.25X4	.337	7.863	56	.017	7.863	y 55	8996.512	15201	78.75	711	1...H1-1a
315	M552	PL2.25X5	.325	18.733	56	.009	35.664	y 56	3742.008	18981	123.75	891	1...H1-1a
316	M42	PL2.25X5	.323	15.152	56	.030	0	y 55	5785.218	18981	123.75	891	1...H1-1a
317	M138	PL2.25X5	.319	15.152	55	.031	0	y 56	5785.218	18981	123.75	891	1...H1-1a
318	M621	PL2.25X5	.314	18.733	56	.008	18.733	y 55	3742.008	18981	123.75	891	1...H1-1a
319	M550	PL2.25X5	.309	18.733	56	.010	35.664	y 56	3742.008	18981	123.75	891	1...H1-1a
320	M556	PL2.25X4	.305	14.763	56	.027	14.763	y 56	4052.628	15201	78.75	711	2...H1-1b
321	M626	PL2.25X4	.303	14.763	55	.027	14.763	y 55	4052.628	15201	78.75	711	2...H1-1b
322	M324	L2.5X1.5X5	.302	22.214	56	.003	0	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
323	M627	PL2.25X4	.300	14.763	55	.027	14.763	y 55	4052.628	15201	78.75	711	2...H1-1b
324	M557	PL2.25X4	.298	14.763	56	.027	14.763	y 56	4052.628	15201	78.75	711	2...H1-1b
325	M347	L2.5X1.5X5	.296	23.201	55	.002	45.937	y 55	12738.921	31113.2...	475.557	1529.862	1...H2-1
326	M620	PL2.25X5	.294	18.733	55	.010	35.664	y 55	3742.008	18981	123.75	891	1...H1-1a
327	M355	PL2.25X5	.285	21.984	55	.005	24.427	y 56	2210.434	18984.3...	123.597	889.893	1...H1-1a
328	M359	PL2.25X5	.276	22.473	55	.006	0	y 55	2210.434	18984.3...	123.597	825.047	1...H1-1a
329	M348	L2.5X1.5X5	.276	23.201	55	.001	0	y 55	12738.921	31113.2...	475.557	1529.862	1...H2-1
330	M289	L2.5X1.5X5	.275	22.735	56	.001	45.934	y 56	12740.431	31113.2...	475.557	1529.877	1...H2-1
331	M574	PL2.25X4	.274	9.809	56	.033	9.809	y 56	8183.037	15201	78.75	711	2...H1-1b
332	M644	PL2.25X4	.274	9.809	55	.033	9.809	y 55	8183.037	15201	78.75	711	2...H1-1b
333	M645	PL2.25X4	.273	9.809	55	.032	9.809	y 55	8183.037	15201	78.75	711	2...H1-1b
334	M575	PL2.25X4	.273	9.809	56	.032	9.809	y 56	8183.037	15201	78.75	711	2...H1-1b
335	M629	PL2.25X4	.269	14.763	56	.026	27.577	y 55	4052.628	15201	78.75	711	2...H1-1b
336	M559	PL2.25X4	.266	14.763	55	.026	27.577	y 56	4052.628	15201	78.75	711	2...H1-1b
337	M558	PL2.25X4	.266	14.763	55	.024	14.763	y 55	4052.628	15201	78.75	711	2...H1-1b
338	M628	PL2.25X4	.263	14.763	56	.024	14.763	y 56	4052.628	15201	78.75	711	2...H1-1b
339	M290	L2.5X1.5X5	.263	26.911	55	.001	0	y 56	12740.431	31113.2...	475.557	1529.877	1...H2-1
340	M564	PL2.25X4	.249	12.585	56	.026	0	y 56	4201.337	15201	78.75	711	1...H1-1b
341	M635	PL2.25X4	.248	12.585	55	.028	0	y 55	4201.337	15201	78.75	711	1...H1-1b



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.03
 Model Name : Catenary Structure Type 3

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
342	M634	PL2.25X4	.246	12.585	55	.026	0	y 55	4201.337	15201	78.75	711	1...H1-1b
343	M565	PL2.25X4	.246	12.585	56	.028	0	y 56	4201.337	15201	78.75	711	1...H1-1b
344	M358	PL2.25X5	.239	23.938	55	.005	24.427	y 56	2210.434	18984.3	123.597	889.893	1...H1-1a
345	M576	PL2.25X4	.226	9.809	56	.031	18.322	y 56	8183.037	15201	78.75	711	2...H1-1b
346	M646	PL2.25X4	.226	9.809	55	.031	18.322	y 55	8183.037	15201	78.75	711	2...H1-1b
347	M647	PL2.25X4	.226	9.809	55	.030	18.322	y 55	8183.037	15201	78.75	711	2...H1-1b
348	M577	PL2.25X4	.225	9.809	56	.030	18.322	y 56	8183.037	15201	78.75	711	2...H1-1b
349	M6	PL2.25X5	.210	15.152	55	.035	0	y 56	5785.218	18981	123.75	891	1...H1-1b
350	M102	PL2.25X5	.207	15.152	56	.036	0	y 55	5785.218	18981	123.75	891	1...H1-1b
351	M637	PL2.25X4	.207	12.585	56	.025	0	y 56	4201.337	15201	78.75	711	1...H1-1b
352	M566	PL2.25X4	.204	12.585	55	.026	12.585	y 56	4201.337	15201	78.75	711	1...H1-1b
353	M567	PL2.25X4	.202	12.585	55	.025	0	y 55	4201.337	15201	78.75	711	1...H1-1b
354	M636	PL2.25X4	.200	12.585	56	.026	12.585	y 55	4201.337	15201	78.75	711	1...H1-1b
355	M655	PL2.25X4	.198	8.252	55	.030	8.252	y 55	8492.403	15201	78.75	711	1...H1-1b
356	M585	PL2.25X4	.198	8.252	56	.031	8.252	y 56	8492.403	15201	78.75	711	1...H1-1b
357	M584	PL2.25X4	.197	8.252	56	.029	8.252	y 56	8492.403	15201	78.75	711	1...H1-1b
358	M654	PL2.25X4	.197	8.252	55	.029	8.252	y 55	8492.403	15201	78.75	711	1...H1-1b
359	M56	PL2.25X5	.195	15.31	56	.032	0	y 56	5666.526	18981	123.75	891	1...H1-1b
360	M653	PL2.25X4	.188	8.252	55	.031	0	y 55	8492.403	15201	78.75	711	1...H1-1b
361	M583	PL2.25X4	.188	8.252	56	.031	0	y 56	8492.403	15201	78.75	711	1...H1-1b
362	M582	PL2.25X4	.187	8.252	56	.031	0	y 56	8492.403	15201	78.75	711	1...H1-1b
363	M652	PL2.25X4	.187	8.252	55	.031	0	y 55	8492.403	15201	78.75	711	1...H1-1b
364	M74	PL2.25X5	.186	15.31	56	.030	0	y 56	5666.526	18981	123.75	891	1...H1-1b
365	M120	PL2.25X5	.176	15.152	55	.035	0	y 55	5785.218	18981	123.75	891	1...H1-1b
366	M24	PL2.25X5	.173	15.152	56	.034	0	y 56	5785.218	18981	123.75	891	1...H1-1b
367	M233	L2.5x1.25x5	.167	14.952	55	.002	29.605	y 55	16726.225	29003.9	340.889	1464.21	1...H2-1
368	M206	L2.5x1.25x5	.167	14.653	56	.001	29.605	y 56	16726.261	29003.9	340.889	1464.21	1...H2-1
369	M231	L2.5x1.25x5	.166	14.952	55	.005	0	y 56	16726.261	29003.9	340.889	1464.21	1...H2-1
370	M571	PL2.25X4	.161	14.092	56	.012	14.092	y 56	4714.98	15201	78.75	711	1...H1-1b
371	M213	L2.5x1.25x5	.160	14.952	55	.003	29.605	y 56	16726.225	29003.9	340.889	1464.21	1...H2-1
372	M260	L2.5x1.25x5	.160	14.952	55	.002	29.605	y 55	16726.261	29003.9	340.889	1464.21	1...H2-1
373	M641	PL2.25X4	.159	14.092	55	.012	14.092	y 55	4714.98	15201	78.75	711	1...H1-1b
374	M210	L2.5x1.25x5	.158	14.653	56	.003	0	y 55	16726.225	29003.9	340.889	1464.21	1...H2-1
375	M156	PL2.25X5	.156	15.152	56	.032	0	y 56	5785.218	18981	123.75	891	1...H1-1b
376	M208	L2.5x1.25x5	.155	14.653	56	.002	0	y 56	16726.261	29003.9	340.889	1464.21	1...H2-1
377	M60	PL2.25X5	.152	15.152	55	.031	0	y 55	5785.218	18981	123.75	891	1...H1-1b
378	M152	PL2.25X5	.151	15.31	55	.034	0	y 55	5666.526	18981	123.75	891	1...H1-1b
379	M170	PL2.25X5	.150	15.31	55	.031	0	y 55	5666.526	18981	123.75	891	1...H1-1b
380	M639	PL2.25X4	.148	14.092	55	.014	14.092	y 55	4714.98	15201	78.75	711	1...H1-1b
381	M569	PL2.25X4	.146	14.092	56	.014	14.092	y 56	4714.98	15201	78.75	711	1...H1-1b
382	M278	L2.5x1.25x5	.144	14.952	55	.004	0	y 56	16726.261	29003.9	340.889	1464.21	1...H2-1
383	M561	PL2.25X4	.143	16.057	55	.015	16.36	y 56	2619.675	15201	78.75	711	1...H1-1b
384	M214	L2.5x1.25x5	.142	14.653	56	.002	29.605	y 55	16726.261	29003.9	340.889	1464.21	1...H2-1
385	M591	PL2.25X4	.138	7.482	56	.019	0	y 56	9416.916	15201	78.75	711	1...H1-1b
386	M661	PL2.25X4	.137	7.482	55	.019	0	y 55	9416.916	15201	78.75	711	1...H1-1b
387	M631	PL2.25X4	.136	16.057	56	.015	16.36	y 55	2619.675	15201	78.75	711	1...H1-1b
388	M258	L2.5x1.25x5	.136	14.952	55	.004	29.605	y 55	16726.261	29003.9	340.889	1464.21	1...H2-1
389	M660	PL2.25X4	.135	7.482	55	.020	0	y 55	9416.916	15201	78.75	711	1...H1-1b
390	M590	PL2.25X4	.135	7.482	56	.020	0	y 56	9416.916	15201	78.75	711	1...H1-1b
391	M133	PL2.25X5	.132	15.461	55	.020	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b
392	M236	L2.5x1.25x5	.132	14.952	55	.002	0	y 56	16726.261	29003.9	340.889	1464.21	1...H2-1
393	M255	L2.5x1.25x5	.132	14.653	56	.001	0	y 55	16726.261	29003.9	340.889	1464.21	1...H2-1
394	M638	PL2.25X4	.130	13.831	55	.017	0	y 55	3535.554	15201	78.75	711	1...H1-1b
395	M568	PL2.25X4	.130	13.831	56	.016	0	y 56	3535.554	15201	78.75	711	1...H1-1b
396	M115	PL2.25X5	.129	15.461	55	.019	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b
397	M241	L2.5x1.25x5	.128	14.952	55	.003	0	y 55	16726.225	29003.9	340.889	1464.21	1...H2-1
398	M121	PL2.25X5	.128	15.461	55	.024	0	y 55	5785.218	18981	123.75	891	1...H1-1b



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.03
 Model Name : Catenary Structure Type 3

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt	phi*Mn y	phi*Mn z	Cb	Eqn	
399	M212	L2.5x1.25x5	.127	14.653	56	.003	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
400	M169	PL2.25X5	.127	15.152	55	.028	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
401	M570	PL2.25X4	.126	13.831	56	.012	0	y	56	3535.554	15201	78.75	711	1...	H1-1b
402	M640	PL2.25X4	.126	13.831	55	.012	0	y	55	3535.554	15201	78.75	711	1...	H1-1b
403	M151	PL2.25X5	.124	15.152	55	.026	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
404	M37	PL2.25X5	.124	15.461	56	.020	15.152	y	56	5785.218	18981	123.75	891	1...	H1-1b
405	M633	PL2.25X4	.124	16.057	56	.010	0	y	56	2619.675	15201	78.75	711	1...	H1-1b
406	M81	L2.5x2.5x5	.123	24	56	.003	0	z	55	35341.325	39420	1096.767	2551.08	1...	H2-1
407	M55	PL2.25X5	.123	15.152	56	.025	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
408	M253	L2.5x1.25x5	.121	14.653	56	.003	0	y	55	16726.225	29003.9...	340.889	1464.211	1...	H2-1
409	M117	PL2.25X5	.121	15.303	56	.008	0	y	56	5905.645	18981	123.75	891	1...	H1-1b
410	M19	PL2.25X5	.121	15.461	56	.018	15.152	y	56	5785.218	18981	123.75	891	1...	H1-1b
411	M25	PL2.25X5	.121	15.461	56	.023	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
412	M167	PL2.25X5	.117	15.152	55	.023	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
413	M593	PL2.25X4	.117	7.482	56	.018	7.482	y	56	9416.916	15201	78.75	711	1...	H1-1b
414	M663	PL2.25X4	.117	7.482	55	.018	7.482	y	55	9416.916	15201	78.75	711	1...	H1-1b
415	M172	PL2.25X5	.117	15.152	55	.004	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
416	M563	PL2.25X4	.117	16.057	55	.010	29.994	y	55	2619.675	15201	78.75	711	1...	H1-1b
417	M243	L2.5x1.25x5	.117	14.802	55	.019	29.308	y	55	16910.955	29003.9...	340.889	1465.997	1...	H2-1
418	M103	PL2.25X5	.116	15.461	55	.023	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
419	M257	L2.5x1.25x5	.116	14.653	56	.003	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
420	M232	L2.5x1.25x5	.115	14.653	56	.004	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
421	M73	PL2.25X5	.115	15.152	56	.027	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
422	M662	PL2.25X4	.115	7.482	55	.019	7.482	y	55	9416.916	15201	78.75	711	1...	H1-1b
423	M592	PL2.25X4	.115	7.482	56	.019	7.482	y	56	9416.916	15201	78.75	711	1...	H1-1b
424	M71	PL2.25X5	.114	15.152	56	.021	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
425	M21	PL2.25X5	.114	15.303	55	.007	0	y	55	5905.645	18981	123.75	891	1...	H1-1b
426	M239	L2.5x1.25x5	.113	14.953	55	.004	29.607	y	55	16724.892	29003.9...	340.889	1464.197	1...	H2-1
427	M228	L2.5x1.25x5	.113	14.653	56	.003	0	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
428	M7	PL2.25X5	.110	15.461	56	.023	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
429	M259	L2.5x1.25x5	.109	14.653	56	.001	0	y	56	16726.225	29003.9...	340.889	1464.211	1...	H2-1
430	M168	PL2.25X5	.109	15.461	55	.024	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
431	M560	PL2.25X4	.108	16.057	56	.012	16.36	y	55	2619.675	15201	78.75	711	1...	H1-1b
432	M139	PL2.25X5	.108	15.152	56	.022	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
433	M177	L2.5x2.5x5	.107	0	55	.002	24	y	55	35341.325	39420	1096.767	2551.08	1...	H2-1
434	M43	PL2.25X5	.106	15.152	55	.022	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
435	M150	PL2.25X5	.106	15.461	55	.025	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
436	M630	PL2.25X4	.105	16.057	55	.012	16.36	y	56	2619.675	15201	78.75	711	1...	H1-1b
437	M72	PL2.25X5	.105	15.461	56	.023	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
438	M268	L2.5x1.25x5	.103	14.952	55	.004	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
439	M54	PL2.25X5	.102	15.461	56	.024	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
440	M135	PL2.25X5	.102	15.303	56	.009	14.997	y	55	5905.645	18981	123.75	891	1...	H1-1b
441	M39	PL2.25X5	.102	15.303	55	.009	0	y	55	5905.645	18981	123.75	891	1...	H1-1b
442	M270	L2.5x1.25x5	.100	14.952	55	.001	0	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
443	M149	PL2.25X5	.100	15.152	55	.021	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
444	M148	PL2.25X5	.099	15.152	55	.019	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
445	M277	L2.5x1.25x5	.099	14.653	56	.004	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
446	M283	L2.5x1.25x5	.097	14.952	55	.001	29.605	y	56	16726.225	29003.9...	340.889	1464.211	1...	H2-1
447	M171	PL2.25X5	.097	14.997	55	.020	0	y	55	5905.645	18981	123.75	891	1.4	H1-1b
448	M53	PL2.25X5	.096	15.152	56	.020	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
449	M226	L2.5x1.25x5	.095	14.653	56	.003	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
450	M52	PL2.25X5	.094	15.152	56	.018	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
451	M178	L2.5x2.5x5	.094	0	55	.024	16	y	55	35341.325	39420	1096.767	2551.08	1...	H2-1
452	M632	PL2.25X4	.093	16.36	56	.012	0	y	55	3503.195	15201	78.75	711	1...	H1-1b
453	M280	L2.5x1.25x5	.091	14.952	55	.001	0	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
454	M562	PL2.25X4	.091	16.36	55	.011	0	y	56	3503.195	15201	78.75	711	1...	H1-1b
455	M157	PL2.25X5	.091	15.461	56	.022	0	y	56	5785.218	18981	123.75	891	1...	H1-1b



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.03
 Model Name : Catenary Structure Type 3

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn			
456	M113	PL2.25X5	.090	15.152	56	.014	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
457	M209	L2.5x1.25x5	.089	14.952	56	.002	0	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
458	M252	L2.5x1.25x5	.088	14.952	56	.001	0	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
459	M207	L2.5x1.25x5	.087	14.952	56	.003	0	y	55	16726.225	29003.9...	340.889	1464.211	1...	H2-1
460	M118	PL2.25X5	.086	15.152	55	.005	15.152	y	55	5785.218	18981	123.75	891	1...	H1-1b
461	M166	PL2.25X5	.086	15.152	55	.018	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
462	M279	L2.5x1.25x5	.086	14.653	55	.002	0	y	55	16726.225	29003.9...	340.889	1464.211	1...	H2-1
463	M114	PL2.25X5	.086	15.461	56	.016	15.152	y	55	5785.218	18981	123.75	891	1...	H1-1b
464	M287	L2.5x1.25x5	.085	14.162	55	.004	28.04	y	55	17701.085	29003.9...	340.889	1473.7	1...	H2-1
465	M285	L2.5x1.25x5	.085	14.951	55	.002	0	y	56	16727.63	29003.9...	340.889	1464.224	1...	H2-1
466	M61	PL2.25X5	.085	15.461	55	.021	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
467	M256	L2.5x1.25x5	.084	14.952	56	.001	29.605	y	55	16726.225	29003.9...	340.889	1464.211	1...	H2-1
468	M216	L2.5x1.25x5	.084	14.952	55	.003	0	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
469	M17	PL2.25X5	.084	15.152	55	.014	15.152	y	56	5785.218	18981	123.75	891	1...	H1-1b
470	M211	L2.5x1.25x5	.083	14.952	56	.004	0	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
471	M70	PL2.25X5	.083	15.152	56	.017	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
472	M265	L2.5x1.25x5	.083	14.653	56	.002	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
473	M275	L2.5x1.25x5	.082	14.653	56	.004	0	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
474	M18	PL2.25X5	.082	15.461	55	.016	15.152	y	56	5785.218	18981	123.75	891	1...	H1-1b
475	M165	PL2.25X5	.081	15.152	55	.016	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
476	M36	PL2.25X5	.081	15.461	56	.014	15.152	y	56	5785.218	18981	123.75	891	1...	H1-1b
477	M132	PL2.25X5	.081	15.461	55	.015	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
478	M62	PL2.25X5	.080	15.152	55	.017	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
479	M223	L2.5x1.25x5	.080	14.952	55	.003	0	y	56	16726.225	29003.9...	340.889	1464.211	1...	H2-1
480	M69	PL2.25X5	.079	15.461	56	.015	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
481	M158	PL2.25X5	.079	15.152	56	.017	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
482	M122	PL2.25X5	.079	15.152	55	.018	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
483	M104	PL2.25X5	.078	15.152	55	.018	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
484	M203	L2.5x1.25x5	.078	14.653	56	.002	0	y	55	16726.225	29003.9...	340.889	1464.211	1...	H2-1
485	M130	PL2.25X5	.077	15.152	56	.012	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
486	M199	L2.5x1.25x5	.077	13.878	56	.004	0	y	56	17701.085	29003.9...	340.889	1473.7	1...	H2-1
487	M8	PL2.25X5	.077	15.152	56	.018	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
488	M26	PL2.25X5	.077	15.152	56	.018	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
489	M254	L2.5x1.25x5	.077	14.952	56	.001	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
490	M147	PL2.25X5	.077	15.461	55	.015	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
491	M234	L2.5x1.25x5	.076	14.653	55	.002	29.605	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
492	M22	PL2.25X5	.076	15.152	56	.005	15.152	y	56	5785.218	18981	123.75	891	1...	H1-1b
493	M146	PL2.25X5	.074	15.461	55	.013	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
494	M218	L2.5x1.25x5	.074	14.952	55	.004	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
495	M282	L2.5x1.25x5	.074	14.653	55	.003	0	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
496	M273	L2.5x1.25x5	.073	14.653	56	.002	29.605	y	55	16726.225	29003.9...	340.889	1464.211	1...	H2-1
497	M230	L2.5x1.25x5	.073	14.653	56	.003	29.605	y	55	16726.225	29003.9...	340.889	1464.211	1...	H2-1
498	M50	PL2.25X5	.072	15.461	56	.012	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
499	M51	PL2.25X5	.072	15.461	56	.014	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
500	M201	L2.5x1.25x5	.072	14.648	56	.002	29.595	y	56	16732.465	29003.9...	340.889	1464.271	1...	H2-1
501	M131	PL2.25X5	.072	15.152	55	.016	15.152	y	55	5785.218	18981	123.75	891	1...	H1-1b
502	M35	PL2.25X5	.071	15.152	56	.016	15.152	y	56	5785.218	18981	123.75	891	1...	H1-1b
503	M34	PL2.25X5	.071	15.152	55	.011	15.152	y	56	5785.218	18981	123.75	891	1...	H1-1b
504	M220	L2.5x1.25x5	.070	14.952	55	.005	0	y	56	16726.225	29003.9...	340.889	1464.211	1...	H2-1
505	M123	PL2.25X5	.070	15.152	55	.013	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
506	M240	L2.5x1.25x5	.069	14.652	55	.002	0	y	55	16727.63	29003.9...	340.889	1464.224	1...	H2-1
507	M140	PL2.25X5	.069	15.152	56	.017	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
508	M82	L2.5x2.5x5	.068	8	56	.020	24	y	55	35341.325	39420	1096.767	2551.08	1...	H2-1
509	M237	L2.5x1.25x5	.068	14.653	55	.003	29.605	y	56	16726.225	29003.9...	340.889	1464.211	1...	H2-1
510	M163	PL2.25X5	.067	15.461	55	.010	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
511	M27	PL2.25X5	.066	15.152	56	.012	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
512	M153	PL2.25X5	.066	14.997	55	.018	0	y	55	5905.645	18981	123.75	891	1...	H1-1b



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.03
 Model Name : Catenary Structure Type 3

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn			
513	M44	PL2.25X5	.066	15.152	55	.015	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
514	M154	PL2.25X5	.066	15.152	55	.006	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
515	M112	PL2.25X5	.066	15.461	55	.012	15.152	y	55	5785.218	18981	123.75	891	1...	H1-1b
516	M164	PL2.25X5	.066	15.461	55	.012	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
517	M57	PL2.25X5	.065	14.997	55	.016	0	y	56	5905.645	18981	123.75	891	1...	H1-1b
518	M67	PL2.25X5	.065	15.461	56	.009	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
519	M45	PL2.25X5	.065	15.152	55	.013	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
520	M141	PL2.25X5	.065	15.152	56	.012	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
521	M40	PL2.25X5	.064	15.152	56	.005	15.461	y	56	5785.218	18981	123.75	891	1...	H1-1b
522	M16	PL2.25X5	.064	15.461	56	.012	15.152	y	56	5785.218	18981	123.75	891	1...	H1-1b
523	M76	PL2.25X5	.064	15.152	56	.004	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
524	M111	PL2.25X5	.062	15.461	56	.010	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
525	M286	L2.5x1.25x5	.062	14.653	55	.001	0	y	55	16726.225	29003.9...	340.889	1464.21	1...	H2-1
526	M68	PL2.25X5	.062	15.461	56	.011	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
527	M136	PL2.25X5	.061	15.152	55	.005	15.461	y	55	5785.218	18981	123.75	891	1...	H1-1b
528	M105	PL2.25X5	.061	15.152	55	.013	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
529	M9	PL2.25X5	.061	15.152	56	.013	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
530	M242	L2.5x1.25x5	.060	13.878	55	.006	0	y	55	17701.085	29003.9...	340.889	1473.7	1...	H2-1
531	M269	L2.5x1.25x5	.060	14.653	56	.002	0	y	56	16726.225	29003.9...	340.889	1464.21	1...	H2-1
532	M129	PL2.25X5	.059	15.461	56	.010	15.152	y	55	5785.218	18981	123.75	891	1...	H1-1b
533	M75	PL2.25X5	.059	14.997	56	.018	0	y	56	5905.645	18981	123.75	891	1...	H1-1b
534	M227	L2.5x1.25x5	.057	14.952	56	.002	0	y	56	16726.225	29003.9...	340.889	1464.21	1...	H2-1
535	M229	L2.5x1.25x5	.057	14.952	56	.004	0	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
536	M33	PL2.25X5	.057	15.461	56	.010	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
537	M145	PL2.25X5	.057	15.461	55	.009	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
538	M15	PL2.25X5	.057	15.461	55	.008	15.152	y	56	5785.218	18981	123.75	891	1...	H1-1b
539	M128	PL2.25X5	.057	15.461	56	.008	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
540	M159	PL2.25X5	.057	15.152	56	.012	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
541	M263	L2.5x1.25x5	.056	14.952	55	.004	29.605	y	55	16726.225	29003.9...	340.889	1464.21	1...	H2-1
542	M284	L2.5x1.25x5	.055	14.654	55	.002	29.607	y	55	16724.892	29003.9...	340.889	1464.197	1...	H2-1
543	M63	PL2.25X5	.055	15.152	55	.011	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
544	M288	L2.5x1.25x5	.054	14.232	55	.007	0	y	55	17255.841	29003.9...	340.889	1469.346	1...	H2-1
545	M274	L2.5x1.25x5	.054	14.952	56	.002	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
546	M58	PL2.25X5	.054	15.152	56	.005	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
547	M49	PL2.25X5	.053	15.461	56	.008	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
548	M251	L2.5x1.25x5	.052	11.879	56	.001	0	y	55	20199.817	29003.9...	340.889	1494.276	1...	H2-1
549	M32	PL2.25X5	.051	15.461	55	.006	15.152	y	56	5785.218	18981	123.75	891	1...	H1-1b
550	M144	PL2.25X5	.051	15.461	55	.006	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
551	M248	L2.5x1.25x5	.051	14.652	56	.002	0	y	55	16727.63	29003.9...	340.889	1464.224	1...	H2-1
552	M109	PL2.25X5	.050	15.461	56	.005	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
553	M48	PL2.25X5	.050	15.461	56	.005	0	y	56	5785.218	18981	123.75	891	2...	H1-1b
554	M106	PL2.25X5	.050	15.152	55	.008	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
555	M110	PL2.25X5	.050	15.461	56	.007	15.152	y	55	5785.218	18981	123.75	891	1...	H1-1b
556	M267	L2.5x1.25x5	.050	14.653	56	.006	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
557	M222	L2.5x1.25x5	.050	14.653	55	.006	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
558	M250	L2.5x1.25x5	.049	14.952	55	.001	29.605	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
559	M64	PL2.25X5	.049	15.152	55	.009	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
560	M160	PL2.25X5	.048	15.152	56	.008	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
561	M221	L2.5x1.25x5	.048	14.952	55	.003	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
562	M10	PL2.25X5	.047	15.152	56	.007	0	y	56	5785.218	18981	123.75	891	1...	H1-1b
563	M162	PL2.25X5	.047	15.461	55	.005	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
564	M224	L2.5x1.25x5	.047	14.653	55	.003	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
565	M246	L2.5x1.25x5	.046	14.647	56	.002	29.593	y	55	16733.833	29003.9...	340.889	1464.284	1...	H2-1
566	M14	PL2.25X5	.046	15.461	55	.008	0	y	55	5785.218	18981	123.75	891	1...	H1-1b
567	M202	L2.5x1.25x5	.046	14.951	56	.002	0	y	56	16727.63	29003.9...	340.889	1464.224	1...	H2-1
568	M266	L2.5x1.25x5	.046	14.952	56	.004	29.605	y	56	16726.225	29003.9...	340.889	1464.21	1...	H2-1
569	M314	L3x2.5x5	.046	22.056	56	.002	41.991	z	56	32987.716	44010	1270.778	2996.056	1...	H2-1



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.03
 Model Name : Catenary Structure Type 3

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]|LC Shear	Loc[in]|Dir LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
570	M124	PL2.25X5	.045	15.152|55 .008	0	y 55	5785.218	18981	123.75	891	1...H1-1b
571	M13	PL2.25X5	.045	15.461|55 .003	15.152	y 56	5785.218	18981	123.75	891	1...H1-1b
572	M28	PL2.25X5	.045	15.152|56 .008	0	y 56	5785.218	18981	123.75	891	1...H1-1b
573	M219	L2.5x1.25x5	.044	14.653|55 .004	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1
574	M66	PL2.25X5	.044	15.461|56 .005	0	y 56	5785.218	18981	123.75	891	1...H1-1b
575	M244	L2.5x1.25x5	.043	14.532|55 .007	0	y 56	17244.099	29003.9...	340.889	1469.232	1...H2-1
576	M198	L2.5x1.25x5	.043	14.812|56 .016	29.328	y 56	16898.734	29003.9...	340.889	1465.879	1...H2-1
577	M261	L2.5x1.25x5	.043	11.879|56 .002	0	y 56	20199.817	29003.9...	340.889	1494.276	1...H2-1
578	M142	PL2.25X5	.042	15.152|56 .008	0	y 56	5785.218	18981	123.75	891	1...H1-1b
579	M127	PL2.25X5	.042	15.461|56 .004	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b
580	M46	PL2.25X5	.041	15.152|55 .006	0	y 55	5785.218	18981	123.75	891	1...H1-1b
581	M217	L2.5x1.25x5	.041	14.653|55 .002	29.605	y 55	16726.225	29003.9...	340.889	1464.211	1...H2-1
582	M215	L2.5x1.25x5	.041	11.879|55 .003	0	y 56	20199.817	29003.9...	340.889	1494.276	1...H2-1
583	M161	PL2.25X5	.040	15.461|55 .004	0	y 56	5785.218	18981	123.75	891	2...H1-1b
584	M65	PL2.25X5	.038	15.461|56 .003	15.461	y 56	5785.218	18981	123.75	891	2...H1-1b
585	M31	PL2.25X5	.038	15.461|55 .005	15.461	y 55	5785.218	18981	123.75	891	2...H1-1b
586	M47	PL2.25X5	.038	15.152|55 .005	0	y 55	5785.218	18981	123.75	891	1...H1-1b
587	M143	PL2.25X5	.037	15.152|56 .004	0	y 56	5785.218	18981	123.75	891	1...H1-1b
588	M125	PL2.25X5	.037	15.152|55 .003	0	y 55	5785.218	18981	123.75	891	1...H1-1b
589	M264	L2.5x1.25x5	.037	14.952|56 .002	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1
590	M262	L2.5x1.25x5	.037	14.653|55 .002	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1
591	M200	L2.5x1.25x5	.037	14.946|56 .003	0	y 56	16733.833	29003.9...	340.889	1464.284	1...H2-1
592	M126	PL2.25X5	.036	15.461|56 .003	15.461	y 56	5785.218	18981	123.75	891	2...H1-1b
593	M247	L2.5x1.25x5	.036	14.947|56 .002	29.595	y 56	16732.465	29003.9...	340.889	1464.271	1...H2-1
594	M249	L2.5x1.25x5	.035	14.952|56 .002	0	y 56	16726.225	29003.9...	340.889	1464.211	1...H2-1
595	M272	L2.5x1.25x5	.035	14.952|56 .003	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1
596	M204	L2.5x1.25x5	.035	14.952|56 .001	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1
597	M29	PL2.25X5	.035	15.152|56 .003	0	y 56	5785.218	18981	123.75	891	1...H1-1b
598	M205	L2.5x1.25x5	.034	11.879|55 .001	0	y 56	20199.817	29003.9...	340.889	1494.276	1...H2-1
599	M108	PL2.25X5	.033	15.461|56 .002	15.461	y 56	5785.218	18981	123.75	891	3...H1-1b
600	M276	L2.5x1.25x5	.033	14.952|56 .001	29.605	y 55	16726.225	29003.9...	340.889	1464.211	1...H2-1
601	M30	PL2.25X5	.032	15.461|55 .002	15.461	y 55	5785.218	18981	123.75	891	2...H1-1b
602	M107	PL2.25X5	.032	15.152|55 .004	0	y 55	5785.218	18981	123.75	891	1...H1-1b
603	M11	PL2.25X5	.031	15.152|56 .004	0	y 56	5785.218	18981	123.75	891	1...H1-1b
604	M245	L2.5x1.25x5	.030	14.162|56 .005	0	y 56	17701.085	29003.9...	340.889	1473.7	1...H2-1
605	M12	PL2.25X5	.030	15.461|55 .004	15.461	y 55	5785.218	18981	123.75	891	2...H1-1b
606	M299	L3x2.5x5	.029	19.935|56 .002	0	z 56	32987.716	44010	1270.778	2996.056	1...H2-1
607	M313	L3x2.5x5	.027	22.056|56 .002	0	z 55	32987.716	44010	1270.778	2996.056	1...H2-1
608	M350	L3x2.5x5	.026	22.056|56 .003	0	z 56	32987.716	44010	1270.778	2996.056	1...H2-1
609	M351	L3x2.5x5	.025	19.935|56 .004	0	z 56	32987.716	44010	1270.778	2996.056	1...H2-1
610	M300	L3x2.5x5	.023	22.056|55 .002	0	z 56	32987.716	44010	1270.778	2982.261	1...H2-1
611	M349	L3x2.5x5	.021	19.935|55 .003	0	z 55	32987.716	44010	1270.778	2982.261	1...H2-1
612	M225	L2.5x1.25x5	.016	11.879|55 .001	0	y 56	20199.817	29003.9...	340.889	1494.276	1...H2-1
613	M281	L2.5x1.25x5	.012	11.879|56 .002	0	y 55	20199.817	29003.9...	340.889	1494.276	1...H2-1
614	M271	L2.5x1.25x5	.012	11.879|56 .001	0	y 55	20199.817	29003.9...	340.889	1494.276	1...H2-1
615	M235	L2.5x1.25x5	.011	11.879|56 .001	0	y 55	20199.817	29003.9...	340.889	1494.276	1...H2-1
616	M352	L3x2.5x5	.004	19.935|55 .004	41.991	z 56	32987.716	44010	1270.778	2982.261	1...H2-1



Milvon to West River Catenary Structure Assessment

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-M
STRUCTURE TYPE 3 FIELD CONDITION
NESC 2012, UI CRITERIA, AND HURRICANE CATEGORY 3
COMPLETE MEMBER RESULTS



Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
1	M628	PL2.25X4	4.319	14.485	70	.045	14.485	y 75	3160.048	15201	78.75	711	1...H1-1a
2	M558	PL2.25X4	4.318	14.485	71	.045	14.485	y 74	3160.048	15201	78.75	711	1...H1-1a
3	M535	6H25	4.277	43.921	75	9.999	118....	z 71	32380.313	215681.4	21582	40822.49	1 H1-1b
4	M605	6H25	4.277	43.921	74	9.999	118....	z 70	32380.313	215681.4	21582	40822.49	1 H1-1b
5	M627	PL2.25X4	4.221	14.485	70	.047	27.577	y 75	3160.048	15201	78.75	711	1...H1-1a
6	M557	PL2.25X4	4.220	14.485	71	.047	27.577	y 74	3160.048	15201	78.75	711	1...H1-1a
7	M636	PL2.25X4	3.861	12.585	70	.067	12.827	y 70	4201.337	15201	78.75	711	1...H1-1a
8	M566	PL2.25X4	3.861	12.585	71	.067	12.827	y 71	4201.337	15201	78.75	711	1...H1-1a
9	M635	PL2.25X4	3.357	12.585	70	.049	0	y 74	4201.337	15201	78.75	711	1...H1-1a
10	M565	PL2.25X4	3.356	12.585	71	.049	0	y 75	4201.337	15201	78.75	711	1...H1-1a
11	M603	L6x4x6	3.272	71.273	74	.242	78.061	z 70	28958.752	97470	4257.614	12612.4...	1 H2-1
12	M533	L6x4x6	3.272	96.727	75	.243	83.152	z 71	28958.752	97470	4257.614	12612.4...	1 H2-1
13	M553	PL2.25X5	3.167	18.733	71	.039	19.093	y 75	3742.008	18981	123.75	891	1...H1-1a
14	M623	PL2.25X5	3.167	18.733	70	.039	19.093	y 74	3742.008	18981	123.75	891	1...H1-1a
15	M664	PL2.25X4	2.689	8.014	70	.961	14.969	y 70	10169.427	15201	78.75	711	2...H1-1a
16	M594	PL2.25X4	2.689	8.014	71	.961	14.969	y 71	10169.427	15201	78.75	711	2...H1-1a
17	M656	PL2.25X4	2.650	8.993	70	.567	16.798	y 70	9140.318	15201	78.75	711	2...H1-1a
18	M586	PL2.25X4	2.650	8.993	71	.567	16.798	y 71	9140.318	15201	78.75	711	2...H1-1a
19	M22	PL2.25X5	2.556	15.152	75	.463	0	y 75	5785.218	18981	123.75	891	1...H1-1a
20	M118	PL2.25X5	2.556	15.152	74	.462	0	y 74	5785.218	18981	123.75	891	1...H1-1a
21	M601	L3x2.5x5	2.506	42.908	70	3.049	0	z 70	40948.468	44010	1270.778	2578.058	1...H2-1
22	M531	L3x2.5x5	2.505	98.683	71	3.049	141....	z 71	40948.468	44010	1270.778	2577.657	1...H2-1
23	M651	PL2.25X4	2.447	10.217	70	.228	10.413	y 70	6269.147	15201	78.75	711	1...H1-1a
24	M581	PL2.25X4	2.447	10.217	71	.228	10.413	y 71	6269.147	15201	78.75	711	1...H1-1a
25	M648	PL2.25X4	2.294	10.413	70	.331	19.451	y 70	7711.625	15201	78.75	711	2...H1-1a
26	M578	PL2.25X4	2.294	10.413	71	.331	19.451	y 71	7711.625	15201	78.75	711	2...H1-1a
27	M667	PL2.25X4	2.246	8.014	70	.862	8.014	y 70	10169.427	15201	78.75	711	1...H1-1a
28	M597	PL2.25X4	2.246	8.014	71	.862	8.014	y 71	10169.427	15201	78.75	711	1...H1-1a
29	M622	PL2.25X5	2.177	18.733	74	.050	0	y 74	3742.008	18981	123.75	891	1...H1-1a
30	M552	PL2.25X5	2.172	18.733	75	.050	0	y 75	3742.008	18981	123.75	891	1...H1-1a
31	M554	L4x3x6	2.141	9.606	75	.423	7.685	z 74	64643.067	67230	2238.689	5885.484	1...H2-1
32	M99	L5x5x8	2.139	26.31	74	.097	372....	y 75	127826.437	129330	7731.399	11180.1...	1...H2-1
33	M624	L4x3x6	2.138	9.414	74	.426	11.336	z 75	64643.067	67230	2238.689	5885.484	1...H2-1
34	M609	L3x2.5x6	2.131	4.545	70	.692	5.182	y 70	51421.803	52110	1486.645	3490.361	2...H2-1
35	M539	L3x2.5x6	2.131	4.455	71	.692	.091	y 71	51421.803	52110	1486.645	3490.361	1...H2-1
36	M97	L5x5x8	2.106	345....	75	.208	0	y 74	127826.437	129330	7731.399	12344.0...	1...H2-1
37	M3	L5x5x8	2.070	345....	75	.096	0	y 74	127826.437	129330	7731.399	17182.3...	1...H2-1
38	M119	PL2.25X5	2.066	15.152	74	.042	0	y 75	5785.218	18981	123.75	891	1...H1-1a
39	M23	PL2.25X5	2.062	15.152	75	.042	0	y 74	5785.218	18981	123.75	891	1...H1-1a
40	M659	PL2.25X4	2.056	8.823	70	.460	16.798	y 70	7875.296	15201	78.75	711	1...H1-1a
41	M589	PL2.25X4	2.056	8.823	71	.460	16.798	y 71	7875.296	15201	78.75	711	1...H1-1a
42	M1	L5x5x8	2.046	26.31	74	.207	368....	y 75	127826.437	129330	7731.399	17182.3...	1...H2-1
43	M665	PL2.25X4	2.002	8.014	70	.904	8.014	y 70	10169.427	15201	78.75	711	1...H1-1a
44	M595	PL2.25X4	2.002	8.014	71	.904	8.014	y 71	10169.427	15201	78.75	711	1...H1-1a
45	M155	PL2.25X5	1.983	15.152	75	.044	0	y 74	5785.218	18981	123.75	891	1...H1-1a
46	M59	PL2.25X5	1.978	15.152	74	.044	0	y 75	5785.218	18981	123.75	891	1...H1-1a
47	M604	L6x4x6	1.965	58.667	70	.755	58.667	z 70	43003.777	97470	4257.614	10951.9...	1 H2-1
48	M534	L6x4x6	1.964	73.333	71	.754	66.667	z 71	43003.777	97470	4257.614	10951.9...	1 H2-1
49	M538	L3x2.5x6	1.951	4.545	71	1.061	4.545	y 71	51421.803	52110	1486.645	3490.361	2...H2-1
50	M608	L3x2.5x6	1.950	4.455	70	1.061	0	y 70	51421.803	52110	1486.645	3490.361	1...H2-1
51	M98	L5x5x8	1.928	26.31	74	.096	368....	y 70	127826.437	129330	7731.399	17021.5...	4...H2-1
52	M2	L5x5x8	1.910	345....	75	.098	0	y 71	127826.437	129330	7731.399	17182.3...	4...H2-1
53	M666	PL2.25X4	1.853	8.014	70	.559	8.014	y 70	10169.427	15201	78.75	711	2...H1-1a
54	M596	PL2.25X4	1.853	8.014	71	.558	8.014	y 71	10169.427	15201	78.75	711	2...H1-1a
55	M563	PL2.25X4	1.842	16.057	71	.080	16.36	y 75	2619.675	15201	78.75	711	2...H1-1a
56	M633	PL2.25X4	1.841	16.057	70	.080	16.36	y 74	2619.675	15201	78.75	711	2...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
57	M100	L5x5x8	1.834	345....	75 .076	349....	y 59	127826.437	129330	7731.399	16924.52	4...	H2-1
58	M555	L4x3x6	1.818	9.414	74 .374	7.685	z 71	64643.067	67230	2238.689	5885.484	1...	H2-1
59	M4	L5x5x8	1.809	26.31	74 .078	22.552	y 60	127826.437	129330	7731.399	17182.3...	3...	H2-1
60	M625	L4x3x6	1.809	9.606	75 .374	9.799	z 69	64643.067	67230	2238.689	5885.484	1...	H2-1
61	M575	PL2.25X4	1.791	9.624	71 .084	9.809	y 71	7062.974	15201	78.75	711	1...	H1-1a
62	M645	PL2.25X4	1.791	9.624	70 .084	9.809	y 70	7062.974	15201	78.75	711	1...	H1-1a
63	M602	L3x2.5x5	1.743	68.649	75 3.066	137....	z 70	40948.468	44010	1270.778	2996.056	1	H2-1
64	M532	L3x2.5x5	1.742	72.94	74 3.064	4.291	z 71	40948.468	44010	1270.778	2996.056	1	H2-1
65	M591	PL2.25X4	1.741	7.628	71 .297	7.628	y 71	10275.222	15201	78.75	711	2...	H1-1a
66	M661	PL2.25X4	1.741	7.628	70 .297	7.628	y 70	10275.222	15201	78.75	711	2...	H1-1a
67	M154	PL2.25X5	1.735	15.461	75 .026	30.614	y 75	5785.218	18981	123.75	891	1...	H1-1a
68	M58	PL2.25X5	1.693	15.461	74 .028	30.614	y 75	5785.218	18981	123.75	891	1...	H1-1a
69	M529	L3x2.5x5	1.665	128....	74 3.133	4.291	z 71	40948.468	44010	1270.778	2996.056	1	H2-1
70	M571	PL2.25X4	1.658	13.831	71 .068	0	y 74	3535.554	15201	78.75	711	1...	H1-1a
71	M641	PL2.25X4	1.657	13.831	70 .068	0	y 75	3535.554	15201	78.75	711	1...	H1-1a
72	M599	L3x2.5x5	1.657	12.872	75 3.133	137....	z 70	40948.468	44010	1270.778	2996.056	1	H2-1
73	M583	PL2.25X4	1.596	8.413	71 .186	8.413	y 71	9438.032	15201	78.75	711	2...	H1-1a
74	M653	PL2.25X4	1.596	8.413	70 .186	8.413	y 70	9438.032	15201	78.75	711	2...	H1-1a
75	M657	PL2.25X4	1.566	8.823	70 .490	8.993	y 70	7875.296	15201	78.75	711	1...	H1-1a
76	M587	PL2.25X4	1.565	8.823	71 .490	8.993	y 71	7875.296	15201	78.75	711	1...	H1-1a
77	M658	PL2.25X4	1.541	8.993	70 .490	8.993	y 70	9140.318	15201	78.75	711	1...	H1-1a
78	M588	PL2.25X4	1.541	8.993	71 .489	8.993	y 71	9140.318	15201	78.75	711	1...	H1-1a
79	M600	L3x2.5x5	1.479	128....	74 3.056	0	z 70	40948.468	44010	1270.778	2996.056	1	H2-1
80	M530	L3x2.5x5	1.477	12.872	75 3.056	141....	z 71	40948.468	44010	1270.778	2996.056	1	H2-1
81	M496	PL2.25X5	1.458	9.647	59 .103	9.848	y 75	11695.943	18981	123.75	891	1...	H1-1a
82	M403	PL2.25X5	1.427	9.647	60 .102	9.848	y 74	11695.944	18981	123.75	891	1...	H1-1a
83	M649	PL2.25X4	1.415	10.217	70 .219	10.413	y 70	6269.147	15201	78.75	711	1...	H1-1a
84	M579	PL2.25X4	1.415	10.217	71 .219	10.413	y 71	6269.147	15201	78.75	711	1...	H1-1a
85	M462	PL2.25X5	1.408	9.647	59 .093	19.896	y 74	11695.943	18981	123.75	891	1...	H1-1a
86	M643	L6x4x6	1.404	6.878	74 .518	6.878	z 70	91550.116	97470	4257.614	12513.33	1...	H2-1
87	M573	L6x4x6	1.403	6.74	75 .517	6.74	z 71	91550.116	97470	4257.614	12499.6...	1...	H2-1
88	M361	PL2.25X5	1.382	9.647	60 .093	19.896	y 75	11695.943	18981	123.75	891	1...	H1-1a
89	M617	PL2.25X5	1.379	15.181	70 .034	0	y 70	5674.836	18981	123.75	891	1...	H1-1a
90	M547	PL2.25X5	1.377	15.181	71 .035	0	y 71	5674.836	18981	123.75	891	1...	H1-1a
91	M446	PL2.25X5	1.368	9.875	59 .083	9.875	y 75	11413.851	18981	123.75	891	1...	H1-1a
92	M379	PL2.25X5	1.345	9.875	60 .083	9.875	y 74	11413.851	18981	123.75	891	1...	H1-1a
93	M637	PL2.25X4	1.343	12.827	70 .053	23.96	y 74	5346.424	15201	78.75	711	1...	H1-1a
94	M567	PL2.25X4	1.343	12.827	71 .053	23.96	y 75	5346.424	15201	78.75	711	1...	H1-1a
95	M480	PL2.25X5	1.337	9.875	59 .104	0	y 74	11413.851	18981	123.75	891	1...	H1-1a
96	M421	PL2.25X5	1.311	9.875	60 .103	0	y 75	11413.851	18981	123.75	891	1...	H1-1a
97	M650	PL2.25X4	1.291	10.413	70 .283	10.413	y 70	7711.625	15201	78.75	711	2...	H1-1a
98	M580	PL2.25X4	1.291	10.413	71 .283	10.413	y 71	7711.625	15201	78.75	711	2...	H1-1a
99	M121	PL2.25X5	1.282	15.152	74 .028	30.614	y 74	5785.218	18981	123.75	891	1...	H1-1a
100	M25	PL2.25X5	1.279	15.152	75 .028	30.614	y 75	5785.218	18981	123.75	891	1...	H1-1a
101	M498	PL2.25X5	1.275	10.109	59 .072	10.32	y 75	11126.204	18981	123.75	891	1...	H1-1a
102	M464	PL2.25X5	1.269	10.109	59 .075	10.109	y 75	11126.204	18981	123.75	891	1...	H1-1a
103	M584	PL2.25X4	1.261	8.413	71 .208	8.413	y 71	9438.032	15201	78.75	711	1...	H1-1a
104	M654	PL2.25X4	1.260	8.413	70 .207	8.413	y 70	9438.032	15201	78.75	711	1...	H1-1a
105	M341	L2.5X1.5X5	1.248	27.23	59 .002	49.922	z 65	10829.35	31113.2...	475.557	1510.593	1...	H2-1
106	M363	PL2.25X5	1.246	10.109	60 .075	10.109	y 74	11126.204	18981	123.75	891	1...	H1-1a
107	M405	PL2.25X5	1.245	10.109	60 .071	10.32	y 74	11126.204	18981	123.75	891	1...	H1-1a
108	M479	PL2.25X5	1.235	9.647	60 .107	9.848	y 74	11695.943	18981	123.75	891	1...	H1-1a
109	M590	PL2.25X4	1.235	7.628	71 .297	14.523	y 71	10275.222	15201	78.75	711	1...	H1-1a
110	M660	PL2.25X4	1.235	7.628	70 .297	14.523	y 70	10275.222	15201	78.75	711	1...	H1-1a
111	M592	PL2.25X4	1.230	7.628	71 .484	7.628	y 71	10275.222	15201	78.75	711	1...	H1-1a
112	M662	PL2.25X4	1.230	7.628	70 .483	7.628	y 70	10275.222	15201	78.75	711	1...	H1-1a
113	M310	L2.5X1.5X5	1.226	22.214	60 .005	0	y 59	11300.048	31113.2...	475.557	1515.611	1...	H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
114	M482	PL2.25X5	1.221	10.34859	.074	0	y 74	10833.703	18981	123.75	891	1...H1-1a
115	M334	L2.5X1.5X5	1.211	27.22959	.002	0	z 66	10830.232	31113.2...	475.557	1510.603	1... H2-1
116	M338	L2.5X1.5X5	1.209	27.22959	.002	0	z 66	10830.232	31113.2...	475.557	1510.603	1... H2-1
117	M629	PL2.25X4	1.206	14.76370	.045	27.577	y 74	4052.628	15201	78.75	711	1...H1-1a
118	M559	PL2.25X4	1.206	14.76371	.045	27.577	y 75	4052.628	15201	78.75	711	1...H1-1a
119	M593	PL2.25X4	1.204	7.62871	.383	14.523	y 71	10275.222	15201	78.75	711	1...H1-1a
120	M663	PL2.25X4	1.204	7.62870	.383	14.523	y 70	10275.222	15201	78.75	711	1...H1-1a
121	M445	PL2.25X5	1.203	9.64760	.091	19.896	y 75	11695.943	18981	123.75	891	1...H1-1a
122	M157	PL2.25X5	1.198	15.15275	.026	30.614	y 75	5785.218	18981	123.75	891	1...H1-1a
123	M423	PL2.25X5	1.198	10.34860	.073	0	y 75	10833.703	18981	123.75	891	1...H1-1a
124	M420	PL2.25X5	1.198	9.64759	.107	9.848	y 75	11695.943	18981	123.75	891	1...H1-1a
125	M61	PL2.25X5	1.195	15.15274	.025	30.614	y 74	5785.218	18981	123.75	891	1...H1-1a
126	M123	PL2.25X5	1.195	15.15274	.031	0	y 74	5785.218	18981	123.75	891	1...H1-1a
127	M560	PL2.25X4	1.193	16.05771	.063	0	y 71	2619.675	15201	78.75	711	2...H1-1a
128	M27	PL2.25X5	1.193	15.15275	.031	0	y 75	5785.218	18981	123.75	891	1...H1-1a
129	M630	PL2.25X4	1.192	16.05770	.063	0	y 70	2619.675	15201	78.75	711	2...H1-1a
130	M448	PL2.25X5	1.190	10.34859	.062	10.348	y 75	10833.703	18981	123.75	891	1...H1-1a
131	M104	PL2.25X5	1.190	15.15274	.029	0	y 74	5785.218	18981	123.75	891	1...H1-1a
132	M8	PL2.25X5	1.188	15.15275	.029	0	y 75	5785.218	18981	123.75	891	1...H1-1a
133	M102	PL2.25X5	1.188	15.15275	.036	0	y 59	5785.218	18981	123.75	891	1...H1-1a
134	M6	PL2.25X5	1.187	15.15274	.035	0	y 60	5785.218	18981	123.75	891	1...H1-1a
135	M378	PL2.25X5	1.182	9.84859	.091	19.896	y 74	11130.129	18981	123.75	891	1...H1-1a
136	M463	PL2.25X5	1.177	9.87560	.084	9.875	y 74	11413.851	18981	123.75	891	1...H1-1a
137	M342	L2.5X1.5X5	1.176	27.2359	.002	0	z 66	10829.35	31113.2...	475.557	1510.593	1... H2-1
138	M106	PL2.25X5	1.170	15.15274	.028	30.614	y 74	5785.218	18981	123.75	891	1...H1-1a
139	M381	PL2.25X5	1.169	10.34860	.062	10.348	y 74	10833.703	18981	123.75	891	1...H1-1a
140	M10	PL2.25X5	1.169	15.15275	.028	30.614	y 75	5785.218	18981	123.75	891	1...H1-1a
141	M125	PL2.25X5	1.161	15.15274	.026	30.614	y 74	5785.218	18981	123.75	891	1...H1-1a
142	M29	PL2.25X5	1.160	15.15275	.026	30.614	y 75	5785.218	18981	123.75	891	1...H1-1a
143	M116	PL2.25X5	1.159	15.3175	.024	30.933	y 70	5666.526	18981	123.75	891	1...H1-1a
144	M196	L5x3.5x6	1.158	46.06359	.103	713....	y 62	74532.516	82350	3178.657	7145.709	1 H2-1
145	M20	PL2.25X5	1.156	15.3174	.022	30.933	y 71	5666.526	18981	123.75	891	1...H1-1a
146	M295	L2.5X1.5X5	1.156	22.21360	.002	48.869	y 75	11300.937	31113.2...	475.557	1515.62	1... H2-1
147	M362	PL2.25X5	1.156	10.08159	.084	9.875	y 75	10862.07	18981	123.75	891	1...H1-1a
148	M108	PL2.25X5	1.149	15.15274	.025	30.614	y 75	5785.218	18981	123.75	891	1...H1-1a
149	M138	PL2.25X5	1.149	15.15274	.032	30.614	y 74	5785.218	18981	123.75	891	1...H1-1a
150	M42	PL2.25X5	1.148	15.15275	.032	30.614	y 75	5785.218	18981	123.75	891	1...H1-1a
151	M12	PL2.25X5	1.147	15.15275	.025	30.614	y 74	5785.218	18981	123.75	891	1...H1-1a
152	M133	PL2.25X5	1.146	15.46174	.025	30.614	y 70	5785.218	18981	123.75	891	1...H1-1a
153	M37	PL2.25X5	1.144	15.46175	.023	30.614	y 71	5785.218	18981	123.75	891	1...H1-1a
154	M127	PL2.25X5	1.144	15.15275	.026	30.614	y 74	5785.218	18981	123.75	891	1...H1-1a
155	M31	PL2.25X5	1.142	15.15274	.026	30.614	y 75	5785.218	18981	123.75	891	1...H1-1a
156	M500	PL2.25X5	1.140	10.59259	.052	0	y 74	10537.06	18981	123.75	891	1...H1-1a
157	M197	L5x3.5x6	1.138	713....59	.157	399....	y 69	74532.516	82350	3178.657	7145.709	1 H2-1
158	M466	PL2.25X5	1.138	10.59259	.053	10.592	y 75	10537.06	18981	123.75	891	1...H1-1a
159	M497	PL2.25X5	1.136	9.87560	.100	0	y 75	11413.851	18981	123.75	891	1...H1-1a
160	M110	PL2.25X5	1.134	15.15275	.024	0	y 75	5785.218	18981	123.75	891	1...H1-1a
161	M112	PL2.25X5	1.132	15.15275	.022	30.614	y 74	5785.218	18981	123.75	891	1...H1-1a
162	M16	PL2.25X5	1.131	15.15274	.022	30.614	y 75	5785.218	18981	123.75	891	1...H1-1a
163	M14	PL2.25X5	1.131	15.15274	.025	0	y 74	5785.218	18981	123.75	891	1...H1-1a
164	M131	PL2.25X5	1.126	15.15275	.023	0	y 75	5785.218	18981	123.75	891	1...H1-1a
165	M129	PL2.25X5	1.124	15.15275	.021	30.614	y 75	5785.218	18981	123.75	891	1...H1-1a
166	M35	PL2.25X5	1.122	15.15274	.024	0	y 74	5785.218	18981	123.75	891	1...H1-1a
167	M33	PL2.25X5	1.121	15.15274	.022	30.614	y 74	5785.218	18981	123.75	891	1...H1-1a
168	M407	PL2.25X5	1.120	10.81360	.052	0	y 75	10022.861	18981	123.75	891	1...H1-1a
169	M365	PL2.25X5	1.119	10.81360	.054	10.592	y 74	10022.861	18981	123.75	891	1...H1-1a
170	M159	PL2.25X5	1.118	15.15275	.028	0	y 75	5785.218	18981	123.75	891	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
171	M169	PL2.25X5	1.118	15.15274 .029	0	y 59	5785.218	18981	123.75	891	1...	H1-1a
172	M63	PL2.25X5	1.116	15.15274 .028	0	y 74	5785.218	18981	123.75	891	1...	H1-1a
173	M142	PL2.25X5	1.114	15.15274 .023	30.614	y 75	5785.218	18981	123.75	891	1...	H1-1a
174	M140	PL2.25X5	1.113	15.15275 .027	0	y 75	5785.218	18981	123.75	891	1...	H1-1a
175	M44	PL2.25X5	1.111	15.15274 .026	0	y 74	5785.218	18981	123.75	891	1...	H1-1a
176	M46	PL2.25X5	1.111	15.15275 .022	0	y 74	5785.218	18981	123.75	891	1...	H1-1a
177	M163	PL2.25X5	1.109	15.15274 .021	0	y 70	5785.218	18981	123.75	891	1...	H1-1a
178	M73	PL2.25X5	1.106	15.15275 .027	0	y 60	5785.218	18981	123.75	891	1...	H1-1a
179	M67	PL2.25X5	1.106	15.15275 .020	0	y 71	5785.218	18981	123.75	891	1...	H1-1a
180	M404	PL2.25X5	1.104	9.875 59 .099	0	y 74	11413.851	18981	123.75	891	1...	H1-1a
181	M161	PL2.25X5	1.104	15.15274 .021	0	y 74	5785.218	18981	123.75	891	1...	H1-1a
182	M114	PL2.25X5	1.102	15.15275 .020	30.614	y 70	5785.218	18981	123.75	891	1...	H1-1a
183	M65	PL2.25X5	1.101	15.15275 .021	0	y 75	5785.218	18981	123.75	891	1...	H1-1a
184	M148	PL2.25X5	1.101	15.15274 .020	0	y 59	5785.218	18981	123.75	891	1...	H1-1a
185	M146	PL2.25X5	1.100	15.15274 .021	0	y 74	5785.218	18981	123.75	891	1...	H1-1a
186	M582	PL2.25X4	1.100	8.413 71 .179	16.018	y 71	9438.032	15201	78.75	711	1...	H1-1a
187	M652	PL2.25X4	1.100	8.413 70 .179	16.018	y 70	9438.032	15201	78.75	711	1...	H1-1a
188	M144	PL2.25X5	1.099	15.15274 .021	0	y 75	5785.218	18981	123.75	891	1...	H1-1a
189	M18	PL2.25X5	1.098	15.15274 .019	30.614	y 71	5785.218	18981	123.75	891	1...	H1-1a
190	M167	PL2.25X5	1.098	15.15274 .023	0	y 59	5785.218	18981	123.75	891	1...	H1-1a
191	M52	PL2.25X5	1.097	15.15275 .018	0	y 60	5785.218	18981	123.75	891	1...	H1-1a
192	M50	PL2.25X5	1.097	15.15275 .020	0	y 75	5785.218	18981	123.75	891	1...	H1-1a
193	M48	PL2.25X5	1.096	15.15275 .020	0	y 74	5785.218	18981	123.75	891	1...	H1-1a
194	M71	PL2.25X5	1.094	15.15275 .022	0	y 60	5785.218	18981	123.75	891	1...	H1-1a
195	M56	PL2.25X5	1.093	15.31 75 .032	0	y 60	5666.526	18981	123.75	891	1...	H1-1a
196	M165	PL2.25X5	1.092	15.15274 .019	0	y 70	5785.218	18981	123.75	891	1...	H1-1a
197	M69	PL2.25X5	1.089	15.15275 .019	0	y 71	5785.218	18981	123.75	891	1...	H1-1a
198	M447	PL2.25X5	1.088	10.109 60 .075	10.109	y 74	11126.204	18981	123.75	891	1...	H1-1a
199	M548	PL2.25X5	1.087	15.181 71 .033	15.479	y 74	5674.836	18981	123.75	891	1...	H1-1a
200	M450	PL2.25X5	1.086	11.066 59 .047	10.84	y 75	9734.36	18981	123.75	891	1...	H1-1a
201	M484	PL2.25X5	1.085	10.84 59 .050	0	y 74	10237.001	18981	123.75	891	1...	H1-1a
202	M333	L2.5X1.5X5	1.081	27.733 77 .003	0	z 65	10830.232	31113.2...	475.557	1578.654	1...	H2-1
203	M302	L2.5X1.5X5	1.075	22.214 60 .002	48.871	y 71	11300.048	31113.2...	475.557	1515.611	1...	H2-1
204	M325	L2.5X1.5X5	1.072	27.229 59 .003	0	y 71	10830.232	31113.2...	475.557	1510.603	1...	H2-1
205	M425	PL2.25X5	1.070	11.066 60 .049	0	y 75	9734.36	18981	123.75	891	1...	H1-1a
206	M383	PL2.25X5	1.070	11.066 60 .047	10.84	y 74	9734.36	18981	123.75	891	1...	H1-1a
207	M306	L2.5X1.5X5	1.069	22.214 60 .002	48.871	z 66	11300.048	31113.2...	475.557	1515.611	1...	H2-1
208	M481	PL2.25X5	1.069	10.109 60 .076	10.32	y 74	11126.204	18981	123.75	891	1...	H1-1a
209	M150	PL2.25X5	1.069	15.15274 .026	0	y 59	5785.218	18981	123.75	891	1...	H1-1a
210	M337	L2.5X1.5X5	1.069	27.733 77 .002	0	z 65	10830.232	31113.2...	475.557	1578.654	1...	H2-1
211	M576	PL2.25X4	1.068	9.809 71 .108	9.809	y 71	8183.037	15201	78.75	711	1...	H1-1a
212	M618	PL2.25X5	1.068	15.181 70 .033	15.479	y 75	5674.836	18981	123.75	891	1...	H1-1a
213	M646	PL2.25X4	1.068	9.809 70 .107	9.809	y 70	8183.037	15201	78.75	711	1...	H1-1a
214	M152	PL2.25X5	1.067	15.31 74 .034	0	y 59	5666.526	18981	123.75	891	1...	H1-1a
215	M380	PL2.25X5	1.067	10.109 59 .076	10.109	y 75	11126.204	18981	123.75	891	1...	H1-1a
216	M54	PL2.25X5	1.067	15.15275 .024	0	y 60	5785.218	18981	123.75	891	1...	H1-1a
217	M476	PL2.25X5	1.059	13.579 59 .023	13.301	y 74	6865.515	18981	123.75	891	1...	H1-1a
218	M499	PL2.25X5	1.048	10.564 60 .071	0	y 75	10307.552	18981	123.75	891	1...	H1-1a
219	M502	PL2.25X5	1.046	11.323 59 .042	0	y 74	9442.879	18981	123.75	891	2...	H1-1a
220	M468	PL2.25X5	1.045	11.323 59 .041	11.092	y 75	9442.879	18981	123.75	891	2...	H1-1a
221	M422	PL2.25X5	1.037	10.109 59 .076	10.32	y 75	11126.204	18981	123.75	891	1...	H1-1a
222	M409	PL2.25X5	1.033	11.323 60 .042	0	y 75	9442.879	18981	123.75	891	1...	H1-1a
223	M494	PL2.25X5	1.031	13.785 59 .020	0	y 75	6796.946	18981	123.75	891	1...	H1-1a
224	M367	PL2.25X5	1.029	11.323 60 .042	11.092	y 74	9442.879	18981	123.75	891	1...	H1-1a
225	M345	L2.5X1.5X5	1.029	26.176 59 .004	0	y 70	12161.091	31113.2...	475.557	1524.092	1...	H2-1
226	M321	L2.5X1.5X5	1.028	27.229 59 .003	49.92	y 71	10830.232	31113.2...	475.557	1510.603	1...	H2-1
227	M406	PL2.25X5	1.025	10.564 59 .070	0	y 74	10307.552	18981	123.75	891	1...	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
228	M510	PL2.25X5	1.022	13.50159	.021	0	y 75	7080.374	18981	123.75	891	1...H1-1a	
229	M330	L2.5X1.5X5	1.022	27.73377	.002	0	z 65	10830.232	31113.2...	475.557	1578.654	1...H2-1	
230	M512	PL2.25X5	1.022	14.07159	.019	0	y 75	6528.15	18981	123.75	891	1...H1-1a	
231	M478	PL2.25X5	1.021	14.07159	.020	13.784	y 74	6528.15	18981	123.75	891	1...H1-1a	
232	M465	PL2.25X5	1.020	10.34860	.060	10.348	y 74	10833.703	18981	123.75	891	1...H1-1a	
233	M492	PL2.25X5	1.016	13.21959	.024	0	y 75	7379.277	18981	123.75	891	1...H1-1a	
234	M458	PL2.25X5	1.015	13.21959	.024	12.949	y 74	7379.277	18981	123.75	891	1...H1-1a	
235	M486	PL2.25X5	1.012	11.58459	.040	0	y 74	9149.226	18981	123.75	891	2...H1-1a	
236	M452	PL2.25X5	1.012	11.58459	.036	11.348	y 75	9149.226	18981	123.75	891	2...H1-1a	
237	M435	PL2.25X5	1.011	13.78560	.020	0	y 74	6796.946	18981	123.75	891	1...H1-1a	
238	M393	PL2.25X5	1.011	13.78560	.021	13.504	y 75	6796.946	18981	123.75	891	1...H1-1a	
239	M508	PL2.25X5	1.011	12.94	59	.024	0	y 75	7674.832	18981	123.75	891	1...H1-1a
240	M474	PL2.25X5	1.011	12.94	59	.025	12.675	y 74	7674.832	18981	123.75	891	1...H1-1a
241	M460	PL2.25X5	1.009	14.06659	.021	13.785	y 74	6937.777	18981	123.75	891	1...H1-1a	
242	M490	PL2.25X5	1.007	12.66359	.026	0	y 75	7968.15	18981	123.75	891	1...H1-1a	
243	M456	PL2.25X5	1.006	12.66359	.027	12.404	y 74	7968.15	18981	123.75	891	1...H1-1a	
244	M577	PL2.25X4	1.006	9.809	71	.164	18.322	y 71	8183.037	15201	78.75	711	1...H1-1a
245	M647	PL2.25X4	1.006	9.809	70	.164	18.322	y 70	8183.037	15201	78.75	711	1...H1-1a
246	M506	PL2.25X5	1.005	12.38859	.027	0	y 75	8262.932	18981	123.75	891	1...H1-1a	
247	M488	PL2.25X5	1.005	12.11759	.030	0	y 75	8558.51	18981	123.75	891	1...H1-1a	
248	M504	PL2.25X5	1.005	11.84959	.033	0	y 74	8854.184	18981	123.75	891	2...H1-1a	
249	M375	PL2.25X5	1.004	13.50160	.023	13.225	y 75	7080.374	18981	123.75	891	1...H1-1a	
250	M472	PL2.25X5	1.003	12.38859	.028	12.136	y 74	8262.932	18981	123.75	891	1...H1-1a	
251	M417	PL2.25X5	1.003	13.50160	.021	0	y 74	7080.374	18981	123.75	891	1...H1-1a	
252	M454	PL2.25X5	1.003	12.11759	.030	11.87	y 74	8558.51	18981	123.75	891	1...H1-1a	
253	M568	PL2.25X4	1.003	13.83171	.072	13.831	y 74	3535.554	15201	78.75	711	2...H1-1a	
254	M470	PL2.25X5	1.002	11.84959	.032	11.607	y 75	8854.184	18981	123.75	891	2...H1-1a	
255	M377	PL2.25X5	1.002	14.07160	.020	13.784	y 75	6528.15	18981	123.75	891	1...H1-1a	
256	M419	PL2.25X5	1.002	14.07160	.019	0	y 74	6528.15	18981	123.75	891	1...H1-1a	
257	M638	PL2.25X4	1.002	13.83170	.072	13.831	y 75	3535.554	15201	78.75	711	2...H1-1a	
258	M364	PL2.25X5	1.001	10.34859	.061	10.348	y 75	10833.703	18981	123.75	891	1.5H1-1a	
259	M427	PL2.25X5	1.000	11.58460	.040	0	y 75	9149.226	18981	123.75	891	2...H1-1a	
260	M385	PL2.25X5	.997	11.58460	.037	11.348	y 74	9149.226	18981	123.75	891	2...H1-1a	
261	M391	PL2.25X5	.997	13.21960	.024	12.949	y 75	7379.277	18981	123.75	891	1...H1-1a	
262	M433	PL2.25X5	.997	13.21960	.024	0	y 74	7379.277	18981	123.75	891	1...H1-1a	
263	M373	PL2.25X5	.991	12.94	60	.025	12.675	y 75	7674.832	18981	123.75	891	1...H1-1a
264	M415	PL2.25X5	.991	12.94	60	.025	0	y 74	7674.832	18981	123.75	891	1...H1-1a
265	M585	PL2.25X4	.991	8.413	71	.265	16.018	y 71	9438.032	15201	78.75	711	1...H1-1a
266	M655	PL2.25X4	.991	8.413	70	.265	16.018	y 70	9438.032	15201	78.75	711	1...H1-1a
267	M634	PL2.25X4	.989	12.58570	.043	12.827	y 74	4201.337	15201	78.75	711	1...H1-1a	
268	M564	PL2.25X4	.989	12.58571	.043	12.827	y 75	4201.337	15201	78.75	711	1...H1-1a	
269	M301	L2.5X1.5X5	.988	22.21478	.002	0	y 71	11300.048	31113.2...	475.557	1584.382	1...H2-1	
270	M431	PL2.25X5	.987	12.66360	.026	0	y 74	7968.15	18981	123.75	891	1...H1-1a	
271	M389	PL2.25X5	.987	12.66360	.027	12.404	y 75	7968.15	18981	123.75	891	1...H1-1a	
272	M483	PL2.25X5	.986	10.81360	.050	10.813	y 74	10022.861	18981	123.75	891	1...H1-1a	
273	M413	PL2.25X5	.985	12.38860	.027	0	y 74	8262.932	18981	123.75	891	1...H1-1a	
274	M429	PL2.25X5	.984	12.11760	.031	0	y 74	8558.51	18981	123.75	891	1...H1-1a	
275	M371	PL2.25X5	.984	12.38860	.029	12.136	y 75	8262.932	18981	123.75	891	1...H1-1a	
276	M411	PL2.25X5	.984	11.84960	.033	0	y 75	8854.184	18981	123.75	891	2...H1-1a	
277	M346	L2.5X1.5X5	.983	26.17659	.002	0	y 70	12161.091	31113.2...	475.557	1524.092	1...H2-1	
278	M387	PL2.25X5	.983	12.11760	.030	11.87	y 75	8558.51	18981	123.75	891	1...H1-1a	
279	M329	L2.5X1.5X5	.983	27.73377	.003	0	z 65	10830.232	31113.2...	475.557	1578.654	1...H2-1	
280	M369	PL2.25X5	.983	11.84960	.033	11.607	y 74	8854.184	18981	123.75	891	2...H1-1a	
281	M305	L2.5X1.5X5	.982	22.21478	.002	48.871	z 65	11300.048	31113.2...	475.557	1584.382	1...H2-1	
282	M449	PL2.25X5	.981	10.81360	.051	10.592	y 74	10022.861	18981	123.75	891	1...H1-1a	
283	M195	L5x3.5x7	.980	46.18259	.106	508	z 69	86264.621	95238.2...	3723.225	7996.164	1 H2-1	
284	M626	PL2.25X4	.976	14.76370	.047	14.763	y 74	4052.628	15201	78.75	711	1...H1-1a	



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt	phi*Mn y	phi*Mn z	Cb	Eqn
285	M556	PL2.25X4	.976	14.763	71	.047	14.763	y 75	4052.628	15201	78.75	711	1...H1-1a
286	M291	L2.5X1.5X5	.974	20.087	60	.004	46.247	y 71	12586.181	31113.2	475.557	1528.342	1...H2-1
287	M194	L5x3.5x7	.974	715	59	.159	538	y 69	86264.621	95238.2	3723.225	7996.164	1 H2-1
288	M296	L2.5X1.5X5	.969	22.213	78	.002	0	z 66	11300.937	31113.2	475.557	1584.393	1...H2-1
289	M323	L2.5X1.5X5	.968	22.214	60	.003	48.871	y 71	11300.048	31113.2	475.557	1515.611	1...H2-1
290	M382	PL2.25X5	.966	10.813	59	.051	10.592	y 75	10022.861	18981	123.75	891	1...H1-1a
291	M424	PL2.25X5	.966	10.813	59	.049	10.813	y 75	10022.861	18981	123.75	891	1...H1-1a
292	M326	L2.5X1.5X5	.940	27.733	77	.003	0	z 66	10830.232	31113.2	475.557	1578.654	1...H2-1
293	M501	PL2.25X5	.940	11.066	60	.047	0	y 75	9734.36	18981	123.75	891	1...H1-1a
294	M467	PL2.25X5	.940	11.066	60	.044	10.84	y 74	9734.36	18981	123.75	891	1...H1-1a
295	M40	PL2.25X5	.926	15.461	74	.093	0	y 75	5785.218	18981	123.75	891	1...H1-1b
296	M366	PL2.25X5	.925	11.066	59	.044	10.84	y 75	9734.36	18981	123.75	891	1...H1-1a
297	M136	PL2.25X5	.925	15.461	75	.093	0	y 74	5785.218	18981	123.75	891	1...H1-1b
298	M408	PL2.25X5	.920	11.066	59	.046	0	y 74	9734.36	18981	123.75	891	1...H1-1a
299	M317	L2.5X1.5X5	.917	27.733	77	.003	49.92	z 66	10830.232	31113.2	475.557	1578.654	1...H2-1
300	M485	PL2.25X5	.907	11.323	60	.041	11.323	y 74	9442.879	18981	123.75	891	1...H1-1a
301	M451	PL2.25X5	.904	11.323	60	.038	11.092	y 74	9442.879	18981	123.75	891	1...H1-1a
302	M21	PL2.25X5	.893	15.303	75	.053	15.303	y 75	5905.645	18981	123.75	891	1...H1-1a
303	M117	PL2.25X5	.892	15.303	74	.053	15.303	y 74	5905.645	18981	123.75	891	1...H1-1a
304	M384	PL2.25X5	.889	11.323	59	.038	11.092	y 75	9442.879	18981	123.75	891	1...H1-1a
305	M546	PL2.25X5	.889	15.181	78	.031	15.181	y 71	5674.836	18981	123.75	891	1...H1-1a
306	M426	PL2.25X5	.889	11.323	59	.041	11.323	y 75	9442.879	18981	123.75	891	1...H1-1a
307	M616	PL2.25X5	.883	15.181	77	.032	15.181	y 70	5674.836	18981	123.75	891	1...H1-1a
308	M319	L2.5X1.5X5	.879	22.214	78	.003	48.871	y 70	11300.048	31113.2	475.557	1584.382	1...H2-1
309	M503	PL2.25X5	.878	11.584	60	.037	0	y 75	9149.226	18981	123.75	891	1...H1-1a
310	M469	PL2.25X5	.876	11.584	60	.032	11.348	y 74	9149.226	18981	123.75	891	1...H1-1a
311	M316	L2.5X1.5X5	.871	22.214	78	.002	48.871	z 66	11300.048	31113.2	475.557	1584.382	1...H2-1
312	M477	PL2.25X5	.871	13.716	60	.019	27.711	y 74	6731.711	18981	123.75	891	1...H1-1a
313	M511	PL2.25X5	.868	13.785	60	.018	13.785	y 75	6796.946	18981	123.75	891	1...H1-1a
314	M461	PL2.25X5	.865	14.071	60	.018	28.43	y 74	6528.15	18981	123.75	891	1...H1-1a
315	M495	PL2.25X5	.863	14.071	60	.020	14.071	y 75	6528.15	18981	123.75	891	1...H1-1a
316	M368	PL2.25X5	.862	11.584	59	.032	23.405	y 74	9149.226	18981	123.75	891	1...H1-1a
317	M410	PL2.25X5	.862	11.584	59	.036	0	y 74	9149.226	18981	123.75	891	1...H1-1a
318	M312	L2.5X1.5X5	.861	27.733	77	.002	49.92	z 65	10830.232	31113.2	475.557	1578.654	1...H2-1
319	M493	PL2.25X5	.861	13.501	60	.020	13.501	y 75	7080.374	18981	123.75	891	1...H1-1a
320	M475	PL2.25X5	.857	13.219	60	.023	26.708	y 74	7379.277	18981	123.75	891	1...H1-1a
321	M487	PL2.25X5	.856	11.849	60	.030	0	y 75	8854.184	18981	123.75	891	1...H1-1a
322	M509	PL2.25X5	.855	13.219	60	.021	13.219	y 75	7379.277	18981	123.75	891	1...H1-1a
323	M453	PL2.25X5	.855	11.849	60	.029	23.94	y 74	8854.184	18981	123.75	891	2...H1-1a
324	M619	PL2.25X5	.854	15.181	78	.035	29.469	y 74	5674.836	18981	123.75	891	1...H1-1a
325	M376	PL2.25X5	.853	13.785	59	.020	27.851	y 75	6796.946	18981	123.75	891	1...H1-1a
326	M457	PL2.25X5	.852	12.94	60	.024	26.143	y 74	7674.832	18981	123.75	891	1...H1-1a
327	M491	PL2.25X5	.849	12.94	60	.023	12.94	y 75	7674.832	18981	123.75	891	1...H1-1a
328	M459	PL2.25X5	.849	13.776	60	.021	27.277	y 74	7215.985	18981	123.75	891	1...H1-1a
329	M473	PL2.25X5	.847	12.663	60	.025	25.584	y 74	7968.15	18981	123.75	891	1...H1-1a
330	M394	PL2.25X5	.847	14.071	59	.018	28.43	y 75	6528.15	18981	123.75	891	1...H1-1a
331	M574	PL2.25X4	.846	9.624	71	.061	9.809	y 71	7062.974	15201	78.75	711	1...H1-1a
332	M644	PL2.25X4	.846	9.624	70	.061	9.809	y 70	7062.974	15201	78.75	711	1...H1-1a
333	M392	PL2.25X5	.846	13.501	59	.021	27.277	y 75	7080.374	18981	123.75	891	1.4 H1-1a
334	M455	PL2.25X5	.845	12.388	60	.026	25.03	y 74	8262.932	18981	123.75	891	1...H1-1a
335	M507	PL2.25X5	.844	12.663	60	.023	12.663	y 75	7968.15	18981	123.75	891	1...H1-1a
336	M418	PL2.25X5	.844	13.785	59	.018	13.785	y 74	6796.946	18981	123.75	891	1...H1-1a
337	M549	PL2.25X5	.844	15.181	77	.035	29.469	y 75	5674.836	18981	123.75	891	1...H1-1a
338	M471	PL2.25X5	.843	12.117	60	.028	24.482	y 74	8558.51	18981	123.75	891	2...H1-1a
339	M489	PL2.25X5	.841	12.388	60	.025	12.388	y 75	8262.932	18981	123.75	891	1...H1-1a
340	M320	L2.5X1.5X5	.841	22.214	78	.003	48.871	y 70	11300.048	31113.2	475.557	1584.382	1...H2-1
341	M386	PL2.25X5	.841	11.849	59	.029	23.94	y 75	8854.184	18981	123.75	891	2...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
342	M374	PL2.25X5	.840	13.219	59 .023	26.708	y 75	7379.277	18981	123.75	891	1...	H1-1a
343	M505	PL2.25X5	.840	12.117	60 .029	0	y 74	8558.51	18981	123.75	891	2...	H1-1a
344	M428	PL2.25X5	.840	11.849	59 .029	11.849	y 74	8854.184	18981	123.75	891	1...	H1-1a
345	M436	PL2.25X5	.838	14.071	59 .020	14.071	y 74	6528.15	18981	123.75	891	1...	H1-1a
346	M434	PL2.25X5	.837	13.501	59 .020	13.501	y 74	7080.374	18981	123.75	891	1...	H1-1a
347	M390	PL2.25X5	.835	12.94	59 .024	26.143	y 75	7674.832	18981	123.75	891	1...	H1-1a
348	M416	PL2.25X5	.831	13.219	59 .022	13.219	y 74	7379.277	18981	123.75	891	1...	H1-1a
349	M372	PL2.25X5	.830	12.663	59 .025	25.584	y 75	7968.15	18981	123.75	891	1...	H1-1a
350	M39	PL2.25X5	.829	15.303	71 .132	0	y 75	5905.645	18981	123.75	891	2...	H1-1a
351	M388	PL2.25X5	.827	12.388	59 .026	25.03	y 75	8262.932	18981	123.75	891	1...	H1-1a
352	M370	PL2.25X5	.826	12.117	59 .028	24.482	y 75	8558.51	18981	123.75	891	2...	H1-1a
353	M432	PL2.25X5	.826	12.94	59 .023	12.94	y 74	7674.832	18981	123.75	891	1...	H1-1a
354	M642	L6x4x6	.824	6.74	70 .400	6.74	z 70	91550.116	97470	4257.614	12792.4...	1...	H2-1
355	M572	L6x4x6	.823	6.878	71 .400	6.878	z 71	91550.116	97470	4257.614	12792.4...	1...	H2-1
356	M412	PL2.25X5	.821	12.117	59 .028	0	y 75	8558.51	18981	123.75	891	1...	H1-1a
357	M414	PL2.25X5	.821	12.663	59 .024	12.663	y 74	7968.15	18981	123.75	891	1...	H1-1a
358	M135	PL2.25X5	.820	15.303	70 .131	0	y 74	5905.645	18981	123.75	891	2...	H1-1a
359	M311	L2.5X1.5X5	.819	27.733	77 .003	49.92	z 65	10830.232	31113.2...	475.557	1578.654	1...	H2-1
360	M430	PL2.25X5	.817	12.388	59 .025	12.388	y 74	8262.932	18981	123.75	891	1...	H1-1a
361	M101	PL2.25X5	.817	15.461	74 .047	15.461	y 74	5785.218	18981	123.75	891	1...	H1-1a
362	M292	L2.5X1.5X5	.815	21.488	78 .002	0	z 66	12586.181	31113.2...	475.557	1599.02	1...	H2-1
363	M5	PL2.25X5	.815	15.461	75 .047	15.461	y 75	5785.218	18981	123.75	891	1...	H1-1a
364	M322	L2.5X1.5X5	.813	27.733	77 .004	0	y 71	10830.232	31113.2...	475.557	1578.654	1...	H2-1
365	M41	PL2.25X5	.802	15.152	75 .044	15.461	y 74	5785.218	18981	123.75	891	1...	H1-1a
366	M137	PL2.25X5	.801	15.152	74 .045	15.461	y 75	5785.218	18981	123.75	891	1...	H1-1a
367	M172	PL2.25X5	.799	15.461	70 .019	15.461	y 70	5785.218	18981	123.75	891	2...	H1-1a
368	M308	L2.5X1.5X5	.799	27.733	77 .004	0	y 59	10830.232	31113.2...	475.557	1578.654	1...	H2-1
369	M562	PL2.25X4	.795	16.36	74 .064	16.36	y 74	3503.195	15201	78.75	711	2...	H1-1a
370	M632	PL2.25X4	.791	16.36	75 .063	16.36	y 75	3503.195	15201	78.75	711	2...	H1-1a
371	M304	L2.5X1.5X5	.779	27.733	77 .002	49.92	y 71	10830.232	31113.2...	475.557	1578.654	1...	H2-1
372	M336	L2.5X1.5X5	.773	22.214	78 .002	48.871	y 70	11300.048	31113.2...	475.557	1584.382	1...	H2-1
373	M318	L2.5X1.5X5	.764	27.733	77 .003	49.92	z 66	10830.232	31113.2...	475.557	1578.654	1...	H2-1
374	M81	L2.5x2.5x5	.760	0	71 .062	0	z 71	35341.325	39420	1096.767	2551.08	2...	H2-1
375	M327	L2.5X1.5X5	.750	22.214	78 .003	0	y 71	11300.048	31113.2...	475.557	1584.382	1...	H2-1
376	M331	L2.5X1.5X5	.741	22.214	78 .002	48.871	z 66	11300.048	31113.2...	475.557	1584.382	1...	H2-1
377	M315	L2.5X1.5X5	.740	22.214	78 .003	0	y 70	11300.048	31113.2...	475.557	1584.382	1...	H2-1
378	M520	PL2.25X6	.732	15.235	59 .015	14.924	y 74	9275.508	22788	177.75	1068.75	1...	H1-1a
379	M177	L2.5x2.5x5	.731	0	70 .061	24	z 70	35341.325	39420	1096.767	2551.08	2...	H2-1
380	M171	PL2.25X5	.726	14.997	75 .021	0	y 59	5905.645	18981	123.75	891	1...	H1-1a
381	M528	PL2.25X6	.716	15.235	59 .022	15.235	y 75	9275.508	22788	177.75	1068.75	1...	H1-1a
382	M76	PL2.25X5	.711	15.461	71 .016	15.152	y 71	5785.218	18981	123.75	891	2...	H1-1a
383	M398	PL2.25X6	.706	15.235	60 .015	14.924	y 75	9275.508	22788	177.75	1068.75	1...	H1-1a
384	M551	PL2.25X5	.698	18.733	71 .039	35.664	y 74	3742.008	18981	123.75	891	1...	H1-1a
385	M298	L2.5X1.5X5	.697	27.733	77 .002	49.92	y 71	10830.232	31113.2...	475.557	1578.654	1...	H2-1
386	M621	PL2.25X5	.696	18.733	70 .039	35.664	y 75	3742.008	18981	123.75	891	1...	H1-1a
387	M294	L2.5X1.5X5	.696	27.734	77 .002	49.922	y 71	10829.35	31113.2...	475.557	1578.643	1...	H2-1
388	M440	PL2.25X6	.693	15.235	60 .021	15.235	y 74	9275.508	22788	177.75	1068.75	1...	H1-1a
389	M75	PL2.25X5	.690	14.997	74 .018	0	y 60	5905.645	18981	123.75	891	1...	H1-1a
390	M569	PL2.25X4	.680	13.831	71 .066	13.831	y 71	3535.554	15201	78.75	711	1...	H1-1a
391	M639	PL2.25X4	.680	13.831	70 .066	13.831	y 70	3535.554	15201	78.75	711	1...	H1-1a
392	M332	L2.5X1.5X5	.679	22.214	78 .002	48.871	z 65	11300.048	31113.2...	475.557	1584.382	1...	H2-1
393	M513	PL2.25X6	.679	14.36	59 .020	14.067	y 74	10238.793	22788	177.75	1068.75	1...	H1-1a
394	M521	PL2.25X6	.673	14.36	59 .018	0	y 75	10238.793	22788	177.75	1068.75	1...	H1-1a
395	M526	PL2.25X6	.667	14.632	59 .016	0	y 75	9936.561	22788	177.75	1068.75	1...	H1-1a
396	M399	PL2.25X6	.667	14.36	60 .020	14.067	y 75	10238.793	22788	177.75	1068.75	1...	H1-1a
397	M620	PL2.25X5	.666	18.733	70 .041	18.733	y 75	3742.008	18981	123.75	891	2...	H1-1a
398	M340	L2.5X1.5X5	.664	22.214	78 .002	0	y 77	11300.048	31113.2...	475.557	1584.382	1...	H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
399	M518	PL2.25X6	.663	14.63259	.019	14.333	y 74	9936.561	22788	177.75	1068.75	1...H1-1a
400	M550	PL2.25X5	.663	18.73371	.041	18.733	y 74	3742.008	18981	123.75	891	2...H1-1a
401	M441	PL2.25X6	.662	14.3660	.018	0	y 74	10238.793	22788	177.75	1068.75	1...H1-1a
402	M309	L2.5X1.5X5	.661	22.21478	.002	48.871	y 59	11300.048	31113.2...	475.557	1584.382	1...H2-1
403	M356	PL2.25X5	.652	23.93860	.006	24.427	y 70	2210.434	18984.3...	123.597	874.914	1...H1-1a
404	M438	PL2.25X6	.652	14.63260	.017	14.632	y 71	9936.561	22788	177.75	1068.75	1...H1-1a
405	M396	PL2.25X6	.650	14.63260	.019	14.333	y 75	9936.561	22788	177.75	1068.75	1...H1-1a
406	M328	L2.5X1.5X5	.648	22.21478	.003	0	z 66	11300.048	31113.2...	475.557	1584.382	1...H2-1
407	M344	L2.5X1.5X5	.647	22.21378	.002	0	y 71	11300.937	31113.2...	475.557	1584.393	1...H2-1
408	M174	L2.5x2.5x5	.645	51.0475	.010	0	y 74	24053.796	39420	1096.767	2551.08	2...H2-1
409	M297	L2.5X1.5X5	.641	27.73377	.002	0	y 71	10830.232	31113.2...	475.557	1578.654	1...H2-1
410	M293	L2.5X1.5X5	.631	27.73477	.002	49.922	y 75	10829.35	31113.2...	475.557	1578.643	1...H2-1
411	M523	PL2.25X6	.627	14.95859	.016	14.958	y 70	9575.237	22788	177.75	1068.75	1...H1-1a
412	M78	L2.5x2.5x5	.625	074	.010	0	y 75	24053.796	39420	1096.767	2551.08	2...H2-1
413	M515	PL2.25X6	.619	14.95859	.018	14.653	y 74	9575.237	22788	177.75	1068.75	1...H1-1a
414	M307	L2.5X1.5X5	.612	27.73377	.002	49.92	z 65	10830.232	31113.2...	475.557	1578.654	1...H2-1
415	M443	PL2.25X6	.607	14.95860	.019	14.958	y 71	9575.237	22788	177.75	1068.75	1...H1-1a
416	M401	PL2.25X6	.603	14.95860	.018	14.653	y 75	9575.237	22788	177.75	1068.75	1...H1-1a
417	M303	L2.5X1.5X5	.599	27.73377	.002	49.92	y 71	10830.232	31113.2...	475.557	1578.654	1...H2-1
418	M139	PL2.25X5	.598	15.15266	.033	15.152	y 74	5785.218	18981	123.75	891	1...H1-1a
419	M156	PL2.25X5	.597	15.15266	.031	0	y 60	5785.218	18981	123.75	891	1...H1-1a
420	M43	PL2.25X5	.591	15.15266	.033	15.152	y 75	5785.218	18981	123.75	891	1...H1-1a
421	M60	PL2.25X5	.590	15.15266	.031	0	y 59	5785.218	18981	123.75	891	1...H1-1a
422	M158	PL2.25X5	.585	15.15266	.024	15.461	y 75	5785.218	18981	123.75	891	1...H1-1a
423	M178	L2.5x2.5x5	.579	075	.140	8	y 75	35341.325	39420	1096.767	2551.08	3...H2-1
424	M82	L2.5x2.5x5	.579	2474	.141	16	y 75	35341.325	39420	1096.767	2551.08	3...H2-1
425	M62	PL2.25X5	.578	15.15266	.023	15.461	y 74	5785.218	18981	123.75	891	1...H1-1a
426	M519	PL2.25X6	.576	14.95860	.015	30.221	y 74	9575.237	22788	177.75	1068.75	1...H1-1a
427	M527	PL2.25X6	.575	14.95860	.015	14.958	y 75	9575.237	22788	177.75	1068.75	1...H1-1a
428	M141	PL2.25X5	.574	15.15266	.026	15.461	y 75	5785.218	18981	123.75	891	1...H1-1a
429	M45	PL2.25X5	.567	15.15266	.026	15.461	y 74	5785.218	18981	123.75	891	1...H1-1a
430	M517	PL2.25X6	.566	14.3660	.018	29.012	y 74	10238.793	22788	177.75	1068.75	1...H1-1a
431	M525	PL2.25X6	.565	14.3660	.016	14.36	y 75	10238.793	22788	177.75	1068.75	1...H1-1a
432	M160	PL2.25X5	.563	15.15266	.022	15.152	y 74	5785.218	18981	123.75	891	1...H1-1a
433	M397	PL2.25X6	.561	14.95859	.015	30.221	y 75	9575.237	22788	177.75	1068.75	1...H1-1a
434	M514	PL2.25X6	.559	14.63260	.016	29.563	y 74	9936.561	22788	177.75	1068.75	1...H1-1a
435	M522	PL2.25X6	.559	14.63260	.016	0	y 74	9936.561	22788	177.75	1068.75	1...H1-1a
436	M64	PL2.25X5	.557	15.15266	.022	15.152	y 75	5785.218	18981	123.75	891	1...H1-1a
437	M439	PL2.25X6	.556	14.95859	.015	14.958	y 74	9575.237	22788	177.75	1068.75	1...H1-1a
438	M353	PL2.25X5	.556	23.4560	.007	0	y 71	2210.434	18984.3...	123.597	825.832	1...H1-1a
439	M324	L2.5X1.5X5	.555	22.21478	.003	48.871	y 71	11300.048	31113.2...	475.557	1584.382	1...H2-1
440	M395	PL2.25X6	.555	14.3659	.018	29.012	y 75	10238.793	22788	177.75	1068.75	1...H1-1a
441	M143	PL2.25X5	.553	15.15266	.022	15.461	y 74	5785.218	18981	123.75	891	1...H1-1a
442	M357	PL2.25X5	.551	22.96160	.007	0	y 60	2210.434	18984.3...	123.597	860.536	1...H1-1a
443	M437	PL2.25X6	.549	14.3659	.016	14.36	y 74	10238.793	22788	177.75	1068.75	1...H1-1a
444	M400	PL2.25X6	.548	14.63259	.017	29.563	y 75	9936.561	22788	177.75	1068.75	1...H1-1a
445	M47	PL2.25X5	.546	15.15266	.022	15.461	y 75	5785.218	18981	123.75	891	1...H1-1a
446	M162	PL2.25X5	.542	15.15266	.020	15.461	y 75	5785.218	18981	123.75	891	1...H1-1a
447	M442	PL2.25X6	.541	14.63259	.015	14.632	y 74	9936.561	22788	177.75	1068.75	1...H1-1a
448	M57	PL2.25X5	.539	15.30371	.018	0	y 71	5905.645	18981	123.75	891	2...H1-1a
449	M153	PL2.25X5	.537	15.30375	.018	0	y 59	5905.645	18981	123.75	891	1...H1-1a
450	M66	PL2.25X5	.535	15.15266	.019	15.461	y 74	5785.218	18981	123.75	891	1...H1-1a
451	M145	PL2.25X5	.531	15.15266	.019	15.461	y 74	5785.218	18981	123.75	891	1...H1-1a
452	M24	PL2.25X5	.528	15.15274	.034	0	y 60	5785.218	18981	123.75	891	1...H1-1a
453	M120	PL2.25X5	.528	15.15275	.035	0	y 59	5785.218	18981	123.75	891	1...H1-1a
454	M49	PL2.25X5	.525	15.15266	.018	15.461	y 75	5785.218	18981	123.75	891	1...H1-1a
455	M173	L2.5x2.5x5	.523	51.0460	.010	1.031	y 70	24053.796	39420	1096.767	2551.08	1...H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
456	M164	PL2.25X5	.520	15.15266	.021	15.461	y 74	5785.218	18981	123.75	891	1...	H1-1a
457	M68	PL2.25X5	.514	15.15266	.021	15.461	y 75	5785.218	18981	123.75	891	1...	H1-1a
458	M77	L2.5x2.5x5	.510	11.34277	.009	0	y 74	24053.796	39420	1096.767	2551.08	1...	H2-1
459	M147	PL2.25X5	.508	15.15266	.018	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
460	M51	PL2.25X5	.502	15.15266	.018	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
461	M7	PL2.25X5	.501	15.15274	.035	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
462	M103	PL2.25X5	.501	15.15275	.035	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
463	M166	PL2.25X5	.496	15.15266	.019	0	y 59	5785.218	18981	123.75	891	1...	H1-1a
464	M170	PL2.25X5	.491	15.3166	.032	0	y 59	5666.526	18981	123.75	891	1...	H1-1a
465	M70	PL2.25X5	.490	15.15266	.018	0	y 60	5785.218	18981	123.75	891	1...	H1-1a
466	M149	PL2.25X5	.487	15.15266	.022	0	y 59	5785.218	18981	123.75	891	1...	H1-1a
467	M26	PL2.25X5	.481	15.15274	.027	15.461	y 75	5785.218	18981	123.75	891	1...	H1-1a
468	M122	PL2.25X5	.481	15.46174	.027	15.461	y 74	5785.218	18981	123.75	891	1...	H1-1a
469	M53	PL2.25X5	.478	15.15266	.021	0	y 60	5785.218	18981	123.75	891	1...	H1-1a
470	M72	PL2.25X5	.469	15.15266	.023	0	y 60	5785.218	18981	123.75	891	1...	H1-1a
471	M168	PL2.25X5	.469	15.15266	.024	0	y 59	5785.218	18981	123.75	891	1...	H1-1a
472	M9	PL2.25X5	.469	15.15274	.029	15.461	y 75	5785.218	18981	123.75	891	1...	H1-1a
473	M105	PL2.25X5	.468	15.15275	.029	15.461	y 74	5785.218	18981	123.75	891	1...	H1-1a
474	M343	L2.5X1.5X5	.467	22.21378	.003	0	y 70	11300.937	31113.2...	475.557	1584.393	1...	H2-1
475	M339	L2.5X1.5X5	.464	22.21478	.003	48.871	y 70	11300.048	31113.2...	475.557	1584.382	1...	H2-1
476	M561	PL2.25X4	.462	16.3671	.074	29.994	y 74	3503.195	15201	78.75	711	1...	H1-1a
477	M631	PL2.25X4	.462	16.3670	.074	29.994	y 75	3503.195	15201	78.75	711	1...	H1-1a
478	M55	PL2.25X5	.460	15.15266	.026	0	y 60	5785.218	18981	123.75	891	1...	H1-1a
479	M28	PL2.25X5	.459	15.15274	.028	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
480	M124	PL2.25X5	.458	15.15275	.027	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
481	M360	PL2.25X5_...	.453	23.4560	.007	24.427	y 70	2210.434	18984.3...	123.597	828.214	1...	H1-1a
482	M570	PL2.25X4	.452	13.83171	.082	0	y 75	3535.554	15201	78.75	711	1...	H1-1a
483	M640	PL2.25X4	.452	13.83170	.082	0	y 74	3535.554	15201	78.75	711	1...	H1-1a
484	M151	PL2.25X5	.452	15.15266	.027	0	y 59	5785.218	18981	123.75	891	1...	H1-1a
485	M126	PL2.25X5	.446	15.46175	.024	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
486	M107	PL2.25X5	.445	15.46175	.025	15.461	y 75	5785.218	18981	123.75	891	1...	H1-1a
487	M30	PL2.25X5	.445	15.46174	.024	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
488	M132	PL2.25X5	.444	15.15274	.027	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
489	M36	PL2.25X5	.444	15.15275	.027	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
490	M11	PL2.25X5	.444	15.46174	.026	15.461	y 74	5785.218	18981	123.75	891	1...	H1-1a
491	M32	PL2.25X5	.442	15.15275	.027	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
492	M128	PL2.25X5	.442	15.15274	.027	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
493	M13	PL2.25X5	.441	15.15275	.023	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
494	M109	PL2.25X5	.441	15.15274	.022	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
495	M15	PL2.25X5	.440	15.15275	.026	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
496	M111	PL2.25X5	.439	15.15274	.026	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
497	M130	PL2.25X5	.437	15.15274	.023	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
498	M34	PL2.25X5	.436	15.15275	.023	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
499	M134	PL2.25X5	.435	15.3174	.029	15.31	y 70	5666.526	18981	123.75	891	1...	H1-1a
500	M113	PL2.25X5	.433	15.15274	.027	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
501	M17	PL2.25X5	.432	15.15275	.027	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
502	M38	PL2.25X5	.431	15.3175	.027	15.31	y 71	5666.526	18981	123.75	891	1...	H1-1a
503	M115	PL2.25X5	.416	15.46175	.025	15.152	y 70	5785.218	18981	123.75	891	1...	H1-1a
504	M19	PL2.25X5	.413	15.46174	.024	15.152	y 71	5785.218	18981	123.75	891	1...	H1-1a
505	M335	L2.5X1.5X5	.400	22.21478	.003	0	y 70	11300.048	31113.2...	475.557	1584.382	1...	H2-1
506	M290	L2.5X1.5X5	.377	24.59177	.009	0	y 71	12740.431	31113.2...	475.557	1600.791	1...	H2-1
507	M74	PL2.25X5	.374	15.3166	.031	0	y 60	5666.526	18981	123.75	891	1.5	H1-1a
508	M524	PL2.25X6	.372	15.23560	.027	15.235	y 75	9275.508	22788	177.75	1068.75	1...	H1-1a
509	M516	PL2.25X6	.371	15.23560	.012	14.924	y 75	9275.508	22788	177.75	1068.75	1...	H1-1a
510	M348	L2.5X1.5X5	.368	21.34578	.012	0	y 70	12738.921	31113.2...	475.557	1600.774	1...	H2-1
511	M244	L2.5x1.25x5	.366	14.24171	.008	0	z 78	17244.126	29003.9...	340.89	1469.231	1...	H2-1
512	M402	PL2.25X6	.353	15.23559	.012	30.782	y 71	9275.508	22788	177.75	1068.75	1...	H1-1a



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.03
 Model Name : Catenary Structure Type 3

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
513	M354	PL2.25X5_...	.351	21.98459	.006	24.427	y 71	2210.434	18984.3...	123.597	889.893	1...	H1-1a
514	M444	PL2.25X6	.345	15.23559	.027	15.235	y 74	9275.508	22788	177.75	1068.75	1...	H1-1a
515	M289	L2.5X1.5X5	.340	24.59177	.011	0	y 71	12740.431	31113.2...	475.557	1600.791	1...	H2-1
516	M347	L2.5X1.5X5	.319	23.20159	.010	45.937	y 70	12738.921	31113.2...	475.557	1529.862	1...	H2-1
517	M241	L2.5x1.25x5	.309	14.95270	.003	29.605	y 59	16726.253	29003.9...	340.89	1464.209	1...	H2-1
518	M231	L2.5x1.25x5	.302	14.95270	.006	0	y 60	16726.289	29003.9...	340.89	1464.21	1...	H2-1
519	M236	L2.5x1.25x5	.298	14.95270	.003	0	y 60	16726.289	29003.9...	340.89	1464.21	1...	H2-1
520	M206	L2.5x1.25x5	.295	14.65371	.001	0	z 78	16726.289	29003.9...	340.89	1464.21	1...	H2-1
521	M210	L2.5x1.25x5	.291	14.65371	.003	0	y 59	16726.253	29003.9...	340.89	1464.209	1...	H2-1
522	M208	L2.5x1.25x5	.285	14.65371	.002	29.605	y 60	16726.289	29003.9...	340.89	1464.21	1...	H2-1
523	M233	L2.5x1.25x5	.282	14.95270	.004	0	z 77	16726.253	29003.9...	340.89	1464.209	1...	H2-1
524	M213	L2.5x1.25x5	.278	14.95270	.004	29.605	y 69	16726.253	29003.9...	340.89	1464.209	1...	H2-1
525	M228	L2.5x1.25x5	.275	14.65371	.003	29.605	y 60	16726.289	29003.9...	340.89	1464.21	1...	H2-1
526	M239	L2.5x1.25x5	.275	14.95370	.004	29.607	y 59	16724.92	29003.9...	340.89	1464.196	1...	H2-1
527	M287	L2.5x1.25x5	.269	14.16270	.006	0	y 74	17701.112	29003.9...	340.89	1473.699	1...	H2-1
528	M201	L2.5x1.25x5	.268	14.64871	.003	29.595	z 78	16732.493	29003.9...	340.89	1464.27	1...	H2-1
529	M203	L2.5x1.25x5	.263	14.65371	.003	29.605	z 77	16726.253	29003.9...	340.89	1464.209	1...	H2-1
530	M359	PL2.25X5_...	.260	22.47359	.007	0	y 70	2210.434	18984.3...	123.597	862.551	1...	H1-1a
531	M260	L2.5x1.25x5	.259	14.95270	.004	29.605	y 69	16726.289	29003.9...	340.89	1464.21	1...	H2-1
532	M218	L2.5x1.25x5	.257	14.95270	.004	29.605	y 60	16726.289	29003.9...	340.89	1464.21	1...	H2-1
533	M278	L2.5x1.25x5	.256	14.95270	.005	0	y 69	16726.289	29003.9...	340.89	1464.21	1...	H2-1
534	M214	L2.5x1.25x5	.255	14.65371	.004	29.605	y 69	16726.289	29003.9...	340.89	1464.21	1...	H2-1
535	M255	L2.5x1.25x5	.251	14.65371	.002	0	z 77	16726.289	29003.9...	340.89	1464.21	1...	H2-1
536	M226	L2.5x1.25x5	.250	14.65371	.003	29.605	y 60	16726.289	29003.9...	340.89	1464.21	1...	H2-1
537	M355	PL2.25X5_...	.250	23.93859	.007	23.938	y 70	2210.434	18984.3...	123.597	889.893	1...	H1-1a
538	M283	L2.5x1.25x5	.249	14.95270	.002	29.605	z 78	16726.253	29003.9...	340.89	1464.209	1...	H2-1
539	M220	L2.5x1.25x5	.248	14.95270	.005	0	y 60	16726.253	29003.9...	340.89	1464.209	1...	H2-1
540	M253	L2.5x1.25x5	.244	14.65371	.003	0	y 59	16726.253	29003.9...	340.89	1464.209	1...	H2-1
541	M257	L2.5x1.25x5	.241	14.65371	.005	0	y 69	16726.289	29003.9...	340.89	1464.21	1...	H2-1
542	M258	L2.5x1.25x5	.240	14.95270	.007	29.605	y 69	16726.289	29003.9...	340.89	1464.21	1...	H2-1
543	M232	L2.5x1.25x5	.240	14.65371	.004	29.605	y 60	16726.289	29003.9...	340.89	1464.21	1...	H2-1
544	M198	L2.5x1.25x5	.236	14.81270	.017	0	y 60	16898.761	29003.9...	340.89	1465.878	1...	H2-1
545	M285	L2.5x1.25x5	.235	14.95170	.003	29.603	y 74	16727.658	29003.9...	340.89	1464.223	1...	H2-1
546	M288	L2.5x1.25x5	.233	14.23270	.008	0	y 74	17255.868	29003.9...	340.89	1469.345	1...	H2-1
547	M212	L2.5x1.25x5	.232	14.65371	.006	29.605	y 69	16726.289	29003.9...	340.89	1464.21	1...	H2-1
548	M280	L2.5x1.25x5	.230	14.95270	.002	29.605	z 78	16726.289	29003.9...	340.89	1464.21	1...	H2-1
549	M216	L2.5x1.25x5	.228	14.95270	.003	0	y 59	16726.289	29003.9...	340.89	1464.21	1...	H2-1
550	M273	L2.5x1.25x5	.227	14.65371	.002	0	y 69	16726.253	29003.9...	340.89	1464.209	1...	H2-1
551	M265	L2.5x1.25x5	.225	14.95270	.003	29.605	y 69	16726.289	29003.9...	340.89	1464.21	1...	H2-1
552	M248	L2.5x1.25x5	.224	14.65271	.003	29.603	y 75	16727.658	29003.9...	340.89	1464.223	1...	H2-1
553	M275	L2.5x1.25x5	.224	14.65371	.004	29.605	z 78	16726.289	29003.9...	340.89	1464.21	1...	H2-1
554	M259	L2.5x1.25x5	.222	14.65371	.002	29.605	z 78	16726.253	29003.9...	340.89	1464.209	1...	H2-1
555	M230	L2.5x1.25x5	.221	14.65371	.003	0	y 59	16726.253	29003.9...	340.89	1464.209	1...	H2-1
556	M237	L2.5x1.25x5	.220	14.65371	.003	0	z 78	16726.253	29003.9...	340.89	1464.209	1...	H2-1
557	M250	L2.5x1.25x5	.217	14.65371	.002	29.605	z 77	16726.289	29003.9...	340.89	1464.21	1...	H2-1
558	M263	L2.5x1.25x5	.216	14.95270	.004	29.605	y 59	16726.253	29003.9...	340.89	1464.209	1...	H2-1
559	M199	L2.5x1.25x5	.216	13.87871	.006	0	y 74	17701.112	29003.9...	340.89	1473.699	1...	H2-1
560	M246	L2.5x1.25x5	.215	14.64771	.004	29.593	y 75	16733.861	29003.9...	340.89	1464.283	1...	H2-1
561	M221	L2.5x1.25x5	.215	14.65371	.005	29.605	y 69	16726.289	29003.9...	340.89	1464.21	1...	H2-1
562	M240	L2.5x1.25x5	.214	14.65271	.003	29.603	y 75	16727.658	29003.9...	340.89	1464.223	1...	H2-1
563	M277	L2.5x1.25x5	.210	14.65371	.006	0	y 69	16726.289	29003.9...	340.89	1464.21	1...	H2-1
564	M242	L2.5x1.25x5	.208	13.87871	.007	0	y 59	17701.112	29003.9...	340.89	1473.699	1...	H2-1
565	M209	L2.5x1.25x5	.206	14.95270	.003	0	y 69	16726.289	29003.9...	340.89	1464.21	1...	H2-1
566	M202	L2.5x1.25x5	.206	14.95170	.003	29.603	z 78	16727.658	29003.9...	340.89	1464.223	1...	H2-1
567	M279	L2.5x1.25x5	.205	14.65371	.004	29.605	y 70	16726.253	29003.9...	340.89	1464.209	1...	H2-1
568	M243	L2.5x1.25x5	.205	14.80272	.019	0	y 59	16910.982	29003.9...	340.89	1465.996	1...	H2-1
569	M200	L2.5x1.25x5	.199	14.94670	.004	29.593	y 71	16733.861	29003.9...	340.89	1464.283	1...	H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear	...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [phi*Mn y	phi*Mn z	Cb	Eqn
570	M207	L2.5x1.25x5	.198	14.95270	.003	0	y	59	16726.253	29003.9...	340.89	1464.209	1...	H2-1	
571	M282	L2.5x1.25x5	.197	14.65371	.003	0	y	60	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
572	M204	L2.5x1.25x5	.192	14.95270	.002	29.605	y	71	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
573	M234	L2.5x1.25x5	.189	14.65371	.002	0	z	77	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
574	M223	L2.5x1.25x5	.188	14.65371	.003	29.605	y	60	16726.253	29003.9...	340.89	1464.209	1...	H2-1	
575	M211	L2.5x1.25x5	.185	14.95270	.004	0	y	59	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
576	M286	L2.5x1.25x5	.184	14.65371	.004	29.605	y	70	16726.253	29003.9...	340.89	1464.209	1...	H2-1	
577	M229	L2.5x1.25x5	.180	14.95270	.004	0	y	69	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
578	M227	L2.5x1.25x5	.178	14.95270	.003	29.605	y	71	16726.253	29003.9...	340.89	1464.209	1...	H2-1	
579	M284	L2.5x1.25x5	.174	14.65471	.002	0	z	77	16724.92	29003.9...	340.89	1464.196	1...	H2-1	
580	M252	L2.5x1.25x5	.174	14.95270	.002	0	y	70	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
581	M270	L2.5x1.25x5	.170	14.65371	.003	0	z	78	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
582	M256	L2.5x1.25x5	.168	14.95270	.002	29.605	y	70	16726.253	29003.9...	340.89	1464.209	1...	H2-1	
583	M249	L2.5x1.25x5	.166	14.95270	.003	0	z	78	16726.253	29003.9...	340.89	1464.209	1...	H2-1	
584	M217	L2.5x1.25x5	.165	14.65371	.004	0	z	77	16726.253	29003.9...	340.89	1464.209	1...	H2-1	
585	M219	L2.5x1.25x5	.165	14.65371	.006	29.605	y	69	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
586	M247	L2.5x1.25x5	.164	14.94770	.003	0	y	71	16732.493	29003.9...	340.89	1464.27	1...	H2-1	
587	M224	L2.5x1.25x5	.161	14.95270	.003	29.605	y	60	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
588	M268	L2.5x1.25x5	.161	14.65371	.007	0	y	69	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
589	M222	L2.5x1.25x5	.159	14.95270	.009	29.605	y	69	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
590	M254	L2.5x1.25x5	.158	14.95270	.002	0	y	70	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
591	M358	PL2.25X5 ...	.155	23.93877	.005	24.427	y	71	2210.434	18984.3...	123.597	889.893	1...	H1-1b
592	M262	L2.5x1.25x5	.155	14.65371	.003	29.605	z	78	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
593	M245	L2.5x1.25x5	.154	14.16271	.005	0	y	60	17701.112	29003.9...	340.89	1473.699	1...	H2-1	
594	M276	L2.5x1.25x5	.147	14.95270	.002	29.605	z	78	16726.253	29003.9...	340.89	1464.209	1...	H2-1	
595	M267	L2.5x1.25x5	.141	14.95270	.010	29.605	y	69	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
596	M274	L2.5x1.25x5	.140	14.95270	.003	29.605	z	78	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
597	M272	L2.5x1.25x5	.133	14.95270	.003	29.605	y	69	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
598	M266	L2.5x1.25x5	.129	14.65371	.004	0	y	60	16726.253	29003.9...	340.89	1464.209	1...	H2-1	
599	M264	L2.5x1.25x5	.128	14.65370	.003	29.605	y	60	16726.289	29003.9...	340.89	1464.21	1...	H2-1	
600	M269	L2.5x1.25x5	.126	14.95270	.003	0	y	71	16726.253	29003.9...	340.89	1464.209	1...	H2-1	
601	M251	L2.5x1.25x5	.052	11.87978	.004	0	y	71	20199.84	29003.9...	340.89	1494.275	1...	H2-1	
602	M314	L3x2.5x5	.048	21.20778	.003	0	z	70	32987.716	44010	1270.778	2996.056	1...	H2-1	
603	M261	L2.5x1.25x5	.043	11.87960	.005	24	y	70	20199.84	29003.9...	340.89	1494.275	1...	H2-1	
604	M215	L2.5x1.25x5	.039	11.87959	.005	0	y	70	20199.84	29003.9...	340.89	1494.275	1...	H2-1	
605	M205	L2.5x1.25x5	.038	11.87961	.004	0	y	71	20199.84	29003.9...	340.89	1494.275	1...	H2-1	
606	M299	L3x2.5x5	.030	20.78378	.004	41.991	z	71	32987.716	44010	1270.778	2996.056	1...	H2-1	
607	M313	L3x2.5x5	.029	22.05660	.005	0	z	70	32987.716	44010	1270.778	2996.056	1...	H2-1	
608	M349	L3x2.5x5	.027	20.78377	.005	0	z	70	32987.716	44010	1270.778	2982.261	1...	H2-1	
609	M350	L3x2.5x5	.027	22.4860	.003	0	z	78	32987.716	44010	1270.778	2996.056	1...	H2-1	
610	M351	L3x2.5x5	.025	19.51160	.005	0	z	71	32987.716	44010	1270.778	2996.056	1...	H2-1	
611	M300	L3x2.5x5	.024	20.78378	.004	41.991	z	71	32987.716	44010	1270.778	2996.056	1...	H2-1	
612	M225	L2.5x1.25x5	.024	11.87977	.002	0	z	77	20199.84	29003.9...	340.89	1494.275	1...	H2-1	
613	M271	L2.5x1.25x5	.023	11.87978	.002	0	z	78	20199.84	29003.9...	340.89	1494.275	1...	H2-1	
614	M281	L2.5x1.25x5	.022	11.87978	.004	24	y	70	20199.84	29003.9...	340.89	1494.275	1...	H2-1	
615	M235	L2.5x1.25x5	.020	11.87977	.004	0	y	70	20199.84	29003.9...	340.89	1494.275	1...	H2-1	
616	M352	L3x2.5x5	.015	20.78377	.004	41.991	z	60	32987.716	44010	1270.778	2982.261	1...	H2-1	



Milvon to West River Catenary Structure Assessment

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-N

STRUCTURE TYPE 4 AS DESIGNED NESC 1961 COMPLETE MEMBER RESULTS



Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
1	M192	PL2.25X5_...	2.811	20.41855	.016	27.69	y 55	1685.965	18984.3...	123.597	889.893	1...	H1-1a	
2	M193	PL2.25X5_...	2.773	20.41855	.015	27.69	y 55	1685.965	18984.3...	123.597	889.893	1...	H1-1a	
3	M95	PL2.25X5_...	2.769	20.41856	.015	0	y 56	1685.965	18984.3...	123.597	889.893	1...	H1-1a	
4	M96	PL2.25X5_...	2.718	20.41856	.016	27.69	y 56	1685.965	18984.3...	123.597	889.893	1...	H1-1a	
5	M182	L2.5x2.5x5	2.198	17.22955	.129	0	y 55	7631.025	39420	1096.767	2551.08	1	H2-1	
6	M183	L2.5x2.5x5	2.194	0	55	.146	17.229	y 55	7631.025	39420	1096.767	2551.08	1	H2-1
7	M187	L2.5x2.5x5	2.168	0	55	.128	17.229	y 55	7631.025	39420	1096.767	2551.08	1	H2-1
8	M86	L2.5x2.5x5	2.165	0	56	.127	17.229	y 56	7631.025	39420	1096.767	2551.08	1	H2-1
9	M188	L2.5x2.5x5	2.163	17.22955	.143	0	y 55	7631.025	39420	1096.767	2551.08	1	H2-1	
10	M87	L2.5x2.5x5	2.161	17.22956	.143	0	y 56	7631.025	39420	1096.767	2551.08	1	H2-1	
11	M184	L2.5x2.5x5	2.150	17.22955	.037	17.229	y 55	7631.025	39420	1096.767	2284.314	1...	H2-1	
12	M91	L2.5x2.5x5	2.126	17.22956	.126	0	y 56	7631.025	39420	1096.767	2551.08	1	H2-1	
13	M92	L2.5x2.5x5	2.122	0	56	.140	17.229	y 56	7631.025	39420	1096.767	2551.08	1	H2-1
14	M189	L2.5x2.5x5	2.121	0	55	.036	0	y 55	7631.025	39420	1096.767	2282.813	1...	H2-1
15	M88	L2.5x2.5x5	2.118	0	56	.036	0	y 56	7631.025	39420	1096.767	2282.9	1...	H2-1
16	M176	PL2.25X5_...	2.113	28.48656	.002	0	y 55	1625.425	18984.3...	123.597	889.893	1...	H1-1a	
17	M185	L2.5x2.5x5	2.109	0	55	.095	0	y 55	7631.025	39420	1096.767	2449.736	1...	H2-1
18	M80	PL2.25X5_...	2.103	28.48655	.003	0	y 56	1625.425	18984.3...	123.597	889.893	1...	H1-1a	
19	M175	PL2.25X5_...	2.092	28.48656	.003	0	y 55	1625.425	18984.3...	123.597	889.893	1...	H1-1a	
20	M190	L2.5x2.5x5	2.080	17.30355	.094	17.303	y 55	7631.025	39420	1096.767	2455.223	1...	H2-1	
21	M93	L2.5x2.5x5	2.077	17.22956	.035	17.229	y 56	7631.025	39420	1096.767	2284.401	1...	H2-1	
22	M89	L2.5x2.5x5	2.076	17.30356	.094	17.303	y 56	7631.025	39420	1096.767	2455.224	1...	H2-1	
23	M238	L2.5x2.5x5	2.038	0	56	.092	0	y 56	7631.025	39420	1096.767	2449.753	1...	H2-1
24	M79	PL2.25X5_...	2.014	27.91655	.002	0	y 56	1625.425	18984.3...	123.597	889.893	1...	H1-1a	
25	M181	L2.5x2.5x5	1.383	0	55	.018	0	y 55	7631.025	39420	1096.767	2230.832	1...	H2-1
26	M186	L2.5x2.5x5	1.365	17.23	55	.018	17.23	y 55	7631.025	39420	1096.767	2231.002	1...	H2-1
27	M85	L2.5x2.5x5	1.363	17.23	56	.018	17.23	y 56	7631.025	39420	1096.767	2231.129	1...	H2-1
28	M179	L2.5x2.5x5	1.361	13.18255	.063	0	y 55	7631.025	39420	1096.767	2454.691	1...	H2-1	
29	M180	L2.5x2.5x5	1.343	0	55	.063	13.182	y 55	7631.025	39420	1096.767	2449.214	1...	H2-1
30	M83	L2.5x2.5x5	1.341	0	56	.062	13.182	y 56	7631.025	39420	1096.767	2449.214	1...	H2-1
31	M90	L2.5x2.5x5	1.337	0	56	.018	0	y 56	7631.025	39420	1096.767	2230.959	1...	H2-1
32	M84	L2.5x2.5x5	1.315	13.18256	.062	0	y 56	7631.025	39420	1096.767	2454.691	1...	H2-1	
33	M605	6H25	1.170	43.92155	.315	41.725	y 55	32380.313	215681.4	21582	40822.49	1	H1-1b	
34	M535	6H25	1.170	43.92156	.315	41.725	y 56	32380.313	215681.4	21582	40822.49	1	H1-1b	
35	M341	L2.5X1.5X5	1.071	27.23	55	.001	49.922	y 56	10829.35	31113.2...	475.557	1510.593	1...	H2-1
36	M603	L6x4x6	1.036	71.27355	.037	71.273	y 55	28958.752	97470	4257.614	12612.4...	1	H2-1	
37	M533	L6x4x6	1.036	96.72756	.037	96.727	y 55	28958.752	97470	4257.614	12612.4...	1	H2-1	
38	M342	L2.5X1.5X5	1.013	27.23	55	.001	49.922	y 55	10829.35	31113.2...	475.557	1510.593	1...	H2-1
39	M295	L2.5X1.5X5	.985	22.21356	.001	0	y 55	11300.937	31113.2...	475.557	1515.62	1...	H2-1	
40	M334	L2.5X1.5X5	.973	27.22955	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1	
41	M98	L5X5X9	.970	26.31	55	.052	22.552	y 55	141666.208	143332...	8354.912	17079.7...	2...	H2-1
42	M310	L2.5X1.5X5	.967	22.21456	.001	0	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1	
43	M338	L2.5X1.5X5	.960	27.22955	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1	
44	M2	L5X5X9	.938	345....	56	.057	349....	y 56	141666.208	143332...	8354.912	18872.9...	2...	H2-1
45	M1	L5X5X9	.936	26.31	56	.057	22.552	y 56	141666.208	143332...	8354.912	18872.9...	2...	H2-1
46	M97	L5X5X9	.936	345....	55	.062	349....	y 55	141666.208	143332...	8354.912	17488.72	2...	H2-1
47	M337	L2.5X1.5X5	.921	27.22955	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1	
48	M333	L2.5X1.5X5	.916	27.22955	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1	
49	M302	L2.5X1.5X5	.906	22.21456	.001	0	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1	
50	M306	L2.5X1.5X5	.902	22.21456	.001	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...	H2-1	
51	M4	L5X5X9	.885	26.31	56	.052	22.552	y 55	141666.208	143332...	8354.912	12834.9...	1	H2-1
52	M3	L5X5X9	.884	345....	56	.052	349....	y 55	141666.208	143332...	8354.912	12834.9...	1	H2-1
53	M330	L2.5X1.5X5	.870	27.22955	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1	
54	M100	L5X5X9	.868	345....	56	.053	349....	y 55	141666.208	143332...	8354.912	17348.2...	2...	H2-1
55	M496	PL2.25X6	.868	9.647	55	.033	9.848	y 56	16077.927	22788	177.75	1068.75	1...	H1-1a
56	M301	L2.5X1.5X5	.860	22.21456	.001	0	y 55	11300.048	31113.2...	475.557	1515.611	1...	H2-1	



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
57	M403	PL2.25X6	.849	9.647	56 .029	9.848	y 55	16077.927	22788	177.75	1068.75	1...	H1-1a
58	M305	L2.5X1.5X5	.846	22.214	56 .001	0	y 55	11300.048	31113.2...	475.557	1515.611	1...	H2-1
59	M296	L2.5X1.5X5	.844	22.213	56 .001	0	y 56	11300.937	31113.2...	475.557	1515.62	1...	H2-1
60	M361	PL2.25X6	.843	9.647	56 .030	9.848	y 55	16077.927	22788	177.75	1068.75	1...	H1-1a
61	M325	L2.5X1.5X5	.843	27.229	55 .001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
62	M99	L5X5X9	.842	26.31	55 .056	22.552	y 56	141666.208	143332...	8354.912	17069.0...	2...	H2-1
63	M321	L2.5X1.5X5	.837	27.229	55 .002	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
64	M462	PL2.25X6	.836	9.647	55 .031	19.896	y 55	16077.927	22788	177.75	1068.75	1...	H1-1a
65	M329	L2.5X1.5X5	.826	27.229	55 .001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
66	M446	PL2.25X6	.802	9.875	55 .031	0	y 55	15797.641	22788	177.75	1068.75	1...	H1-1a
67	M421	PL2.25X6	.787	9.875	56 .030	0	y 56	15797.641	22788	177.75	1068.75	1...	H1-1a
68	M326	L2.5X1.5X5	.786	27.229	55 .001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
69	M379	PL2.25X6	.781	9.875	56 .030	0	y 56	15797.641	22788	177.75	1068.75	1...	H1-1a
70	M480	PL2.25X6	.776	9.875	55 .030	0	y 55	15797.641	22788	177.75	1068.75	1...	H1-1a
71	M323	L2.5X1.5X5	.764	22.214	56 .002	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
72	M196	L5x3.5x7	.757	38.385	55 .095	46.063	y 55	86264.621	95238.2...	3723.225	8577.673	1	H2-1
73	M479	PL2.25X6	.750	9.647	56 .037	9.848	y 55	16077.927	22788	177.75	1068.75	1...	H1-1a
74	M197	L5x3.5x7	.746	721....	55 .095	713....	y 55	86264.621	95238.2...	3723.225	8577.673	1	H2-1
75	M317	L2.5X1.5X5	.745	27.229	55 .001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
76	M345	L2.5X1.5X5	.736	26.652	55 .002	0	y 55	12161.091	31113.2...	475.557	1524.092	1...	H2-1
77	M464	PL2.25X6	.736	10.109	55 .028	0	y 55	15509.834	22788	177.75	1068.75	1...	H1-1a
78	M378	PL2.25X6	.731	9.647	55 .034	9.848	y 56	16077.927	22788	177.75	1068.75	1...	H1-1a
79	M405	PL2.25X6	.727	10.109	56 .027	0	y 56	15509.834	22788	177.75	1068.75	1...	H1-1a
80	M316	L2.5X1.5X5	.725	22.214	56 .001	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
81	M498	PL2.25X6	.725	10.109	55 .027	0	y 55	15509.834	22788	177.75	1068.75	1...	H1-1a
82	M530	L3x2.5x5	.722	68.649	56 .060	32.894	z 56	40948.468	44010	1270.778	2996.056	1	H2-1
83	M600	L3x2.5x5	.722	72.94	55 .060	108....	z 55	40948.468	44010	1270.778	2996.056	1	H2-1
84	M363	PL2.25X6	.722	10.109	56 .027	0	y 56	15509.834	22788	177.75	1068.75	1...	H1-1a
85	M420	PL2.25X6	.720	9.647	55 .034	9.848	y 56	16077.927	22788	177.75	1068.75	1...	H1-1a
86	M445	PL2.25X6	.717	9.647	56 .031	9.848	y 55	16077.927	22788	177.75	1068.75	1...	H1-1a
87	M599	L3x2.5x5	.716	68.649	55 .059	32.894	z 55	40948.468	44010	1270.778	2996.056	1	H2-1
88	M529	L3x2.5x5	.716	72.94	56 .059	108....	z 56	40948.468	44010	1270.778	2996.056	1	H2-1
89	M319	L2.5X1.5X5	.714	22.214	56 .002	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1...	H2-1
90	M320	L2.5X1.5X5	.698	22.214	56 .001	0	y 55	11300.048	31113.2...	475.557	1515.611	1...	H2-1
91	M346	L2.5X1.5X5	.698	26.652	55 .001	0	y 55	12161.091	31113.2...	475.557	1524.092	1...	H2-1
92	M482	PL2.25X6	.694	10.348	55 .020	0	y 55	15215.026	22788	177.75	1068.75	1...	H1-1a
93	M463	PL2.25X6	.692	9.875	56 .031	10.081	y 55	15797.641	22788	177.75	1068.75	1...	H1-1a
94	M423	PL2.25X6	.687	10.348	56 .020	0	y 56	15215.026	22788	177.75	1068.75	1...	H1-1a
95	M448	PL2.25X6	.685	10.348	55 .021	0	y 55	15215.026	22788	177.75	1068.75	1...	H1-1a
96	M291	L2.5X1.5X5	.685	19.62	56 .002	46.247	y 56	12586.181	31113.2...	475.557	1528.342	1...	H2-1
97	M381	PL2.25X6	.682	10.348	56 .020	0	y 56	15215.026	22788	177.75	1068.75	1...	H1-1a
98	M362	PL2.25X6	.678	9.875	55 .030	10.081	y 56	15797.641	22788	177.75	1068.75	1...	H1-1a
99	M194	L5x3.5x8	.675	715....	55 .068	538....	y 56	97617.22	108000	4102.811	9397.984	1	H2-1
100	M195	L5x3.5x8	.673	46.182	55 .025	723....	y 55	97617.22	108000	4102.811	9397.984	1	H2-1
101	M312	L2.5X1.5X5	.670	27.229	55 .002	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
102	M497	PL2.25X6	.669	9.875	56 .028	10.081	y 55	15797.641	22788	177.75	1068.75	1...	H1-1a
103	M404	PL2.25X6	.668	9.875	55 .030	10.081	y 56	15797.641	22788	177.75	1068.75	1...	H1-1a
104	M119	PL2.25X6	.663	15.461	55 .024	0	y 55	9570.668	22788	177.75	1068.75	1...	H1-1a
105	M466	PL2.25X6	.647	10.592	55 .015	0	y 55	14913.763	22788	177.75	1068.75	1...	H1-1a
106	M407	PL2.25X6	.642	10.592	56 .015	0	y 56	14913.763	22788	177.75	1068.75	1...	H1-1a
107	M500	PL2.25X6	.642	10.592	55 .014	0	y 55	14913.763	22788	177.75	1068.75	1...	H1-1a
108	M311	L2.5X1.5X5	.639	27.229	55 .001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
109	M365	PL2.25X6	.637	10.592	56 .014	0	y 56	14913.763	22788	177.75	1068.75	1...	H1-1a
110	M447	PL2.25X6	.631	10.109	56 .025	0	y 56	15509.834	22788	177.75	1068.75	1...	H1-1a
111	M155	PL2.25X6	.627	15.461	56 .022	0	y 56	9570.668	22788	177.75	1068.75	1...	H1-1a
112	M380	PL2.25X6	.624	10.109	55 .024	0	y 55	15509.834	22788	177.75	1068.75	1...	H1-1a
113	M481	PL2.25X6	.623	10.109	56 .024	0	y 56	15509.834	22788	177.75	1068.75	1...	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear	...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [...	phi*Mn y	phi*Mn z	...	Cb	Eqn
114	M308	L2.5X1.5X5	.621	27.229	55	.002	0	y	56	10830.232	31113.2...	475.557	1510.603	1...		H2-1	
115	M322	L2.5X1.5X5	.619	27.229	55	.001	49.92	y	56	10830.232	31113.2...	475.557	1510.603	1...		H2-1	
116	M422	PL2.25X6	.614	10.109	55	.023	0	y	55	15509.834	22788	177.75	1068.75	1...		H1-1a	
117	M531	L3x2.5x5	.614	68.649	55	.051	32.894	z	55	40948.468	44010	1270.778	2996.056	1		H2-1	
118	M601	L3x2.5x5	.614	72.94	56	.051	108....	z	56	40948.468	44010	1270.778	2996.056	1		H2-1	
119	M602	L3x2.5x5	.613	68.649	56	.049	32.894	z	56	40948.468	44010	1270.778	2996.056	1		H2-1	
120	M532	L3x2.5x5	.613	72.94	55	.049	108....	z	55	40948.468	44010	1270.778	2996.056	1		H2-1	
121	M450	PL2.25X6	.608	10.84	55	.011	0	y	55	14606.605	22788	177.75	1068.75	1...		H1-1a	
122	M315	L2.5X1.5X5	.603	22.214	56	.001	0	y	55	11300.048	31113.2...	475.557	1515.611	1...		H2-1	
123	M425	PL2.25X6	.602	10.84	56	.011	0	y	56	14606.605	22788	177.75	1068.75	1...		H1-1a	
124	M484	PL2.25X6	.601	10.84	55	.011	0	y	55	14606.605	22788	177.75	1068.75	1...		H1-1a	
125	M383	PL2.25X6	.598	10.84	56	.011	0	y	56	14606.605	22788	177.75	1068.75	1...		H1-1a	
126	M499	PL2.25X6	.598	10.348	56	.018	0	y	56	15215.026	22788	177.75	1068.75	1...		H1-1a	
127	M604	L6x4x6	.596	58.667	55	.134	58.667	y	55	43003.777	97470	4257.614	12792.4...	1		H2-1	
128	M534	L6x4x6	.595	73.333	56	.134	73.333	y	56	43003.777	97470	4257.614	12792.4...	1		H2-1	
129	M318	L2.5X1.5X5	.591	27.229	55	.001	49.92	y	56	10830.232	31113.2...	475.557	1510.603	1...		H2-1	
130	M364	PL2.25X6	.590	10.348	55	.019	0	y	55	15215.026	22788	177.75	1068.75	1...		H1-1a	
131	M465	PL2.25X6	.587	10.348	56	.019	0	y	56	15215.026	22788	177.75	1068.75	1...		H1-1a	
132	M336	L2.5X1.5X5	.584	22.214	56	.001	0	y	56	11300.048	31113.2...	475.557	1515.611	1...		H2-1	
133	M327	L2.5X1.5X5	.581	22.214	56	.001	48.871	y	56	11300.048	31113.2...	475.557	1515.611	1...		H2-1	
134	M406	PL2.25X6	.581	10.348	55	.018	0	y	55	15215.026	22788	177.75	1068.75	1...		H1-1a	
135	M304	L2.5X1.5X5	.579	27.229	55	.001	49.92	y	56	10830.232	31113.2...	475.557	1510.603	1...		H2-1	
136	M468	PL2.25X6	.575	11.092	55	.008	0	y	55	14294.129	22788	177.75	1068.75	2...		H1-1a	
137	M331	L2.5X1.5X5	.574	22.214	56	.001	48.871	y	55	11300.048	31113.2...	475.557	1515.611	1...		H2-1	
138	M409	PL2.25X6	.570	11.092	56	.008	0	y	56	14294.129	22788	177.75	1068.75	2...		H1-1a	
139	M502	PL2.25X6	.570	11.092	55	.008	0	y	55	14294.129	22788	177.75	1068.75	2...		H1-1a	
140	M292	L2.5X1.5X5	.566	19.62	56	.001	46.247	y	55	12586.181	31113.2...	475.557	1528.342	1...		H2-1	
141	M367	PL2.25X6	.566	11.092	56	.008	0	y	56	14294.129	22788	177.75	1068.75	2...		H1-1a	
142	M449	PL2.25X6	.556	10.592	56	.013	0	y	56	14913.763	22788	177.75	1068.75	1...		H1-1a	
143	M483	PL2.25X6	.553	10.592	56	.013	0	y	56	14913.763	22788	177.75	1068.75	1...		H1-1a	
144	M382	PL2.25X6	.552	10.592	55	.013	0	y	55	14913.763	22788	177.75	1068.75	1...		H1-1a	
145	M452	PL2.25X6	.547	11.348	55	.005	0	y	55	13976.916	22788	177.75	1068.75	2.9		H1-1a	
146	M424	PL2.25X6	.543	10.592	55	.013	10.813	y	56	14913.763	22788	177.75	1068.75	1...		H1-1a	
147	M427	PL2.25X6	.543	11.348	56	.005	0	y	56	13976.916	22788	177.75	1068.75	2...		H1-1a	
148	M486	PL2.25X6	.542	11.348	55	.005	0	y	55	13976.916	22788	177.75	1068.75	2...		H1-1a	
149	M385	PL2.25X6	.539	11.348	56	.005	0	y	56	13976.916	22788	177.75	1068.75	2...		H1-1a	
150	M478	PL2.25X6	.535	14.071	55	.005	14.071	y	55	10563.787	22788	177.75	1068.75	1...		H1-1a	
151	M476	PL2.25X6	.534	13.579	55	.005	13.579	y	55	10970.502	22788	177.75	1068.75	1...		H1-1a	
152	M470	PL2.25X6	.533	11.849	55	.003	0	y	55	13156.803	22788	177.75	1068.75	1...		H1-1a	
153	M454	PL2.25X6	.531	12.117	55	.002	12.117	y	55	12838.818	22788	177.75	1068.75	1...		H1-1a	
154	M309	L2.5X1.5X5	.530	22.214	56	.001	48.871	y	56	11300.048	31113.2...	475.557	1515.611	1...		H2-1	
155	M512	PL2.25X6	.529	14.071	55	.006	13.784	y	55	10563.787	22788	177.75	1068.75	1...		H1-1a	
156	M419	PL2.25X6	.528	14.071	56	.006	13.784	y	56	10563.787	22788	177.75	1068.75	1...		H1-1a	
157	M504	PL2.25X6	.528	11.849	55	.002	0	y	55	13156.803	22788	177.75	1068.75	1...		H1-1a	
158	M472	PL2.25X6	.528	12.388	55	.003	12.388	y	55	12517.851	22788	177.75	1068.75	1...		H1-1a	
159	M411	PL2.25X6	.527	11.849	56	.003	0	y	56	13156.803	22788	177.75	1068.75	2...		H1-1a	
160	M488	PL2.25X6	.526	12.117	55	.003	12.117	y	55	12838.818	22788	177.75	1068.75	1...		H1-1a	
161	M456	PL2.25X6	.525	12.663	55	.004	12.663	y	55	12194.533	22788	177.75	1068.75	1...		H1-1a	
162	M377	PL2.25X6	.525	14.071	56	.006	13.784	y	56	10563.787	22788	177.75	1068.75	1...		H1-1a	
163	M429	PL2.25X6	.525	12.117	56	.003	12.117	y	56	12838.818	22788	177.75	1068.75	1...		H1-1a	
164	M474	PL2.25X6	.524	12.94	55	.005	12.94	y	55	11869.483	22788	177.75	1068.75	1...		H1-1a	
165	M369	PL2.25X6	.523	11.849	56	.003	11.849	y	55	13156.803	22788	177.75	1068.75	2...		H1-1a	
166	M506	PL2.25X6	.523	12.388	55	.004	12.388	y	55	12517.851	22788	177.75	1068.75	1...		H1-1a	
167	M413	PL2.25X6	.522	12.388	56	.004	12.388	y	56	12517.851	22788	177.75	1068.75	1...		H1-1a	
168	M467	PL2.25X6	.522	10.84	56	.010	0	y	56	14606.605	22788	177.75	1068.75	1...		H1-1a	
169	M458	PL2.25X6	.522	13.219	55	.005	13.219	y	55	11543.305	22788	177.75	1068.75	1...		H1-1a	
170	M608	L3x2.5x6	.521	4.545	55	.124	9	z	55	51421.803	52110	1486.645	3490.361	1...		H2-1	



Company : Black & Veatch
Designer : DPBrankovich
Job Number : Project 190407 Calculation File: 51.2400.04
Model Name : Catenary Structure Type 4

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Table with columns: Member, Shape, Code Check, Loc[in], LC Shear, Dir, LC, phi*Pnc [lb], phi*Pnt, phi*Mn y, phi*Mn z, Cb, Eqn. Rows 171-227.



Company : Black & Veatch
Designer : DPBrankovich
Job Number : Project 190407 Calculation File: 51.2400.04
Model Name : Catenary Structure Type 4

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Table with columns: Member, Shape, Code Check, Loc[in], LC Shear, Dir, LC, phi*Pnc [lb], phi*Pnt, phi*Mn y, phi*Mn z, Cb, Egn. Rows 228-284.



Company : Black & Veatch
Designer : DPBrankovich
Job Number : Project 190407 Calculation File: 51.2400.04
Model Name : Catenary Structure Type 4

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y [lb-ft]	phi*Mn z [lb-ft]	Cb	Eqn		
285	M594	PL2.25X5_...	.375	7.863	56	.024	0	y 56	13465.981	18984.3...	123.597	889.893	1...	H1-1a
286	M77	L2.5x2.5x5	.373	25.262	55	.001	0	z 55	24053.796	39420	1096.767	2551.08	1...	H2-1
287	M78	L2.5x2.5x5	.368	25.778	55	.001	51.04	z 55	24053.796	39420	1096.767	2551.08	1...	H2-1
288	M519	PL2.25X6	.362	14.958	56	.006	30.221	y 55	9575.237	22788	177.75	1068.75	1...	H1-1a
289	M527	PL2.25X6	.361	14.958	56	.007	30.221	y 55	9575.237	22788	177.75	1068.75	1...	H1-1a
290	M339	L2.5X1.5X5	.359	24.682	55	.001	0	y 55	11300.048	31113.2...	475.557	1515.611	1...	H2-1
291	M397	PL2.25X6	.358	14.958	55	.007	30.221	y 56	9575.237	22788	177.75	1068.75	1...	H1-1a
292	M517	PL2.25X6	.356	14.36	56	.006	29.012	y 55	10238.793	22788	177.75	1068.75	1...	H1-1a
293	M515	PL2.25X6	.355	14.958	55	.006	14.958	y 55	9575.237	22788	177.75	1068.75	1...	H1-1a
294	M525	PL2.25X6	.354	14.36	56	.007	29.012	y 55	10238.793	22788	177.75	1068.75	1...	H1-1a
295	M395	PL2.25X6	.353	14.36	55	.006	29.012	y 56	10238.793	22788	177.75	1068.75	1...	H1-1a
296	M439	PL2.25X6	.352	14.958	55	.007	30.221	y 56	9575.237	22788	177.75	1068.75	1...	H1-1a
297	M523	PL2.25X6	.352	14.958	55	.007	14.653	y 55	9575.237	22788	177.75	1068.75	1...	H1-1a
298	M443	PL2.25X6	.352	14.958	56	.007	14.653	y 56	9575.237	22788	177.75	1068.75	1...	H1-1a
299	M514	PL2.25X6	.349	14.632	56	.006	29.563	y 55	9936.561	22788	177.75	1068.75	1...	H1-1a
300	M437	PL2.25X6	.347	14.36	55	.007	29.012	y 56	10238.793	22788	177.75	1068.75	1...	H1-1a
301	M522	PL2.25X6	.347	14.632	56	.007	29.563	y 55	9936.561	22788	177.75	1068.75	1...	H1-1a
302	M400	PL2.25X6	.346	14.632	55	.006	29.563	y 56	9936.561	22788	177.75	1068.75	1...	H1-1a
303	M401	PL2.25X6	.346	14.958	56	.007	14.653	y 56	9575.237	22788	177.75	1068.75	1...	H1-1a
304	M442	PL2.25X6	.340	14.632	55	.007	29.563	y 56	9936.561	22788	177.75	1068.75	1...	H1-1a
305	M294	L2.5X1.5X5	.336	27.23	55	.001	49.922	y 55	10829.35	31113.2...	475.557	1510.593	1...	H2-1
306	M335	L2.5X1.5X5	.332	24.682	55	.001	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
307	M293	L2.5X1.5X5	.316	24.709	56	.002	49.922	y 56	10829.35	31113.2...	475.557	1510.593	1...	H2-1
308	M343	L2.5X1.5X5	.316	24.681	55	.002	0	y 55	11300.937	31113.2...	475.557	1515.62	1...	H2-1
309	M555	L6x4x6	.312	9.414	56	.166	7.685	z 56	90666.49	97470	4257.614	12792.4...	1...	H2-1
310	M625	L6x4x6	.308	9.606	55	.165	11.336	z 55	90666.49	97470	4257.614	12792.4...	1...	H2-1
311	M344	L2.5X1.5X5	.304	22.213	56	.001	0	y 55	11300.937	31113.2...	475.557	1515.62	1...	H2-1
312	M101	PL2.25X6	.303	15.461	56	.024	0	y 55	9570.668	22788	177.75	1068.75	1...	H1-1a
313	M137	PL2.25X6	.302	15.461	55	.022	15.152	y 55	9570.668	22788	177.75	1068.75	1...	H1-1a
314	M649	PL2.25X5_...	.301	10.217	56	.033	10.217	y 55	10629.797	18984.3...	123.597	889.893	1...	H1-1a
315	M579	PL2.25X5_...	.300	10.217	55	.033	10.217	y 56	10629.797	18984.3...	123.597	889.893	1...	H1-1a
316	M624	L6x4x6	.299	9.606	55	.153	7.685	z 56	90666.49	97470	4257.614	12792.4...	1...	H2-1
317	M554	L6x4x6	.299	9.414	56	.154	11.336	z 55	90666.49	97470	4257.614	12301.7...	1...	H2-1
318	M581	PL2.25X5_...	.295	10.217	55	.030	10.217	y 56	10629.797	18984.3...	123.597	889.893	1...	H1-1a
319	M651	PL2.25X5_...	.295	10.217	56	.030	10.217	y 55	10629.797	18984.3...	123.597	889.893	1...	H1-1a
320	M353	PL2.25X5_...	.290	23.45	56	.004	0	y 56	2210.434	18984.3...	123.597	797.95	1...	H1-1a
321	M665	PL2.25X5_...	.280	7.863	55	.023	7.863	y 55	13465.981	18984.3...	123.597	889.893	1...	H1-1a
322	M595	PL2.25X5_...	.280	7.863	56	.023	7.863	y 56	13465.981	18984.3...	123.597	889.893	1...	H1-1a
323	M597	PL2.25X5_...	.279	7.863	56	.019	7.863	y 56	13465.981	18984.3...	123.597	889.893	1...	H1-1a
324	M667	PL2.25X5_...	.279	7.863	55	.019	7.863	y 55	13465.981	18984.3...	123.597	889.893	1...	H1-1a
325	M556	PL2.25X5_...	.278	14.763	56	.027	14.763	y 56	7706.669	18984.3...	123.597	889.893	2...	H1-1b
326	M626	PL2.25X5_...	.278	14.763	55	.027	14.763	y 55	7706.669	18984.3...	123.597	889.893	2...	H1-1b
327	M657	PL2.25X5_...	.276	8.823	56	.029	8.823	y 55	12342.035	18984.3...	123.597	889.893	1...	H1-1a
328	M587	PL2.25X5_...	.276	8.823	55	.029	8.823	y 56	12342.035	18984.3...	123.597	889.893	1...	H1-1a
329	M589	PL2.25X5_...	.276	8.823	55	.026	8.823	y 56	12342.035	18984.3...	123.597	889.893	1...	H1-1a
330	M659	PL2.25X5_...	.276	8.823	56	.026	8.823	y 55	12342.035	18984.3...	123.597	889.893	1...	H1-1a
331	M627	PL2.25X5_...	.273	14.763	55	.028	14.763	y 55	7706.669	18984.3...	123.597	889.893	2...	H1-1b
332	M557	PL2.25X5_...	.273	14.763	56	.028	14.763	y 56	7706.669	18984.3...	123.597	889.893	2...	H1-1b
333	M574	PL2.25X5_...	.269	9.809	56	.035	9.809	y 56	12655.735	18984.3...	123.597	889.893	2...	H1-1b
334	M644	PL2.25X5_...	.269	9.809	55	.035	9.809	y 55	12655.735	18984.3...	123.597	889.893	2...	H1-1b
335	M645	PL2.25X5_...	.267	9.809	55	.034	9.809	y 55	12655.735	18984.3...	123.597	889.893	2...	H1-1b
336	M575	PL2.25X5_...	.267	9.809	56	.034	9.809	y 56	12655.735	18984.3...	123.597	889.893	2...	H1-1b
337	M357	PL2.25X5_...	.259	22.473	56	.003	0	y 56	2210.434	18984.3...	123.597	889.893	1.7	H1-1a
338	M635	PL2.25X5_...	.243	12.585	55	.029	0	y 55	7956.557	18984.3...	123.597	889.893	1...	H1-1b
339	M564	PL2.25X5_...	.243	12.585	56	.028	0	y 56	7956.557	18984.3...	123.597	889.893	1...	H1-1b
340	M565	PL2.25X5_...	.243	12.585	56	.029	0	y 56	7956.557	18984.3...	123.597	889.893	1...	H1-1b
341	M634	PL2.25X5_...	.243	12.585	55	.028	0	y 55	7956.557	18984.3...	123.597	889.893	1...	H1-1b



Company : Black & Veatch
Designer : DPBrankovich
Job Number : Project 190407 Calculation File: 51.2400.04
Model Name : Catenary Structure Type 4

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn		
342	M629	PL2.25X5_...	.243	14.763	56	.026	27.577	y	55	7706.669	18984.3...	123.597	889.893	2...	H1-1b
343	M558	PL2.25X5_...	.242	14.763	55	.025	27.577	y	56	7706.669	18984.3...	123.597	889.893	2...	H1-1b
344	M559	PL2.25X5_...	.242	14.763	55	.026	27.577	y	56	7706.669	18984.3...	123.597	889.893	2...	H1-1b
345	M628	PL2.25X5_...	.242	14.763	56	.025	27.577	y	55	7706.669	18984.3...	123.597	889.893	2...	H1-1b
346	M576	PL2.25X5_...	.237	9.809	56	.034	18.322	y	56	12655.735	18984.3...	123.597	889.893	2...	H1-1b
347	M646	PL2.25X5_...	.237	9.809	55	.034	18.322	y	55	12655.735	18984.3...	123.597	889.893	2...	H1-1b
348	M647	PL2.25X5_...	.236	9.809	55	.032	18.322	y	55	12655.735	18984.3...	123.597	889.893	2...	H1-1b
349	M577	PL2.25X5_...	.235	9.809	56	.032	18.322	y	56	12655.735	18984.3...	123.597	889.893	2...	H1-1b
350	M637	PL2.25X5_...	.204	12.585	56	.026	0	y	56	7956.557	18984.3...	123.597	889.893	1...	H1-1b
351	M566	PL2.25X5_...	.204	12.585	55	.027	12.585	y	56	7956.557	18984.3...	123.597	889.893	1...	H1-1b
352	M567	PL2.25X5_...	.203	12.585	55	.026	0	y	55	7956.557	18984.3...	123.597	889.893	1...	H1-1b
353	M636	PL2.25X5_...	.203	12.585	56	.027	12.585	y	55	7956.557	18984.3...	123.597	889.893	1...	H1-1b
354	M655	PL2.25X5_...	.202	8.252	55	.032	8.252	y	55	12967.011	18984.3...	123.597	889.893	1...	H1-1b
355	M585	PL2.25X5_...	.202	8.252	56	.032	8.252	y	56	12967.011	18984.3...	123.597	889.893	1...	H1-1b
356	M584	PL2.25X5_...	.201	8.252	56	.030	8.252	y	56	12967.011	18984.3...	123.597	889.893	1...	H1-1b
357	M654	PL2.25X5_...	.201	8.252	55	.030	8.252	y	55	12967.011	18984.3...	123.597	889.893	1...	H1-1b
358	M583	PL2.25X5_...	.199	8.252	56	.033	0	y	56	12967.011	18984.3...	123.597	889.893	1...	H1-1b
359	M653	PL2.25X5_...	.199	8.252	55	.033	0	y	55	12967.011	18984.3...	123.597	889.893	1...	H1-1b
360	M652	PL2.25X5_...	.198	8.252	55	.032	0	y	55	12967.011	18984.3...	123.597	889.893	1...	H1-1b
361	M582	PL2.25X5_...	.198	8.252	56	.032	0	y	56	12967.011	18984.3...	123.597	889.893	1...	H1-1b
362	M23	PL2.25X6	.173	15.461	56	.024	0	y	56	9570.668	22788	177.75	1068.75	1...	H1-1b
363	M5	PL2.25X6	.173	15.461	56	.024	0	y	56	9570.668	22788	177.75	1068.75	1...	H1-1b
364	M347	L2.5X1.5X5	.166	23.201	55	.001	45.937	y	55	12738.921	31113.2...	475.557	1529.862	1...	H2-1
365	M289	L2.5X1.5X5	.160	22.735	56	.001	0	y	56	12740.431	31113.2...	475.557	1529.877	1...	H2-1
366	M623	PL2.25X6	.153	18.733	56	.008	35.664	y	56	6236.681	22788	177.75	1068.75	1...	H1-1b
367	M348	L2.5X1.5X5	.152	23.201	55	.001	45.937	y	55	12738.921	31113.2...	475.557	1529.862	1...	H2-1
368	M59	PL2.25X6	.152	15.461	55	.022	15.152	y	56	9570.668	22788	177.75	1068.75	1...	H1-1b
369	M41	PL2.25X6	.151	15.461	55	.022	15.152	y	56	9570.668	22788	177.75	1068.75	1...	H1-1b
370	M553	PL2.25X6	.150	18.733	55	.008	35.664	y	55	6236.681	22788	177.75	1068.75	1...	H1-1b
371	M571	PL2.25X5_...	.148	14.092	56	.014	0	y	55	8747.18	18984.3...	123.597	889.893	1...	H1-1b
372	M641	PL2.25X5_...	.148	14.092	55	.014	0	y	56	8747.18	18984.3...	123.597	889.893	1...	H1-1b
373	M551	PL2.25X6	.140	18.733	55	.010	35.664	y	55	6236.68	22788	177.75	1068.75	1...	H1-1b
374	M638	PL2.25X5_...	.139	13.831	55	.019	0	y	55	6743.48	18984.3...	123.597	889.893	1...	H1-1b
375	M568	PL2.25X5_...	.139	13.831	56	.019	0	y	56	6743.48	18984.3...	123.597	889.893	1...	H1-1b
376	M622	PL2.25X6	.139	18.733	55	.012	35.664	y	55	6236.68	22788	177.75	1068.75	1...	H1-1b
377	M639	PL2.25X5_...	.137	14.092	55	.015	14.092	y	55	8747.18	18984.3...	123.597	889.893	1...	H1-1b
378	M569	PL2.25X5_...	.137	14.092	56	.015	14.092	y	56	8747.18	18984.3...	123.597	889.893	1...	H1-1b
379	M621	PL2.25X6	.136	18.733	56	.010	35.664	y	56	6236.68	22788	177.75	1068.75	1...	H1-1b
380	M552	PL2.25X6	.136	18.733	56	.011	35.664	y	56	6236.68	22788	177.75	1068.75	1...	H1-1b
381	M591	PL2.25X5_...	.136	7.482	56	.021	0	y	55	13874.755	18984.3...	123.597	889.893	1...	H1-1b
382	M661	PL2.25X5_...	.136	7.482	55	.021	0	y	55	13874.755	18984.3...	123.597	889.893	1...	H1-1b
383	M550	PL2.25X6	.134	18.733	56	.011	35.664	y	56	6236.68	22788	177.75	1068.75	1...	H1-1b
384	M570	PL2.25X5_...	.134	13.831	56	.016	0	y	56	6743.48	18984.3...	123.597	889.893	1...	H1-1b
385	M640	PL2.25X5_...	.134	13.831	55	.015	0	y	55	6743.48	18984.3...	123.597	889.893	1...	H1-1b
386	M660	PL2.25X5_...	.133	7.482	55	.023	0	y	55	13874.755	18984.3...	123.597	889.893	1...	H1-1b
387	M590	PL2.25X5_...	.133	7.482	56	.023	0	y	56	13874.755	18984.3...	123.597	889.893	1...	H1-1b
388	M620	PL2.25X6	.132	18.733	55	.011	35.664	y	55	6236.68	22788	177.75	1068.75	1...	H1-1b
389	M631	PL2.25X5_...	.129	16.36	55	.016	16.36	y	55	6681.76	18984.3...	123.597	889.893	1...	H1-1b
390	M134	PL2.25X6	.129	15.31	56	.012	0	y	56	9398.326	22788	177.75	1068.75	1...	H1-1b
391	M561	PL2.25X5_...	.129	16.36	56	.016	16.36	y	56	6681.76	18984.3...	123.597	889.893	1...	H1-1b
392	M290	L2.5X1.5X5	.129	22.735	56	.001	45.934	y	56	12740.431	31113.2...	475.557	1529.877	1...	H2-1
393	M38	PL2.25X6	.127	15.31	55	.011	15.31	y	56	9398.326	22788	177.75	1068.75	1...	H1-1b
394	M138	PL2.25X6	.126	15.152	55	.022	0	y	56	9570.668	22788	177.75	1068.75	1...	H1-1b
395	M120	PL2.25X6	.126	15.152	55	.025	0	y	55	9570.668	22788	177.75	1068.75	1...	H1-1b
396	M102	PL2.25X6	.125	15.152	56	.025	0	y	55	9570.668	22788	177.75	1068.75	1...	H1-1b
397	M116	PL2.25X6	.124	15.31	56	.013	15.31	y	55	9398.326	22788	177.75	1068.75	1...	H1-1b
398	M593	PL2.25X5_...	.121	7.482	56	.020	7.482	y	56	13874.755	18984.3...	123.597	889.893	1...	H1-1b



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
399	M663	PL2.25X5	.121	7.482	55	.020	7.482	y	55	13874.755	18984.3	123.597	889.893	1...H1-1b
400	M20	PL2.25X6	.120	15.31	55	.012	15.31	y	56	9398.326	22788	177.75	1068.75	1...H1-1b
401	M516	PL2.25X6	.119	15.235	56	.007	0	y	55	9275.508	22788	177.75	1068.75	1...H1-1b
402	M662	PL2.25X5	.118	7.482	55	.022	7.482	y	55	13874.755	18984.3	123.597	889.893	1...H1-1b
403	M592	PL2.25X5	.118	7.482	56	.022	7.482	y	56	13874.755	18984.3	123.597	889.893	1...H1-1b
404	M524	PL2.25X6	.117	15.235	56	.007	30.782	y	55	9275.508	22788	177.75	1068.75	1...H1-1b
405	M24	PL2.25X6	.115	15.152	56	.025	0	y	56	9570.668	22788	177.75	1068.75	1...H1-1b
406	M6	PL2.25X6	.115	15.152	56	.025	0	y	56	9570.668	22788	177.75	1068.75	1...H1-1b
407	M402	PL2.25X6	.113	15.235	55	.007	0	y	56	9275.508	22788	177.75	1068.75	1...H1-1b
408	M444	PL2.25X6	.110	15.235	55	.007	30.782	y	56	9275.508	22788	177.75	1068.75	1...H1-1b
409	M156	PL2.25X6	.108	15.152	56	.022	0	y	56	9570.668	22788	177.75	1068.75	1...H1-1b
410	M56	PL2.25X6	.108	15.31	56	.022	0	y	56	9398.326	22788	177.75	1068.75	1...H1-1b
411	M563	PL2.25X5	.107	16.36	56	.012	16.36	y	56	6681.76	18984.3	123.597	889.893	1...H1-1b
412	M633	PL2.25X5	.107	16.36	55	.012	16.36	y	55	6681.76	18984.3	123.597	889.893	1...H1-1b
413	M42	PL2.25X6	.107	15.152	56	.022	0	y	55	9570.668	22788	177.75	1068.75	1...H1-1b
414	M206	L2.5x1.25x5	.106	14.653	56	.002	29.605	y	55	16726.289	29003.9	340.89	1464.21	1...H2-1
415	M74	PL2.25X6	.104	15.31	56	.022	0	y	56	9398.326	22788	177.75	1068.75	1...H1-1b
416	M354	PL2.25X5	.103	23.938	55	.004	24.427	y	56	2210.434	18984.3	123.597	866.907	1...H1-1b
417	M178	L2.5x2.5x5	.101	8	55	.018	8	z	55	35341.325	39420	1096.767	2551.08	1...H2-1
418	M60	PL2.25X6	.099	15.152	55	.022	0	y	55	9570.668	22788	177.75	1068.75	1...H1-1b
419	M231	L2.5x1.25x5	.099	14.952	55	.003	0	y	56	16726.289	29003.9	340.89	1464.21	1...H2-1
420	M82	L2.5x2.5x5	.098	8	56	.018	8	z	56	35341.325	39420	1096.767	2551.08	1...H2-1
421	M630	PL2.25X5	.097	16.36	56	.013	16.36	y	56	6681.76	18984.3	123.597	889.893	1...H1-1b
422	M177	L2.5x2.5x5	.097	11.879	55	.001	0	y	55	35341.325	39420	1096.767	2551.08	1...H2-1
423	M560	PL2.25X5	.096	16.36	55	.013	16.36	y	55	6681.76	18984.3	123.597	889.893	1...H1-1b
424	M81	L2.5x2.5x5	.096	11.879	56	.001	24	z	55	35341.325	39420	1096.767	2551.08	1...H2-1
425	M632	PL2.25X5	.095	16.057	55	.012	29.994	y	55	4996.593	18984.3	123.597	889.893	1...H1-1b
426	M562	PL2.25X5	.095	16.057	56	.012	29.994	y	56	4996.593	18984.3	123.597	889.893	1...H1-1b
427	M210	L2.5x1.25x5	.094	14.653	56	.002	0	y	55	16726.253	29003.9	340.89	1464.209	1...H2-1
428	M236	L2.5x1.25x5	.094	14.952	55	.003	0	y	56	16726.289	29003.9	340.89	1464.21	1...H2-1
429	M170	PL2.25X6	.094	15.31	55	.021	0	y	55	9398.326	22788	177.75	1068.75	1...H1-1b
430	M360	PL2.25X5	.092	23.938	56	.005	24.427	y	55	2210.434	18984.3	123.597	889.893	1...H1-1b
431	M258	L2.5x1.25x5	.091	14.952	55	.004	0	y	55	16726.289	29003.9	340.89	1464.21	1...H2-1
432	M233	L2.5x1.25x5	.089	14.952	55	.003	0	y	55	16726.253	29003.9	340.89	1464.209	1...H2-1
433	M152	PL2.25X6	.088	15.31	55	.023	0	y	55	9398.326	22788	177.75	1068.75	1...H1-1b
434	M260	L2.5x1.25x5	.088	14.952	55	.002	29.605	y	55	16726.289	29003.9	340.89	1464.21	1...H2-1
435	M208	L2.5x1.25x5	.087	14.653	56	.002	29.605	y	55	16726.289	29003.9	340.89	1464.21	1...H2-1
436	M213	L2.5x1.25x5	.086	14.952	55	.002	0	y	55	16726.253	29003.9	340.89	1464.209	1...H2-1
437	M71	PL2.25X6	.086	15.152	56	.017	0	y	56	9570.668	22788	177.75	1068.75	1...H1-1b
438	M241	L2.5x1.25x5	.086	14.952	55	.002	0	y	56	16726.253	29003.9	340.89	1464.209	1...H2-1
439	M55	PL2.25X6	.084	15.152	56	.018	0	y	56	9570.668	22788	177.75	1068.75	1...H1-1b
440	M149	PL2.25X6	.083	15.152	55	.017	0	y	55	9570.668	22788	177.75	1068.75	1...H1-1b
441	M167	PL2.25X6	.083	15.152	55	.018	0	y	55	9570.668	22788	177.75	1068.75	1...H1-1b
442	M151	PL2.25X6	.083	15.152	55	.018	0	y	55	9570.668	22788	177.75	1068.75	1...H1-1b
443	M169	PL2.25X6	.082	15.152	55	.019	0	y	55	9570.668	22788	177.75	1068.75	1...H1-1b
444	M255	L2.5x1.25x5	.080	14.653	56	.002	0	y	55	16726.289	29003.9	340.89	1464.21	1...H2-1
445	M73	PL2.25X6	.079	15.152	56	.018	0	y	56	9570.668	22788	177.75	1068.75	1...H1-1b
446	M53	PL2.25X6	.078	15.152	56	.017	0	y	56	9570.668	22788	177.75	1068.75	1...H1-1b
447	M278	L2.5x1.25x5	.078	14.952	55	.003	29.605	y	56	16726.289	29003.9	340.89	1464.21	1...H2-1
448	M121	PL2.25X6	.077	15.152	55	.017	0	y	55	9570.668	22788	177.75	1068.75	1...H1-1b
449	M228	L2.5x1.25x5	.075	14.653	56	.002	29.605	y	56	16726.289	29003.9	340.89	1464.21	1...H2-1
450	M25	PL2.25X6	.074	15.152	56	.018	0	y	56	9570.668	22788	177.75	1068.75	1...H1-1b
451	M7	PL2.25X6	.074	15.152	56	.018	0	y	56	9570.668	22788	177.75	1068.75	1...H1-1b
452	M133	PL2.25X6	.074	15.152	55	.013	15.152	y	55	9570.668	22788	177.75	1068.75	1...H1-1b
453	M72	PL2.25X6	.072	15.461	56	.017	0	y	56	9570.668	22788	177.75	1068.75	1...H1-1b
454	M150	PL2.25X6	.072	15.461	55	.018	0	y	55	9570.668	22788	177.75	1068.75	1...H1-1b
455	M168	PL2.25X6	.072	15.461	55	.017	0	y	55	9570.668	22788	177.75	1068.75	1...H1-1b



Company : Black & Veatch
Designer : DPBrankovich
Job Number : Project 190407 Calculation File: 51.2400.04
Model Name : Catenary Structure Type 4

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y [lb-ft]	phi*Mn z [lb-ft]	Cb	Eqn
456	M243	L2.5x1.25x5	.071	14.80255	.010	0	y 55	16910.982	29003.9...	340.89	1465.996	1... H2-1
457	M103	PL2.25X6	.071	15.15255	.018	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
458	M54	PL2.25X6	.070	15.46156	.017	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
459	M253	L2.5x1.25x5	.070	14.65356	.002	0	y 55	16726.253	29003.9...	340.89	1464.209	1... H2-1
460	M37	PL2.25X6	.069	15.15256	.012	15.152	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
461	M139	PL2.25X6	.069	15.15256	.016	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
462	M257	L2.5x1.25x5	.068	14.65356	.003	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
463	M19	PL2.25X6	.067	15.15256	.012	15.152	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
464	M43	PL2.25X6	.066	15.15255	.016	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
465	M52	PL2.25X6	.065	15.46156	.014	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
466	M115	PL2.25X6	.065	15.15255	.012	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
467	M283	L2.5x1.25x5	.064	14.95255	.002	0	y 56	16726.253	29003.9...	340.89	1464.209	1... H2-1
468	M214	L2.5x1.25x5	.064	14.65356	.002	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
469	M61	PL2.25X6	.063	15.15255	.016	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
470	M70	PL2.25X6	.063	15.46156	.014	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
471	M239	L2.5x1.25x5	.063	14.95355	.005	29.607	y 55	16724.92	29003.9...	340.89	1464.196	1... H2-1
472	M148	PL2.25X6	.063	15.46155	.015	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
473	M166	PL2.25X6	.063	15.46155	.014	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
474	M157	PL2.25X6	.062	15.15256	.016	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
475	M171	PL2.25X6	.062	14.99755	.014	0	y 55	9741.485	22788	177.75	1068.75	1... H1-1b
476	M355	PL2.25X5 ...	.062	23.93855	.004	24.427	y 56	2210.434	18984.3...	123.597	889.893	1... H1-1b
477	M359	PL2.25X5 ...	.061	22.96155	.004	0	y 55	2210.434	18984.3...	123.597	889.893	1... H1-1b
478	M270	L2.5x1.25x5	.061	14.95255	.002	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
479	M114	PL2.25X6	.060	15.15255	.011	15.152	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
480	M212	L2.5x1.25x5	.060	14.65356	.003	29.605	y 55	16726.289	29003.9...	340.89	1464.21	1... H2-1
481	M104	PL2.25X6	.060	15.15255	.013	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
482	M69	PL2.25X6	.059	15.46156	.012	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
483	M172	PL2.25X6	.059	15.15255	.003	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
484	M218	L2.5x1.25x5	.057	14.95255	.002	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
485	M252	L2.5x1.25x5	.057	14.95256	.001	29.605	y 55	16726.289	29003.9...	340.89	1464.21	1... H2-1
486	M36	PL2.25X6	.057	15.46156	.010	15.152	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
487	M18	PL2.25X6	.057	15.46155	.010	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
488	M26	PL2.25X6	.057	15.15256	.013	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
489	M8	PL2.25X6	.057	15.15256	.013	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
490	M265	L2.5x1.25x5	.056	14.65356	.002	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
491	M165	PL2.25X6	.056	15.46155	.012	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
492	M287	L2.5x1.25x5	.056	14.16255	.003	28.04	y 55	17701.112	29003.9...	340.89	1473.699	1... H2-1
493	M122	PL2.25X6	.055	15.15255	.013	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
494	M17	PL2.25X6	.055	15.15255	.009	15.152	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
495	M113	PL2.25X6	.055	15.15256	.009	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
496	M147	PL2.25X6	.055	15.46155	.011	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b
497	M285	L2.5x1.25x5	.055	14.95155	.002	29.603	y 56	16727.658	29003.9...	340.89	1464.223	1... H2-1
498	M51	PL2.25X6	.055	15.46156	.012	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
499	M277	L2.5x1.25x5	.055	14.65355	.002	0	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
500	M158	PL2.25X6	.055	15.15256	.012	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
501	M199	L2.5x1.25x5	.055	13.87856	.001	28.04	y 55	17701.112	29003.9...	340.89	1473.699	1... H2-1
502	M132	PL2.25X6	.055	15.46155	.010	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
503	M259	L2.5x1.25x5	.054	14.65356	.001	29.605	y 55	16726.253	29003.9...	340.89	1464.209	1... H2-1
504	M203	L2.5x1.25x5	.054	14.65356	.004	0	y 56	16726.253	29003.9...	340.89	1464.209	1... H2-1
505	M268	L2.5x1.25x5	.053	14.95255	.003	0	y 55	16726.289	29003.9...	340.89	1464.21	1... H2-1
506	M50	PL2.25X6	.053	15.46156	.009	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
507	M275	L2.5x1.25x5	.053	14.65356	.003	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
508	M209	L2.5x1.25x5	.053	14.95256	.002	0	y 55	16726.289	29003.9...	340.89	1464.21	1... H2-1
509	M280	L2.5x1.25x5	.053	14.95255	.001	0	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
510	M279	L2.5x1.25x5	.053	14.65355	.003	0	y 55	16726.253	29003.9...	340.89	1464.209	1... H2-1
511	M232	L2.5x1.25x5	.053	14.65355	.003	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1... H2-1
512	M62	PL2.25X6	.052	15.15255	.012	0	y 55	9570.668	22788	177.75	1068.75	1... H1-1b



Company : Black & Veatch
Designer : DPBrankovich
Job Number : Project 190407 Calculation File: 51.2400.04
Model Name : Catenary Structure Type 4

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Table with columns: Member, Shape, Code Check, Loc[in] LC Shear, Loc[in] Dir LC, phi*Pnc [lb], phi*Pnt, phi*Mn y, phi*Mn z, Cb, Eqn. Rows 513-569.



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.04
 Model Name : Catenary Structure Type 4

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
570	M48	PL2.25X6	.037	15.46156	.004	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
571	M244	L2.5x1.25x5	.037	14.53255	.005	0	y 56	17244.126	29003.9...	340.89	1469.231	1...H2-1
572	M251	L2.5x1.25x5	.037	11.87956	.001	0	y 55	20199.84	29003.9...	340.89	1494.275	1...H2-1
573	M32	PL2.25X6	.037	15.46155	.004	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
574	M76	PL2.25X6	.037	15.15256	.003	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
575	M118	PL2.25X6	.036	15.15255	.003	15.461	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
576	M205	L2.5x1.25x5	.035	11.87955	.001	0	y 56	20199.84	29003.9...	340.89	1494.275	1...H2-1
577	M128	PL2.25X6	.035	15.46156	.005	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
578	M58	PL2.25X6	.035	15.15256	.003	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
579	M40	PL2.25X6	.035	15.15256	.004	15.461	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
580	M110	PL2.25X6	.035	15.46156	.005	15.152	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
581	M229	L2.5x1.25x5	.035	14.95256	.003	0	y 56	16726.289	29003.9...	340.89	1464.21	1...H2-1
582	M106	PL2.25X6	.035	15.15255	.005	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
583	M14	PL2.25X6	.035	15.46155	.005	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
584	M227	L2.5x1.25x5	.035	14.95256	.002	0	y 56	16726.253	29003.9...	340.89	1464.209	1...H2-1
585	M136	PL2.25X6	.035	15.15255	.004	15.461	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
586	M66	PL2.25X6	.035	15.46156	.004	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
587	M124	PL2.25X6	.035	15.15255	.006	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
588	M22	PL2.25X6	.034	15.15256	.003	15.461	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
589	M144	PL2.25X6	.034	15.46155	.005	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
590	M246	L2.5x1.25x5	.034	14.64756	.002	29.593	y 55	16733.861	29003.9...	340.89	1464.283	1...H2-1
591	M162	PL2.25X6	.034	15.46155	.004	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
592	M242	L2.5x1.25x5	.034	13.87855	.002	0	y 56	17701.112	29003.9...	340.89	1473.699	1...H2-1
593	M28	PL2.25X6	.033	15.15256	.006	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
594	M314	L3x2.5x5	.033	22.05656	.002	41.991	z 56	32987.716	44010	1270.778	2996.056	1...H2-1
595	M10	PL2.25X6	.033	15.15256	.006	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
596	M202	L2.5x1.25x5	.033	14.95156	.005	0	y 56	16727.658	29003.9...	340.89	1464.223	1...H2-1
597	M160	PL2.25X6	.033	15.15256	.006	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
598	M13	PL2.25X6	.032	15.46155	.003	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
599	M219	L2.5x1.25x5	.031	14.65355	.002	0	y 55	16726.289	29003.9...	340.89	1464.21	1...H2-1
600	M264	L2.5x1.25x5	.031	14.65355	.001	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1...H2-1
601	M64	PL2.25X6	.031	15.15255	.006	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
602	M109	PL2.25X6	.031	15.46156	.004	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
603	M234	L2.5x1.25x5	.031	14.65355	.001	0	y 56	16726.289	29003.9...	340.89	1464.21	1...H2-1
604	M142	PL2.25X6	.031	15.15256	.005	0	y 56	9570.668	22788	177.75	1068.75	1...H1-1b
605	M46	PL2.25X6	.030	15.15255	.005	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
606	M127	PL2.25X6	.030	15.46156	.003	15.152	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
607	M222	L2.5x1.25x5	.030	14.65355	.003	0	y 55	16726.289	29003.9...	340.89	1464.21	1...H2-1
608	M217	L2.5x1.25x5	.029	14.65355	.003	0	y 55	16726.253	29003.9...	340.89	1464.209	1...H2-1
609	M31	PL2.25X6	.029	15.46155	.004	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
610	M65	PL2.25X6	.029	15.46156	.002	15.461	y 56	9570.668	22788	177.75	1068.75	2...H1-1b
611	M269	L2.5x1.25x5	.029	14.65355	.001	0	y 55	16726.253	29003.9...	340.89	1464.209	1...H2-1
612	M247	L2.5x1.25x5	.028	14.94756	.002	29.595	y 55	16732.493	29003.9...	340.89	1464.27	1...H2-1
613	M266	L2.5x1.25x5	.028	14.95256	.001	0	y 56	16726.253	29003.9...	340.89	1464.209	1...H2-1
614	M230	L2.5x1.25x5	.027	14.65356	.001	29.605	y 56	16726.253	29003.9...	340.89	1464.209	1...H2-1
615	M262	L2.5x1.25x5	.027	14.65355	.001	29.605	y 56	16726.289	29003.9...	340.89	1464.21	1...H2-1
616	M249	L2.5x1.25x5	.027	14.95256	.002	0	y 56	16726.253	29003.9...	340.89	1464.209	1...H2-1
617	M198	L2.5x1.25x5	.027	14.81256	.010	0	y 56	16898.761	29003.9...	340.89	1465.878	1...H2-1
618	M224	L2.5x1.25x5	.026	14.65355	.001	0	y 55	16726.289	29003.9...	340.89	1464.21	1...H2-1
619	M204	L2.5x1.25x5	.026	14.65355	.002	29.605	y 55	16726.289	29003.9...	340.89	1464.21	1...H2-1
620	M272	L2.5x1.25x5	.026	14.65355	.002	0	y 55	16726.289	29003.9...	340.89	1464.21	1...H2-1
621	M47	PL2.25X6	.026	15.46156	.003	0	y 55	9570.668	22788	177.75	1068.75	2...H1-1b
622	M125	PL2.25X6	.026	15.15255	.002	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
623	M161	PL2.25X6	.026	15.46155	.003	15.461	y 55	9570.668	22788	177.75	1068.75	2...H1-1b
624	M143	PL2.25X6	.025	15.46155	.003	0	y 56	9570.668	22788	177.75	1068.75	2...H1-1b
625	M107	PL2.25X6	.024	15.15255	.003	0	y 55	9570.668	22788	177.75	1068.75	1...H1-1b
626	M245	L2.5x1.25x5	.024	14.16256	.004	0	y 56	17701.112	29003.9...	340.89	1473.699	1...H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y [lb-ft]	phi*Mn z [lb-ft]	Cb	Eqn	
627	M108	PL2.25X6	.023	15.461	56	.002	15.461	y 56	9570.668	22788	177.75	1068.75	2... H1-1b
628	M30	PL2.25X6	.023	15.461	55	.002	15.461	y 55	9570.668	22788	177.75	1068.75	2... H1-1b
629	M12	PL2.25X6	.023	15.461	55	.003	15.461	y 55	9570.668	22788	177.75	1068.75	2... H1-1b
630	M11	PL2.25X6	.023	15.152	56	.003	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
631	M29	PL2.25X6	.022	15.152	56	.003	0	y 56	9570.668	22788	177.75	1068.75	1... H1-1b
632	M215	L2.5x1.25x5	.022	11.879	55	.002	0	y 56	20199.84	29003.9...	340.89	1494.275	1... H2-1
633	M126	PL2.25X6	.022	15.461	56	.002	15.461	y 56	9570.668	22788	177.75	1068.75	2... H1-1b
634	M276	L2.5x1.25x5	.021	14.952	56	.002	29.605	y 56	16726.253	29003.9...	340.89	1464.209	1... H2-1
635	M200	L2.5x1.25x5	.021	14.946	56	.002	29.593	y 55	16733.861	29003.9...	340.89	1464.283	1... H2-1
636	M261	L2.5x1.25x5	.019	11.879	56	.001	0	y 56	20199.84	29003.9...	340.89	1494.275	1... H2-1
637	M299	L3x2.5x5	.017	19.935	56	.001	0	z 56	32987.716	44010	1270.778	2996.056	1... H2-1
638	M349	L3x2.5x5	.015	19.935	55	.002	0	z 55	32987.716	44010	1270.778	2982.261	1... H2-1
639	M221	L2.5x1.25x5	.014	14.952	55	.002	0	y 55	16726.289	29003.9...	340.89	1464.21	1... H2-1
640	M351	L3x2.5x5	.014	19.935	56	.001	0	z 56	32987.716	44010	1270.778	2996.056	1... H2-1
641	M271	L2.5x1.25x5	.014	11.879	55	.001	0	y 56	20199.84	29003.9...	340.89	1494.275	1... H2-1
642	M94	PL5x0.3125	.013	12.121	55	.001	0	y 56	4987.327	42187.5	274.658	3911.694	1... H1-1b
643	M191	PL5x0.3125	.013	11.879	56	.001	0	y 55	4987.327	42187.5	274.658	3911.694	1... H1-1b
644	M281	L2.5x1.25x5	.013	11.879	56	.001	0	y 55	20199.84	29003.9...	340.89	1494.275	1... H2-1
645	M235	L2.5x1.25x5	.012	12.121	55	.001	0	y 55	20199.84	29003.9...	340.89	1494.275	1... H2-1
646	M300	L3x2.5x5	.012	22.056	55	.001	0	z 56	32987.716	44010	1270.778	2982.261	1... H2-1
647	M225	L2.5x1.25x5	.012	11.879	55	.000	0	y 55	20199.84	29003.9...	340.89	1494.275	1... H2-1
648	M350	L3x2.5x5	.010	22.056	55	.002	0	z 56	32987.716	44010	1270.778	2982.261	1... H2-1
649	M313	L3x2.5x5	.009	22.056	56	.001	0	z 55	32987.716	44010	1270.778	2996.056	1... H2-1
650	M352	L3x2.5x5	.007	22.056	56	.002	0	z 56	32987.716	44010	1270.778	2996.056	1... H2-1



Milvon to West River Catenary Structure Assessment

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-O
STRUCTURE TYPE 4 FIELD CONDITION NESC 1961
COMPLETE MEMBER RESULTS



Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
1	M496	PL2.25X5	1.187	9.647	55 .034	9.848	y 56	11695.943	18981	123.75	891	1...	H1-1a
2	M341	L2.5X1.5X5	1.175	27.23	55 .001	49.922	y 55	10829.35	31113.2...	475.557	1510.593	1...	H2-1
3	M535	6H25	1.170	43.921	56 .315	41.725	y 56	32380.313	215681.4	21582	40822.49	1	H1-1b
4	M605	6H25	1.170	43.921	55 .315	41.725	y 55	32380.313	215681.4	21582	40822.49	1	H1-1b
5	M403	PL2.25X5	1.155	9.647	56 .030	9.848	y 55	11695.944	18981	123.75	891	1...	H1-1a
6	M361	PL2.25X5	1.153	9.647	56 .032	9.848	y 55	11695.943	18981	123.75	891	1...	H1-1a
7	M462	PL2.25X5	1.141	9.647	55 .033	19.896	y 55	11695.943	18981	123.75	891	1...	H1-1a
8	M446	PL2.25X5	1.132	9.875	55 .033	0	y 55	11413.851	18981	123.75	891	1...	H1-1a
9	M421	PL2.25X5	1.106	9.875	56 .032	0	y 56	11413.851	18981	123.75	891	1...	H1-1a
10	M379	PL2.25X5	1.103	9.875	56 .032	0	y 56	11413.851	18981	123.75	891	1...	H1-1a
11	M480	PL2.25X5	1.097	9.875	55 .031	0	y 55	11413.851	18981	123.75	891	1...	H1-1a
12	M342	L2.5X1.5X5	1.077	27.23	55 .001	0	y 56	10829.35	31113.2...	475.557	1510.593	1...	H2-1
13	M310	L2.5X1.5X5	1.068	22.214	56 .002	0	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
14	M295	L2.5X1.5X5	1.056	22.213	56 .001	0	y 55	11300.937	31113.2...	475.557	1515.62	1...	H2-1
15	M464	PL2.25X5	1.053	10.109	55 .028	0	y 55	11126.204	18981	123.75	891	1...	H1-1a
16	M98	L5X5X9	1.045	26.31	55 .058	22.552	y 56	141666.208	143332...	8354.912	17119.6...	2...	H2-1
17	M334	L2.5X1.5X5	1.045	27.229	55 .002	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
18	M498	PL2.25X5	1.039	10.109	55 .029	0	y 55	11126.204	18981	123.75	891	1...	H1-1a
19	M405	PL2.25X5	1.037	10.109	56 .028	0	y 56	11126.204	18981	123.75	891	1...	H1-1a
20	M603	L6x4x6	1.036	71.273	55 .037	71.273	y 55	28958.752	97470	4257.614	12612.4...	1	H2-1
21	M533	L6x4x6	1.036	96.727	56 .037	96.727	y 55	28958.752	97470	4257.614	12612.4...	1	H2-1
22	M338	L2.5X1.5X5	1.034	27.229	55 .001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
23	M363	PL2.25X5	1.034	10.109	56 .028	0	y 56	11126.204	18981	123.75	891	1...	H1-1a
24	M479	PL2.25X5	1.015	9.647	56 .039	9.848	y 55	11695.943	18981	123.75	891	1...	H1-1a
25	M482	PL2.25X5	1.014	10.348	55 .021	0	y 55	10833.703	18981	123.75	891	1...	H1-1a
26	M337	L2.5X1.5X5	1.013	27.229	55 .001	49.92	y 55	10830.232	31113.2...	475.557	1510.603	1...	H2-1
27	M1	L5X5X9	1.011	26.31	56 .058	22.552	y 56	141666.208	143332...	8354.912	18872.9...	2...	H2-1
28	M2	L5X5X9	1.009	345....	56 .058	349....	y 56	141666.208	143332...	8354.912	18872.9...	2...	H2-1
29	M97	L5X5X9	1.009	345....	55 .066	349....	y 55	141666.208	143332...	8354.912	17577.8...	2...	H2-1
30	M333	L2.5X1.5X5	1.005	27.229	55 .001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
31	M423	PL2.25X5	.995	10.348	56 .021	0	y 56	10833.703	18981	123.75	891	1...	H1-1a
32	M119	PL2.25X5	.994	15.461	55 .026	0	y 55	5785.218	18981	123.75	891	1...	H1-1a
33	M381	PL2.25X5	.992	10.348	56 .021	0	y 56	10833.703	18981	123.75	891	1...	H1-1a
34	M448	PL2.25X5	.991	10.348	55 .021	0	y 55	10833.703	18981	123.75	891	1...	H1-1a
35	M378	PL2.25X5	.990	9.647	55 .036	9.848	y 56	11695.943	18981	123.75	891	1...	H1-1a
36	M4	L5X5X9	.988	26.31	56 .057	338....	z 56	141666.208	143332...	8354.912	12834.9...	1	H2-1
37	M3	L5X5X9	.984	345....	56 .057	368....	z 56	141666.208	143332...	8354.912	12834.9...	1	H2-1
38	M345	L2.5X1.5X5	.981	26.652	55 .003	0	y 55	12161.091	31113.2...	475.557	1524.092	1...	H2-1
39	M445	PL2.25X5	.973	9.848	56 .032	9.848	y 55	11130.129	18981	123.75	891	1...	H1-1a
40	M463	PL2.25X5	.971	10.081	56 .032	10.081	y 55	10862.07	18981	123.75	891	1...	H1-1a
41	M306	L2.5X1.5X5	.969	22.214	56 .001	0	y 55	11300.048	31113.2...	475.557	1515.611	1...	H2-1
42	M420	PL2.25X5	.967	9.848	55 .036	9.848	y 56	11130.129	18981	123.75	891	1...	H1-1a
43	M302	L2.5X1.5X5	.967	22.214	56 .001	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
44	M500	PL2.25X5	.953	10.592	55 .015	0	y 55	10537.06	18981	123.75	891	1...	H1-1a
45	M466	PL2.25X5	.952	10.592	55 .015	0	y 55	10537.06	18981	123.75	891	1...	H1-1a
46	M362	PL2.25X5	.948	9.875	55 .031	10.081	y 56	11413.851	18981	123.75	891	1...	H1-1a
47	M407	PL2.25X5	.946	10.813	56 .015	0	y 56	10022.861	18981	123.75	891	1...	H1-1a
48	M100	L5X5X9	.945	345....	56 .061	33.827	z 55	141666.208	143332...	8354.912	17346.2...	2...	H2-1
49	M365	PL2.25X5	.942	10.592	56 .015	0	y 56	10537.06	18981	123.75	891	1...	H1-1a
50	M155	PL2.25X5	.941	15.461	56 .023	0	y 56	5785.218	18981	123.75	891	1...	H1-1a
51	M99	L5X5X9	.938	26.31	55 .061	22.552	y 56	141666.208	143332...	8354.912	17075.4...	2...	H2-1
52	M497	PL2.25X5	.937	9.875	56 .030	10.081	y 55	11413.851	18981	123.75	891	1...	H1-1a
53	M404	PL2.25X5	.928	10.081	55 .031	10.081	y 56	10862.07	18981	123.75	891	1...	H1-1a
54	M330	L2.5X1.5X5	.923	27.229	55 .001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
55	M450	PL2.25X5	.913	11.066	55 .011	0	y 55	9734.36	18981	123.75	891	1...	H1-1a
56	M196	L5x3.5x7	.913	38.385	55 .116	713....	y 56	86264.635	95238.2...	3723.228	8577.673	1	H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
57	M346	L2.5X1.5X5	.911	26.652	55	.001	0	y 55	12161.091	31113.2...	475.557	1524.092	1... H2-1
58	M484	PL2.25X5	.908	11.066	55	.011	0	y 55	9734.36	18981	123.75	891	1... H1-1a
59	M301	L2.5X1.5X5	.905	22.214	56	.001	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1... H2-1
60	M425	PL2.25X5	.905	11.066	56	.011	0	y 56	9734.36	18981	123.75	891	1... H1-1a
61	M325	L2.5X1.5X5	.904	27.229	55	.002	0	y 56	10830.232	31113.2...	475.557	1510.603	1... H2-1
62	M383	PL2.25X5	.900	11.066	56	.011	0	y 56	9734.36	18981	123.75	891	1... H1-1a
63	M321	L2.5X1.5X5	.898	27.229	55	.002	0	y 56	10830.232	31113.2...	475.557	1510.603	1... H2-1
64	M305	L2.5X1.5X5	.895	22.214	56	.001	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1... H2-1
65	M291	L2.5X1.5X5	.895	19.62	56	.002	46.247	y 56	12586.181	31113.2...	475.557	1528.342	1... H2-1
66	M447	PL2.25X5	.895	10.109	56	.025	0	y 56	11126.204	18981	123.75	891	1... H1-1a
67	M476	PL2.25X5	.894	13.579	55	.005	13.579	y 55	8685.515	18981	123.75	891	1... H1-1a
68	M197	L5x3.5x7	.894	721....	55	.114	713....	y 55	86264.635	95238.2...	3723.228	8577.673	1 H2-1
69	M296	L2.5X1.5X5	.886	22.213	56	.001	48.869	y 55	11300.937	31113.2...	475.557	1515.62	1... H2-1
70	M380	PL2.25X5	.885	10.109	55	.026	0	y 55	11126.204	18981	123.75	891	1... H1-1a
71	M481	PL2.25X5	.883	10.109	56	.025	0	y 56	11126.204	18981	123.75	891	1... H1-1a
72	M468	PL2.25X5	.880	11.323	55	.008	0	y 55	9442.879	18981	123.75	891	2... H1-1a
73	M502	PL2.25X5	.879	11.323	55	.008	0	y 55	9442.879	18981	123.75	891	2... H1-1a
74	M499	PL2.25X5	.876	10.564	56	.019	0	y 56	10307.552	18981	123.75	891	1... H1-1a
75	M409	PL2.25X5	.874	11.323	56	.008	0	y 56	9442.879	18981	123.75	891	2... H1-1a
76	M367	PL2.25X5	.869	11.323	56	.008	0	y 56	9442.879	18981	123.75	891	2... H1-1a
77	M494	PL2.25X5	.866	13.785	55	.006	13.785	y 55	6796.946	18981	123.75	891	1... H1-1a
78	M422	PL2.25X5	.866	10.32	55	.024	0	y 55	10587.579	18981	123.75	891	1... H1-1a
79	M329	L2.5X1.5X5	.866	27.229	55	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1... H2-1
80	M510	PL2.25X5	.861	13.501	55	.006	13.501	y 55	7080.374	18981	123.75	891	1... H1-1a
81	M478	PL2.25X5	.860	14.071	55	.006	0	y 56	6528.15	18981	123.75	891	1... H1-1a
82	M435	PL2.25X5	.858	13.785	56	.006	13.785	y 56	6796.946	18981	123.75	891	1... H1-1a
83	M512	PL2.25X5	.858	14.071	55	.006	13.784	y 55	6528.15	18981	123.75	891	1... H1-1a
84	M458	PL2.25X5	.857	13.219	55	.005	13.219	y 55	7379.277	18981	123.75	891	1... H1-1a
85	M393	PL2.25X5	.856	13.785	56	.005	13.785	y 56	6796.946	18981	123.75	891	1... H1-1a
86	M492	PL2.25X5	.856	13.219	55	.006	13.219	y 55	7379.277	18981	123.75	891	1... H1-1a
87	M452	PL2.25X5	.855	11.584	55	.005	0	y 55	9149.226	18981	123.75	891	2... H1-1a
88	M486	PL2.25X5	.854	11.584	55	.005	0	y 55	9149.226	18981	123.75	891	2... H1-1a
89	M474	PL2.25X5	.854	12.94	55	.005	12.94	y 55	7674.832	18981	123.75	891	1... H1-1a
90	M417	PL2.25X5	.853	13.501	56	.006	13.501	y 56	7080.374	18981	123.75	891	1... H1-1a
91	M508	PL2.25X5	.852	12.94	55	.005	12.94	y 55	7674.832	18981	123.75	891	1... H1-1a
92	M375	PL2.25X5	.851	13.501	56	.005	13.501	y 56	7080.374	18981	123.75	891	1... H1-1a
93	M364	PL2.25X5	.851	10.564	55	.020	0	y 55	10307.552	18981	123.75	891	1.5 H1-1a
94	M419	PL2.25X5	.850	14.071	56	.006	13.784	y 56	6528.15	18981	123.75	891	1... H1-1a
95	M456	PL2.25X5	.850	12.663	55	.004	12.663	y 55	7968.15	18981	123.75	891	1... H1-1a
96	M460	PL2.25X5	.849	14.066	55	.005	14.066	y 55	6937.777	18981	123.75	891	1... H1-1a
97	M427	PL2.25X5	.849	11.584	56	.005	0	y 56	9149.226	18981	123.75	891	2... H1-1a
98	M470	PL2.25X5	.848	11.849	55	.003	11.849	y 56	8854.184	18981	123.75	891	2... H1-1a
99	M490	PL2.25X5	.848	12.663	55	.005	12.663	y 55	7968.15	18981	123.75	891	1... H1-1a
100	M433	PL2.25X5	.848	13.219	56	.005	13.219	y 56	7379.277	18981	123.75	891	1... H1-1a
101	M472	PL2.25X5	.848	12.388	55	.003	12.388	y 55	8262.932	18981	123.75	891	1... H1-1a
102	M454	PL2.25X5	.848	12.117	55	.002	12.117	y 56	8558.51	18981	123.75	891	1... H1-1a
103	M377	PL2.25X5	.848	14.071	56	.005	13.784	y 56	6528.15	18981	123.75	891	1... H1-1a
104	M504	PL2.25X5	.847	11.849	55	.003	11.849	y 56	8854.184	18981	123.75	891	2... H1-1a
105	M488	PL2.25X5	.847	12.117	55	.003	12.117	y 55	8558.51	18981	123.75	891	1... H1-1a
106	M506	PL2.25X5	.847	12.388	55	.004	12.388	y 55	8262.932	18981	123.75	891	1... H1-1a
107	M391	PL2.25X5	.846	13.219	56	.005	13.219	y 56	7379.277	18981	123.75	891	1... H1-1a
108	M385	PL2.25X5	.844	11.584	56	.006	11.584	y 55	9149.226	18981	123.75	891	2... H1-1a
109	M415	PL2.25X5	.844	12.94	56	.005	12.94	y 56	7674.832	18981	123.75	891	1... H1-1a
110	M373	PL2.25X5	.842	12.94	56	.005	12.94	y 56	7674.832	18981	123.75	891	1... H1-1a
111	M431	PL2.25X5	.841	12.663	56	.004	12.663	y 56	7968.15	18981	123.75	891	1... H1-1a
112	M465	PL2.25X5	.841	10.348	56	.019	0	y 56	10833.703	18981	123.75	891	1... H1-1a
113	M406	PL2.25X5	.840	10.564	55	.018	0	y 55	10307.552	18981	123.75	891	1.4 H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
114	M411	PL2.25X5	.839	11.849	56	.003	11.849	y 55	8854.184	18981	123.75	891	2...H1-1a
115	M413	PL2.25X5	.839	12.388	56	.004	12.388	y 56	8262.932	18981	123.75	891	1...H1-1a
116	M429	PL2.25X5	.839	12.117	56	.003	12.117	y 55	8558.51	18981	123.75	891	1...H1-1a
117	M389	PL2.25X5	.838	12.663	56	.004	12.663	y 56	7968.15	18981	123.75	891	1...H1-1a
118	M369	PL2.25X5	.837	11.849	56	.004	11.849	y 55	8854.184	18981	123.75	891	2...H1-1a
119	M371	PL2.25X5	.836	12.388	56	.003	12.388	y 56	8262.932	18981	123.75	891	1...H1-1a
120	M387	PL2.25X5	.836	12.117	56	.003	12.117	y 55	8558.51	18981	123.75	891	1...H1-1a
121	M326	L2.5X1.5X5	.832	27.229	55	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
122	M483	PL2.25X5	.828	10.813	56	.014	0	y 56	10022.861	18981	123.75	891	1...H1-1a
123	M323	L2.5X1.5X5	.822	22.214	56	.002	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
124	M382	PL2.25X5	.815	10.813	55	.015	0	y 55	10022.861	18981	123.75	891	1...H1-1a
125	M449	PL2.25X5	.815	10.813	56	.014	0	y 56	10022.861	18981	123.75	891	1...H1-1a
126	M424	PL2.25X5	.805	10.813	55	.013	10.813	y 56	10022.861	18981	123.75	891	1...H1-1a
127	M501	PL2.25X5	.789	11.066	56	.011	0	y 56	9734.36	18981	123.75	891	1...H1-1a
128	M467	PL2.25X5	.783	11.066	56	.010	0	y 56	9734.36	18981	123.75	891	1...H1-1a
129	M317	L2.5X1.5X5	.782	27.229	55	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
130	M366	PL2.25X5	.780	11.066	55	.011	0	y 55	9734.36	18981	123.75	891	1...H1-1a
131	M316	L2.5X1.5X5	.773	22.214	56	.001	0	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
132	M408	PL2.25X5	.770	11.066	55	.009	11.066	y 56	9734.36	18981	123.75	891	1...H1-1a
133	M195	L5x3.5x8	.763	46.182	55	.030	223....	y 56	97617.22	108000	4102.811	9397.984	1 H2-1
134	M485	PL2.25X5	.763	11.323	56	.008	0	y 56	9442.879	18981	123.75	891	1...H1-1a
135	M194	L5x3.5x8	.762	715....	55	.087	538....	y 56	97617.22	108000	4102.811	9397.984	1 H2-1
136	M451	PL2.25X5	.754	11.323	56	.008	0	y 56	9442.879	18981	123.75	891	1...H1-1a
137	M384	PL2.25X5	.752	11.323	55	.009	0	y 55	9442.879	18981	123.75	891	1...H1-1a
138	M292	L2.5X1.5X5	.748	19.62	56	.001	46.247	y 55	12586.181	31113.2...	475.557	1528.342	1...H2-1
139	M426	PL2.25X5	.743	11.323	55	.007	0	y 55	9442.879	18981	123.75	891	1...H1-1a
140	M503	PL2.25X5	.741	11.584	56	.006	0	y 56	9149.226	18981	123.75	891	1...H1-1a
141	M319	L2.5X1.5X5	.738	22.214	56	.002	0	y 55	11300.048	31113.2...	475.557	1515.611	1...H2-1
142	M469	PL2.25X5	.732	11.584	56	.005	0	y 56	9149.226	18981	123.75	891	1...H1-1a
143	M368	PL2.25X5	.731	11.584	55	.007	0	y 55	9149.226	18981	123.75	891	1...H1-1a
144	M320	L2.5X1.5X5	.729	22.214	56	.001	0	y 55	11300.048	31113.2...	475.557	1515.611	1...H2-1
145	M511	PL2.25X5	.729	13.785	56	.006	27.851	y 55	6796.946	18981	123.75	891	1...H1-1a
146	M477	PL2.25X5	.724	13.716	56	.005	13.716	y 56	6731.711	18981	123.75	891	1...H1-1a
147	M493	PL2.25X5	.723	13.501	56	.006	27.277	y 55	7080.374	18981	123.75	891	1...H1-1a
148	M487	PL2.25X5	.722	11.849	56	.004	0	y 56	8854.184	18981	123.75	891	1...H1-1a
149	M495	PL2.25X5	.722	14.071	56	.006	28.43	y 55	6528.15	18981	123.75	891	1...H1-1a
150	M410	PL2.25X5	.722	11.584	55	.004	11.584	y 56	9149.226	18981	123.75	891	1...H1-1a
151	M376	PL2.25X5	.721	13.785	55	.005	0	y 56	6796.946	18981	123.75	891	1...H1-1a
152	M600	L3x2.5x5	.720	72.94	55	.066	108....	z 55	40948.468	44010	1270.778	2996.056	1 H2-1
153	M530	L3x2.5x5	.720	68.649	56	.066	32.894	z 56	40948.468	44010	1270.778	2996.056	1 H2-1
154	M509	PL2.25X5	.719	13.219	56	.005	0	y 55	7379.277	18981	123.75	891	1...H1-1a
155	M461	PL2.25X5	.717	14.071	56	.006	14.071	y 56	6528.15	18981	123.75	891	1...H1-1a
156	M392	PL2.25X5	.716	13.501	55	.005	0	y 56	7080.374	18981	123.75	891	1...H1-1a
157	M453	PL2.25X5	.715	11.849	56	.003	0	y 56	8854.184	18981	123.75	891	2...H1-1a
158	M394	PL2.25X5	.715	14.071	55	.006	28.43	y 56	6528.15	18981	123.75	891	1...H1-1a
159	M491	PL2.25X5	.715	12.94	56	.005	0	y 55	7674.832	18981	123.75	891	1...H1-1a
160	M529	L3x2.5x5	.714	72.94	56	.063	108....	z 56	40948.468	44010	1270.778	2996.056	1 H2-1
161	M599	L3x2.5x5	.714	68.649	55	.063	32.894	z 55	40948.468	44010	1270.778	2996.056	1 H2-1
162	M475	PL2.25X5	.714	13.219	56	.005	13.219	y 56	7379.277	18981	123.75	891	1...H1-1a
163	M386	PL2.25X5	.713	11.849	55	.005	0	y 55	8854.184	18981	123.75	891	2...H1-1a
164	M374	PL2.25X5	.712	13.219	55	.005	0	y 56	7379.277	18981	123.75	891	1...H1-1a
165	M507	PL2.25X5	.711	12.663	56	.004	0	y 55	7968.15	18981	123.75	891	1...H1-1a
166	M457	PL2.25X5	.710	12.94	56	.004	0	y 55	7674.832	18981	123.75	891	1...H1-1a
167	M489	PL2.25X5	.709	12.388	56	.003	0	y 55	8262.932	18981	123.75	891	1...H1-1a
168	M505	PL2.25X5	.708	12.117	56	.003	12.117	y 55	8558.51	18981	123.75	891	2...H1-1a
169	M390	PL2.25X5	.708	12.94	55	.004	0	y 56	7674.832	18981	123.75	891	1...H1-1a
170	M418	PL2.25X5	.707	13.785	55	.006	27.851	y 56	6796.946	18981	123.75	891	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt	phi*Mn y	phi*Mn z	Cb	Eqn
171	M473	PL2.25X5	.706	12.66356	.004	0	y 55	7968.15	18981	123.75	891	1...H1-1a
172	M459	PL2.25X5	.706	13.77656	.005	13.776	y 56	7215.985	18981	123.75	891	1...H1-1a
173	M455	PL2.25X5	.705	12.38856	.003	0	y 55	8262.932	18981	123.75	891	1...H1-1a
174	M428	PL2.25X5	.705	11.84955	.003	11.849	y 56	8854.184	18981	123.75	891	1...H1-1a
175	M372	PL2.25X5	.705	12.66355	.004	0	y 56	7968.15	18981	123.75	891	1...H1-1a
176	M471	PL2.25X5	.704	12.11756	.003	0	y 55	8558.51	18981	123.75	891	2...H1-1a
177	M388	PL2.25X5	.703	12.38855	.003	0	y 56	8262.932	18981	123.75	891	1...H1-1a
178	M370	PL2.25X5	.702	12.11755	.003	0	y 55	8558.51	18981	123.75	891	2...H1-1a
179	M434	PL2.25X5	.702	13.50155	.006	27.277	y 56	7080.374	18981	123.75	891	1...H1-1a
180	M436	PL2.25X5	.701	14.07155	.006	28.43	y 56	6528.15	18981	123.75	891	1...H1-1a
181	M416	PL2.25X5	.698	13.21955	.005	13.219	y 55	7379.277	18981	123.75	891	1...H1-1a
182	M432	PL2.25X5	.694	12.94	.004	0	y 56	7674.832	18981	123.75	891	1...H1-1a
183	M414	PL2.25X5	.691	12.66355	.004	0	y 56	7968.15	18981	123.75	891	1...H1-1a
184	M412	PL2.25X5	.690	12.11755	.002	12.117	y 56	8558.51	18981	123.75	891	2...H1-1a
185	M430	PL2.25X5	.689	12.38855	.003	12.388	y 55	8262.932	18981	123.75	891	1...H1-1a
186	M312	L2.5X1.5X5	.675	27.22955	.002	0	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
187	M311	L2.5X1.5X5	.667	27.22955	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
188	M308	L2.5X1.5X5	.630	27.22955	.002	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
189	M648	PL2.25X4	.629	10.21755	.031	0	y 55	6269.147	15201	78.75	711	1...H1-1a
190	M578	PL2.25X4	.629	10.21756	.031	0	y 56	6269.147	15201	78.75	711	1...H1-1a
191	M580	PL2.25X4	.627	10.21756	.026	0	y 56	6269.147	15201	78.75	711	1...H1-1a
192	M650	PL2.25X4	.626	10.21755	.026	0	y 55	6269.147	15201	78.75	711	1...H1-1a
193	M322	L2.5X1.5X5	.626	27.22955	.002	0	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
194	M315	L2.5X1.5X5	.615	22.21456	.001	0	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
195	M531	L3x2.5x5	.613	68.64955	.055	32.894	z 55	40948.468	44010	1270.778	2996.056	1 H2-1
196	M602	L3x2.5x5	.612	68.64956	.053	32.894	z 56	40948.468	44010	1270.778	2996.056	1 H2-1
197	M601	L3x2.5x5	.612	72.94	.056	108....	z 56	40948.468	44010	1270.778	2996.056	1 H2-1
198	M532	L3x2.5x5	.611	72.94	.055	108....	z 55	40948.468	44010	1270.778	2996.056	1 H2-1
199	M336	L2.5X1.5X5	.605	22.21456	.002	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
200	M546	PL2.25X5	.604	15.18156	.009	15.479	y 55	5674.836	18981	123.75	891	1...H1-1a
201	M520	PL2.25X6	.600	15.23555	.006	15.235	y 55	9181.303	22781.25	177.98	1067.87	1...H1-1a
202	M617	PL2.25X5	.598	15.18155	.011	29.469	y 56	5674.836	18981	123.75	891	1...H1-1a
203	M616	PL2.25X5	.597	15.18155	.009	29.469	y 56	5674.836	18981	123.75	891	1.9H1-1a
204	M604	L6x4x6	.596	58.66755	.134	58.667	y 55	43003.777	97470	4257.614	12792.4...	1 H2-1
205	M528	PL2.25X6	.596	15.23555	.006	15.235	y 55	9181.303	22781.25	177.98	1067.87	1...H1-1a
206	M534	L6x4x6	.595	73.33356	.134	73.333	y 55	43003.777	97470	4257.614	12792.4...	1 H2-1
207	M547	PL2.25X5	.591	15.18156	.011	29.469	y 55	5674.836	18981	123.75	891	1...H1-1a
208	M398	PL2.25X6	.581	15.23556	.007	15.235	y 56	9181.303	22781.25	177.98	1067.87	1...H1-1a
209	M327	L2.5X1.5X5	.580	22.21456	.001	0	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
210	M513	PL2.25X6	.580	14.36	.006	0	y 56	10145.853	22781.25	177.98	1067.87	1...H1-1a
211	M440	PL2.25X6	.580	15.23556	.006	15.235	y 56	9181.303	22781.25	177.98	1067.87	1...H1-1a
212	M331	L2.5X1.5X5	.578	22.21456	.001	0	y 55	11300.048	31113.2...	475.557	1515.611	1...H2-1
213	M521	PL2.25X6	.578	14.36	.007	14.067	y 55	10145.853	22781.25	177.98	1067.87	1...H1-1a
214	M318	L2.5X1.5X5	.574	27.22955	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
215	M441	PL2.25X6	.573	14.36	.007	14.067	y 56	10145.853	22781.25	177.98	1067.87	1...H1-1a
216	M399	PL2.25X6	.572	14.36	.006	14.067	y 56	10145.853	22781.25	177.98	1067.87	1...H1-1a
217	M304	L2.5X1.5X5	.572	27.22955	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
218	M518	PL2.25X6	.551	14.63255	.006	14.333	y 55	9843.112	22781.25	177.98	1067.87	1...H1-1a
219	M526	PL2.25X6	.550	14.63255	.007	14.333	y 55	9843.112	22781.25	177.98	1067.87	1...H1-1a
220	M588	PL2.25X4	.549	8.823	.025	0	y 56	7875.296	15201	78.75	711	1...H1-1a
221	M658	PL2.25X4	.549	8.823	.025	0	y 55	7875.296	15201	78.75	711	1...H1-1a
222	M619	PL2.25X5	.549	15.18156	.012	29.469	y 55	5674.836	18981	123.75	891	1...H1-1a
223	M656	PL2.25X4	.546	8.823	.029	0	y 55	7875.296	15201	78.75	711	1...H1-1a
224	M438	PL2.25X6	.546	14.63256	.007	14.333	y 56	9843.112	22781.25	177.98	1067.87	1...H1-1a
225	M586	PL2.25X4	.545	8.823	.029	0	y 56	7875.296	15201	78.75	711	1...H1-1a
226	M396	PL2.25X6	.545	14.63256	.006	14.333	y 56	9843.112	22781.25	177.98	1067.87	1...H1-1a
227	M549	PL2.25X5	.539	15.18155	.012	29.469	y 56	5674.836	18981	123.75	891	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
228	M555	L4x3x6	.537	9.414	56	.179	7.685	z 56	64643.067	67230	2238.689	5885.484	1... H2-1
229	M548	PL2.25X5	.536	15.181	55	.009	29.469	y 56	5674.836	18981	123.75	891	1... H1-1a
230	M625	L4x3x6	.535	9.414	56	.177	11.336	z 55	64643.067	67230	2238.689	5885.484	1... H2-1
231	M624	L4x3x6	.529	9.606	55	.165	7.685	z 56	64643.067	67230	2238.689	5885.484	2... H2-1
232	M618	PL2.25X5	.526	15.181	56	.009	29.469	y 55	5674.836	18981	123.75	891	1... H1-1a
233	M608	L3x2.5x6	.526	4.545	55	.125	9	z 55	51421.803	52110	1486.645	3490.361	1... H2-1
234	M538	L3x2.5x6	.525	4.455	56	.125	0	z 56	51421.803	52110	1486.645	3490.361	1... H2-1
235	M539	L3x2.5x6	.524	4.545	56	.125	9	z 56	51421.803	52110	1486.645	3490.361	1... H2-1
236	M609	L3x2.5x6	.524	4.455	55	.125	0	z 55	51421.803	52110	1486.645	3490.361	1... H2-1
237	M515	PL2.25X6	.521	14.958	55	.008	14.958	y 55	9481.312	22781.25	177.98	1067.87	1... H1-1a
238	M523	PL2.25X6	.520	14.958	55	.008	14.653	y 55	9481.313	22781.25	177.98	1067.87	1... H1-1a
239	M554	L4x3x6	.519	9.414	56	.168	11.336	z 55	64643.067	67230	2238.689	5885.484	1... H2-1
240	M596	PL2.25X4	.518	7.863	56	.019	0	y 56	8996.512	15201	78.75	711	1... H1-1a
241	M666	PL2.25X4	.517	7.863	55	.019	0	y 55	8996.512	15201	78.75	711	1... H1-1a
242	M664	PL2.25X4	.516	7.863	55	.023	0	y 55	8996.512	15201	78.75	711	1... H1-1a
243	M594	PL2.25X4	.516	7.863	56	.023	0	y 56	8996.512	15201	78.75	711	1... H1-1a
244	M443	PL2.25X6	.512	14.958	56	.008	14.653	y 56	9481.313	22781.25	177.98	1067.87	1... H1-1a
245	M401	PL2.25X6	.511	14.958	56	.008	14.958	y 56	9481.312	22781.25	177.98	1067.87	1... H1-1a
246	M332	L2.5X1.5X5	.509	22.214	56	.001	0	y 55	11300.048	31113.2...	475.557	1515.611	1... H2-1
247	M309	L2.5X1.5X5	.509	22.214	56	.001	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1... H2-1
248	M298	L2.5X1.5X5	.488	27.229	55	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1... H2-1
249	M356	PL2.25X5	.481	23.938	56	.004	0	y 56	2210.434	18984.3...	123.597	865.486	1... H1-1a
250	M525	PL2.25X6	.479	14.36	56	.008	29.012	y 55	10145.853	22781.25	177.98	1067.87	1... H1-1a
251	M527	PL2.25X6	.477	14.958	56	.007	30.221	y 55	9481.312	22781.25	177.98	1067.87	1... H1-1a
252	M294	L2.5X1.5X5	.476	27.23	55	.001	0	y 56	10829.35	31113.2...	475.557	1510.593	1... H2-1
253	M517	PL2.25X6	.475	14.36	56	.007	29.012	y 55	10145.853	22781.25	177.98	1067.87	1... H1-1a
254	M395	PL2.25X6	.474	14.36	55	.007	29.012	y 56	10145.853	22781.25	177.98	1067.87	1... H1-1a
255	M519	PL2.25X6	.473	14.958	56	.007	0	y 55	9481.312	22781.25	177.98	1067.87	1... H1-1a
256	M522	PL2.25X6	.472	14.632	56	.008	29.563	y 55	9843.112	22781.25	177.98	1067.87	1... H1-1a
257	M397	PL2.25X6	.470	14.958	55	.007	0	y 56	9481.312	22781.25	177.98	1067.87	1... H1-1a
258	M514	PL2.25X6	.469	14.632	56	.007	29.563	y 55	9843.112	22781.25	177.98	1067.87	1... H1-1a
259	M400	PL2.25X6	.468	14.632	55	.007	29.563	y 56	9843.112	22781.25	177.98	1067.87	1... H1-1a
260	M437	PL2.25X6	.464	14.36	55	.008	29.012	y 56	10145.853	22781.25	177.98	1067.87	1... H1-1a
261	M439	PL2.25X6	.462	14.958	55	.007	30.221	y 56	9481.312	22781.25	177.98	1067.87	1... H1-1a
262	M328	L2.5X1.5X5	.460	22.214	56	.001	0	y 56	11300.048	31113.2...	475.557	1515.611	1... H2-1
263	M442	PL2.25X6	.458	14.632	55	.007	29.563	y 56	9843.112	22781.25	177.98	1067.87	1... H1-1a
264	M649	PL2.25X4	.456	10.217	56	.029	10.217	y 55	6269.147	15201	78.75	711	1... H1-1a
265	M579	PL2.25X4	.456	10.217	55	.029	10.217	y 56	6269.147	15201	78.75	711	1... H1-1a
266	M340	L2.5X1.5X5	.455	22.214	56	.001	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1... H2-1
267	M173	L2.5x2.5x5	.448	51.04	56	.003	0	z 56	24053.796	39420	1096.767	2551.08	1... H2-1
268	M581	PL2.25X4	.447	10.217	55	.027	10.217	y 56	6269.147	15201	78.75	711	1... H1-1a
269	M651	PL2.25X4	.446	10.217	56	.026	10.217	y 55	6269.147	15201	78.75	711	1... H1-1a
270	M174	L2.5x2.5x5	.443	.516	56	.003	0	z 55	24053.796	39420	1096.767	2551.08	1... H2-1
271	M77	L2.5x2.5x5	.438	1.547	55	.003	0	z 56	24053.796	39420	1096.767	2551.08	1... H2-1
272	M78	L2.5x2.5x5	.430	51.04	55	.003	51.04	z 56	24053.796	39420	1096.767	2551.08	1... H2-1
273	M343	L2.5X1.5X5	.421	24.681	55	.001	48.869	y 55	11300.937	31113.2...	475.557	1515.62	1... H2-1
274	M344	L2.5X1.5X5	.421	22.213	56	.001	48.869	y 55	11300.937	31113.2...	475.557	1515.62	1... H2-1
275	M642	L6x4x6	.419	6.74	55	.132	6.74	z 55	91550.116	97470	4257.614	12792.4...	1... H2-1
276	M572	L6x4x6	.418	6.878	56	.132	6.878	z 56	91550.116	97470	4257.614	12792.4...	1... H2-1
277	M293	L2.5X1.5X5	.413	24.709	56	.001	0	y 56	10829.35	31113.2...	475.557	1510.593	1... H2-1
278	M573	L6x4x6	.410	6.878	56	.142	6.878	z 56	91550.116	97470	4257.614	12792.4...	1... H2-1
279	M643	L6x4x6	.409	6.74	55	.142	6.74	z 55	91550.116	97470	4257.614	12637.1...	1... H2-1
280	M307	L2.5X1.5X5	.397	27.229	55	.002	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1... H2-1
281	M339	L2.5X1.5X5	.394	24.682	55	.001	48.871	y 55	11300.048	31113.2...	475.557	1515.611	1... H2-1
282	M297	L2.5X1.5X5	.393	24.708	56	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1... H2-1
283	M657	PL2.25X4	.392	8.823	56	.027	8.823	y 55	7875.296	15201	78.75	711	1... H1-1a
284	M587	PL2.25X4	.392	8.823	55	.027	8.823	y 56	7875.296	15201	78.75	711	1... H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt	phi*Mn y	phi*Mn z	Cb	Eqn
285	M589	PL2.25X4	.390	8.823	55 .024	8.823	y 56	7875.296	15201	78.75	711	1...	H1-1a
286	M659	PL2.25X4	.390	8.823	56 .024	8.823	y 55	7875.296	15201	78.75	711	1...	H1-1a
287	M665	PL2.25X4	.371	7.863	56 .021	7.863	y 55	8996.512	15201	78.75	711	1...	H1-1a
288	M595	PL2.25X4	.371	7.863	55 .021	7.863	y 56	8996.512	15201	78.75	711	1...	H1-1a
289	M597	PL2.25X4	.369	7.863	55 .018	7.863	y 56	8996.512	15201	78.75	711	1...	H1-1a
290	M667	PL2.25X4	.369	7.863	56 .018	7.863	y 55	8996.512	15201	78.75	711	1...	H1-1a
291	M623	PL2.25X5	.366	18.733	56 .009	19.093	y 55	3742.008	18981	123.75	891	1...	H1-1a
292	M335	L2.5X1.5X5	.362	24.682	55 .001	0	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
293	M353	PL2.25X5	.354	23.45	56 .004	0	y 56	2210.434	18984.3...	123.597	810.259	1...	H1-1a
294	M303	L2.5X1.5X5	.353	27.229	55 .001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
295	M137	PL2.25X5	.348	15.461	55 .024	15.152	y 55	5785.218	18981	123.75	891	1...	H1-1a
296	M553	PL2.25X5	.347	18.733	55 .008	19.093	y 56	3742.008	18981	123.75	891	1...	H1-1a
297	M101	PL2.25X5	.346	15.461	56 .026	0	y 55	5785.218	18981	123.75	891	1...	H1-1a
298	M324	L2.5X1.5X5	.332	22.214	56 .002	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
299	M357	PL2.25X5	.331	22.473	56 .003	0	y 56	2210.434	18984.3...	123.597	889.893	1...	H1-1a
300	M551	PL2.25X5	.322	18.733	55 .009	35.664	y 55	3742.008	18981	123.75	891	1...	H1-1a
301	M556	PL2.25X4	.318	14.763	56 .028	14.763	y 56	4052.628	15201	78.75	711	2...	H1-1b
302	M626	PL2.25X4	.317	14.763	55 .028	14.763	y 55	4052.628	15201	78.75	711	2...	H1-1b
303	M627	PL2.25X4	.312	14.763	55 .028	14.763	y 55	4052.628	15201	78.75	711	2...	H1-1b
304	M557	PL2.25X4	.311	14.763	56 .028	14.763	y 56	4052.628	15201	78.75	711	2...	H1-1b
305	M622	PL2.25X5	.308	18.733	55 .009	35.664	y 55	3742.008	18981	123.75	891	1...	H1-1a
306	M621	PL2.25X5	.303	18.733	56 .008	35.664	y 56	3742.008	18981	123.75	891	1...	H1-1a
307	M552	PL2.25X5	.296	18.733	56 .009	35.664	y 56	3742.008	18981	123.75	891	1...	H1-1a
308	M134	PL2.25X5	.292	15.31	56 .014	15.31	y 55	5666.526	18981	123.75	891	1...	H1-1a
309	M550	PL2.25X5	.292	18.733	56 .011	35.664	y 56	3742.008	18981	123.75	891	1...	H1-1a
310	M574	PL2.25X4	.291	9.809	56 .035	9.809	y 56	8183.037	15201	78.75	711	2...	H1-1b
311	M644	PL2.25X4	.291	9.809	55 .035	9.809	y 55	8183.037	15201	78.75	711	2...	H1-1b
312	M645	PL2.25X4	.290	9.809	55 .034	9.809	y 55	8183.037	15201	78.75	711	2...	H1-1b
313	M575	PL2.25X4	.290	9.809	56 .034	9.809	y 56	8183.037	15201	78.75	711	2...	H1-1b
314	M38	PL2.25X5	.289	15.31	55 .014	15.31	y 56	5666.526	18981	123.75	891	1...	H1-1a
315	M629	PL2.25X4	.281	14.763	56 .027	27.577	y 55	4052.628	15201	78.75	711	2...	H1-1b
316	M620	PL2.25X5	.280	18.733	55 .010	35.664	y 55	3742.008	18981	123.75	891	1...	H1-1a
317	M558	PL2.25X4	.279	14.763	55 .026	14.763	y 55	4052.628	15201	78.75	711	2...	H1-1b
318	M559	PL2.25X4	.279	14.763	55 .027	27.577	y 56	4052.628	15201	78.75	711	2...	H1-1b
319	M628	PL2.25X4	.277	14.763	56 .026	14.763	y 56	4052.628	15201	78.75	711	2...	H1-1b
320	M116	PL2.25X5	.275	15.31	56 .016	15.31	y 55	5666.526	18981	123.75	891	1...	H1-1a
321	M524	PL2.25X6	.267	15.235	56 .008	0	y 55	9181.303	22781.25	177.98	1067.87	1...	H1-1a
322	M516	PL2.25X6	.263	15.235	56 .008	0	y 55	9181.303	22781.25	177.98	1067.87	1...	H1-1a
323	M564	PL2.25X4	.262	12.585	56 .027	0	y 56	4201.337	15201	78.75	711	1...	H1-1b
324	M635	PL2.25X4	.261	12.585	55 .029	0	y 55	4201.337	15201	78.75	711	1...	H1-1b
325	M634	PL2.25X4	.261	12.585	55 .027	0	y 55	4201.337	15201	78.75	711	1...	H1-1b
326	M565	PL2.25X4	.260	12.585	56 .029	0	y 56	4201.337	15201	78.75	711	1...	H1-1b
327	M402	PL2.25X6	.257	15.235	55 .008	0	y 56	9181.303	22781.25	177.98	1067.87	1...	H1-1a
328	M576	PL2.25X4	.241	9.809	56 .034	18.322	y 56	8183.037	15201	78.75	711	2...	H1-1b
329	M646	PL2.25X4	.241	9.809	55 .033	18.322	y 55	8183.037	15201	78.75	711	2...	H1-1b
330	M647	PL2.25X4	.240	9.809	55 .032	18.322	y 55	8183.037	15201	78.75	711	2...	H1-1b
331	M577	PL2.25X4	.240	9.809	56 .032	18.322	y 56	8183.037	15201	78.75	711	2...	H1-1b
332	M360	PL2.25X5	.236	22.961	56 .005	24.427	y 55	2210.434	18984.3...	123.597	889.893	1...	H1-1a
333	M347	L2.5X1.5X5	.232	23.201	55 .001	45.937	y 55	12738.921	31113.2...	475.557	1529.862	1...	H2-1
334	M637	PL2.25X4	.220	12.585	56 .026	0	y 56	4201.337	15201	78.75	711	1...	H1-1b
335	M566	PL2.25X4	.218	12.585	55 .027	12.585	y 56	4201.337	15201	78.75	711	1...	H1-1b
336	M289	L2.5X1.5X5	.218	22.735	56 .001	45.934	y 55	12740.431	31113.2...	475.557	1529.877	1...	H2-1
337	M567	PL2.25X4	.216	12.585	55 .026	0	y 55	4201.337	15201	78.75	711	1...	H1-1b
338	M636	PL2.25X4	.214	12.585	56 .027	12.585	y 55	4201.337	15201	78.75	711	1...	H1-1b
339	M655	PL2.25X4	.211	8.252	55 .033	8.252	y 55	8492.403	15201	78.75	711	1...	H1-1b
340	M585	PL2.25X4	.211	8.252	56 .033	8.252	y 56	8492.403	15201	78.75	711	1...	H1-1b
341	M584	PL2.25X4	.210	8.252	56 .031	8.252	y 56	8492.403	15201	78.75	711	1...	H1-1b



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear	...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [...	phi*Mn y	...	phi*Mn z	Cb	Eqn
342	M654	PL2.25X4	.210	8.252	55	.031	8.252	y	55	8492.403	15201	78.75	711	1...	H1-1b		
343	M23	PL2.25X5	.209	15.461	56	.026	0	y	56	5785.218	18981	123.75	891	1...	H1-1b		
344	M348	L2.5X1.5X5	.208	23.201	55	.001	0	y	55	12738.921	31113.2...	475.557	1529.862	1...	H2-1		
345	M5	PL2.25X5	.203	15.461	56	.026	0	y	56	5785.218	18981	123.75	891	1...	H1-1b		
346	M653	PL2.25X4	.200	8.252	55	.033	0	y	55	8492.403	15201	78.75	711	1...	H1-1b		
347	M583	PL2.25X4	.200	8.252	56	.033	0	y	56	8492.403	15201	78.75	711	1...	H1-1b		
348	M652	PL2.25X4	.199	8.252	55	.033	0	y	55	8492.403	15201	78.75	711	1...	H1-1b		
349	M582	PL2.25X4	.199	8.252	56	.033	0	y	56	8492.403	15201	78.75	711	1...	H1-1b		
350	M59	PL2.25X5	.182	15.461	55	.023	15.152	y	56	5785.218	18981	123.75	891	1...	H1-1b		
351	M41	PL2.25X5	.182	15.461	55	.023	15.152	y	56	5785.218	18981	123.75	891	1...	H1-1b		
352	M571	PL2.25X4	.180	14.092	56	.013	14.092	y	56	4714.98	15201	78.75	711	1...	H1-1b		
353	M641	PL2.25X4	.180	14.092	55	.013	14.092	y	55	4714.98	15201	78.75	711	1...	H1-1b		
354	M290	L2.5X1.5X5	.179	22.735	56	.001	45.934	y	56	12740.431	31113.2...	475.557	1529.877	1...	H2-1		
355	M138	PL2.25X5	.178	15.152	55	.024	0	y	56	5785.218	18981	123.75	891	1...	H1-1b		
356	M20	PL2.25X5	.176	15.31	55	.015	15.31	y	56	5666.526	18981	123.75	891	1...	H1-1b		
357	M102	PL2.25X5	.169	15.152	56	.027	0	y	55	5785.218	18981	123.75	891	1...	H1-1b		
358	M639	PL2.25X4	.167	14.092	55	.015	14.092	y	55	4714.98	15201	78.75	711	1...	H1-1b		
359	M569	PL2.25X4	.166	14.092	56	.015	14.092	y	56	4714.98	15201	78.75	711	1...	H1-1b		
360	M444	PL2.25X6	.157	15.235	55	.007	0	y	56	9181.303	22781.25	177.98	1067.87	1...	H1-1b		
361	M56	PL2.25X5	.151	15.31	56	.025	0	y	56	5666.526	18981	123.75	891	1...	H1-1b		
362	M74	PL2.25X5	.147	15.31	56	.024	0	y	56	5666.526	18981	123.75	891	1...	H1-1b		
363	M591	PL2.25X4	.146	7.482	56	.020	0	y	56	9416.916	15201	78.75	711	1...	H1-1b		
364	M661	PL2.25X4	.146	7.482	55	.020	0	y	55	9416.916	15201	78.75	711	1...	H1-1b		
365	M660	PL2.25X4	.144	7.482	55	.021	0	y	55	9416.916	15201	78.75	711	1...	H1-1b		
366	M590	PL2.25X4	.143	7.482	56	.021	0	y	56	9416.916	15201	78.75	711	1...	H1-1b		
367	M631	PL2.25X4	.141	16.36	55	.015	16.36	y	55	3503.195	15201	78.75	711	1...	H1-1b		
368	M638	PL2.25X4	.140	13.831	55	.017	0	y	55	3535.554	15201	78.75	711	1...	H1-1b		
369	M561	PL2.25X4	.140	16.36	56	.015	16.36	y	56	3503.195	15201	78.75	711	1...	H1-1b		
370	M568	PL2.25X4	.140	13.831	56	.017	0	y	56	3535.554	15201	78.75	711	1...	H1-1b		
371	M120	PL2.25X5	.140	15.152	55	.026	0	y	55	5785.218	18981	123.75	891	1...	H1-1b		
372	M570	PL2.25X4	.137	13.831	56	.013	0	y	56	3535.554	15201	78.75	711	1...	H1-1b		
373	M640	PL2.25X4	.136	13.831	55	.013	0	y	55	3535.554	15201	78.75	711	1...	H1-1b		
374	M42	PL2.25X5	.136	15.152	56	.023	0	y	55	5785.218	18981	123.75	891	1...	H1-1b		
375	M24	PL2.25X5	.131	15.152	55	.027	0	y	56	5785.218	18981	123.75	891	1...	H1-1b		
376	M206	L2.5x1.25x5	.129	14.653	56	.001	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1		
377	M593	PL2.25X4	.125	7.482	56	.019	7.482	y	56	9416.916	15201	78.75	711	1...	H1-1b		
378	M663	PL2.25X4	.125	7.482	55	.019	7.482	y	55	9416.916	15201	78.75	711	1...	H1-1b		
379	M6	PL2.25X5	.125	15.152	56	.026	0	y	56	5785.218	18981	123.75	891	1...	H1-1b		
380	M662	PL2.25X4	.122	7.482	55	.020	7.482	y	55	9416.916	15201	78.75	711	1...	H1-1b		
381	M592	PL2.25X4	.122	7.482	56	.020	7.482	y	56	9416.916	15201	78.75	711	1...	H1-1b		
382	M60	PL2.25X5	.122	15.152	56	.024	0	y	55	5785.218	18981	123.75	891	1...	H1-1b		
383	M231	L2.5x1.25x5	.121	14.952	55	.003	0	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1		
384	M170	PL2.25X5	.121	15.31	55	.025	0	y	55	5666.526	18981	123.75	891	1...	H1-1b		
385	M156	PL2.25X5	.120	15.152	56	.024	0	y	56	5785.218	18981	123.75	891	1...	H1-1b		
386	M210	L2.5x1.25x5	.117	14.653	56	.002	0	y	55	16726.225	29003.9...	340.889	1464.21	1...	H2-1		
387	M152	PL2.25X5	.115	15.31	55	.026	0	y	55	5666.526	18981	123.75	891	1...	H1-1b		
388	M563	PL2.25X4	.114	16.36	56	.011	29.994	y	55	3503.195	15201	78.75	711	1...	H1-1b		
389	M236	L2.5x1.25x5	.114	14.952	55	.002	0	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1		
390	M633	PL2.25X4	.113	16.36	55	.010	16.36	y	55	3503.195	15201	78.75	711	1...	H1-1b		
391	M233	L2.5x1.25x5	.111	14.952	55	.002	29.605	y	55	16726.225	29003.9...	340.889	1464.21	1...	H2-1		
392	M208	L2.5x1.25x5	.111	14.653	56	.001	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1		
393	M260	L2.5x1.25x5	.111	14.952	55	.002	29.605	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1		
394	M354	PL2.25X5	.110	23.938	55	.004	24.427	y	56	2210.434	18984.3...	123.597	810.167	1...	H1-1b		
395	M258	L2.5x1.25x5	.110	14.952	55	.004	0	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1		
396	M213	L2.5x1.25x5	.108	14.952	55	.002	0	y	55	16726.225	29003.9...	340.889	1464.21	1...	H2-1		
397	M241	L2.5x1.25x5	.108	14.952	55	.001	0	y	55	16726.225	29003.9...	340.889	1464.21	1...	H2-1		
398	M177	L2.5x2.5x5	.106	0	55	.002	0	z	56	35341.325	39420	1096.767	2551.08	1...	H2-1		



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt	phi*Mn y	phi*Mn z	Cb	Eqn
399	M81	L2.5x2.5x5	.104	24 56 .003	0	z 55	35341.325	39420	1096.767	2551.08	1...	H2-1
400	M55	PL2.25X5	.101	15.15256 .021	0	y 56	5785.218	18981	123.75	891	1...	H1-1b
401	M255	L2.5x1.25x5	.101	14.65356 .002	0	y 55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
402	M278	L2.5x1.25x5	.100	14.95255 .004	0	y 56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
403	M151	PL2.25X5	.100	15.15255 .021	0	y 55	5785.218	18981	123.75	891	1...	H1-1b
404	M169	PL2.25X5	.098	15.15255 .022	0	y 55	5785.218	18981	123.75	891	1...	H1-1b
405	M560	PL2.25X4	.096	16.05756 .012	16.36	y 55	2619.675	15201	78.75	711	1...	H1-1b
406	M73	PL2.25X5	.095	15.15256 .021	0	y 56	5785.218	18981	123.75	891	1...	H1-1b
407	M630	PL2.25X4	.095	16.36 56 .013	16.36	y 56	3503.195	15201	78.75	711	1...	H1-1b
408	M632	PL2.25X4	.095	16.05755 .012	0	y 55	2619.675	15201	78.75	711	1...	H1-1b
409	M228	L2.5x1.25x5	.095	14.65356 .002	0	y 56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
410	M562	PL2.25X4	.095	16.05756 .011	0	y 56	2619.675	15201	78.75	711	1...	H1-1b
411	M133	PL2.25X5	.093	15.15255 .016	15.152	y 55	5785.218	18981	123.75	891	1...	H1-1b
412	M71	PL2.25X5	.093	15.15256 .017	0	y 56	5785.218	18981	123.75	891	1...	H1-1b
413	M167	PL2.25X5	.092	15.15255 .018	0	y 55	5785.218	18981	123.75	891	1...	H1-1b
414	M243	L2.5x1.25x5	.091	14.80255 .013	29.308	y 55	16910.955	29003.9...	340.889	1465.997	1...	H2-1
415	M37	PL2.25X5	.091	15.15256 .015	15.152	y 56	5785.218	18981	123.75	891	1...	H1-1b
416	M253	L2.5x1.25x5	.089	14.65356 .002	0	y 55	16726.225	29003.9...	340.889	1464.211	1...	H2-1
417	M117	PL2.25X5	.089	15.30356 .006	0	y 56	5905.645	18981	123.75	891	1...	H1-1b
418	M121	PL2.25X5	.089	15.15255 .019	0	y 55	5785.218	18981	123.75	891	1...	H1-1b
419	M172	PL2.25X5	.088	15.15255 .003	0	y 55	5785.218	18981	123.75	891	1...	H1-1b
420	M21	PL2.25X5	.087	15.30355 .005	14.997	y 56	5905.645	18981	123.75	891	1...	H1-1b
421	M168	PL2.25X5	.086	15.46155 .019	0	y 55	5785.218	18981	123.75	891	1...	H1-1b
422	M25	PL2.25X5	.086	15.15256 .019	0	y 56	5785.218	18981	123.75	891	1...	H1-1b
423	M257	L2.5x1.25x5	.086	14.65356 .004	0	y 56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
424	M72	PL2.25X5	.085	15.46156 .019	0	y 56	5785.218	18981	123.75	891	1...	H1-1b
425	M149	PL2.25X5	.084	15.15255 .017	0	y 55	5785.218	18981	123.75	891	1...	H1-1b
426	M115	PL2.25X5	.084	15.15255 .014	0	y 56	5785.218	18981	123.75	891	1...	H1-1b
427	M150	PL2.25X5	.084	15.46155 .020	0	y 55	5785.218	18981	123.75	891	1...	H1-1b
428	M54	PL2.25X5	.083	15.46156 .019	0	y 56	5785.218	18981	123.75	891	1...	H1-1b
429	M19	PL2.25X5	.083	15.15256 .014	15.152	y 56	5785.218	18981	123.75	891	1...	H1-1b
430	M239	L2.5x1.25x5	.082	14.95355 .003	29.607	y 55	16724.892	29003.9...	340.889	1464.197	1...	H2-1
431	M171	PL2.25X5	.082	14.99755 .016	0	y 55	5905.645	18981	123.75	891	1...	H1-1b
432	M283	L2.5x1.25x5	.082	14.95255 .002	29.605	y 56	16726.225	29003.9...	340.889	1464.211	1...	H2-1
433	M7	PL2.25X5	.082	15.15256 .019	0	y 56	5785.218	18981	123.75	891	1...	H1-1b
434	M139	PL2.25X5	.081	15.15256 .017	0	y 56	5785.218	18981	123.75	891	1...	H1-1b
435	M53	PL2.25X5	.081	15.15256 .017	0	y 56	5785.218	18981	123.75	891	1...	H1-1b
436	M135	PL2.25X5	.081	15.30356 .007	14.997	y 55	5905.645	18981	123.75	891	1...	H1-1b
437	M103	PL2.25X5	.080	15.15255 .019	0	y 55	5785.218	18981	123.75	891	1...	H1-1b
438	M39	PL2.25X5	.079	15.30355 .007	0	y 55	5905.645	18981	123.75	891	1...	H1-1b
439	M52	PL2.25X5	.078	15.15256 .015	0	y 56	5785.218	18981	123.75	891	1...	H1-1b
440	M148	PL2.25X5	.078	15.15255 .015	0	y 55	5785.218	18981	123.75	891	1.5	H1-1b
441	M114	PL2.25X5	.078	15.46155 .012	15.152	y 55	5785.218	18981	123.75	891	1...	H1-1b
442	M43	PL2.25X5	.077	15.15255 .018	0	y 55	5785.218	18981	123.75	891	1...	H1-1b
443	M359	PL2.25X5_...	.076	22.96155 .005	0	y 55	2210.434	18984.3...	123.597	889.893	1...	H1-1b
444	M214	L2.5x1.25x5	.076	14.65356 .002	0	y 55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
445	M218	L2.5x1.25x5	.075	14.95255 .002	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
446	M18	PL2.25X5	.074	15.46156 .012	0	y 55	5785.218	18981	123.75	891	1...	H1-1b
447	M270	L2.5x1.25x5	.074	14.95255 .002	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
448	M265	L2.5x1.25x5	.074	14.65356 .002	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
449	M178	L2.5x2.5x5	.073	6.788 55 .023	16	y 55	35341.325	39420	1096.767	2551.08	1...	H2-1
450	M36	PL2.25X5	.072	15.46156 .011	15.152	y 56	5785.218	18981	123.75	891	1...	H1-1b
451	M287	L2.5x1.25x5	.071	14.16255 .004	28.04	y 55	17701.085	29003.9...	340.889	1473.7	1...	H2-1
452	M280	L2.5x1.25x5	.071	14.95255 .001	0	y 56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
453	M132	PL2.25X5	.070	15.46155 .012	0	y 56	5785.218	18981	123.75	891	1...	H1-1b
454	M285	L2.5x1.25x5	.070	14.95155 .002	0	y 56	16727.63	29003.9...	340.889	1464.224	1...	H2-1
455	M61	PL2.25X5	.070	15.15255 .016	0	y 55	5785.218	18981	123.75	891	1...	H1-1b



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
456	M166	PL2.25X5	.070	15.15255	.014	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
457	M70	PL2.25X5	.069	15.15256	.014	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
458	M104	PL2.25X5	.069	15.15255	.014	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
459	M252	L2.5x1.25x5	.069	14.95256	.001	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1	
460	M199	L2.5x1.25x5	.069	13.87856	.002	0	y 56	17701.085	29003.9...	340.889	1473.7	1...H2-1	
461	M275	L2.5x1.25x5	.068	14.65356	.004	0	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1	
462	M157	PL2.25X5	.068	15.15256	.017	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
463	M212	L2.5x1.25x5	.067	14.65356	.003	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1	
464	M268	L2.5x1.25x5	.067	14.95255	.003	29.605	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1	
465	M203	L2.5x1.25x5	.067	14.65356	.002	0	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1	
466	M158	PL2.25X5	.067	15.15256	.013	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
467	M69	PL2.25X5	.067	15.46156	.012	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
468	M232	L2.5x1.25x5	.067	14.65355	.004	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1	
469	M277	L2.5x1.25x5	.067	14.65355	.003	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1	
470	M17	PL2.25X5	.067	15.15255	.010	15.152	y 56	5785.218	18981	123.75	891	1...H1-1b	
471	M8	PL2.25X5	.067	15.15256	.014	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
472	M209	L2.5x1.25x5	.066	14.95256	.002	0	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1	
473	M82	L2.5x2.5x5	.066	8	56	.021	24	y 55	35341.325	39420	1096.767	2551.08	1...H2-1
474	M57	PL2.25X5	.065	14.99755	.013	0	y 56	5905.645	18981	123.75	891	1...H1-1b	
475	M113	PL2.25X5	.065	15.15256	.011	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
476	M165	PL2.25X5	.065	15.46155	.013	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
477	M279	L2.5x1.25x5	.064	14.65355	.003	29.605	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1	
478	M355	PL2.25X5	.064	23.93855	.004	24.427	y 56	2210.434	18984.3...	123.597	889.893	1...H1-1b	
479	M226	L2.5x1.25x5	.064	14.65356	.001	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1	
480	M256	L2.5x1.25x5	.063	14.95256	.001	0	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1	
481	M147	PL2.25X5	.063	15.46155	.012	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
482	M259	L2.5x1.25x5	.063	14.65356	.001	29.605	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1	
483	M118	PL2.25X5	.063	15.15255	.003	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b	
484	M26	PL2.25X5	.062	15.15256	.014	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
485	M50	PL2.25X5	.062	15.46156	.010	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
486	M62	PL2.25X5	.062	15.15255	.013	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
487	M51	PL2.25X5	.062	15.46156	.012	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
488	M122	PL2.25X5	.061	15.15255	.014	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
489	M201	L2.5x1.25x5	.061	14.64856	.002	29.595	y 56	16732.465	29003.9...	340.889	1464.271	1...H2-1	
490	M273	L2.5x1.25x5	.061	14.65356	.002	29.605	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1	
491	M207	L2.5x1.25x5	.061	14.95256	.002	0	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1	
492	M282	L2.5x1.25x5	.060	14.65355	.002	0	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1	
493	M146	PL2.25X5	.060	15.46155	.011	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
494	M263	L2.5x1.25x5	.059	14.95255	.003	29.605	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1	
495	M254	L2.5x1.25x5	.059	14.95256	.001	29.605	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1	
496	M34	PL2.25X5	.059	15.15255	.008	15.152	y 56	5785.218	18981	123.75	891	1...H1-1b	
497	M220	L2.5x1.25x5	.059	14.95255	.002	29.605	y 56	16726.225	29003.9...	340.889	1464.21	1...H2-1	
498	M131	PL2.25X5	.057	15.46156	.011	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b	
499	M67	PL2.25X5	.057	15.46156	.007	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
500	M22	PL2.25X5	.057	15.15256	.003	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
501	M130	PL2.25X5	.056	15.15256	.009	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
502	M40	PL2.25X5	.056	15.15256	.003	15.461	y 56	5785.218	18981	123.75	891	1...H1-1b	
503	M154	PL2.25X5	.056	15.15255	.005	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
504	M140	PL2.25X5	.056	15.15256	.013	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
505	M216	L2.5x1.25x5	.056	14.95255	.001	0	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1	
506	M44	PL2.25X5	.056	15.15255	.012	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
507	M76	PL2.25X5	.055	15.15255	.003	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
508	M35	PL2.25X5	.055	15.15256	.011	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
509	M164	PL2.25X5	.055	15.46155	.010	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
510	M123	PL2.25X5	.055	15.15255	.010	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
511	M163	PL2.25X5	.054	15.46155	.008	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
512	M141	PL2.25X5	.054	15.15256	.009	0	y 56	5785.218	18981	123.75	891	1...H1-1b	



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
513	M68	PL2.25X5	.053	15.46156	.010	0	y 56	5785.218	18981	123.75	891	1...H1-1b
514	M286	L2.5x1.25x5	.053	14.65355	.002	0	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1
515	M237	L2.5x1.25x5	.053	14.65355	.002	29.605	y 56	16726.225	29003.9...	340.889	1464.21	1...H2-1
516	M75	PL2.25X5	.053	14.99756	.014	0	y 56	5905.645	18981	123.75	891	1...H1-1b
517	M240	L2.5x1.25x5	.053	14.65255	.001	0	y 56	16727.63	29003.9...	340.889	1464.224	1...H2-1
518	M250	L2.5x1.25x5	.053	14.95255	.001	29.605	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1
519	M223	L2.5x1.25x5	.053	14.95255	.002	0	y 56	16726.225	29003.9...	340.889	1464.21	1...H2-1
520	M27	PL2.25X5	.052	15.15256	.010	0	y 56	5785.218	18981	123.75	891	1...H1-1b
521	M136	PL2.25X5	.052	15.15255	.004	15.461	y 55	5785.218	18981	123.75	891	1...H1-1b
522	M9	PL2.25X5	.052	15.15256	.010	0	y 56	5785.218	18981	123.75	891	1...H1-1b
523	M105	PL2.25X5	.052	15.15255	.010	0	y 55	5785.218	18981	123.75	891	1...H1-1b
524	M211	L2.5x1.25x5	.051	14.95256	.002	0	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1
525	M153	PL2.25X5	.051	14.99755	.014	0	y 55	5905.645	18981	123.75	891	1...H1-1b
526	M112	PL2.25X5	.050	15.46156	.009	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b
527	M16	PL2.25X5	.050	15.46155	.010	0	y 55	5785.218	18981	123.75	891	1...H1-1b
528	M45	PL2.25X5	.049	15.15255	.010	0	y 55	5785.218	18981	123.75	891	1...H1-1b
529	M15	PL2.25X5	.049	15.46155	.006	15.152	y 56	5785.218	18981	123.75	891	1...H1-1b
530	M267	L2.5x1.25x5	.048	14.65356	.004	0	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1
531	M129	PL2.25X5	.048	15.46155	.007	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b
532	M248	L2.5x1.25x5	.048	14.65256	.002	0	y 55	16727.63	29003.9...	340.889	1464.224	1...H2-1
533	M159	PL2.25X5	.048	15.15256	.010	0	y 56	5785.218	18981	123.75	891	1...H1-1b
534	M145	PL2.25X5	.048	15.46155	.007	0	y 55	5785.218	18981	123.75	891	1...H1-1b
535	M284	L2.5x1.25x5	.047	14.65455	.002	0	y 55	16724.892	29003.9...	340.889	1464.197	1...H2-1
536	M274	L2.5x1.25x5	.047	14.95256	.002	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1
537	M58	PL2.25X5	.047	15.15256	.004	0	y 56	5785.218	18981	123.75	891	1...H1-1b
538	M33	PL2.25X5	.047	15.46155	.008	0	y 55	5785.218	18981	123.75	891	1...H1-1b
539	M49	PL2.25X5	.047	15.46156	.007	0	y 56	5785.218	18981	123.75	891	1...H1-1b
540	M288	L2.5x1.25x5	.046	14.23255	.006	0	y 55	17255.841	29003.9...	340.889	1469.346	1...H2-1
541	M63	PL2.25X5	.046	15.15255	.009	0	y 55	5785.218	18981	123.75	891	1...H1-1b
542	M111	PL2.25X5	.045	15.46156	.008	0	y 56	5785.218	18981	123.75	891	1...H1-1b
543	M48	PL2.25X5	.045	15.46156	.005	0	y 56	5785.218	18981	123.75	891	1...H1-1b
544	M32	PL2.25X5	.045	15.46155	.004	15.152	y 56	5785.218	18981	123.75	891	1...H1-1b
545	M229	L2.5x1.25x5	.045	14.95256	.004	0	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1
546	M227	L2.5x1.25x5	.045	14.95256	.002	0	y 56	16726.225	29003.9...	340.889	1464.21	1...H2-1
547	M244	L2.5x1.25x5	.045	14.53255	.006	0	y 56	17244.099	29003.9...	340.889	1469.232	1...H2-1
548	M242	L2.5x1.25x5	.045	13.87855	.003	28.04	y 55	17701.085	29003.9...	340.889	1473.7	1...H2-1
549	M358	PL2.25X5	.044	23.93855	.003	24.427	y 56	2210.434	18984.3...	123.597	889.893	1...H1-1b
550	M246	L2.5x1.25x5	.044	14.64756	.002	29.593	y 55	16733.833	29003.9...	340.889	1464.284	1...H2-1
551	M234	L2.5x1.25x5	.043	14.65355	.001	29.605	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1
552	M144	PL2.25X5	.042	15.46155	.005	0	y 55	5785.218	18981	123.75	891	1...H1-1b
553	M219	L2.5x1.25x5	.042	14.65355	.003	0	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1
554	M160	PL2.25X5	.042	15.15256	.006	0	y 56	5785.218	18981	123.75	891	1...H1-1b
555	M128	PL2.25X5	.041	15.46156	.006	0	y 56	5785.218	18981	123.75	891	1...H1-1b
556	M251	L2.5x1.25x5	.041	11.87956	.001	0	y 55	20199.817	29003.9...	340.889	1494.276	1...H2-1
557	M202	L2.5x1.25x5	.041	14.95156	.002	0	y 55	16727.63	29003.9...	340.889	1464.224	1...H2-1
558	M106	PL2.25X5	.041	15.15255	.006	0	y 55	5785.218	18981	123.75	891	1...H1-1b
559	M162	PL2.25X5	.040	15.46155	.005	0	y 55	5785.218	18981	123.75	891	1...H1-1b
560	M13	PL2.25X5	.040	15.46155	.003	15.461	y 55	5785.218	18981	123.75	891	1...H1-1b
561	M110	PL2.25X5	.040	15.46156	.005	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b
562	M28	PL2.25X5	.040	15.15256	.006	0	y 56	5785.218	18981	123.75	891	1...H1-1b
563	M264	L2.5x1.25x5	.040	14.65355	.002	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1
564	M124	PL2.25X5	.040	15.15255	.006	0	y 55	5785.218	18981	123.75	891	1...H1-1b
565	M14	PL2.25X5	.040	15.46155	.006	0	y 55	5785.218	18981	123.75	891	1...H1-1b
566	M66	PL2.25X5	.039	15.46156	.004	0	y 56	5785.218	18981	123.75	891	1...H1-1b
567	M217	L2.5x1.25x5	.039	14.65355	.003	29.605	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1
568	M10	PL2.25X5	.038	15.15256	.006	0	y 56	5785.218	18981	123.75	891	1...H1-1b
569	M142	PL2.25X5	.038	15.15256	.007	0	y 56	5785.218	18981	123.75	891	1...H1-1b



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Egn
570	M230	L2.5x1.25x5	.038	14.65356	.001	0	y	56	16726.225	29003.9...	340.889	1464.21	1... H2-1
571	M64	PL2.25X5	.037	15.15255	.007	0	y	55	5785.218	18981	123.75	891	1... H1-1b
572	M314	L3x2.5x5	.037	22.05656	.002	41.991	z	56	32987.716	44010	1270.778	2996.056	1... H2-1
573	M109	PL2.25X5	.037	15.46156	.004	15.461	y	56	5785.218	18981	123.75	891	1... H1-1b
574	M266	L2.5x1.25x5	.036	14.95256	.002	29.605	y	56	16726.225	29003.9...	340.889	1464.21	1... H2-1
575	M65	PL2.25X5	.036	15.46156	.003	15.461	y	56	5785.218	18981	123.75	891	2... H1-1b
576	M269	L2.5x1.25x5	.036	14.65355	.001	29.605	y	55	16726.225	29003.9...	340.889	1464.21	1... H2-1
577	M205	L2.5x1.25x5	.036	11.87955	.001	0	y	56	20199.817	29003.9...	340.889	1494.276	1... H2-1
578	M222	L2.5x1.25x5	.036	14.65355	.004	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1... H2-1
579	M46	PL2.25X5	.036	15.15255	.005	0	y	55	5785.218	18981	123.75	891	1... H1-1b
580	M198	L2.5x1.25x5	.035	14.81256	.012	29.328	y	56	16898.734	29003.9...	340.889	1465.879	1... H2-1
581	M143	PL2.25X5	.035	15.15256	.003	0	y	56	5785.218	18981	123.75	891	1... H1-1b
582	M247	L2.5x1.25x5	.035	14.94756	.001	29.595	y	55	16732.465	29003.9...	340.889	1464.271	1... H2-1
583	M262	L2.5x1.25x5	.034	14.65355	.002	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1... H2-1
584	M127	PL2.25X5	.034	15.46156	.003	15.152	y	55	5785.218	18981	123.75	891	2... H1-1b
585	M31	PL2.25X5	.034	15.46155	.005	15.461	y	55	5785.218	18981	123.75	891	2... H1-1b
586	M161	PL2.25X5	.034	15.46155	.004	0	y	56	5785.218	18981	123.75	891	2... H1-1b
587	M249	L2.5x1.25x5	.034	14.95256	.002	29.605	y	56	16726.225	29003.9...	340.889	1464.21	1... H2-1
588	M125	PL2.25X5	.032	15.15255	.003	0	y	55	5785.218	18981	123.75	891	1... H1-1b
589	M224	L2.5x1.25x5	.031	14.65355	.001	0	y	55	16726.261	29003.9...	340.889	1464.211	1... H2-1
590	M272	L2.5x1.25x5	.030	14.65355	.002	0	y	55	16726.261	29003.9...	340.889	1464.211	1... H2-1
591	M30	PL2.25X5	.030	15.46155	.002	15.461	y	55	5785.218	18981	123.75	891	2... H1-1b
592	M47	PL2.25X5	.030	15.46156	.005	0	y	55	5785.218	18981	123.75	891	2... H1-1b
593	M245	L2.5x1.25x5	.030	14.16256	.004	0	y	56	17701.085	29003.9...	340.889	1473.7	1... H2-1
594	M29	PL2.25X5	.030	15.15256	.003	0	y	56	5785.218	18981	123.75	891	1... H1-1b
595	M11	PL2.25X5	.029	15.15256	.003	0	y	56	5785.218	18981	123.75	891	1... H1-1b
596	M107	PL2.25X5	.029	15.15255	.003	0	y	55	5785.218	18981	123.75	891	1... H1-1b
597	M108	PL2.25X5	.028	15.46156	.002	15.461	y	56	5785.218	18981	123.75	891	3... H1-1b
598	M12	PL2.25X5	.028	15.46155	.004	15.461	y	55	5785.218	18981	123.75	891	2... H1-1b
599	M200	L2.5x1.25x5	.028	14.94656	.002	0	y	56	16733.833	29003.9...	340.889	1464.284	1... H2-1
600	M126	PL2.25X5	.026	15.46156	.003	15.461	y	56	5785.218	18981	123.75	891	2... H1-1b
601	M204	L2.5x1.25x5	.026	14.65355	.001	29.605	y	55	16726.261	29003.9...	340.889	1464.211	1... H2-1
602	M276	L2.5x1.25x5	.026	14.95256	.002	0	y	56	16726.225	29003.9...	340.889	1464.21	1... H2-1
603	M215	L2.5x1.25x5	.026	11.87955	.002	0	y	56	20199.817	29003.9...	340.889	1494.276	1... H2-1
604	M261	L2.5x1.25x5	.023	11.87956	.002	0	y	56	20199.817	29003.9...	340.889	1494.276	1... H2-1
605	M299	L3x2.5x5	.020	19.93556	.001	0	z	56	32987.716	44010	1270.778	2996.056	1... H2-1
606	M351	L3x2.5x5	.017	19.93556	.002	0	z	56	32987.716	44010	1270.778	2996.056	1... H2-1
607	M221	L2.5x1.25x5	.017	14.65356	.002	0	y	55	16726.261	29003.9...	340.889	1464.211	1... H2-1
608	M349	L3x2.5x5	.017	19.93555	.002	0	z	55	32987.716	44010	1270.778	2982.261	1... H2-1
609	M271	L2.5x1.25x5	.014	12.12155	.001	0	y	56	20199.817	29003.9...	340.889	1494.276	1... H2-1
610	M300	L3x2.5x5	.014	19.93556	.001	0	z	56	32987.716	44010	1270.778	2996.056	1... H2-1
611	M313	L3x2.5x5	.013	22.05656	.002	0	z	55	32987.716	44010	1270.778	2996.056	1... H2-1
612	M281	L2.5x1.25x5	.013	11.87956	.001	0	y	55	20199.817	29003.9...	340.889	1494.276	1... H2-1
613	M350	L3x2.5x5	.013	22.05656	.002	0	z	56	32987.716	44010	1270.778	2996.056	1... H2-1
614	M235	L2.5x1.25x5	.012	11.87955	.001	0	y	55	20199.817	29003.9...	340.889	1494.276	1... H2-1
615	M225	L2.5x1.25x5	.012	11.87955	.000	0	y	55	20199.817	29003.9...	340.889	1494.276	1... H2-1
616	M352	L3x2.5x5	.007	22.05656	.002	0	z	56	32987.716	44010	1270.778	2996.056	1... H2-1



Milvon to West River Catenary Structure Assessment

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-P
STRUCTURE TYPE 4 FIELD CONDITION
NESC 2012, UI CRITERIA, AND HURRICANE CATEGORY 3
COMPLETE MEMBER RESULTS



Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
1	M535	6H25	4.760	43.921	75	9.999	118....	z 71	32380.313	215681.4	21582	40822.49	1	H1-1b
2	M605	6H25	4.760	43.921	74	9.999	118....	z 70	32380.313	215681.4	21582	40822.49	1	H1-1b
3	M558	PL2.25X4	4.433	14.485	71	.047	14.485	y 74	3160.048	15201	78.75	711	1...	H1-1a
4	M628	PL2.25X4	4.432	14.485	70	.047	14.485	y 75	3160.048	15201	78.75	711	1...	H1-1a
5	M557	PL2.25X4	4.165	14.485	71	.051	27.577	y 74	3160.048	15201	78.75	711	1...	H1-1a
6	M627	PL2.25X4	4.165	14.485	70	.051	27.577	y 75	3160.048	15201	78.75	711	1...	H1-1a
7	M566	PL2.25X4	3.971	12.585	71	.070	12.827	y 71	4201.337	15201	78.75	711	1...	H1-1a
8	M636	PL2.25X4	3.971	12.585	70	.070	12.827	y 70	4201.337	15201	78.75	711	1...	H1-1a
9	M565	PL2.25X4	3.315	12.585	71	.053	0	y 75	4201.337	15201	78.75	711	1...	H1-1a
10	M635	PL2.25X4	3.315	12.585	70	.053	0	y 74	4201.337	15201	78.75	711	1...	H1-1a
11	M623	PL2.25X5	3.293	18.733	70	.041	19.093	y 74	3742.008	18981	123.75	891	1...	H1-1a
12	M553	PL2.25X5	3.293	18.733	71	.041	19.093	y 75	3742.008	18981	123.75	891	1...	H1-1a
13	M533	L6x4x6	3.272	96.727	75	.240	72.97	z 71	28958.752	97470	4257.614	12612.4...	1	H2-1
14	M603	L6x4x6	3.272	71.273	74	.239	76.364	z 70	28958.752	97470	4257.614	12612.4...	1	H2-1
15	M594	PL2.25X4	2.705	8.014	71	.967	14.969	y 71	10169.427	15201	78.75	711	2...	H1-1a
16	M664	PL2.25X4	2.704	8.014	70	.966	14.969	y 70	10169.427	15201	78.75	711	2...	H1-1a
17	M586	PL2.25X4	2.695	8.993	71	.574	16.798	y 71	9140.318	15201	78.75	711	2...	H1-1a
18	M656	PL2.25X4	2.695	8.993	70	.574	16.798	y 70	9140.318	15201	78.75	711	2...	H1-1a
19	M601	L3x2.5x5	2.637	42.906	70	3.046	0	z 70	40948.468	44010	1270.778	2492.277	1...	H2-1
20	M531	L3x2.5x5	2.634	98.683	71	3.047	141....	z 71	40948.468	44010	1270.778	2530.668	1...	H2-1
21	M118	PL2.25X5	2.496	15.152	74	.449	0	y 74	5785.218	18981	123.75	891	1...	H1-1a
22	M581	PL2.25X4	2.483	10.217	71	.232	10.413	y 71	6269.147	15201	78.75	711	1...	H1-1a
23	M651	PL2.25X4	2.483	10.217	70	.232	10.413	y 70	6269.147	15201	78.75	711	1...	H1-1a
24	M22	PL2.25X5	2.469	15.152	75	.450	0	y 75	5785.218	18981	123.75	891	1...	H1-1a
25	M578	PL2.25X4	2.306	10.413	71	.340	19.451	y 71	7711.625	15201	78.75	711	2...	H1-1a
26	M648	PL2.25X4	2.306	10.413	70	.340	19.451	y 70	7711.625	15201	78.75	711	2...	H1-1a
27	M597	PL2.25X4	2.277	8.014	71	.864	8.014	y 71	10169.427	15201	78.75	711	1...	H1-1a
28	M667	PL2.25X4	2.277	8.014	70	.863	8.014	y 70	10169.427	15201	78.75	711	1...	H1-1a
29	M622	PL2.25X5	2.275	18.733	74	.054	0	y 75	3742.008	18981	123.75	891	1...	H1-1a
30	M552	PL2.25X5	2.260	18.733	75	.049	0	y 75	3742.008	18981	123.75	891	1...	H1-1a
31	M554	L4x3x6	2.152	9.606	75	.420	11.336	z 75	64643.067	67230	2238.689	5885.484	1...	H2-1
32	M539	L3x2.5x6	2.141	4.455	71	.713	0	y 71	51421.803	52110	1486.645	3490.361	1...	H2-1
33	M609	L3x2.5x6	2.141	4.545	70	.713	5.455	y 70	51421.803	52110	1486.645	3490.361	2...	H2-1
34	M624	L4x3x6	2.137	9.414	74	.418	11.336	z 75	64643.067	67230	2238.689	5885.484	1...	H2-1
35	M589	PL2.25X4	2.061	8.823	71	.454	16.798	y 71	7875.296	15201	78.75	711	1...	H1-1a
36	M659	PL2.25X4	2.061	8.823	70	.453	16.798	y 70	7875.296	15201	78.75	711	1...	H1-1a
37	M534	L6x4x6	2.031	73.333	71	.796	66.667	z 71	43003.777	97470	4257.614	10951.9...	1	H2-1
38	M604	L6x4x6	2.031	58.667	70	.796	58.667	z 70	43003.777	97470	4257.614	10951.9...	1	H2-1
39	M595	PL2.25X4	2.000	8.014	71	.898	8.014	y 71	10169.427	15201	78.75	711	1...	H1-1a
40	M665	PL2.25X4	2.000	8.014	70	.897	8.014	y 70	10169.427	15201	78.75	711	1...	H1-1a
41	M119	PL2.25X5	1.997	15.152	74	.029	0	y 74	5785.218	18981	123.75	891	1...	H1-1a
42	M538	L3x2.5x6	1.946	4.545	71	1.082	4.545	y 71	51421.803	52110	1486.645	3490.361	2...	H2-1
43	M608	L3x2.5x6	1.945	4.455	70	1.081	0	y 70	51421.803	52110	1486.645	3490.361	1...	H2-1
44	M155	PL2.25X5	1.916	15.152	75	.034	0	y 74	5785.218	18981	123.75	891	1...	H1-1a
45	M99	L5X5X9	1.905	26.31	74	.083	18.793	z 75	141666.208	143332....	8354.912	13481.7...	1...	H2-1
46	M97	L5X5X9	1.887	345....	75	.187	0	y 74	141666.208	143332....	8354.912	14095.67	1...	H2-1
47	M596	PL2.25X4	1.856	8.014	71	.565	8.014	y 71	10169.427	15201	78.75	711	2...	H1-1a
48	M666	PL2.25X4	1.855	8.014	70	.565	8.014	y 70	10169.427	15201	78.75	711	2...	H1-1a
49	M555	L4x3x6	1.853	9.414	74	.373	7.685	z 71	64643.067	67230	2238.689	5885.484	1...	H2-1
50	M633	PL2.25X4	1.850	16.057	70	.084	16.36	y 74	2619.675	15201	78.75	711	2...	H1-1a
51	M563	PL2.25X4	1.850	16.057	71	.084	16.36	y 75	2619.675	15201	78.75	711	2...	H1-1a
52	M532	L3x2.5x5	1.847	72.94	74	3.066	4.291	z 71	40948.468	44010	1270.778	2996.056	1	H2-1
53	M602	L3x2.5x5	1.847	68.649	75	3.065	137....	z 70	40948.468	44010	1270.778	2996.056	1	H2-1
54	M625	L4x3x6	1.841	9.606	75	.374	9.606	z 69	64643.067	67230	2238.689	5885.484	1...	H2-1
55	M645	PL2.25X4	1.824	9.624	70	.079	9.809	y 70	7062.974	15201	78.75	711	2...	H1-1a
56	M575	PL2.25X4	1.824	9.624	71	.079	9.809	y 71	7062.974	15201	78.75	711	2...	H1-1a



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.04
 Model Name : Catenary Structure Type 4

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
57	M3	L5X5X9	1.762	345.00	75.080	3.759	y 74	141666.208	143332.000	8354.912	18872.900	1.00	H2-1
58	M661	PL2.25X4	1.761	7.628	70.293	7.628	y 70	10275.222	15201.000	78.75	711	1.00	H1-1a
59	M591	PL2.25X4	1.761	7.628	71.292	7.628	y 71	10275.222	15201.000	78.75	711	1.00	H1-1a
60	M1	L5X5X9	1.743	26.31	74.187	368.000	y 75	141666.208	143332.000	8354.912	18872.900	1.00	H2-1
61	M641	PL2.25X4	1.718	13.831	70.073	0	y 75	3535.554	15201.000	78.75	711	1.00	H1-1a
62	M571	PL2.25X4	1.717	13.831	71.074	0	y 74	3535.554	15201.000	78.75	711	1.00	H1-1a
63	M98	L5X5X9	1.700	26.31	74.102	368.000	y 70	141666.208	143332.000	8354.912	18872.900	4.00	H2-1
64	M2	L5X5X9	1.673	345.00	75.102	0	y 71	141666.208	143332.000	8354.912	18872.900	4.00	H2-1
65	M599	L3x2.5x5	1.638	12.872	75.3131	137.000	z 70	40948.468	44010.000	1270.778	2996.056	1.00	H2-1
66	M100	L5X5X9	1.619	345.00	75.063	33.827	z 77	141666.208	143332.000	8354.912	18872.900	4.00	H2-1
67	M154	PL2.25X5	1.619	15.461	75.025	30.614	y 74	5785.218	18981.000	123.75	891	1.00	H1-1a
68	M529	L3x2.5x5	1.615	128.000	74.3133	4.291	z 71	40948.468	44010.000	1270.778	2996.056	1.00	H2-1
69	M58	PL2.25X5	1.604	15.461	74.025	30.614	y 74	5785.218	18981.000	123.75	891	1.00	H1-1a
70	M653	PL2.25X4	1.602	8.413	70.180	8.413	y 70	9438.032	15201.000	78.75	711	1.00	H1-1a
71	M583	PL2.25X4	1.602	8.413	71.180	8.413	y 71	9438.032	15201.000	78.75	711	1.00	H1-1a
72	M587	PL2.25X4	1.595	8.823	71.483	8.993	y 71	7875.296	15201.000	78.75	711	1.00	H1-1a
73	M657	PL2.25X4	1.595	8.823	70.483	8.993	y 70	7875.296	15201.000	78.75	711	1.00	H1-1a
74	M4	L5X5X9	1.581	26.31	74.061	338.000	z 78	141666.208	143332.000	8354.912	18872.900	2.00	H2-1
75	M588	PL2.25X4	1.561	8.993	71.495	8.993	y 71	9140.318	15201.000	78.75	711	1.00	H1-1a
76	M658	PL2.25X4	1.561	8.993	70.495	8.993	y 70	9140.318	15201.000	78.75	711	1.00	H1-1a
77	M600	L3x2.5x5	1.546	128.000	74.3054	0	z 70	40948.468	44010.000	1270.778	2996.056	1.00	H2-1
78	M530	L3x2.5x5	1.543	12.872	75.3056	141.000	z 71	40948.468	44010.000	1270.778	2996.056	1.00	H2-1
79	M573	L6x4x6	1.451	6.74	75.532	6.74	z 71	91550.116	97470.000	4257.614	12512.000	1.00	H2-1
80	M643	L6x4x6	1.451	6.878	74.532	6.878	z 70	91550.116	97470.000	4257.614	12557.700	1.00	H2-1
81	M579	PL2.25X4	1.450	10.217	71.220	19.451	y 71	6269.147	15201.000	78.75	711	1.00	H1-1a
82	M649	PL2.25X4	1.450	10.217	70.220	19.451	y 70	6269.147	15201.000	78.75	711	1.00	H1-1a
83	M567	PL2.25X4	1.390	12.827	71.055	23.96	y 75	5346.424	15201.000	78.75	711	1.00	H1-1a
84	M637	PL2.25X4	1.390	12.827	70.056	23.96	y 74	5346.424	15201.000	78.75	711	1.00	H1-1a
85	M617	PL2.25X5	1.378	15.181	70.034	0	y 70	5674.836	18981.000	123.75	891	1.00	H1-1a
86	M547	PL2.25X5	1.375	15.181	71.035	0	y 71	5674.836	18981.000	123.75	891	1.00	H1-1a
87	M580	PL2.25X4	1.309	10.413	71.291	10.413	y 71	7711.625	15201.000	78.75	711	2.00	H1-1a
88	M650	PL2.25X4	1.309	10.413	70.291	10.413	y 70	7711.625	15201.000	78.75	711	2.00	H1-1a
89	M121	PL2.25X5	1.256	15.152	74.026	30.614	y 74	5785.218	18981.000	123.75	891	1.00	H1-1a
90	M341	L2.5X1.5X5	1.254	27.23	59.002	0	y 74	10829.35	31113.200	475.557	1510.593	1.00	H2-1
91	M654	PL2.25X4	1.253	8.413	70.213	8.413	y 70	9438.032	15201.000	78.75	711	1.00	H1-1a
92	M584	PL2.25X4	1.253	8.413	71.213	8.413	y 71	9438.032	15201.000	78.75	711	1.00	H1-1a
93	M559	PL2.25X4	1.251	14.763	71.048	27.577	y 75	4052.628	15201.000	78.75	711	1.00	H1-1a
94	M629	PL2.25X4	1.251	14.763	70.048	27.577	y 74	4052.628	15201.000	78.75	711	1.00	H1-1a
95	M660	PL2.25X4	1.240	7.628	70.293	7.628	y 70	10275.222	15201.000	78.75	711	1.00	H1-1a
96	M590	PL2.25X4	1.240	7.628	71.292	7.628	y 71	10275.222	15201.000	78.75	711	1.00	H1-1a
97	M23	PL2.25X5	1.232	15.152	75.034	0	y 75	5785.218	18981.000	123.75	891	1.00	H1-1a
98	M662	PL2.25X4	1.216	7.628	70.488	7.628	y 70	10275.222	15201.000	78.75	711	1.00	H1-1a
99	M592	PL2.25X4	1.216	7.628	71.488	7.628	y 71	10275.222	15201.000	78.75	711	1.00	H1-1a
100	M663	PL2.25X4	1.207	7.628	70.389	14.523	y 70	10275.222	15201.000	78.75	711	1.00	H1-1a
101	M593	PL2.25X4	1.206	7.628	71.389	14.523	y 71	10275.222	15201.000	78.75	711	1.00	H1-1a
102	M25	PL2.25X5	1.197	15.152	75.029	0	y 75	5785.218	18981.000	123.75	891	1.00	H1-1a
103	M496	PL2.25X5	1.190	9.647	59.093	9.848	y 75	11695.943	18981.000	123.75	891	1.00	H1-1a
104	M630	PL2.25X4	1.185	16.36	70.067	29.994	y 74	3503.195	15201.000	78.75	711	2.00	H1-1a
105	M560	PL2.25X4	1.185	16.36	71.066	29.994	y 75	3503.195	15201.000	78.75	711	2.00	H1-1a
106	M8	PL2.25X5	1.175	15.152	75.026	0	y 75	5785.218	18981.000	123.75	891	1.00	H1-1a
107	M123	PL2.25X5	1.173	15.152	74.028	0	y 74	5785.218	18981.000	123.75	891	1.00	H1-1a
108	M157	PL2.25X5	1.172	15.152	75.025	0	y 75	5785.218	18981.000	123.75	891	1.00	H1-1a
109	M102	PL2.25X5	1.169	15.461	75.032	0	y 74	5785.218	18981.000	123.75	891	1.00	H1-1a
110	M104	PL2.25X5	1.167	15.152	74.026	0	y 74	5785.218	18981.000	123.75	891	1.00	H1-1a
111	M59	PL2.25X5	1.164	15.152	74.031	0	y 74	5785.218	18981.000	123.75	891	1.00	H1-1a
112	M27	PL2.25X5	1.160	15.152	75.029	0	y 75	5785.218	18981.000	123.75	891	1.00	H1-1a
113	M403	PL2.25X5	1.159	9.647	60.088	9.848	y 74	11695.944	18981.000	123.75	891	1.00	H1-1a



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.04
 Model Name : Catenary Structure Type 4

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
114	M361	PL2.25X5	1.157	9.647	60	.079	19.896	y 75	11695.943	18981	123.75	891	1...H1-1a
115	M6	PL2.25X5	1.155	15.461	74	.035	0	y 75	5785.218	18981	123.75	891	1...H1-1a
116	M106	PL2.25X5	1.154	15.152	74	.026	30.614	y 74	5785.218	18981	123.75	891	1...H1-1a
117	M116	PL2.25X5	1.150	15.31	75	.024	30.933	y 70	5666.526	18981	123.75	891	1...H1-1a
118	M342	L2.5X1.5X5	1.146	27.734	77	.002	0	z 66	10829.35	31113.2...	475.557	1578.643	1...H2-1
119	M10	PL2.25X5	1.145	15.152	75	.026	30.614	y 75	5785.218	18981	123.75	891	1...H1-1a
120	M125	PL2.25X5	1.145	15.152	74	.023	30.614	y 74	5785.218	18981	123.75	891	1...H1-1a
121	M462	PL2.25X5	1.144	9.647	59	.082	19.896	y 74	11695.943	18981	123.75	891	1...H1-1a
122	M20	PL2.25X5	1.144	15.31	74	.022	30.933	y 71	5666.526	18981	123.75	891	1...H1-1a
123	M108	PL2.25X5	1.138	15.152	75	.023	0	y 74	5785.218	18981	123.75	891	1...H1-1a
124	M548	PL2.25X5	1.137	15.181	71	.035	15.479	y 74	5674.836	18981	123.75	891	1...H1-1a
125	M29	PL2.25X5	1.136	15.152	75	.024	30.614	y 75	5785.218	18981	123.75	891	1...H1-1a
126	M127	PL2.25X5	1.135	15.152	75	.024	30.614	y 74	5785.218	18981	123.75	891	1...H1-1a
127	M446	PL2.25X5	1.134	9.875	59	.074	9.875	y 75	11413.851	18981	123.75	891	1...H1-1a
128	M110	PL2.25X5	1.132	15.152	75	.022	30.614	y 74	5785.218	18981	123.75	891	1...H1-1a
129	M12	PL2.25X5	1.131	15.152	74	.024	0	y 75	5785.218	18981	123.75	891	1...H1-1a
130	M31	PL2.25X5	1.129	15.152	74	.024	30.614	y 75	5785.218	18981	123.75	891	1...H1-1a
131	M133	PL2.25X5	1.128	15.461	74	.024	30.614	y 70	5785.218	18981	123.75	891	1...H1-1a
132	M129	PL2.25X5	1.127	15.152	75	.021	0	y 75	5785.218	18981	123.75	891	1...H1-1a
133	M61	PL2.25X5	1.126	15.152	74	.027	0	y 74	5785.218	18981	123.75	891	1...H1-1a
134	M14	PL2.25X5	1.125	15.152	74	.023	0	y 74	5785.218	18981	123.75	891	1...H1-1a
135	M112	PL2.25X5	1.123	15.152	75	.021	0	y 75	5785.218	18981	123.75	891	1...H1-1a
136	M131	PL2.25X5	1.121	15.152	75	.021	0	y 75	5785.218	18981	123.75	891	1...H1-1a
137	M33	PL2.25X5	1.119	15.152	74	.023	0	y 74	5785.218	18981	123.75	891	1...H1-1a
138	M37	PL2.25X5	1.119	15.461	75	.023	30.614	y 71	5785.218	18981	123.75	891	1...H1-1a
139	M618	PL2.25X5	1.118	15.181	70	.035	15.479	y 75	5674.836	18981	123.75	891	1...H1-1a
140	M16	PL2.25X5	1.117	15.152	74	.023	0	y 74	5785.218	18981	123.75	891	1...H1-1a
141	M295	L2.5X1.5X5	1.114	22.213	78	.002	48.869	y 74	11300.937	31113.2...	475.557	1584.393	1...H2-1
142	M35	PL2.25X5	1.114	15.152	74	.022	0	y 74	5785.218	18981	123.75	891	1...H1-1a
143	M42	PL2.25X5	1.112	15.461	75	.033	0	y 74	5785.218	18981	123.75	891	1...H1-1a
144	M44	PL2.25X5	1.110	15.152	74	.023	0	y 74	5785.218	18981	123.75	891	1...H1-1a
145	M421	PL2.25X5	1.109	9.875	60	.093	0	y 75	11413.851	18981	123.75	891	1...H1-1a
146	M138	PL2.25X5	1.108	15.152	74	.030	0	y 75	5785.218	18981	123.75	891	1...H1-1a
147	M310	L2.5X1.5X5	1.107	22.214	60	.002	48.871	z 65	11300.048	31113.2...	475.557	1515.611	1...H2-1
148	M114	PL2.25X5	1.106	15.152	75	.021	0	y 75	5785.218	18981	123.75	891	1...H1-1a
149	M379	PL2.25X5	1.106	9.875	60	.074	9.875	y 74	11413.851	18981	123.75	891	1...H1-1a
150	M46	PL2.25X5	1.101	15.152	75	.021	30.614	y 74	5785.218	18981	123.75	891	1...H1-1a
151	M18	PL2.25X5	1.100	15.152	74	.022	0	y 74	5785.218	18981	123.75	891	1...H1-1a
152	M480	PL2.25X5	1.099	9.875	59	.094	0	y 74	11413.851	18981	123.75	891	1...H1-1a
153	M63	PL2.25X5	1.097	15.152	75	.026	0	y 74	5785.218	18981	123.75	891	1...H1-1a
154	M65	PL2.25X5	1.097	15.152	75	.019	0	y 75	5785.218	18981	123.75	891	1...H1-1a
155	M142	PL2.25X5	1.096	15.152	74	.022	30.614	y 75	5785.218	18981	123.75	891	1...H1-1a
156	M169	PL2.25X5	1.096	15.152	74	.023	0	y 59	5785.218	18981	123.75	891	1...H1-1a
157	M652	PL2.25X4	1.095	8.413	70	.174	16.018	y 70	9438.032	15201	78.75	711	1...H1-1a
158	M582	PL2.25X4	1.095	8.413	71	.173	16.018	y 71	9438.032	15201	78.75	711	1...H1-1a
159	M48	PL2.25X5	1.094	15.152	75	.019	0	y 74	5785.218	18981	123.75	891	1...H1-1a
160	M159	PL2.25X5	1.094	15.152	75	.027	0	y 75	5785.218	18981	123.75	891	1...H1-1a
161	M67	PL2.25X5	1.093	15.152	75	.019	0	y 75	5785.218	18981	123.75	891	1...H1-1a
162	M73	PL2.25X5	1.093	15.152	75	.022	0	y 60	5785.218	18981	123.75	891	1...H1-1a
163	M50	PL2.25X5	1.090	15.152	75	.019	0	y 75	5785.218	18981	123.75	891	1...H1-1a
164	M163	PL2.25X5	1.089	15.152	74	.019	30.614	y 75	5785.218	18981	123.75	891	1...H1-1a
165	M140	PL2.25X5	1.088	15.152	75	.024	0	y 75	5785.218	18981	123.75	891	1...H1-1a
166	M161	PL2.25X5	1.087	15.152	74	.020	0	y 74	5785.218	18981	123.75	891	1...H1-1a
167	M69	PL2.25X5	1.086	15.152	75	.019	0	y 75	5785.218	18981	123.75	891	1...H1-1a
168	M52	PL2.25X5	1.084	15.152	75	.019	0	y 75	5785.218	18981	123.75	891	1...H1-1a
169	M333	L2.5X1.5X5	1.084	27.733	77	.003	0	z 65	10830.232	31113.2...	475.557	1578.654	1...H2-1
170	M71	PL2.25X5	1.084	15.152	75	.020	0	y 75	5785.218	18981	123.75	891	1...H1-1a



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.04
 Model Name : Catenary Structure Type 4

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt	phi*Mn y	phi*Mn z	Cb	Eqn
171	M337	L2.5X1.5X5	1.082	27.22959	.002	0	z 65	10830.232	31113.2...	475.557	1510.603	1... H2-1
172	M144	PL2.25X5	1.082	15.15274	.020	0	y 75	5785.218	18981	123.75	891	1... H1-1a
173	M146	PL2.25X5	1.081	15.15274	.019	0	y 74	5785.218	18981	123.75	891	1... H1-1a
174	M148	PL2.25X5	1.081	15.15274	.017	0	y 72	5785.218	18981	123.75	891	1... H1-1a
175	M167	PL2.25X5	1.077	15.15274	.019	0	y 59	5785.218	18981	123.75	891	1... H1-1a
176	M165	PL2.25X5	1.073	15.15274	.017	0	y 70	5785.218	18981	123.75	891	1... H1-1a
177	M56	PL2.25X5	1.073	15.3175	.025	0	y 60	5666.526	18981	123.75	891	1... H1-1a
178	M334	L2.5X1.5X5	1.073	27.73377	.002	0	z 66	10830.232	31113.2...	475.557	1578.654	1... H2-1
179	M338	L2.5X1.5X5	1.066	27.22959	.002	0	z 66	10830.232	31113.2...	475.557	1510.603	1... H2-1
180	M54	PL2.25X5	1.065	15.15275	.019	0	y 60	5785.218	18981	123.75	891	1... H1-1a
181	M464	PL2.25X5	1.056	10.10959	.068	10.109	y 75	11126.204	18981	123.75	891	1... H1-1a
182	M646	PL2.25X4	1.051	9.80970	.112	9.809	y 70	8183.037	15201	78.75	711	1.4 H1-1a
183	M576	PL2.25X4	1.051	9.80971	.112	9.809	y 71	8183.037	15201	78.75	711	1.4 H1-1a
184	M150	PL2.25X5	1.051	15.15274	.021	0	y 59	5785.218	18981	123.75	891	1... H1-1a
185	M345	L2.5X1.5X5	1.047	26.17659	.004	0	y 70	12161.091	31113.2...	475.557	1524.092	1... H2-1
186	M152	PL2.25X5	1.045	15.3174	.027	0	y 59	5666.526	18981	123.75	891	1... H1-1a
187	M498	PL2.25X5	1.041	10.10959	.062	10.32	y 75	11126.204	18981	123.75	891	1... H1-1a
188	M405	PL2.25X5	1.040	10.10960	.061	0	y 75	11126.204	18981	123.75	891	1... H1-1a
189	M363	PL2.25X5	1.037	10.10960	.068	10.109	y 74	11126.204	18981	123.75	891	1... H1-1a
190	M302	L2.5X1.5X5	1.032	22.21478	.002	48.871	z 66	11300.048	31113.2...	475.557	1584.382	1... H2-1
191	M479	PL2.25X5	1.030	9.64778	.097	9.848	y 74	11695.943	18981	123.75	891	1... H1-1a
192	M306	L2.5X1.5X5	1.027	22.21478	.002	48.871	z 66	11300.048	31113.2...	475.557	1584.382	1... H2-1
193	M647	PL2.25X4	1.018	9.80970	.171	18.322	y 70	8183.037	15201	78.75	711	1... H1-1a
194	M577	PL2.25X4	1.018	9.80971	.171	18.322	y 71	8183.037	15201	78.75	711	1... H1-1a
195	M482	PL2.25X5	1.017	10.34859	.066	0	y 74	10833.703	18981	123.75	891	1... H1-1a
196	M330	L2.5X1.5X5	1.014	27.73377	.002	0	z 65	10830.232	31113.2...	475.557	1578.654	1... H2-1
197	M378	PL2.25X5	1.012	9.84877	.078	19.896	y 74	11130.129	18981	123.75	891	1... H1-1a
198	M301	L2.5X1.5X5	1.010	22.21478	.002	48.871	z 65	11300.048	31113.2...	475.557	1584.382	1... H2-1
199	M420	PL2.25X5	1.002	9.84877	.094	9.848	y 75	11130.129	18981	123.75	891	1... H1-1a
200	M445	PL2.25X5	1.000	9.84878	.081	19.896	y 75	11130.129	18981	123.75	891	1... H1-1a
201	M305	L2.5X1.5X5	.999	22.21478	.002	48.871	z 65	11300.048	31113.2...	475.557	1584.382	1... H2-1
202	M463	PL2.25X5	.998	10.08178	.074	9.875	y 74	10862.07	18981	123.75	891	1... H1-1a
203	M423	PL2.25X5	.997	10.34860	.063	0	y 75	10833.703	18981	123.75	891	1... H1-1a
204	M655	PL2.25X4	.996	8.41370	.272	16.018	y 70	9438.032	15201	78.75	711	1... H1-1a
205	M585	PL2.25X4	.996	8.41371	.272	16.018	y 71	9438.032	15201	78.75	711	1... H1-1a
206	M381	PL2.25X5	.995	10.34860	.056	10.348	y 74	10833.703	18981	123.75	891	1... H1-1a
207	M448	PL2.25X5	.994	10.34859	.056	10.348	y 75	10833.703	18981	123.75	891	1... H1-1a
208	M39	PL2.25X5	.994	14.99774	.121	0	y 75	5905.645	18981	123.75	891	1... H1-1a
209	M296	L2.5X1.5X5	.985	22.21378	.002	0	z 66	11300.937	31113.2...	475.557	1584.393	1... H2-1
210	M638	PL2.25X4	.981	13.83170	.075	13.831	y 75	3535.554	15201	78.75	711	1... H1-1a
211	M568	PL2.25X4	.981	13.83171	.075	13.831	y 74	3535.554	15201	78.75	711	1... H1-1a
212	M329	L2.5X1.5X5	.979	27.73377	.003	0	z 65	10830.232	31113.2...	475.557	1578.654	1... H2-1
213	M556	PL2.25X4	.976	14.76371	.050	14.763	y 71	4052.628	15201	78.75	711	1... H1-1a
214	M626	PL2.25X4	.976	14.76370	.050	14.763	y 70	4052.628	15201	78.75	711	1... H1-1a
215	M326	L2.5X1.5X5	.976	27.73377	.003	0	z 66	10830.232	31113.2...	475.557	1578.654	1... H2-1
216	M362	PL2.25X5	.970	10.08177	.075	9.875	y 75	10862.07	18981	123.75	891	1... H1-1a
217	M346	L2.5X1.5X5	.968	25.22477	.002	0	z 66	12161.091	31113.2...	475.557	1594.12	1... H2-1
218	M404	PL2.25X5	.964	10.08177	.085	0	y 74	10862.07	18981	123.75	891	1... H1-1a
219	M321	L2.5X1.5X5	.959	27.73377	.003	49.92	y 71	10830.232	31113.2...	475.557	1578.654	1... H2-1
220	M197	L5x3.5x7	.956	399....69	.168	399....	y 69	86264.635	95238.2...	3723.228	7996.163	1 H2-1
221	M497	PL2.25X5	.956	9.87578	.090	0	y 75	11413.851	18981	123.75	891	1... H1-1a
222	M500	PL2.25X5	.955	10.59259	.047	0	y 74	10537.06	18981	123.75	891	1... H1-1a
223	M466	PL2.25X5	.954	10.59259	.049	10.592	y 75	10537.06	18981	123.75	891	1... H1-1a
224	M564	PL2.25X4	.949	12.58571	.046	12.827	y 75	4201.337	15201	78.75	711	1... H1-1a
225	M634	PL2.25X4	.949	12.58570	.045	12.827	y 74	4201.337	15201	78.75	711	1... H1-1a
226	M407	PL2.25X5	.947	10.59260	.049	0	y 75	10537.06	18981	123.75	891	1... H1-1a
227	M325	L2.5X1.5X5	.946	27.73377	.002	0	z 65	10830.232	31113.2...	475.557	1578.654	1... H2-1



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.04
 Model Name : Catenary Structure Type 4

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
228	M365	PL2.25X5	.945	10.592	60 .049	10.592	y	74	10537.06	18981	123.75	891	1...	H1-1a
229	M291	L2.5X1.5X5	.944	20.087	60 .004	46.247	y	71	12586.181	31113.2...	475.557	1528.342	1...	H2-1
230	M196	L5x3.5x7	.941	46.063	77 .121	46.063	y	59	86264.635	95238.2...	3723.228	8577.673	1	H2-1
231	M546	PL2.25X5	.928	15.181	78 .032	15.479	y	75	5674.836	18981	123.75	891	1...	H1-1a
232	M616	PL2.25X5	.922	15.181	77 .032	15.181	y	70	5674.836	18981	123.75	891	1...	H1-1a
233	M450	PL2.25X5	.912	11.066	59 .043	10.84	y	75	9734.36	18981	123.75	891	1...	H1-1a
234	M447	PL2.25X5	.912	10.32	78 .067	10.109	y	74	10587.579	18981	123.75	891	1...	H1-1a
235	M484	PL2.25X5	.907	10.84	59 .045	0	y	74	10237.001	18981	123.75	891	1...	H1-1a
236	M425	PL2.25X5	.905	11.066	60 .046	0	y	75	9734.36	18981	123.75	891	1...	H1-1a
237	M135	PL2.25X5	.904	14.997	75 .122	0	y	74	5905.645	18981	123.75	891	1...	H1-1a
238	M380	PL2.25X5	.902	10.32	77 .068	10.109	y	75	10587.579	18981	123.75	891	1...	H1-1a
239	M317	L2.5X1.5X5	.901	27.733	77 .002	49.92	z	66	10830.232	31113.2...	475.557	1578.654	1...	H2-1
240	M383	PL2.25X5	.899	10.84	60 .044	10.84	y	74	10237.001	18981	123.75	891	1...	H1-1a
241	M481	PL2.25X5	.899	10.32	78 .067	10.32	y	74	10587.579	18981	123.75	891	1...	H1-1a
242	M476	PL2.25X5	.897	13.579	59 .021	13.301	y	74	6865.515	18981	123.75	891	1...	H1-1a
243	M422	PL2.25X5	.896	10.32	77 .065	10.32	y	75	10587.579	18981	123.75	891	1...	H1-1a
244	M499	PL2.25X5	.890	10.564	78 .061	0	y	75	10307.552	18981	123.75	891	1...	H1-1a
245	M619	PL2.25X5	.889	15.181	78 .036	29.469	y	74	5674.836	18981	123.75	891	1...	H1-1a
246	M549	PL2.25X5	.882	15.181	77 .036	29.469	y	75	5674.836	18981	123.75	891	1...	H1-1a
247	M468	PL2.25X5	.878	11.323	59 .038	11.092	y	75	9442.879	18981	123.75	891	2...	H1-1a
248	M502	PL2.25X5	.878	11.323	59 .038	0	y	74	9442.879	18981	123.75	891	2...	H1-1a
249	M409	PL2.25X5	.874	11.323	60 .040	0	y	75	9442.879	18981	123.75	891	2...	H1-1a
250	M364	PL2.25X5	.872	10.564	77 .055	10.348	y	75	10307.552	18981	123.75	891	1.4	H1-1a
251	M117	PL2.25X5	.869	15.303	74 .065	15.303	y	74	5905.645	18981	123.75	891	1...	H1-1a
252	M494	PL2.25X5	.869	13.785	59 .018	0	y	75	6796.946	18981	123.75	891	1...	H1-1a
253	M367	PL2.25X5	.867	11.323	60 .039	11.092	y	74	9442.879	18981	123.75	891	2...	H1-1a
254	M644	PL2.25X4	.866	9.809	70 .066	9.809	y	70	8183.037	15201	78.75	711	1...	H1-1a
255	M574	PL2.25X4	.865	9.809	71 .066	9.809	y	71	8183.037	15201	78.75	711	1...	H1-1a
256	M406	PL2.25X5	.865	10.564	77 .057	0	y	74	10307.552	18981	123.75	891	1...	H1-1a
257	M510	PL2.25X5	.863	13.501	59 .020	0	y	75	7080.374	18981	123.75	891	1...	H1-1a
258	M478	PL2.25X5	.863	14.071	59 .018	13.784	y	74	6528.15	18981	123.75	891	1...	H1-1a
259	M435	PL2.25X5	.861	13.785	60 .018	0	y	74	6796.946	18981	123.75	891	1...	H1-1a
260	M323	L2.5X1.5X5	.861	22.214	78 .003	0	y	69	11300.048	31113.2...	475.557	1584.382	1...	H2-1
261	M21	PL2.25X5	.861	15.303	75 .065	15.303	y	75	5905.645	18981	123.75	891	1...	H1-1a
262	M512	PL2.25X5	.860	14.071	59 .017	0	y	75	6528.15	18981	123.75	891	1...	H1-1a
263	M458	PL2.25X5	.860	13.219	59 .022	12.949	y	74	7379.277	18981	123.75	891	1...	H1-1a
264	M320	L2.5X1.5X5	.859	22.214	78 .003	0	y	70	11300.048	31113.2...	475.557	1584.382	1...	H2-1
265	M393	PL2.25X5	.859	13.785	60 .019	13.504	y	75	6796.946	18981	123.75	891	1...	H1-1a
266	M492	PL2.25X5	.858	13.219	59 .022	0	y	75	7379.277	18981	123.75	891	1...	H1-1a
267	M465	PL2.25X5	.858	10.564	78 .054	10.348	y	74	10307.552	18981	123.75	891	1...	H1-1a
268	M474	PL2.25X5	.857	12.94	59 .023	12.675	y	74	7674.832	18981	123.75	891	1...	H1-1a
269	M417	PL2.25X5	.856	13.501	60 .021	0	y	74	7080.374	18981	123.75	891	1...	H1-1a
270	M508	PL2.25X5	.854	12.94	59 .022	0	y	75	7674.832	18981	123.75	891	1...	H1-1a
271	M452	PL2.25X5	.854	11.584	59 .034	11.348	y	75	9149.226	18981	123.75	891	2...	H1-1a
272	M375	PL2.25X5	.854	13.501	60 .021	13.225	y	75	7080.374	18981	123.75	891	1...	H1-1a
273	M419	PL2.25X5	.853	14.071	60 .018	0	y	74	6528.15	18981	123.75	891	1...	H1-1a
274	M456	PL2.25X5	.853	12.663	59 .024	12.404	y	74	7968.15	18981	123.75	891	1...	H1-1a
275	M486	PL2.25X5	.853	11.584	59 .036	0	y	74	9149.226	18981	123.75	891	2...	H1-1a
276	M460	PL2.25X5	.852	14.066	59 .019	13.785	y	74	6937.777	18981	123.75	891	1...	H1-1a
277	M470	PL2.25X5	.852	11.849	59 .030	11.607	y	75	8854.184	18981	123.75	891	1...	H1-1a
278	M454	PL2.25X5	.851	12.117	59 .028	11.87	y	74	8558.51	18981	123.75	891	1...	H1-1a
279	M433	PL2.25X5	.851	13.219	60 .022	0	y	74	7379.277	18981	123.75	891	1...	H1-1a
280	M472	PL2.25X5	.851	12.388	59 .026	12.136	y	74	8262.932	18981	123.75	891	1...	H1-1a
281	M490	PL2.25X5	.851	12.663	59 .023	0	y	75	7968.15	18981	123.75	891	1...	H1-1a
282	M316	L2.5X1.5X5	.851	22.214	78 .002	48.871	y	70	11300.048	31113.2...	475.557	1584.382	1...	H2-1
283	M377	PL2.25X5	.850	14.071	60 .018	13.784	y	75	6528.15	18981	123.75	891	1...	H1-1a
284	M504	PL2.25X5	.850	11.849	59 .030	0	y	74	8854.184	18981	123.75	891	1...	H1-1a



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.04
 Model Name : Catenary Structure Type 4

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
285	M488	PL2.25X5	.850	12.11759	.029	0	y 75	8558.51	18981	123.75	891	1...H1-1a
286	M506	PL2.25X5	.850	12.38859	.026	0	y 75	8262.932	18981	123.75	891	1...H1-1a
287	M427	PL2.25X5	.849	11.58460	.036	0	y 75	9149.226	18981	123.75	891	2...H1-1a
288	M391	PL2.25X5	.849	13.21960	.022	12.949	y 75	7379.277	18981	123.75	891	1...H1-1a
289	M415	PL2.25X5	.847	12.9460	.023	0	y 74	7674.832	18981	123.75	891	1...H1-1a
290	M373	PL2.25X5	.845	12.9460	.023	12.675	y 75	7674.832	18981	123.75	891	1...H1-1a
291	M431	PL2.25X5	.844	12.66360	.024	0	y 74	7968.15	18981	123.75	891	1...H1-1a
292	M319	L2.5X1.5X5	.843	22.21478	.003	0	y 70	11300.048	31113.2...	475.557	1584.382	1...H2-1
293	M385	PL2.25X5	.843	11.58460	.035	11.348	y 74	9149.226	18981	123.75	891	2...H1-1a
294	M411	PL2.25X5	.843	11.84960	.031	0	y 75	8854.184	18981	123.75	891	2...H1-1a
295	M429	PL2.25X5	.842	12.11760	.029	0	y 74	8558.51	18981	123.75	891	1...H1-1a
296	M413	PL2.25X5	.842	12.38860	.027	0	y 74	8262.932	18981	123.75	891	1...H1-1a
297	M389	PL2.25X5	.841	12.66360	.025	12.404	y 75	7968.15	18981	123.75	891	1...H1-1a
298	M562	PL2.25X4	.841	16.3674	.069	16.36	y 74	3503.195	15201	78.75	711	2...H1-1a
299	M369	PL2.25X5	.840	11.84960	.031	11.607	y 74	8854.184	18981	123.75	891	1...H1-1a
300	M483	PL2.25X5	.840	10.81378	.048	0	y 75	10022.861	18981	123.75	891	1...H1-1a
301	M387	PL2.25X5	.840	12.11760	.028	11.87	y 75	8558.51	18981	123.75	891	1...H1-1a
302	M371	PL2.25X5	.839	12.38860	.026	12.136	y 75	8262.932	18981	123.75	891	1...H1-1a
303	M632	PL2.25X4	.837	16.3675	.068	16.36	y 75	3503.195	15201	78.75	711	2...H1-1a
304	M311	L2.5X1.5X5	.836	27.73377	.003	49.92	z 65	10830.232	31113.2...	475.557	1578.654	1...H2-1
305	M382	PL2.25X5	.832	10.81377	.047	10.592	y 75	10022.861	18981	123.75	891	1...H1-1a
306	M449	PL2.25X5	.829	10.81378	.046	10.592	y 74	10022.861	18981	123.75	891	1...H1-1a
307	M292	L2.5X1.5X5	.828	21.48878	.002	0	z 66	12586.181	31113.2...	475.557	1599.02	1...H2-1
308	M424	PL2.25X5	.825	10.81377	.048	0	y 74	10022.861	18981	123.75	891	1...H1-1a
309	M194	L5x3.5x8	.817	46.18278	.144	538...	y 69	97617.22	108000	4102.811	9397.984	1 H2-1
310	M195	L5x3.5x8	.814	46.18277	.079	23.091	y 75	97617.22	108000	4102.811	9397.984	1 H2-1
311	M572	L6x4x6	.810	6.87871	.394	6.878	z 71	91550.116	97470	4257.614	12792.4...	1...H2-1
312	M642	L6x4x6	.810	6.7470	.394	6.74	z 70	91550.116	97470	4257.614	12792.4...	1...H2-1
313	M501	PL2.25X5	.797	11.06678	.043	0	y 75	9734.36	18981	123.75	891	1...H1-1a
314	M312	L2.5X1.5X5	.794	27.73377	.002	49.92	z 65	10830.232	31113.2...	475.557	1578.654	1...H2-1
315	M366	PL2.25X5	.792	11.06677	.041	10.84	y 75	9734.36	18981	123.75	891	1...H1-1a
316	M467	PL2.25X5	.792	11.06678	.040	10.84	y 74	9734.36	18981	123.75	891	1...H1-1a
317	M81	L2.5x2.5x5	.786	071	.065	0	z 71	35341.325	39420	1096.767	2551.08	2...H2-1
318	M408	PL2.25X5	.786	11.06677	.042	0	y 74	9734.36	18981	123.75	891	1...H1-1a
319	M172	PL2.25X5	.782	15.46170	.018	15.461	y 70	5785.218	18981	123.75	891	2...H1-1a
320	M101	PL2.25X5	.781	15.46174	.036	15.461	y 74	5785.218	18981	123.75	891	1.7H1-1a
321	M136	PL2.25X5	.779	15.46174	.090	0	y 74	5785.218	18981	123.75	891	1...H1-1b
322	M40	PL2.25X5	.776	15.46175	.090	0	y 75	5785.218	18981	123.75	891	1...H1-1b
323	M137	PL2.25X5	.767	15.15274	.034	15.461	y 75	5785.218	18981	123.75	891	1...H1-1a
324	M485	PL2.25X5	.766	11.32378	.037	0	y 75	9442.879	18981	123.75	891	1...H1-1a
325	M322	L2.5X1.5X5	.763	27.73377	.003	0	y 71	10830.232	31113.2...	475.557	1578.654	1...H2-1
326	M384	PL2.25X5	.760	11.32377	.035	11.092	y 75	9442.879	18981	123.75	891	1...H1-1a
327	M451	PL2.25X5	.759	11.32378	.034	11.092	y 74	9442.879	18981	123.75	891	1...H1-1a
328	M318	L2.5X1.5X5	.756	27.73377	.003	49.92	z 65	10830.232	31113.2...	475.557	1578.654	1...H2-1
329	M426	PL2.25X5	.754	11.32377	.037	0	y 74	9442.879	18981	123.75	891	1...H1-1a
330	M308	L2.5X1.5X5	.752	27.73377	.002	49.92	z 66	10830.232	31113.2...	475.557	1578.654	1...H2-1
331	M177	L2.5x2.5x5	.746	070	.063	24	z 70	35341.325	39420	1096.767	2551.08	2...H2-1
332	M503	PL2.25X5	.740	11.58478	.033	0	y 75	9149.226	18981	123.75	891	1...H1-1a
333	M304	L2.5X1.5X5	.738	27.73377	.002	49.92	y 71	10830.232	31113.2...	475.557	1578.654	1...H2-1
334	M368	PL2.25X5	.734	11.58477	.031	23.405	y 74	9149.226	18981	123.75	891	1...H1-1a
335	M469	PL2.25X5	.733	11.58478	.030	23.405	y 75	9149.226	18981	123.75	891	1...H1-1a
336	M410	PL2.25X5	.729	11.58477	.032	0	y 74	9149.226	18981	123.75	891	1...H1-1a
337	M551	PL2.25X5	.724	18.73371	.039	35.664	y 74	3742.008	18981	123.75	891	1...H1-1a
338	M621	PL2.25X5	.723	18.73370	.039	35.664	y 75	3742.008	18981	123.75	891	1...H1-1a
339	M327	L2.5X1.5X5	.723	22.21478	.002	48.871	y 71	11300.048	31113.2...	475.557	1584.382	1...H2-1
340	M331	L2.5X1.5X5	.721	22.21478	.002	48.871	z 66	11300.048	31113.2...	475.557	1584.382	1...H2-1
341	M487	PL2.25X5	.717	11.84978	.029	0	y 75	8854.184	18981	123.75	891	1...H1-1a



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.04
 Model Name : Catenary Structure Type 4

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
342	M315	L2.5X1.5X5	.715	22.21478	.003	0	y 70	11300.048	31113.2...	475.557	1584.382	1...	H2-1
343	M639	PL2.25X4	.713	13.83170	.068	13.831	y 70	3535.554	15201	78.75	711	1...	H1-1a
344	M569	PL2.25X4	.713	13.83171	.068	13.831	y 71	3535.554	15201	78.75	711	1...	H1-1a
345	M386	PL2.25X5	.713	11.84977	.028	23.94	y 74	8854.184	18981	123.75	891	1...	H1-1a
346	M453	PL2.25X5	.712	11.84978	.027	23.94	y 75	8854.184	18981	123.75	891	1...	H1-1a
347	M336	L2.5X1.5X5	.712	22.21478	.002	48.871	y 70	11300.048	31113.2...	475.557	1584.382	1...	H2-1
348	M428	PL2.25X5	.707	11.84977	.028	11.849	y 75	8854.184	18981	123.75	891	1...	H1-1a
349	M511	PL2.25X5	.706	13.78560	.017	13.785	y 75	6796.946	18981	123.75	891	1...	H1-1a
350	M477	PL2.25X5	.701	13.71660	.017	27.711	y 74	6731.711	18981	123.75	891	1...	H1-1a
351	M493	PL2.25X5	.701	13.50160	.018	13.501	y 75	7080.374	18981	123.75	891	1...	H1-1a
352	M495	PL2.25X5	.700	14.07160	.016	14.071	y 75	6528.15	18981	123.75	891	1...	H1-1a
353	M76	PL2.25X5	.700	15.46171	.016	15.152	y 71	5785.218	18981	123.75	891	2...	H1-1a
354	M376	PL2.25X5	.700	13.78559	.018	27.851	y 75	6796.946	18981	123.75	891	1...	H1-1a
355	M505	PL2.25X5	.698	12.11778	.027	0	y 74	8558.51	18981	123.75	891	1...	H1-1a
356	M509	PL2.25X5	.697	13.21960	.020	13.219	y 75	7379.277	18981	123.75	891	1...	H1-1a
357	M461	PL2.25X5	.696	14.07160	.016	28.43	y 74	6528.15	18981	123.75	891	1...	H1-1a
358	M392	PL2.25X5	.695	13.50159	.019	27.277	y 75	7080.374	18981	123.75	891	1...	H1-1a
359	M370	PL2.25X5	.694	12.11777	.026	24.482	y 75	8558.51	18981	123.75	891	2...	H1-1a
360	M394	PL2.25X5	.693	14.07159	.016	28.43	y 75	6528.15	18981	123.75	891	1...	H1-1a
361	M491	PL2.25X5	.693	12.9460	.022	12.94	y 75	7674.832	18981	123.75	891	1...	H1-1a
362	M471	PL2.25X5	.693	12.11778	.025	24.482	y 74	8558.51	18981	123.75	891	2...	H1-1a
363	M475	PL2.25X5	.692	13.21960	.020	26.708	y 74	7379.277	18981	123.75	891	1...	H1-1a
364	M374	PL2.25X5	.691	13.21959	.021	26.708	y 75	7379.277	18981	123.75	891	1...	H1-1a
365	M489	PL2.25X5	.690	12.38878	.023	12.388	y 75	8262.932	18981	123.75	891	1...	H1-1a
366	M507	PL2.25X5	.690	12.66360	.023	12.663	y 75	7968.15	18981	123.75	891	1...	H1-1a
367	M457	PL2.25X5	.688	12.9460	.022	26.143	y 74	7674.832	18981	123.75	891	1...	H1-1a
368	M412	PL2.25X5	.688	12.11777	.027	0	y 75	8558.51	18981	123.75	891	1...	H1-1a
369	M388	PL2.25X5	.688	12.38877	.024	25.03	y 75	8262.932	18981	123.75	891	1...	H1-1a
370	M390	PL2.25X5	.687	12.9459	.022	26.143	y 75	7674.832	18981	123.75	891	1...	H1-1a
371	M455	PL2.25X5	.687	12.38878	.024	25.03	y 74	8262.932	18981	123.75	891	1...	H1-1a
372	M75	PL2.25X5	.686	14.99775	.016	30.3	y 71	5905.645	18981	123.75	891	1...	H1-1a
373	M372	PL2.25X5	.685	12.66377	.023	25.584	y 75	7968.15	18981	123.75	891	1...	H1-1a
374	M473	PL2.25X5	.685	12.66360	.023	25.584	y 74	7968.15	18981	123.75	891	1...	H1-1a
375	M418	PL2.25X5	.685	13.78559	.018	13.785	y 74	6796.946	18981	123.75	891	1...	H1-1a
376	M459	PL2.25X5	.685	13.77660	.019	27.277	y 74	7215.985	18981	123.75	891	1...	H1-1a
377	M298	L2.5X1.5X5	.683	27.73377	.002	0	y 71	10830.232	31113.2...	475.557	1578.654	1...	H2-1
378	M294	L2.5X1.5X5	.681	27.73477	.002	0	y 71	10829.35	31113.2...	475.557	1578.643	1...	H2-1
379	M434	PL2.25X5	.680	13.50159	.018	13.501	y 74	7080.374	18981	123.75	891	1...	H1-1a
380	M436	PL2.25X5	.679	14.07159	.017	14.071	y 74	6528.15	18981	123.75	891	1...	H1-1a
381	M430	PL2.25X5	.678	12.38877	.024	12.388	y 74	8262.932	18981	123.75	891	1...	H1-1a
382	M171	PL2.25X5	.676	14.99775	.016	0	y 59	5905.645	18981	123.75	891	2...	H1-1a
383	M414	PL2.25X5	.676	12.66377	.023	12.663	y 74	7968.15	18981	123.75	891	1...	H1-1a
384	M416	PL2.25X5	.676	13.21959	.020	13.219	y 74	7379.277	18981	123.75	891	1...	H1-1a
385	M432	PL2.25X5	.675	12.9477	.022	12.94	y 74	7674.832	18981	123.75	891	1...	H1-1a
386	M309	L2.5X1.5X5	.667	22.21478	.002	48.871	z 65	11300.048	31113.2...	475.557	1584.382	1...	H2-1
387	M332	L2.5X1.5X5	.661	22.21478	.002	48.871	z 65	11300.048	31113.2...	475.557	1584.382	1...	H2-1
388	M340	L2.5X1.5X5	.634	22.21478	.002	48.871	y 70	11300.048	31113.2...	475.557	1584.382	1...	H2-1
389	M344	L2.5X1.5X5	.620	22.21378	.002	0	z 66	11300.937	31113.2...	475.557	1584.393	1...	H2-1
390	M328	L2.5X1.5X5	.618	22.21478	.003	48.871	z 66	11300.048	31113.2...	475.557	1584.382	1...	H2-1
391	M297	L2.5X1.5X5	.614	27.73377	.002	49.92	y 71	10830.232	31113.2...	475.557	1578.654	1...	H2-1
392	M307	L2.5X1.5X5	.603	27.73377	.002	49.92	z 65	10830.232	31113.2...	475.557	1578.654	1...	H2-1
393	M520	PL2.25X6	.602	15.23559	.013	14.924	y 74	9181.303	22781.25	177.98	1067.87	1...	H1-1a
394	M303	L2.5X1.5X5	.602	27.73377	.002	0	y 71	10830.232	31113.2...	475.557	1578.654	1...	H2-1
395	M293	L2.5X1.5X5	.601	27.73477	.002	0	y 74	10829.35	31113.2...	475.557	1578.643	1...	H2-1
396	M528	PL2.25X6	.598	15.23559	.015	15.235	y 70	9181.303	22781.25	177.98	1067.87	1...	H1-1a
397	M398	PL2.25X6	.584	15.23560	.013	14.924	y 75	9181.303	22781.25	177.98	1067.87	1...	H1-1a
398	M139	PL2.25X5	.583	15.15266	.029	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.04
 Model Name : Catenary Structure Type 4

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear	...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [...]	phi*Mn y...	phi*Mn z...	Cb	Eqn
399	M440	PL2.25X6	.583	15.235	60	.019	15.235	y	71	9181.303	22781.25	177.98	1067.87	1...	H1-1a
400	M513	PL2.25X6	.582	14.36	59	.018	14.067	y	74	10145.853	22781.25	177.98	1067.87	1...	H1-1a
401	M156	PL2.25X5	.582	15.152	66	.025	15.461	y	75	5785.218	18981	123.75	891	1...	H1-1a
402	M521	PL2.25X6	.580	14.36	59	.018	0	y	75	10145.853	22781.25	177.98	1067.87	1...	H1-1a
403	M43	PL2.25X5	.577	15.152	66	.027	15.152	y	75	5785.218	18981	123.75	891	1...	H1-1a
404	M60	PL2.25X5	.575	15.152	66	.031	15.152	y	75	5785.218	18981	123.75	891	1...	H1-1a
405	M441	PL2.25X6	.575	14.36	60	.019	0	y	74	10145.853	22781.25	177.98	1067.87	1...	H1-1a
406	M399	PL2.25X6	.574	14.36	60	.018	14.067	y	75	10145.853	22781.25	177.98	1067.87	1...	H1-1a
407	M158	PL2.25X5	.571	15.152	66	.022	15.461	y	75	5785.218	18981	123.75	891	1...	H1-1a
408	M174	L2.5x2.5x5	.568	51.04	75	.010	2.062	y	74	24053.796	39420	1096.767	2551.08	2...	H2-1
409	M62	PL2.25X5	.564	15.152	66	.024	15.152	y	75	5785.218	18981	123.75	891	1...	H1-1a
410	M324	L2.5x1.5x5	.564	22.214	78	.003	48.871	y	71	11300.048	31113.2...	475.557	1584.382	1...	H2-1
411	M141	PL2.25X5	.560	15.152	66	.025	15.461	y	75	5785.218	18981	123.75	891	1...	H1-1a
412	M41	PL2.25X5	.555	15.152	66	.028	15.152	y	75	5785.218	18981	123.75	891	1...	H1-1a
413	M518	PL2.25X6	.553	14.632	59	.017	14.333	y	74	9843.112	22781.25	177.98	1067.87	1...	H1-1a
414	M45	PL2.25X5	.553	15.152	66	.024	15.461	y	74	5785.218	18981	123.75	891	1...	H1-1a
415	M526	PL2.25X6	.552	14.632	59	.016	0	y	75	9843.112	22781.25	177.98	1067.87	1...	H1-1a
416	M78	L2.5x2.5x5	.551	51.04	74	.009	0	y	75	24053.796	39420	1096.767	2551.08	2...	H2-1
417	M160	PL2.25X5	.549	15.152	66	.020	15.461	y	75	5785.218	18981	123.75	891	1...	H1-1a
418	M438	PL2.25X6	.548	14.632	60	.017	14.632	y	71	9843.112	22781.25	177.98	1067.87	1...	H1-1a
419	M396	PL2.25X6	.547	14.632	60	.017	14.333	y	75	9843.112	22781.25	177.98	1067.87	1...	H1-1a
420	M64	PL2.25X5	.543	15.152	66	.019	15.461	y	74	5785.218	18981	123.75	891	1...	H1-1a
421	M620	PL2.25X5	.540	19.093	74	.036	18.733	y	75	4900.241	18981	123.75	891	1...	H1-1a
422	M550	PL2.25X5	.539	18.733	74	.035	18.733	y	74	3742.008	18981	123.75	891	1...	H1-1a
423	M143	PL2.25X5	.539	15.152	66	.020	15.461	y	74	5785.218	18981	123.75	891	1...	H1-1a
424	M47	PL2.25X5	.532	15.152	66	.018	15.152	y	74	5785.218	18981	123.75	891	1...	H1-1a
425	M82	L2.5x2.5x5	.531	24	74	.125	16	y	74	35341.325	39420	1096.767	2551.08	3...	H2-1
426	M162	PL2.25X5	.528	15.152	66	.019	15.461	y	75	5785.218	18981	123.75	891	1...	H1-1a
427	M178	L2.5x2.5x5	.527	0	75	.135	8	y	74	35341.325	39420	1096.767	2551.08	3...	H2-1
428	M515	PL2.25X6	.522	14.958	59	.016	14.653	y	74	9481.312	22781.25	177.98	1067.87	1...	H1-1a
429	M523	PL2.25X6	.522	14.958	59	.016	14.958	y	70	9481.313	22781.25	177.98	1067.87	1...	H1-1a
430	M66	PL2.25X5	.522	15.152	66	.018	15.461	y	74	5785.218	18981	123.75	891	1...	H1-1a
431	M145	PL2.25X5	.518	15.152	66	.017	15.461	y	74	5785.218	18981	123.75	891	1...	H1-1a
432	M356	PL2.25X5...	.516	23.938	78	.006	48.365	y	70	2210.434	18984.3...	123.597	882.121	1...	H1-1a
433	M443	PL2.25X6	.514	14.958	60	.019	14.958	y	71	9481.313	22781.25	177.98	1067.87	1...	H1-1a
434	M401	PL2.25X6	.512	14.958	60	.016	14.653	y	75	9481.312	22781.25	177.98	1067.87	1...	H1-1a
435	M49	PL2.25X5	.511	15.152	66	.015	15.461	y	75	5785.218	18981	123.75	891	1...	H1-1a
436	M57	PL2.25X5	.511	15.303	71	.017	14.997	y	71	5905.645	18981	123.75	891	3...	H1-1a
437	M164	PL2.25X5	.507	15.152	66	.019	15.461	y	74	5785.218	18981	123.75	891	1...	H1-1a
438	M120	PL2.25X5	.502	15.152	75	.030	15.152	y	75	5785.218	18981	123.75	891	1...	H1-1a
439	M68	PL2.25X5	.501	15.152	66	.017	15.152	y	74	5785.218	18981	123.75	891	1...	H1-1a
440	M153	PL2.25X5	.500	15.303	75	.017	15.303	y	70	5905.645	18981	123.75	891	1...	H1-1a
441	M147	PL2.25X5	.495	15.152	66	.017	15.152	y	75	5785.218	18981	123.75	891	1...	H1-1a
442	M24	PL2.25X5	.492	15.152	74	.032	15.461	y	75	5785.218	18981	123.75	891	1...	H1-1a
443	M51	PL2.25X5	.489	15.152	66	.015	15.152	y	74	5785.218	18981	123.75	891	1...	H1-1a
444	M5	PL2.25X5	.488	15.152	74	.029	15.461	y	75	5785.218	18981	123.75	891	1...	H1-1a
445	M640	PL2.25X4	.488	13.831	70	.086	0	y	74	3535.554	15201	78.75	711	1...	H1-1a
446	M570	PL2.25X4	.488	13.831	71	.086	0	y	75	3535.554	15201	78.75	711	1...	H1-1a
447	M561	PL2.25X4	.487	16.36	71	.077	29.994	y	74	3503.195	15201	78.75	711	1...	H1-1a
448	M631	PL2.25X4	.487	16.36	70	.078	29.994	y	75	3503.195	15201	78.75	711	1...	H1-1a
449	M173	L2.5x2.5x5	.486	0	78	.010	0	y	70	24053.796	39420	1096.767	2551.08	1...	H2-1
450	M166	PL2.25X5	.484	15.152	66	.015	15.461	y	74	5785.218	18981	123.75	891	1...	H1-1a
451	M170	PL2.25X5	.481	15.31	66	.025	0	y	59	5666.526	18981	123.75	891	1...	H1-1a
452	M77	L2.5x2.5x5	.479	13.405	77	.008	9.796	y	71	24053.796	39420	1096.767	2551.08	1...	H2-1
453	M103	PL2.25X5	.478	15.152	75	.029	15.152	y	75	5785.218	18981	123.75	891	1...	H1-1a
454	M70	PL2.25X5	.478	15.152	66	.015	0	y	60	5785.218	18981	123.75	891	1...	H1-1a
455	M7	PL2.25X5	.475	15.152	74	.028	15.461	y	75	5785.218	18981	123.75	891	1...	H1-1a



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.04
 Model Name : Catenary Structure Type 4

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
456	M149	PL2.25X5	.475	15.15266	.019	15.461	y 74	5785.218	18981	123.75	891	1...	H1-1a
457	M122	PL2.25X5	.466	15.15275	.026	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
458	M53	PL2.25X5	.466	15.15266	.017	0	y 60	5785.218	18981	123.75	891	1...	H1-1a
459	M525	PL2.25X6	.464	14.3660	.015	14.36	y 75	10145.853	22781.25	177.98	1067.87	1...	H1-1a
460	M26	PL2.25X5	.464	15.15274	.027	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
461	M527	PL2.25X6	.461	14.95860	.013	14.958	y 75	9481.312	22781.25	177.98	1067.87	1...	H1-1a
462	M517	PL2.25X6	.461	14.3660	.016	29.012	y 74	10145.853	22781.25	177.98	1067.87	1...	H1-1a
463	M395	PL2.25X6	.460	14.3659	.016	29.012	y 75	10145.853	22781.25	177.98	1067.87	1...	H1-1a
464	M72	PL2.25X5	.458	15.15266	.019	0	y 60	5785.218	18981	123.75	891	1...	H1-1a
465	M519	PL2.25X6	.458	14.95860	.014	30.221	y 74	9481.312	22781.25	177.98	1067.87	1...	H1-1a
466	M522	PL2.25X6	.458	14.63260	.014	0	y 74	9843.112	22781.25	177.98	1067.87	1...	H1-1a
467	M168	PL2.25X5	.456	15.15266	.019	0	y 59	5785.218	18981	123.75	891	1...	H1-1a
468	M397	PL2.25X6	.456	14.95859	.014	30.221	y 75	9481.312	22781.25	177.98	1067.87	1...	H1-1a
469	M105	PL2.25X5	.456	15.15275	.027	15.461	y 74	5785.218	18981	123.75	891	1...	H1-1a
470	M514	PL2.25X6	.454	14.63260	.015	29.563	y 74	9843.112	22781.25	177.98	1067.87	1...	H1-1a
471	M400	PL2.25X6	.454	14.63259	.015	29.563	y 75	9843.112	22781.25	177.98	1067.87	1...	H1-1a
472	M9	PL2.25X5	.453	15.15274	.028	15.461	y 75	5785.218	18981	123.75	891	1...	H1-1a
473	M343	L2.5X1.5X5	.450	24.68159	.003	48.869	y 70	11300.937	31113.2...	475.557	1515.62	1...	H2-1
474	M437	PL2.25X6	.450	14.3659	.016	14.36	y 74	10145.853	22781.25	177.98	1067.87	1...	H1-1a
475	M55	PL2.25X5	.448	15.15266	.021	0	y 60	5785.218	18981	123.75	891	1...	H1-1a
476	M439	PL2.25X6	.446	14.95859	.013	14.958	y 74	9481.312	22781.25	177.98	1067.87	1...	H1-1a
477	M442	PL2.25X6	.444	14.63259	.014	0	y 75	9843.112	22781.25	177.98	1067.87	1...	H1-1a
478	M124	PL2.25X5	.444	15.15275	.023	15.461	y 74	5785.218	18981	123.75	891	1...	H1-1a
479	M339	L2.5X1.5X5	.443	22.21478	.003	48.871	y 70	11300.048	31113.2...	475.557	1584.382	1...	H2-1
480	M151	PL2.25X5	.441	15.15266	.021	0	y 59	5785.218	18981	123.75	891	1...	H1-1a
481	M28	PL2.25X5	.441	15.15274	.024	15.461	y 75	5785.218	18981	123.75	891	1...	H1-1a
482	M107	PL2.25X5	.435	15.46175	.023	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
483	M11	PL2.25X5	.433	15.46174	.023	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
484	M126	PL2.25X5	.431	15.46175	.022	15.461	y 74	5785.218	18981	123.75	891	1...	H1-1a
485	M30	PL2.25X5	.430	15.46174	.023	15.461	y 75	5785.218	18981	123.75	891	1...	H1-1a
486	M132	PL2.25X5	.428	15.15274	.024	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
487	M128	PL2.25X5	.428	15.15274	.024	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
488	M109	PL2.25X5	.428	15.46175	.020	15.461	y 75	5785.218	18981	123.75	891	1...	H1-1a
489	M111	PL2.25X5	.426	15.15274	.023	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
490	M13	PL2.25X5	.426	15.46174	.022	15.461	y 74	5785.218	18981	123.75	891	1...	H1-1a
491	M32	PL2.25X5	.425	15.15275	.025	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
492	M36	PL2.25X5	.425	15.15275	.024	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
493	M15	PL2.25X5	.423	15.15275	.024	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
494	M130	PL2.25X5	.422	15.15274	.020	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
495	M34	PL2.25X5	.419	15.15275	.020	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
496	M113	PL2.25X5	.418	15.15274	.024	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
497	M17	PL2.25X5	.415	15.15275	.024	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
498	M134	PL2.25X5	.410	15.3174	.027	15.31	y 70	5666.526	18981	123.75	891	1...	H1-1a
499	M38	PL2.25X5	.406	15.3175	.025	15.31	y 71	5666.526	18981	123.75	891	1...	H1-1a
500	M115	PL2.25X5	.403	15.46175	.024	15.152	y 70	5785.218	18981	123.75	891	1...	H1-1a
501	M19	PL2.25X5	.401	15.46174	.023	15.152	y 71	5785.218	18981	123.75	891	1...	H1-1a
502	M335	L2.5X1.5X5	.401	22.21478	.003	0	y 70	11300.048	31113.2...	475.557	1584.382	1...	H2-1
503	M244	L2.5x1.25x5	.373	14.24171	.007	0	z 78	17244.099	29003.9...	340.889	1469.232	1...	H2-1
504	M353	PL2.25X5	.365	22.96160	.006	0	y 71	2210.434	18984.3...	123.597	798.586	1...	H1-1a
505	M74	PL2.25X5	.360	15.3166	.025	0	y 60	5666.526	18981	123.75	891	1...	H1-1a
506	M357	PL2.25X5	.346	22.47360	.005	0	y 71	2210.434	18984.3...	123.597	889.893	1...	H1-1a
507	M290	L2.5X1.5X5	.314	24.59177	.009	45.934	y 71	12740.431	31113.2...	475.557	1600.791	1...	H2-1
508	M360	PL2.25X5	.306	21.49675	.007	24.427	y 70	2210.434	18984.3...	123.597	828.902	1...	H1-1a
509	M348	L2.5X1.5X5	.302	21.34578	.011	45.937	y 70	12738.921	31113.2...	475.557	1600.774	1...	H2-1
510	M241	L2.5x1.25x5	.296	14.95270	.002	0	y 70	16726.225	29003.9...	340.889	1464.21	1...	H2-1
511	M236	L2.5x1.25x5	.281	14.95270	.002	29.605	z 78	16726.261	29003.9...	340.889	1464.211	1...	H2-1
512	M231	L2.5x1.25x5	.279	14.95270	.006	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.04
 Model Name : Catenary Structure Type 4

Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
513	M206	L2.5x1.25x5	.273	14.65371	.001	0	y 70	16726.261	29003.9...	340.889	1464.211	1... H2-1
514	M289	L2.5X1.5X5	.271	24.59177	.011	45.934	y 71	12740.431	31113.2...	475.557	1600.791	1... H2-1
515	M347	L2.5X1.5X5	.271	23.66570	.009	45.937	y 70	12738.921	31113.2...	475.557	1529.862	1... H2-1
516	M210	L2.5x1.25x5	.270	14.65371	.002	0	y 70	16726.225	29003.9...	340.889	1464.21	1... H2-1
517	M287	L2.5x1.25x5	.264	14.16270	.006	0	y 74	17701.085	29003.9...	340.889	1473.7	1... H2-1
518	M208	L2.5x1.25x5	.264	14.65371	.002	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
519	M228	L2.5x1.25x5	.261	14.65371	.003	0	y 70	16726.261	29003.9...	340.889	1464.211	1... H2-1
520	M239	L2.5x1.25x5	.261	14.95370	.003	29.607	z 77	16724.892	29003.9...	340.889	1464.197	1... H2-1
521	M524	PL2.25X6	.260	15.23560	.013	0	y 74	9181.303	22781.25	177.98	1067.87	1... H1-1a
522	M201	L2.5x1.25x5	.259	14.64871	.002	0	z 78	16732.465	29003.9...	340.889	1464.271	1... H2-1
523	M516	PL2.25X6	.255	15.23560	.010	30.782	y 74	9181.303	22781.25	177.98	1067.87	1... H1-1a
524	M233	L2.5x1.25x5	.253	14.95270	.004	0	z 77	16726.225	29003.9...	340.889	1464.21	1... H2-1
525	M218	L2.5x1.25x5	.253	14.95270	.004	0	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
526	M213	L2.5x1.25x5	.252	14.95270	.004	29.605	y 69	16726.225	29003.9...	340.889	1464.21	1... H2-1
527	M203	L2.5x1.25x5	.252	14.65371	.002	0	z 77	16726.225	29003.9...	340.889	1464.21	1... H2-1
528	M220	L2.5x1.25x5	.242	14.95270	.002	0	z 77	16726.225	29003.9...	340.889	1464.21	1... H2-1
529	M283	L2.5x1.25x5	.239	14.95270	.003	29.605	z 78	16726.225	29003.9...	340.889	1464.21	1... H2-1
530	M255	L2.5x1.25x5	.235	14.65371	.003	0	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
531	M278	L2.5x1.25x5	.233	14.95270	.005	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
532	M288	L2.5x1.25x5	.233	14.23270	.008	0	y 74	17255.841	29003.9...	340.889	1469.346	1... H2-1
533	M226	L2.5x1.25x5	.233	14.65371	.003	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
534	M260	L2.5x1.25x5	.230	14.95270	.004	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
535	M253	L2.5x1.25x5	.227	14.65371	.003	0	y 69	16726.225	29003.9...	340.889	1464.21	1... H2-1
536	M198	L2.5x1.25x5	.225	14.81270	.013	29.328	z 78	16898.734	29003.9...	340.889	1465.879	1... H2-1
537	M257	L2.5x1.25x5	.224	14.65371	.006	0	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
538	M285	L2.5x1.25x5	.224	14.95170	.003	0	y 74	16727.63	29003.9...	340.889	1464.224	1... H2-1
539	M258	L2.5x1.25x5	.223	14.95270	.008	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
540	M265	L2.5x1.25x5	.222	14.95270	.004	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
541	M214	L2.5x1.25x5	.220	14.65371	.005	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
542	M216	L2.5x1.25x5	.218	14.95270	.002	29.605	z 78	16726.261	29003.9...	340.889	1464.211	1... H2-1
543	M273	L2.5x1.25x5	.218	14.65371	.003	29.605	y 69	16726.225	29003.9...	340.889	1464.21	1... H2-1
544	M248	L2.5x1.25x5	.217	14.65271	.002	0	y 74	16727.63	29003.9...	340.889	1464.224	1... H2-1
545	M280	L2.5x1.25x5	.217	14.95270	.002	0	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
546	M263	L2.5x1.25x5	.215	14.95270	.004	29.605	y 59	16726.225	29003.9...	340.889	1464.21	1... H2-1
547	M275	L2.5x1.25x5	.212	14.65371	.004	0	z 78	16726.261	29003.9...	340.889	1464.211	1... H2-1
548	M250	L2.5x1.25x5	.211	14.65371	.002	29.605	z 77	16726.261	29003.9...	340.889	1464.211	1... H2-1
549	M230	L2.5x1.25x5	.209	14.65371	.002	0	z 78	16726.225	29003.9...	340.889	1464.21	1... H2-1
550	M246	L2.5x1.25x5	.206	14.64771	.004	29.593	y 74	16733.833	29003.9...	340.889	1464.284	1... H2-1
551	M232	L2.5x1.25x5	.206	14.65371	.004	0	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
552	M212	L2.5x1.25x5	.202	14.65371	.007	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
553	M199	L2.5x1.25x5	.202	13.87871	.005	0	y 75	17701.085	29003.9...	340.889	1473.7	1... H2-1
554	M237	L2.5x1.25x5	.197	14.65371	.003	29.605	z 78	16726.225	29003.9...	340.889	1464.21	1... H2-1
555	M223	L2.5x1.25x5	.195	14.65371	.003	0	y 69	16726.225	29003.9...	340.889	1464.21	1... H2-1
556	M221	L2.5x1.25x5	.194	14.65371	.005	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
557	M259	L2.5x1.25x5	.193	14.65371	.002	29.605	y 71	16726.225	29003.9...	340.889	1464.21	1... H2-1
558	M202	L2.5x1.25x5	.193	14.95170	.003	0	z 77	16727.63	29003.9...	340.889	1464.224	1... H2-1
559	M240	L2.5x1.25x5	.192	14.65271	.002	0	z 78	16727.63	29003.9...	340.889	1464.224	1... H2-1
560	M242	L2.5x1.25x5	.188	13.87871	.004	0	y 70	17701.085	29003.9...	340.889	1473.7	1... H2-1
561	M200	L2.5x1.25x5	.188	14.94670	.003	29.593	y 71	16733.833	29003.9...	340.889	1464.284	1... H2-1
562	M243	L2.5x1.25x5	.187	14.80272	.014	0	z 77	16910.955	29003.9...	340.889	1465.997	1... H2-1
563	M209	L2.5x1.25x5	.184	14.95270	.004	0	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
564	M204	L2.5x1.25x5	.181	14.95270	.002	29.605	y 71	16726.261	29003.9...	340.889	1464.211	1... H2-1
565	M277	L2.5x1.25x5	.181	14.65371	.006	0	y 69	16726.261	29003.9...	340.889	1464.211	1... H2-1
566	M279	L2.5x1.25x5	.177	14.65371	.004	0	y 70	16726.225	29003.9...	340.889	1464.21	1... H2-1
567	M207	L2.5x1.25x5	.177	14.95270	.003	0	z 77	16726.225	29003.9...	340.889	1464.21	1... H2-1
568	M282	L2.5x1.25x5	.175	14.65371	.003	29.605	z 78	16726.261	29003.9...	340.889	1464.211	1... H2-1
569	M270	L2.5x1.25x5	.174	14.65371	.004	29.605	z 78	16726.261	29003.9...	340.889	1464.211	1... H2-1



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.04
 Model Name : Catenary Structure Type 4

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
570	M354	PL2.25X5_...	.171	23.93877	.006	24.427	y 71	2210.434	18984.3...	123.597	889.893	1...	H1-1b
571	M268	L2.5x1.25x5	.167	14.65371	.007	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
572	M224	L2.5x1.25x5	.167	14.95270	.003	0	z 77	16726.261	29003.9...	340.889	1464.211	1...	H2-1
573	M229	L2.5x1.25x5	.167	14.95270	.005	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
574	M234	L2.5x1.25x5	.165	14.65371	.002	0	z 77	16726.261	29003.9...	340.889	1464.211	1...	H2-1
575	M286	L2.5x1.25x5	.165	14.65371	.004	0	y 70	16726.225	29003.9...	340.889	1464.211	1...	H2-1
576	M227	L2.5x1.25x5	.164	14.95270	.004	29.605	y 69	16726.225	29003.9...	340.889	1464.211	1...	H2-1
577	M211	L2.5x1.25x5	.164	14.95270	.003	29.605	z 78	16726.261	29003.9...	340.889	1464.211	1...	H2-1
578	M222	L2.5x1.25x5	.162	14.95270	.010	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
579	M402	PL2.25X6	.158	15.23577	.011	30.782	y 71	9181.303	22781.25	177.98	1067.87	1...	H1-1b
580	M249	L2.5x1.25x5	.157	14.95270	.003	29.605	z 78	16726.225	29003.9...	340.889	1464.211	1...	H2-1
581	M219	L2.5x1.25x5	.156	14.65371	.007	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
582	M217	L2.5x1.25x5	.156	14.65371	.004	29.605	z 77	16726.225	29003.9...	340.889	1464.211	1...	H2-1
583	M284	L2.5x1.25x5	.155	14.65471	.002	0	z 77	16724.892	29003.9...	340.889	1464.197	1...	H2-1
584	M267	L2.5x1.25x5	.155	14.95270	.010	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
585	M247	L2.5x1.25x5	.155	14.94770	.002	0	y 71	16732.465	29003.9...	340.889	1464.271	1...	H2-1
586	M252	L2.5x1.25x5	.155	14.95270	.002	29.605	y 70	16726.261	29003.9...	340.889	1464.211	1...	H2-1
587	M444	PL2.25X6	.154	15.23577	.013	0	y 75	9181.303	22781.25	177.98	1067.87	1...	H1-1b
588	M245	L2.5x1.25x5	.153	14.16271	.005	28.04	z 78	17701.085	29003.9...	340.889	1473.7	1...	H2-1
589	M256	L2.5x1.25x5	.152	14.95270	.003	29.605	y 70	16726.225	29003.9...	340.889	1464.211	1...	H2-1
590	M355	PL2.25X5_...	.149	23.93878	.007	23.938	y 70	2210.434	18984.3...	123.597	889.893	2...	H1-1b
591	M358	PL2.25X5_...	.141	23.93878	.004	24.427	y 71	2210.434	18984.3...	123.597	889.893	2...	H1-1b
592	M359	PL2.25X5_...	.140	23.93878	.007	0	y 70	2210.434	18984.3...	123.597	889.893	1...	H1-1b
593	M254	L2.5x1.25x5	.139	14.95270	.002	0	y 70	16726.261	29003.9...	340.889	1464.211	1...	H2-1
594	M262	L2.5x1.25x5	.139	14.65371	.003	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
595	M276	L2.5x1.25x5	.139	14.95270	.003	0	z 78	16726.225	29003.9...	340.889	1464.211	1...	H2-1
596	M269	L2.5x1.25x5	.136	14.95270	.002	29.605	y 71	16726.225	29003.9...	340.889	1464.211	1...	H2-1
597	M274	L2.5x1.25x5	.130	14.95271	.003	0	z 78	16726.261	29003.9...	340.889	1464.211	1...	H2-1
598	M266	L2.5x1.25x5	.128	14.65371	.002	29.605	y 69	16726.225	29003.9...	340.889	1464.211	1...	H2-1
599	M264	L2.5x1.25x5	.127	14.65370	.003	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
600	M272	L2.5x1.25x5	.123	14.95270	.004	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
601	M251	L2.5x1.25x5	.048	11.87978	.004	0	y 71	20199.817	29003.9...	340.889	1494.276	1...	H2-1
602	M314	L3x2.5x5	.045	21.20778	.003	0	z 70	32987.716	44010	1270.778	2996.056	1...	H2-1
603	M205	L2.5x1.25x5	.042	11.87977	.004	0	y 71	20199.817	29003.9...	340.889	1494.276	1...	H2-1
604	M271	L2.5x1.25x5	.028	11.87977	.002	0	z 78	20199.817	29003.9...	340.889	1494.276	1...	H2-1
605	M350	L3x2.5x5	.027	21.20777	.003	0	z 78	32987.716	44010	1270.778	2982.261	1...	H2-1
606	M299	L3x2.5x5	.027	20.78378	.004	41.991	z 71	32987.716	44010	1270.778	2996.056	1...	H2-1
607	M215	L2.5x1.25x5	.026	11.87978	.005	0	y 70	20199.817	29003.9...	340.889	1494.276	1...	H2-1
608	M349	L3x2.5x5	.025	20.78377	.005	0	z 70	32987.716	44010	1270.778	2982.261	1...	H2-1
609	M313	L3x2.5x5	.024	21.20777	.005	0	z 70	32987.716	44010	1270.778	2982.261	1...	H2-1
610	M261	L2.5x1.25x5	.023	11.87960	.004	0	y 70	20199.817	29003.9...	340.889	1494.276	1...	H2-1
611	M225	L2.5x1.25x5	.023	11.87977	.002	0	z 77	20199.817	29003.9...	340.889	1494.276	1...	H2-1
612	M235	L2.5x1.25x5	.023	11.87977	.004	0	y 70	20199.817	29003.9...	340.889	1494.276	1...	H2-1
613	M351	L3x2.5x5	.023	20.78378	.004	0	z 71	32987.716	44010	1270.778	2996.056	1...	H2-1
614	M281	L2.5x1.25x5	.022	11.87978	.004	0	y 70	20199.817	29003.9...	340.889	1494.276	1...	H2-1
615	M300	L3x2.5x5	.021	20.78378	.004	41.991	z 71	32987.716	44010	1270.778	2996.056	1...	H2-1
616	M352	L3x2.5x5	.016	21.20778	.003	0	z 78	32987.716	44010	1270.778	2996.056	1...	H2-1



Milvon to West River Catenary Structure Assessment

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-Q
STRUCTURE TYPE 5 AS DESIGNED NESC 1961
COMPLETE MEMBER RESULTS



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.05
 Model Name : Catenary Structure Type 5

Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
1	M209	PL2.25X5	1.928	20.138	55	.012	0	y	55	1767.877	18981	123.75	891	1...H1-1a
2	M210	PL2.25X5	1.905	20.138	55	.011	0	y	55	1767.877	18981	123.75	891	1...H1-1a
3	M112	PL2.25X5	1.891	20.138	56	.011	0	y	56	1767.877	18981	123.75	891	1...H1-1a
4	M113	PL2.25X5	1.858	20.138	56	.011	0	y	56	1767.877	18981	123.75	891	1...H1-1a
5	M193	PL2.25X5	1.746	28.486	56	.002	0	y	55	1704.395	18981	123.75	891	1...H1-1a
6	M192	PL2.25X5	1.709	28.486	56	.002	0	y	55	1704.395	18981	123.75	891	1...H1-1a
7	M97	PL2.25X5	1.706	28.486	55	.002	0	y	56	1704.395	18981	123.75	891	1...H1-1a
8	M96	PL2.25X5	1.672	27.916	55	.002	0	y	56	1704.395	18981	123.75	891	1...H1-1a
9	M199	L2.5x2.5x5	1.577	17.229	55	.093	0	y	55	7631.025	39420	1096.767	2551.08	1 H2-1
10	M200	L2.5x2.5x5	1.574	0	55	.105	17.229	y	55	7631.025	39420	1096.767	2551.08	1 H2-1
11	M204	L2.5x2.5x5	1.558	0	55	.092	17.229	y	55	7631.025	39420	1096.767	2551.08	1 H2-1
12	M205	L2.5x2.5x5	1.554	17.229	55	.104	0	y	55	7631.025	39420	1096.767	2551.08	1 H2-1
13	M201	L2.5x2.5x5	1.547	17.229	55	.028	17.229	y	55	7631.025	39420	1096.767	2283.855	1...H2-1
14	M103	L2.5x2.5x5	1.547	0	56	.091	17.229	y	56	7631.025	39420	1096.767	2551.08	1 H2-1
15	M104	L2.5x2.5x5	1.544	17.229	56	.103	0	y	56	7631.025	39420	1096.767	2551.08	1 H2-1
16	M206	L2.5x2.5x5	1.530	0	55	.027	0	y	55	7631.025	39420	1096.767	2282.309	1...H2-1
17	M108	L2.5x2.5x5	1.520	17.229	56	.090	0	y	56	7631.025	39420	1096.767	2551.08	1 H2-1
18	M105	L2.5x2.5x5	1.518	0	56	.027	0	y	56	7631.025	39420	1096.767	2282.422	1...H2-1
19	M202	L2.5x2.5x5	1.518	0	55	.070	0	y	55	7631.025	39420	1096.767	2449.931	1...H2-1
20	M109	L2.5x2.5x5	1.517	0	56	.101	17.229	y	56	7631.025	39420	1096.767	2551.08	1 H2-1
21	M207	L2.5x2.5x5	1.500	17.303	55	.069	17.303	y	55	7631.025	39420	1096.767	2455.421	1...H2-1
22	M110	L2.5x2.5x5	1.491	17.229	56	.026	17.229	y	56	7631.025	39420	1096.767	2283.893	1...H2-1
23	M106	L2.5x2.5x5	1.488	17.303	56	.068	17.303	y	56	7631.025	39420	1096.767	2455.427	1...H2-1
24	M255	L2.5x2.5x5	1.462	0	56	.067	0	y	56	7631.025	39420	1096.767	2449.958	1...H2-1
25	M573	6H25	1.100	43.921	55	.295	41.725	y	55	32380.313	215681.4	21582	40822.49	1 H1-1b
26	M83	6H25	1.100	43.921	56	.295	41.725	y	56	32380.313	215681.4	21582	40822.49	1 H1-1b
27	M571	L6x4x6	1.036	71.273	55	.037	71.273	y	55	28958.752	97470	4257.614	12612.4...	1 H2-1
28	M81	L6x4x6	1.036	96.727	56	.037	96.727	y	56	28958.752	97470	4257.614	12612.4...	1 H2-1
29	M198	L2.5x2.5x5	1.001	0	55	.014	0	y	55	7631.025	39420	1096.767	2229.299	1...H2-1
30	M203	L2.5x2.5x5	.990	17.23	55	.014	17.23	y	55	7631.025	39420	1096.767	2229.324	1...H2-1
31	M196	L2.5x2.5x5	.984	13.182	55	.047	0	y	55	7631.025	39420	1096.767	2454.684	1...H2-1
32	M102	L2.5x2.5x5	.983	17.23	56	.013	17.23	y	56	7631.025	39420	1096.767	2229.484	1...H2-1
33	M197	L2.5x2.5x5	.974	0	55	.047	13.182	y	55	7631.025	39420	1096.767	2449.206	1...H2-1
34	M100	L2.5x2.5x5	.966	0	56	.046	13.182	y	56	7631.025	39420	1096.767	2449.206	1...H2-1
35	M107	L2.5x2.5x5	.965	0	56	.014	0	y	56	7631.025	39420	1096.767	2229.3	1...H2-1
36	M101	L2.5x2.5x5	.949	13.182	56	.045	0	y	56	7631.025	39420	1096.767	2454.683	1...H2-1
37	M342	L2.5X1.5X5	.759	27.229	55	.001	0	y	56	10830.232	31113.2...	475.557	1510.603	1...H2-1
38	M338	L2.5X1.5X5	.730	27.229	55	.001	0	y	56	10830.232	31113.2...	475.557	1510.603	1...H2-1
39	M78	L3x2.5x5	.693	68.649	56	.058	32.894	z	55	40948.468	44010	1270.778	2996.056	1 H2-1
40	M568	L3x2.5x5	.693	72.94	55	.058	108....	z	55	40948.468	44010	1270.778	2996.056	1 H2-1
41	M567	L3x2.5x5	.687	68.649	55	.057	32.894	z	55	40948.468	44010	1270.778	2996.056	1 H2-1
42	M77	L3x2.5x5	.687	72.94	56	.057	108....	z	56	40948.468	44010	1270.778	2996.056	1 H2-1
43	M343	L2.5X1.5X5	.682	27.229	55	.001	49.92	y	56	10830.232	31113.2...	475.557	1510.603	1...H2-1
44	M333	L2.5X1.5X5	.668	22.214	56	.001	0	y	56	11300.048	31113.2...	475.557	1515.611	1...H2-1
45	M340	L2.5X1.5X5	.657	22.214	56	.001	0	y	56	11300.048	31113.2...	475.557	1515.611	1...H2-1
46	M334	L2.5X1.5X5	.641	27.229	55	.001	0	y	56	10830.232	31113.2...	475.557	1510.603	1...H2-1
47	M337	L2.5X1.5X5	.624	22.214	56	.001	0	y	55	11300.048	31113.2...	475.557	1515.611	1...H2-1
48	M336	L2.5X1.5X5	.617	22.214	56	.001	0	y	55	11300.048	31113.2...	475.557	1515.611	1...H2-1
49	M82	L6x4x6	.586	73.333	56	.134	73.333	y	56	43003.777	97470	4257.614	12792.4...	1 H2-1
50	M572	L6x4x6	.586	58.667	55	.134	58.667	y	55	43003.777	97470	4257.614	12792.4...	1 H2-1
51	M79	L3x2.5x5	.585	68.649	55	.050	32.894	z	55	40948.468	44010	1270.778	2996.056	1 H2-1
52	M569	L3x2.5x5	.585	72.94	56	.050	108....	z	56	40948.468	44010	1270.778	2996.056	1 H2-1
53	M570	L3x2.5x5	.585	68.649	56	.049	32.894	z	56	40948.468	44010	1270.778	2996.056	1 H2-1
54	M80	L3x2.5x5	.584	72.94	55	.049	108....	z	55	40948.468	44010	1270.778	2996.056	1 H2-1
55	M329	L2.5X1.5X5	.583	27.229	55	.002	0	y	56	10830.232	31113.2...	475.557	1510.603	1...H2-1
56	M413	PL2.25X6	.580	10.908	55	.008	0	y	55	14485.93	22781.25	177.98	1067.87	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
57	M481	PL2.25X6	.579	10.90655	.008	0	y 55	14485.93	22781.25	177.98	1067.87	1...H1-1a
58	M214	L6x4x8	.578	721....55	.080	713....	y 55	118844.707	128250	5530.762	14152.4...	1 H2-1
59	M213	L6x4x8	.577	38.38555	.077	46.063	y 55	118844.707	128250	5530.762	14152.4...	1 H2-1
60	M497	PL2.25X6	.575	10.65455	.010	0	y 55	14802.704	22781.25	177.98	1067.87	1...H1-1a
61	M429	PL2.25X6	.575	10.65455	.010	0	y 55	14802.704	22781.25	177.98	1067.87	1...H1-1a
62	M464	PL2.25X6	.575	10.90656	.008	0	y 56	14485.93	22781.25	177.98	1067.87	1...H1-1a
63	M396	PL2.25X6	.573	10.90656	.008	0	y 56	14485.93	22781.25	177.98	1067.87	1...H1-1a
64	M446	PL2.25X6	.570	10.65456	.011	0	y 56	14802.704	22781.25	177.98	1067.87	1...H1-1a
65	M378	PL2.25X6	.569	10.65456	.011	0	y 56	14802.704	22781.25	177.98	1067.87	1...H1-1a
66	M115	L6x6x10	.562	30.06955	.046	22.552	y 55	190937.059	192510	13542.2...	30578.6...	2...H2-1
67	M2	L6x6x10	.561	342....56	.046	349....	y 56	190937.059	192510	13542.2...	30578.6...	2...H2-1
68	M114	L6x6x10	.561	342....55	.047	349....	y 55	190937.059	192510	13542.2...	30578.6...	2...H2-1
69	M1	L6x6x10	.560	30.06956	.047	22.552	y 56	190937.059	192510	13542.2...	30578.6...	2...H2-1
70	M431	PL2.25X6	.552	11.16455	.007	0	y 55	14162.544	22781.25	177.98	1067.87	1...H1-1a
71	M499	PL2.25X6	.552	11.16455	.006	0	y 55	14162.544	22781.25	177.98	1067.87	1...H1-1a
72	M448	PL2.25X6	.547	11.16456	.007	0	y 56	14162.544	22781.25	177.98	1067.87	1...H1-1a
73	M380	PL2.25X6	.546	11.16456	.007	0	y 56	14162.544	22781.25	177.98	1067.87	1...H1-1a
74	M328	L2.5X1.5X5	.541	27.22955	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
75	M359	L2.5x2x5	.539	26.72655	.001	49.922	y 56	19175.995	35640	809.265	1908.803	1...H2-1
76	M358	L2.5x2x5	.537	26.72655	.001	49.922	y 56	19175.995	35640	809.265	1908.803	1...H2-1
77	M116	L6x6x10	.531	30.06955	.046	338....	z 55	190937.059	192510	13542.2...	21627.3...	1 H2-1
78	M335	L2.5X1.5X5	.530	27.22955	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
79	M339	L2.5X1.5X5	.530	27.22955	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
80	M117	L6x6x10	.528	342....55	.048	33.827	z 55	190937.059	192510	13542.2...	21627.3...	1 H2-1
81	M415	PL2.25X6	.528	11.42755	.005	0	y 55	13833.234	22781.25	177.98	1067.87	2...H1-1a
82	M483	PL2.25X6	.527	11.42755	.004	0	y 55	13833.234	22781.25	177.98	1067.87	2...H1-1a
83	M3	L6x6x10	.526	342....56	.045	33.827	z 56	190937.059	192510	13542.2...	21627.3...	1 H2-1
84	M4	L6x6x10	.525	30.06956	.046	338....	z 56	190937.059	192510	13542.2...	21627.3...	1 H2-1
85	M466	PL2.25X6	.523	11.42756	.004	0	y 56	13833.234	22781.25	177.98	1067.87	2...H1-1a
86	M398	PL2.25X6	.521	11.42756	.005	0	y 56	13833.234	22781.25	177.98	1067.87	2...H1-1a
87	M312	L2.5x2x5	.516	22.70756	.001	48.869	y 55	19678.445	35640	809.265	1914.416	1...H2-1
88	M433	PL2.25X6	.506	11.93855	.003	0	y 55	12935.542	22781.25	177.98	1067.87	2...H1-1a
89	M501	PL2.25X6	.505	11.93855	.003	0	y 55	12935.542	22781.25	177.98	1067.87	2...H1-1a
90	M355	L2.5x2x5	.505	26.72555	.001	0	y 56	19176.963	35640	809.265	1908.814	1...H2-1
91	M344	L2.5X1.5X5	.502	22.21456	.001	0	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
92	M450	PL2.25X6	.501	11.93856	.003	0	y 56	12935.542	22781.25	177.98	1067.87	2...H1-1a
93	M382	PL2.25X6	.499	11.93856	.003	0	y 56	12935.542	22781.25	177.98	1067.87	2...H1-1a
94	M351	L2.5x2x5	.497	26.72555	.001	0	y 56	19176.963	35640	809.265	1908.814	1...H2-1
95	M430	PL2.25X6	.496	10.90656	.008	11.133	y 55	14485.93	22781.25	177.98	1067.87	1...H1-1a
96	M498	PL2.25X6	.495	11.13356	.008	11.133	y 55	13890.197	22781.25	177.98	1067.87	1...H1-1a
97	M417	PL2.25X6	.495	12.21555	.002	0	y 55	12606.567	22781.25	177.98	1067.87	2...H1-1a
98	M485	PL2.25X6	.494	12.21555	.003	0	y 55	12606.567	22781.25	177.98	1067.87	2...H1-1a
99	M435	PL2.25X6	.490	12.49755	.001	0	y 55	12273.588	22781.25	177.98	1067.87	1...H1-1a
100	M503	PL2.25X6	.490	12.49755	.002	12.497	y 55	12273.588	22781.25	177.98	1067.87	1...H1-1a
101	M412	PL2.25X6	.490	10.65456	.011	10.876	y 55	14802.704	22781.25	177.98	1067.87	1...H1-1a
102	M468	PL2.25X6	.489	12.21556	.003	0	y 56	12606.567	22781.25	177.98	1067.87	2...H1-1a
103	M211	L6x4x9	.489	715....55	.032	723....	y 56	132785.254	143370	6117.855	15040.0...	1 H2-1
104	M86	L3x2.5x6	.489	4.45556	.116	0	z 56	51421.803	52110	1486.645	3490.361	1...H2-1
105	M576	L3x2.5x6	.489	4.45555	.116	9	z 55	51421.803	52110	1486.645	3490.361	1...H2-1
106	M379	PL2.25X6	.489	10.90655	.008	11.133	y 56	14485.93	22781.25	177.98	1067.87	1...H1-1a
107	M87	L3x2.5x6	.488	4.45556	.116	9	z 56	51421.803	52110	1486.645	3490.361	1...H2-1
108	M447	PL2.25X6	.488	11.13355	.008	11.133	y 56	13890.197	22781.25	177.98	1067.87	1...H1-1a
109	M577	L3x2.5x6	.488	4.45555	.116	0	z 55	51421.803	52110	1486.645	3490.361	1...H2-1
110	M400	PL2.25X6	.487	12.21556	.002	0	y 56	12606.567	22781.25	177.98	1067.87	2...H1-1a
111	M354	L2.5x2x5	.487	26.72555	.001	0	y 56	19176.963	35640	809.265	1908.814	1...H2-1
112	M419	PL2.25X6	.486	12.78355	.002	12.783	y 55	11937.401	22781.25	177.98	1067.87	1...H1-1a
113	M212	L6x4x9	.486	46.18255	.026	23.091	y 55	132785.254	143370	6117.855	15040.0...	1 H2-1



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.05
 Model Name : Catenary Structure Type 5

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear	...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn v	phi*Mn z	Cb	Eqn
114	M487	PL2.25X6	.486	12.783	55	.003	12.783	y	55	11937.401	22781.25	177.98	1067.87	1...	H1-1a
115	M327	L2.5x2x5	.485	22.708	56	.001	48.871	y	55	19677.524	35640	809.265	1914.406	1...	H2-1
116	M452	PL2.25X6	.484	12.497	56	.002	0	y	56	12273.588	22781.25	177.98	1067.87	1...	H1-1a
117	M480	PL2.25X6	.484	10.654	56	.011	10.876	y	55	14802.704	22781.25	177.98	1067.87	1...	H1-1a
118	M384	PL2.25X6	.483	12.497	56	.002	0	y	56	12273.588	22781.25	177.98	1067.87	1...	H1-1a
119	M395	PL2.25X6	.483	10.654	55	.011	10.876	y	56	14802.704	22781.25	177.98	1067.87	1...	H1-1a
120	M421	PL2.25X6	.482	13.39	55	.003	13.39	y	55	11225.776	22781.25	177.98	1067.87	1...	H1-1a
121	M489	PL2.25X6	.482	13.39	55	.003	13.39	y	55	11225.776	22781.25	177.98	1067.87	1...	H1-1a
122	M332	L2.5X1.5X5	.482	22.214	56	.001	0	y	55	11300.048	31113.2...	475.557	1515.611	1...	H2-1
123	M470	PL2.25X6	.480	12.783	56	.002	12.783	y	55	11937.401	22781.25	177.98	1067.87	1...	H1-1a
124	M441	PL2.25X6	.480	14.26	55	.004	14.26	y	56	10234.938	22781.25	177.98	1067.87	1...	H1-1a
125	M437	PL2.25X6	.480	13.043	55	.002	13.043	y	55	11634.553	22781.25	177.98	1067.87	1...	H1-1a
126	M402	PL2.25X6	.479	12.783	56	.002	12.783	y	56	11937.401	22781.25	177.98	1067.87	1...	H1-1a
127	M505	PL2.25X6	.479	13.043	55	.003	13.043	y	55	11634.553	22781.25	177.98	1067.87	1...	H1-1a
128	M509	PL2.25X6	.479	14.26	55	.004	13.969	y	55	10234.938	22781.25	177.98	1067.87	1...	H1-1a
129	M319	L2.5x2x5	.477	22.708	56	.001	0	y	56	19677.524	35640	809.265	1914.406	1...	H2-1
130	M463	PL2.25X6	.477	10.654	55	.011	10.876	y	56	14802.704	22781.25	177.98	1067.87	1...	H1-1a
131	M439	PL2.25X6	.477	13.66	55	.003	13.66	y	55	10917.303	22781.25	177.98	1067.87	1...	H1-1a
132	M472	PL2.25X6	.477	13.39	56	.003	13.39	y	56	11225.776	22781.25	177.98	1067.87	1...	H1-1a
133	M507	PL2.25X6	.476	13.66	55	.004	13.381	y	55	10917.303	22781.25	177.98	1067.87	1...	H1-1a
134	M404	PL2.25X6	.475	13.39	56	.003	13.39	y	56	11225.776	22781.25	177.98	1067.87	1...	H1-1a
135	M414	PL2.25X6	.475	11.397	56	.006	0	y	56	13578.197	22781.25	177.98	1067.87	1...	H1-1a
136	M454	PL2.25X6	.474	13.043	56	.003	13.043	y	56	11634.553	22781.25	177.98	1067.87	1...	H1-1a
137	M458	PL2.25X6	.474	14.26	56	.004	13.969	y	56	10234.939	22781.25	177.98	1067.87	1...	H1-1a
138	M482	PL2.25X6	.473	11.397	56	.006	0	y	56	13578.197	22781.25	177.98	1067.87	1...	H1-1a
139	M390	PL2.25X6	.473	14.26	56	.004	13.969	y	56	10234.939	22781.25	177.98	1067.87	1...	H1-1a
140	M386	PL2.25X6	.473	13.043	56	.003	13.043	y	56	11634.553	22781.25	177.98	1067.87	1...	H1-1a
141	M323	L2.5x2x5	.472	22.708	56	.001	0	y	55	19677.524	35640	809.265	1914.406	1...	H2-1
142	M423	PL2.25X6	.471	13.958	55	.004	13.958	y	55	10575.882	22781.25	177.98	1067.87	1...	H1-1a
143	M456	PL2.25X6	.471	13.66	56	.003	13.381	y	56	10917.303	22781.25	177.98	1067.87	1...	H1-1a
144	M491	PL2.25X6	.470	13.958	55	.004	13.673	y	55	10575.882	22781.25	177.98	1067.87	1...	H1-1a
145	M388	PL2.25X6	.470	13.66	56	.003	13.381	y	56	10917.303	22781.25	177.98	1067.87	1...	H1-1a
146	M425	PL2.25X6	.468	14.564	55	.004	14.266	y	55	9895.135	22781.25	177.98	1067.87	1...	H1-1a
147	M493	PL2.25X6	.466	14.564	55	.005	14.266	y	55	9895.135	22781.25	177.98	1067.87	1...	H1-1a
148	M465	PL2.25X6	.466	11.397	55	.006	0	y	55	13578.197	22781.25	177.98	1067.87	1...	H1-1a
149	M397	PL2.25X6	.466	11.397	55	.006	0	y	55	13578.197	22781.25	177.98	1067.87	1...	H1-1a
150	M474	PL2.25X6	.465	13.958	56	.004	13.673	y	56	10575.882	22781.25	177.98	1067.87	1...	H1-1a
151	M406	PL2.25X6	.464	13.958	56	.003	13.673	y	56	10575.882	22781.25	177.98	1067.87	1...	H1-1a
152	M476	PL2.25X6	.460	14.564	56	.004	14.266	y	56	9895.135	22781.25	177.98	1067.87	1...	H1-1a
153	M408	PL2.25X6	.459	14.564	56	.004	14.266	y	56	9895.135	22781.25	177.98	1067.87	1...	H1-1a
154	M432	PL2.25X6	.456	11.665	56	.005	0	y	56	13259.696	22781.25	177.98	1067.87	1...	H1-1a
155	M313	L2.5x2x5	.454	22.707	56	.001	0	y	55	19678.445	35640	809.265	1914.416	1...	H2-1
156	M500	PL2.25X6	.454	11.665	56	.005	11.665	y	55	13259.696	22781.25	177.98	1067.87	1...	H1-1a
157	M347	L2.5x2x5	.451	26.725	55	.001	49.92	y	56	19176.963	35640	809.265	1908.814	1...	H2-1
158	M318	L2.5x2x5	.450	22.708	56	.001	48.871	y	55	19677.524	35640	809.265	1914.406	1...	H2-1
159	M449	PL2.25X6	.447	11.665	55	.005	11.665	y	56	13259.696	22781.25	177.98	1067.87	1...	H1-1a
160	M381	PL2.25X6	.447	11.665	55	.005	0	y	55	13259.696	22781.25	177.98	1067.87	1...	H1-1a
161	M514	PL2.25X6	.445	15.181	56	.011	29.469	y	55	9316.432	22781.25	177.98	1067.87	1...	H1-1a
162	M584	PL2.25X6	.445	15.181	55	.011	29.469	y	56	9316.432	22781.25	177.98	1067.87	1...	H1-1a
163	M322	L2.5x2x5	.440	22.708	56	.001	48.871	y	55	19677.524	35640	809.265	1914.406	1...	H2-1
164	M416	PL2.25X6	.437	11.938	56	.003	11.938	y	55	12935.542	22781.25	177.98	1067.87	1...	H1-1a
165	M585	PL2.25X6	.436	15.181	55	.012	29.469	y	56	9316.432	22781.25	177.98	1067.87	1...	H1-1a
166	M515	PL2.25X6	.436	15.181	56	.012	29.469	y	55	9316.432	22781.25	177.98	1067.87	1...	H1-1a
167	M484	PL2.25X6	.435	11.938	56	.004	11.938	y	55	12935.542	22781.25	177.98	1067.87	1...	H1-1a
168	M467	PL2.25X6	.429	11.938	55	.004	11.938	y	56	12935.542	22781.25	177.98	1067.87	1...	H1-1a
169	M399	PL2.25X6	.429	11.938	55	.004	11.938	y	56	12935.542	22781.25	177.98	1067.87	1...	H1-1a
170	M445	PL2.25X6	.425	15.489	55	.004	15.173	y	55	8885.209	22781.25	177.98	1067.87	1...	H1-1a



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.05
 Model Name : Catenary Structure Type 5

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
171	M513	PL2.25X6	.424	15.489	55	.004	15.173	y 55	8885.209	22781.25	177.98	1067.87	1...H1-1a
172	M434	PL2.25X6	.421	12.215	56	.002	12.215	y 55	12606.567	22781.25	177.98	1067.87	2...H1-1a
173	M346	L2.5x2x5	.420	26.725	55	.001	0	y 56	19176.963	35640	809.265	1908.814	1...H2-1
174	M350	L2.5x2x5	.420	26.725	55	.001	0	y 56	19176.963	35640	809.265	1908.814	1...H2-1
175	M502	PL2.25X6	.419	12.215	56	.003	12.215	y 55	12606.567	22781.25	177.98	1067.87	1...H1-1a
176	M462	PL2.25X6	.419	15.489	56	.004	15.173	y 56	8885.209	22781.25	177.98	1067.87	1...H1-1a
177	M394	PL2.25X6	.418	15.489	56	.004	15.173	y 56	8885.209	22781.25	177.98	1067.87	1...H1-1a
178	M451	PL2.25X6	.413	12.215	55	.003	12.215	y 56	12606.567	22781.25	177.98	1067.87	1...H1-1a
179	M383	PL2.25X6	.413	12.215	55	.003	12.215	y 56	12606.567	22781.25	177.98	1067.87	2...H1-1a
180	M363	L2.5x2x5	.409	26.176	55	.001	47.116	y 56	20519.432	35640	809.265	1923.882	1...H2-1
181	M418	PL2.25X6	.408	12.497	56	.002	12.497	y 55	12273.588	22781.25	177.98	1067.87	2...H1-1a
182	M486	PL2.25X6	.405	14.792	56	.003	12.497	y 55	12273.588	22781.25	177.98	1067.87	2...H1-1a
183	M436	PL2.25X6	.405	12.783	56	.002	0	y 55	11937.401	22781.25	177.98	1067.87	1...H1-1a
184	M362	L2.5x2x5	.405	26.176	55	.001	47.116	y 55	20519.432	35640	809.265	1923.882	1...H2-1
185	M587	PL2.25X6	.405	15.181	56	.012	29.469	y 55	9316.432	22781.25	177.98	1067.87	1...H1-1a
186	M517	PL2.25X6	.403	15.181	55	.012	29.469	y 56	9316.432	22781.25	177.98	1067.87	1...H1-1a
187	M438	PL2.25X6	.402	13.39	56	.003	0	y 55	11225.776	22781.25	177.98	1067.87	1...H1-1a
188	M504	PL2.25X6	.402	12.783	56	.002	0	y 55	11937.401	22781.25	177.98	1067.87	1...H1-1a
189	M401	PL2.25X6	.401	12.497	55	.002	12.497	y 56	12273.588	22781.25	177.98	1067.87	2...H1-1a
190	M420	PL2.25X6	.400	13.043	56	.003	0	y 55	11634.553	22781.25	177.98	1067.87	1...H1-1a
191	M469	PL2.25X6	.399	14.027	55	.002	12.497	y 56	12273.588	22781.25	177.98	1067.87	2...H1-1a
192	M516	PL2.25X6	.399	15.181	55	.010	29.469	y 56	9316.432	22781.25	177.98	1067.87	1...H1-1a
193	M506	PL2.25X6	.399	13.39	56	.003	27.054	y 55	11225.776	22781.25	177.98	1067.87	1...H1-1a
194	M440	PL2.25X6	.398	13.958	56	.004	28.201	y 55	10575.882	22781.25	177.98	1067.87	1...H1-1a
195	M385	PL2.25X6	.398	12.783	55	.002	0	y 56	11937.401	22781.25	177.98	1067.87	1...H1-1a
196	M422	PL2.25X6	.398	13.66	56	.003	27.598	y 55	10917.303	22781.25	177.98	1067.87	1...H1-1a
197	M488	PL2.25X6	.397	13.043	56	.003	26.352	y 55	11634.553	22781.25	177.98	1067.87	1...H1-1a
198	M586	PL2.25X6	.397	15.181	56	.010	29.469	y 55	9316.432	22781.25	177.98	1067.87	1...H1-1a
199	M453	PL2.25X6	.396	12.783	55	.002	0	y 56	11937.401	22781.25	177.98	1067.87	1...H1-1a
200	M508	PL2.25X6	.395	13.958	56	.004	28.201	y 55	10575.882	22781.25	177.98	1067.87	1...H1-1a
201	M490	PL2.25X6	.395	13.66	56	.004	27.598	y 55	10917.303	22781.25	177.98	1067.87	1...H1-1a
202	M387	PL2.25X6	.395	13.39	55	.003	27.054	y 56	11225.776	22781.25	177.98	1067.87	1...H1-1a
203	M540	L6x4x6	.394	6.878	56	.123	6.878	z 56	91550.116	97470	4257.614	12792.4...	1...H2-1
204	M610	L6x4x6	.394	6.74	55	.123	6.74	z 55	91550.116	97470	4257.614	12792.4...	1...H2-1
205	M403	PL2.25X6	.393	13.043	55	.002	0	y 56	11634.553	22781.25	177.98	1067.87	1...H1-1a
206	M455	PL2.25X6	.393	13.39	55	.003	27.054	y 56	11225.776	22781.25	177.98	1067.87	1...H1-1a
207	M443	PL2.25X6	.391	14.87	55	.005	14.567	y 55	9557.11	22781.25	177.98	1067.87	1...H1-1a
208	M471	PL2.25X6	.391	13.043	55	.003	26.352	y 56	11634.553	22781.25	177.98	1067.87	1...H1-1a
209	M389	PL2.25X6	.391	13.958	55	.004	28.201	y 56	10575.882	22781.25	177.98	1067.87	1...H1-1a
210	M424	PL2.25X6	.391	14.26	56	.004	28.81	y 55	10234.938	22781.25	177.98	1067.87	1...H1-1a
211	M511	PL2.25X6	.391	14.87	55	.005	14.567	y 55	9557.11	22781.25	177.98	1067.87	1...H1-1a
212	M405	PL2.25X6	.391	13.66	55	.003	27.598	y 56	10917.303	22781.25	177.98	1067.87	1...H1-1a
213	M308	L2.5x2x5	.389	20.087	56	.001	0	y 56	20937.986	35640	809.265	1928.635	1...H2-1
214	M457	PL2.25X6	.389	13.958	55	.004	28.201	y 56	10575.882	22781.25	177.98	1067.87	1...H1-1a
215	M473	PL2.25X6	.389	13.66	55	.004	27.598	y 56	10917.303	22781.25	177.98	1067.87	1...H1-1a
216	M460	PL2.25X6	.388	14.87	56	.005	14.567	y 56	9557.11	22781.25	177.98	1067.87	1...H1-1a
217	M492	PL2.25X6	.388	14.26	56	.005	28.81	y 55	10234.938	22781.25	177.98	1067.87	1...H1-1a
218	M616	PL2.25X5	.387	10.217	55	.033	0	y 55	10918.438	18981	123.75	891	1...H1-1a
219	M546	PL2.25X5	.387	10.217	56	.033	0	y 56	10918.438	18981	123.75	891	1...H1-1a
220	M611	L6x4x6	.387	6.74	55	.133	6.74	z 55	91550.116	97470	4257.614	12685.8...	1...H2-1
221	M541	L6x4x6	.387	6.878	56	.133	6.878	z 56	91550.116	97470	4257.614	12792.4...	1...H2-1
222	M548	PL2.25X5	.386	10.217	56	.028	0	y 56	10918.438	18981	123.75	891	1...H1-1a
223	M618	PL2.25X5	.386	10.217	55	.028	0	y 55	10918.438	18981	123.75	891	1...H1-1a
224	M345	L2.5X1.5X5	.386	22.214	56	.001	0	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
225	M392	PL2.25X6	.386	14.87	56	.005	14.567	y 56	9557.11	22781.25	177.98	1067.87	1...H1-1a
226	M407	PL2.25X6	.383	14.26	55	.004	28.81	y 56	10234.939	22781.25	177.98	1067.87	1...H1-1a
227	M475	PL2.25X6	.382	14.26	55	.005	28.81	y 56	10234.939	22781.25	177.98	1067.87	1...H1-1a



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.05
 Model Name : Catenary Structure Type 5

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear	...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
228	M556	PL2.25X5	.364	8.823	56	.025	0	y	56	12589.429	18981	123.75	891	1...	H1-1a
229	M626	PL2.25X5	.364	8.823	55	.025	0	y	55	12589.429	18981	123.75	891	1...	H1-1a
230	M624	PL2.25X5	.362	8.823	55	.029	0	y	55	12589.429	18981	123.75	891	1...	H1-1a
231	M554	PL2.25X5	.362	8.823	56	.029	0	y	56	12589.429	18981	123.75	891	1...	H1-1a
232	M634	PL2.25X5	.354	7.863	55	.018	0	y	55	13680.345	18981	123.75	891	1...	H1-1a
233	M564	PL2.25X5	.354	7.863	56	.018	0	y	56	13680.345	18981	123.75	891	1...	H1-1a
234	M495	PL2.25X6	.353	15.179	55	.005	14.869	y	55	9221.47	22781.25	177.98	1067.87	1...	H1-1a
235	M427	PL2.25X6	.353	15.179	55	.005	15.179	y	55	9221.47	22781.25	177.98	1067.87	1...	H1-1a
236	M562	PL2.25X5	.353	7.863	56	.023	0	y	56	13680.345	18981	123.75	891	1...	H1-1a
237	M632	PL2.25X5	.353	7.863	55	.023	0	y	55	13680.345	18981	123.75	891	1...	H1-1a
238	M442	PL2.25X6	.353	14.564	56	.005	29.424	y	55	9895.135	22781.25	177.98	1067.87	1...	H1-1a
239	M478	PL2.25X6	.349	15.179	56	.005	14.869	y	56	9221.47	22781.25	177.98	1067.87	1...	H1-1a
240	M510	PL2.25X6	.349	14.564	56	.005	29.424	y	55	9895.135	22781.25	177.98	1067.87	1...	H1-1a
241	M341	L2.5X1.5X5	.348	22.214	56	.001	48.871	y	56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
242	M410	PL2.25X6	.347	15.179	56	.005	15.179	y	56	9221.47	22781.25	177.98	1067.87	1...	H1-1a
243	M391	PL2.25X6	.344	14.564	55	.005	29.424	y	56	9895.135	22781.25	177.98	1067.87	1...	H1-1a
244	M459	PL2.25X6	.342	14.564	55	.005	29.424	y	56	9895.135	22781.25	177.98	1067.87	1...	H1-1a
245	M309	L2.5x2x5	.334	20.087	56	.001	0	y	55	20937.986	35640	809.265	1928.635	1...	H2-1
246	M444	PL2.25X6	.334	15.179	56	.005	0	y	55	9221.47	22781.25	177.98	1067.87	1...	H1-1a
247	M426	PL2.25X6	.331	14.87	56	.004	30.043	y	55	9557.11	22781.25	177.98	1067.87	1...	H1-1a
248	M512	PL2.25X6	.330	15.179	56	.005	30.667	y	55	9221.47	22781.25	177.98	1067.87	1...	H1-1a
249	M494	PL2.25X6	.327	14.87	56	.005	30.043	y	55	9557.11	22781.25	177.98	1067.87	1...	H1-1a
250	M393	PL2.25X6	.327	15.179	55	.005	30.667	y	56	9221.47	22781.25	177.98	1067.87	1...	H1-1a
251	M190	L2.5x2.5x5	.325	25.778	56	.001	51.04	z	56	24053.796	39420	1096.767	2551.08	1...	H2-1
252	M461	PL2.25X6	.325	15.179	55	.005	30.667	y	56	9221.47	22781.25	177.98	1067.87	1...	H1-1a
253	M409	PL2.25X6	.324	14.87	55	.004	30.043	y	56	9557.11	22781.25	177.98	1067.87	1...	H1-1a
254	M191	L2.5x2.5x5	.322	25.262	56	.001	51.04	z	56	24053.796	39420	1096.767	2551.08	1...	H2-1
255	M477	PL2.25X6	.322	14.87	55	.005	30.043	y	56	9557.11	22781.25	177.98	1067.87	1...	H1-1a
256	M94	L2.5x2.5x5	.319	25.262	55	.001	0	z	55	24053.796	39420	1096.767	2551.08	1...	H2-1
257	M95	L2.5x2.5x5	.315	25.778	55	.001	51.04	z	55	24053.796	39420	1096.767	2551.08	1...	H2-1
258	M523	L6x4x6	.311	9.414	56	.166	7.685	z	56	90666.49	97470	4257.614	12792.4...	1...	H2-1
259	M593	L6x4x6	.311	9.606	55	.166	11.336	z	55	90666.49	97470	4257.614	12792.4...	1...	H2-1
260	M325	L2.5x2x5	.308	26.725	55	.001	0	y	55	19176.963	35640	809.265	1908.814	1...	H2-1
261	M373	PL2.25X5	.306	22.961	56	.003	0	y	56	2317.827	18981	123.75	858.545	1...	H1-1a
262	M326	L2.5x2x5	.305	22.708	56	.001	0	y	55	19677.524	35640	809.265	1914.406	1...	H2-1
263	M522	L6x4x6	.298	9.414	56	.154	11.336	z	55	90666.49	97470	4257.614	12309.1...	1...	H2-1
264	M592	L6x4x6	.296	9.606	55	.153	7.685	z	56	90666.49	97470	4257.614	12792.4...	1...	H2-1
265	M314	L2.5x2x5	.291	24.708	56	.001	49.92	y	56	19176.963	35640	809.265	1908.814	1...	H2-1
266	M321	L2.5x2x5	.289	26.725	55	.001	49.92	y	56	19176.963	35640	809.265	1908.814	1...	H2-1
267	M348	L2.5x2x5	.284	22.708	56	.001	0	y	55	19677.524	35640	809.265	1914.406	1...	H2-1
268	M353	L2.5x2x5	.282	22.708	56	.001	48.871	y	56	19677.524	35640	809.265	1914.406	1...	H2-1
269	M357	L2.5x2x5	.279	24.682	55	.001	0	y	55	19677.524	35640	809.265	1914.406	1...	H2-1
270	M617	PL2.25X5	.276	10.217	56	.031	10.217	y	55	10918.438	18981	123.75	891	1...	H1-1a
271	M547	PL2.25X5	.276	10.217	55	.031	10.217	y	56	10918.438	18981	123.75	891	1...	H1-1a
272	M549	PL2.25X5	.270	10.217	55	.028	10.217	y	56	10918.438	18981	123.75	891	1...	H1-1a
273	M619	PL2.25X5	.270	10.217	56	.028	10.217	y	55	10918.438	18981	123.75	891	1...	H1-1a
274	M524	PL2.25X5	.267	14.763	56	.026	14.763	y	56	8035.2	18981	123.75	891	2...	H1-1b
275	M594	PL2.25X5	.267	14.763	55	.026	14.763	y	55	8035.2	18981	123.75	891	2...	H1-1b
276	M633	PL2.25X5	.266	7.863	55	.022	7.863	y	55	13680.346	18981	123.75	891	1...	H1-1a
277	M563	PL2.25X5	.266	7.863	56	.022	7.863	y	56	13680.345	18981	123.75	891	1...	H1-1a
278	M565	PL2.25X5	.266	7.863	56	.018	7.863	y	56	13680.346	18981	123.75	891	1...	H1-1a
279	M635	PL2.25X5	.266	7.863	55	.018	7.863	y	55	13680.346	18981	123.75	891	1...	H1-1a
280	M310	L2.5x2x5	.266	24.709	56	.001	0	y	56	19175.995	35640	809.265	1908.803	1...	H2-1
281	M356	L2.5x2x5	.263	24.682	55	.001	48.871	y	55	19677.524	35640	809.265	1914.406	1...	H2-1
282	M595	PL2.25X5	.261	14.763	55	.027	14.763	y	55	8035.201	18981	123.75	891	2...	H1-1b
283	M525	PL2.25X5	.261	14.763	56	.027	14.763	y	56	8035.201	18981	123.75	891	2...	H1-1b
284	M360	L2.5x2x5	.261	24.681	55	.001	48.869	y	55	19678.445	35640	809.265	1914.416	1...	H2-1



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.05
 Model Name : Catenary Structure Type 5

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
285	M361	L2.5x2x5	.261	24.681	55 .001	48.869	y	55	19678.445	35640	809.265	1914.416	1...	H2-1
286	M315	L2.5x2x5	.260	24.708	56 .001	49.92	y	56	19176.963	35640	809.265	1908.814	1...	H2-1
287	M320	L2.5x2x5	.258	24.708	56 .001	0	y	56	19176.963	35640	809.265	1908.814	1...	H2-1
288	M352	L2.5x2x5	.258	24.682	55 .001	0	y	55	19677.524	35640	809.265	1914.406	1...	H2-1
289	M349	L2.5x2x5	.256	22.708	56 .001	48.871	y	55	19677.524	35640	809.265	1914.406	1...	H2-1
290	M542	PL2.25X5	.255	9.809	56 .033	9.809	y	56	12894.358	18981	123.75	891	2...	H1-1b
291	M612	PL2.25X5	.255	9.809	55 .033	9.809	y	55	12894.358	18981	123.75	891	2...	H1-1b
292	M591	PL2.25X6	.255	18.733	56 .008	35.664	y	56	6166.83	22781.25	177.98	1067.87	1...	H1-1a
293	M613	PL2.25X5	.253	9.809	55 .032	9.809	y	55	12894.358	18981	123.75	891	2...	H1-1b
294	M543	PL2.25X5	.253	9.809	56 .032	9.809	y	56	12894.358	18981	123.75	891	2...	H1-1b
295	M521	PL2.25X6	.250	18.733	55 .008	35.664	y	55	6166.83	22781.25	177.98	1067.87	1...	H1-1a
296	M370	PL2.25X5	.244	22.961	56 .003	0	y	56	2317.827	18981	123.75	797.905	1...	H1-1a
297	M324	L2.5x2x5	.238	24.708	56 .001	49.92	y	56	19176.963	35640	809.265	1908.814	1...	H2-1
298	M602	PL2.25X5	.232	12.585	55 .027	0	y	55	8283.44	18981	123.75	891	1...	H1-1b
299	M532	PL2.25X5	.232	12.585	56 .027	0	y	56	8283.44	18981	123.75	891	1...	H1-1b
300	M374	PL2.25X5	.232	22.473	56 .002	23.938	y	55	2317.827	18981	123.75	891	1...	H1-1a
301	M533	PL2.25X5	.232	12.585	56 .028	0	y	56	8283.44	18981	123.75	891	1...	H1-1b
302	M603	PL2.25X5	.232	12.585	55 .028	0	y	55	8283.44	18981	123.75	891	1...	H1-1b
303	M597	PL2.25X5	.231	14.763	56 .025	27.577	y	55	8035.201	18981	123.75	891	2...	H1-1b
304	M527	PL2.25X5	.231	14.763	55 .025	27.577	y	56	8035.201	18981	123.75	891	2...	H1-1b
305	M526	PL2.25X5	.231	14.763	55 .024	27.577	y	56	8035.2	18981	123.75	891	2...	H1-1b
306	M596	PL2.25X5	.231	14.763	56 .024	27.577	y	55	8035.2	18981	123.75	891	2...	H1-1b
307	M311	L2.5x2x5	.230	24.709	56 .001	0	y	56	19175.995	35640	809.265	1908.803	1...	H2-1
308	M544	PL2.25X5	.225	9.809	56 .032	18.322	y	56	12894.358	18981	123.75	891	2...	H1-1b
309	M614	PL2.25X5	.225	9.809	55 .032	18.322	y	55	12894.358	18981	123.75	891	2...	H1-1b
310	M615	PL2.25X5	.224	9.809	55 .030	18.322	y	55	12894.358	18981	123.75	891	2...	H1-1b
311	M545	PL2.25X5	.224	9.809	56 .030	18.322	y	56	12894.358	18981	123.75	891	2...	H1-1b
312	M605	PL2.25X5	.194	12.585	56 .025	0	y	56	8283.44	18981	123.75	891	1...	H1-1b
313	M534	PL2.25X5	.194	12.585	55 .026	12.585	y	56	8283.44	18981	123.75	891	1...	H1-1b
314	M535	PL2.25X5	.193	12.585	55 .025	0	y	55	8283.44	18981	123.75	891	1...	H1-1b
315	M604	PL2.25X5	.193	12.585	56 .026	12.585	y	55	8283.44	18981	123.75	891	1...	H1-1b
316	M553	PL2.25X5	.192	8.252	56 .031	8.252	y	56	13196.584	18981	123.75	891	1...	H1-1b
317	M623	PL2.25X5	.192	8.252	55 .031	8.252	y	55	13196.584	18981	123.75	891	1...	H1-1b
318	M622	PL2.25X5	.190	8.252	55 .028	8.252	y	55	13196.584	18981	123.75	891	1...	H1-1b
319	M552	PL2.25X5	.190	8.252	56 .028	8.252	y	56	13196.584	18981	123.75	891	1...	H1-1b
320	M551	PL2.25X5	.190	8.252	56 .031	0	y	56	13196.584	18981	123.75	891	1...	H1-1b
321	M621	PL2.25X5	.190	8.252	55 .031	0	y	55	13196.584	18981	123.75	891	1...	H1-1b
322	M620	PL2.25X5	.188	8.252	55 .030	0	y	55	13196.584	18981	123.75	891	1...	H1-1b
323	M550	PL2.25X5	.188	8.252	56 .030	0	y	56	13196.584	18981	123.75	891	1...	H1-1b
324	M625	PL2.25X5	.188	8.823	55 .028	8.823	y	55	12589.429	18981	123.75	891	1...	H1-1b
325	M555	PL2.25X5	.188	8.823	56 .028	8.823	y	56	12589.429	18981	123.75	891	1...	H1-1b
326	M557	PL2.25X5	.187	8.823	56 .024	8.823	y	56	12589.429	18981	123.75	891	1...	H1-1b
327	M627	PL2.25X5	.187	8.823	55 .024	8.823	y	55	12589.429	18981	123.75	891	1...	H1-1b
328	M519	PL2.25X6	.144	18.733	55 .010	35.664	y	55	6166.829	22781.25	177.98	1067.87	1...	H1-1b
329	M589	PL2.25X6	.141	18.733	56 .010	35.664	y	56	6166.829	22781.25	177.98	1067.87	1...	H1-1b
330	M590	PL2.25X6	.139	18.733	55 .011	35.664	y	55	6166.829	22781.25	177.98	1067.87	1...	H1-1b
331	M520	PL2.25X6	.139	18.733	56 .011	35.664	y	56	6166.829	22781.25	177.98	1067.87	1...	H1-1b
332	M518	PL2.25X6	.138	18.733	56 .011	35.664	y	56	6166.829	22781.25	177.98	1067.87	1...	H1-1b
333	M588	PL2.25X6	.138	18.733	55 .011	35.664	y	55	6166.829	22781.25	177.98	1067.87	1...	H1-1b
334	M609	PL2.25X5	.137	14.092	55 .014	0	y	56	9066.515	18981	123.75	891	1...	H1-1b
335	M539	PL2.25X5	.137	14.092	56 .014	0	y	55	9066.515	18981	123.75	891	1...	H1-1b
336	M606	PL2.25X5	.132	13.831	55 .018	0	y	55	7071.108	18981	123.75	891	1...	H1-1b
337	M536	PL2.25X5	.132	13.831	56 .018	0	y	56	7071.108	18981	123.75	891	1...	H1-1b
338	M559	PL2.25X5	.129	7.482	56 .020	0	y	56	14076.038	18981	123.75	891	1...	H1-1b
339	M629	PL2.25X5	.129	7.482	55 .020	0	y	55	14076.038	18981	123.75	891	1...	H1-1b
340	M538	PL2.25X5	.127	13.831	56 .015	0	y	56	7071.108	18981	123.75	891	1...	H1-1b
341	M608	PL2.25X5	.127	13.831	55 .015	0	y	55	7071.108	18981	123.75	891	1...	H1-1b



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.05
 Model Name : Catenary Structure Type 5

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear	...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
342	M628	PL2.25X5	.126	7.482	55	.022	0	y	55	14076.038	18981	123.75	891	1...	H1-1b
343	M558	PL2.25X5	.126	7.482	56	.022	0	y	56	14076.038	18981	123.75	891	1...	H1-1b
344	M537	PL2.25X5	.126	14.092	56	.015	14.092	y	56	9066.515	18981	123.75	891	1...	H1-1b
345	M607	PL2.25X5	.126	14.092	55	.015	14.092	y	55	9066.515	18981	123.75	891	1...	H1-1b
346	M428	PL2.25X6	.123	15.489	56	.005	31.295	y	55	8885.209	22781.25	177.98	1067.87	1...	H1-1b
347	M496	PL2.25X6	.120	15.489	56	.005	31.295	y	55	8885.209	22781.25	177.98	1067.87	1...	H1-1b
348	M529	PL2.25X5	.119	16.36	56	.015	16.36	y	56	7006.39	18981	123.75	891	1...	H1-1b
349	M599	PL2.25X5	.119	16.36	55	.015	16.36	y	55	7006.39	18981	123.75	891	1...	H1-1b
350	M411	PL2.25X6	.119	15.489	55	.005	31.295	y	56	8885.209	22781.25	177.98	1067.87	1...	H1-1b
351	M479	PL2.25X6	.118	15.489	55	.005	31.295	y	56	8885.209	22781.25	177.98	1067.87	1...	H1-1b
352	M561	PL2.25X5	.115	7.482	56	.019	7.482	y	56	14076.039	18981	123.75	891	1...	H1-1b
353	M631	PL2.25X5	.115	7.482	55	.019	7.482	y	55	14076.039	18981	123.75	891	1...	H1-1b
354	M630	PL2.25X5	.112	7.482	55	.021	7.482	y	55	14076.039	18981	123.75	891	1...	H1-1b
355	M560	PL2.25X5	.112	7.482	56	.021	7.482	y	56	14076.038	18981	123.75	891	1...	H1-1b
356	M306	L2.5x2.5x5	.106	22.735	56	.001	0	y	56	26421.669	39420	1096.767	2551.08	1...	H2-1
357	M364	L2.5x2.5x5	.106	23.201	55	.001	45.937	y	55	26420.266	39420	1096.767	2551.08	1...	H2-1
358	M365	L2.5x2.5x5	.105	23.201	55	.001	45.937	y	55	26420.266	39420	1096.767	2551.08	1...	H2-1
359	M136	PL2.25X6	.103	15.461	55	.017	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
360	M23	PL2.25X6	.103	15.461	56	.016	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
361	M5	PL2.25X6	.101	15.461	56	.017	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
362	M118	PL2.25X6	.100	15.461	55	.017	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
363	M531	PL2.25X5	.098	16.36	56	.012	16.36	y	56	7006.389	18981	123.75	891	1...	H1-1b
364	M601	PL2.25X5	.098	16.36	55	.012	16.36	y	55	7006.389	18981	123.75	891	1...	H1-1b
365	M371	PL2.25X5	.097	23.938	55	.003	24.427	y	56	2317.827	18981	123.75	891	1...	H1-1b
366	M253	L2.5x1.25x5	.097	14.952	55	.002	0	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
367	M598	PL2.25X5	.097	16.057	55	.012	16.36	y	56	5239.35	18981	123.75	891	1...	H1-1b
368	M528	PL2.25X5	.097	16.057	56	.012	16.36	y	55	5239.35	18981	123.75	891	1...	H1-1b
369	M600	PL2.25X5	.093	16.36	56	.011	29.994	y	55	7006.389	18981	123.75	891	1...	H1-1b
370	M530	PL2.25X5	.093	16.36	55	.011	29.994	y	56	7006.389	18981	123.75	891	1...	H1-1b
371	M223	L2.5x1.25x5	.093	14.653	56	.001	29.605	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
372	M41	PL2.25X6	.091	15.461	55	.015	15.152	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
373	M154	PL2.25X6	.090	15.461	56	.015	15.152	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
374	M151	PL2.25X6	.090	15.31	56	.008	0	y	56	9304.223	22781.25	177.98	1067.87	1...	H1-1b
375	M172	PL2.25X6	.090	15.461	56	.015	15.152	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
376	M59	PL2.25X6	.089	15.461	55	.015	15.152	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
377	M307	L2.5x2.5x5	.087	22.735	56	.001	45.934	y	56	26421.669	39420	1096.767	2551.08	1...	H2-1
378	M38	PL2.25X6	.087	15.31	55	.007	0	y	55	9304.223	22781.25	177.98	1067.87	1...	H1-1b
379	M133	PL2.25X6	.084	15.31	56	.009	15.31	y	55	9304.223	22781.25	177.98	1067.87	1...	H1-1b
380	M56	PL2.25X6	.083	15.31	56	.016	0	y	56	9304.223	22781.25	177.98	1067.87	1...	H1-1b
381	M195	L2.5x2.5x5	.082	8	55	.016	8	z	55	35341.325	39420	1096.767	2551.08	1...	H2-1
382	M20	PL2.25X6	.082	15.31	55	.008	15.31	y	56	9304.223	22781.25	177.98	1067.87	1...	H1-1b
383	M74	PL2.25X6	.082	15.31	56	.015	0	y	56	9304.223	22781.25	177.98	1067.87	1...	H1-1b
384	M227	L2.5x1.25x5	.081	14.653	56	.002	0	y	55	16726.225	29003.9...	340.889	1464.211	1...	H2-1
385	M99	L2.5x2.5x5	.080	8	56	.016	8	z	56	35341.325	39420	1096.767	2551.08	1...	H2-1
386	M258	L2.5x1.25x5	.080	14.952	55	.001	29.605	y	56	16726.225	29003.9...	340.889	1464.211	1...	H2-1
387	M277	L2.5x1.25x5	.079	14.952	55	.002	0	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
388	M377	PL2.25X5	.078	23.938	56	.002	23.938	y	56	2317.827	18981	123.75	804.968	1...	H1-1b
389	M248	L2.5x1.25x5	.077	14.952	55	.002	0	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
390	M225	L2.5x1.25x5	.074	14.653	56	.001	29.605	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
391	M187	PL2.25X6	.073	15.31	55	.015	0	y	55	9304.223	22781.25	177.98	1067.87	1...	H1-1b
392	M250	L2.5x1.25x5	.072	14.952	55	.003	29.605	y	56	16726.225	29003.9...	340.889	1464.211	1...	H2-1
393	M194	L2.5x2.5x5	.071	11.879	55	.001	0	y	55	35341.325	39420	1096.767	2551.08	1...	H2-1
394	M98	L2.5x2.5x5	.070	11.879	56	.001	0	y	56	35341.325	39420	1096.767	2551.08	1...	H2-1
395	M169	PL2.25X6	.069	15.31	55	.017	0	y	55	9304.223	22781.25	177.98	1067.87	1...	H1-1b
396	M272	L2.5x1.25x5	.069	14.653	56	.002	0	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
397	M230	L2.5x1.25x5	.069	14.952	55	.002	0	y	55	16726.225	29003.9...	340.889	1464.211	1...	H2-1
398	M260	L2.5x1.25x5	.068	14.802	55	.007	29.308	y	55	16910.955	29003.9...	340.889	1465.997	1...	H2-1



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.05
 Model Name : Catenary Structure Type 5

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt	phi*Mn y	phi*Mn z	Cb	Eqn
399	M275	L2.5x1.25x5	.067	14.95255	.003	29.605	y 55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
400	M137	PL2.25X6	.064	15.15255	.019	0	y 55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
401	M24	PL2.25X6	.063	15.15256	.019	0	y 56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
402	M6	PL2.25X6	.063	15.15256	.019	0	y 56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
403	M119	PL2.25X6	.062	15.15255	.019	0	y 55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
404	M372	PL2.25X5	.062	23.93855	.003	24.427	y 56	2317.827	18981	123.75	891	1...	H1-1b
405	M274	L2.5x1.25x5	.062	14.65356	.002	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
406	M42	PL2.25X6	.060	15.15256	.017	0	y 55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
407	M245	L2.5x1.25x5	.060	14.65356	.002	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
408	M229	L2.5x1.25x5	.060	14.65356	.002	0	y 55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
409	M155	PL2.25X6	.060	15.15255	.017	0	y 56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
410	M168	PL2.25X6	.060	15.15255	.012	0	y 55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
411	M55	PL2.25X6	.059	15.15256	.012	0	y 56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
412	M300	L2.5x1.25x5	.058	14.95255	.002	29.605	y 56	16726.225	29003.9...	340.889	1464.21	1...	H2-1
413	M186	PL2.25X6	.058	15.15255	.013	0	y 55	9476.739	22781.25	177.98	1067.87	1...	H1-1b
414	M256	L2.5x1.25x5	.058	14.95355	.003	29.607	y 55	16724.892	29003.9...	340.889	1464.197	1...	H2-1
415	M184	PL2.25X6	.058	15.15255	.012	0	y 55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
416	M71	PL2.25X6	.057	15.15256	.011	0	y 56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
417	M270	L2.5x1.25x5	.057	14.65356	.002	0	y 55	16726.225	29003.9...	340.889	1464.21	1...	H2-1
418	M173	PL2.25X6	.057	15.15256	.017	0	y 56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
419	M73	PL2.25X6	.057	15.15256	.013	0	y 56	9476.739	22781.25	177.98	1067.87	1...	H1-1b
420	M138	PL2.25X6	.056	15.46155	.014	0	y 55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
421	M25	PL2.25X6	.056	15.46156	.014	0	y 56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
422	M60	PL2.25X6	.056	15.15255	.017	0	y 55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
423	M295	L2.5x1.25x5	.054	14.95255	.003	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
424	M7	PL2.25X6	.054	15.46156	.014	0	y 56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
425	M297	L2.5x1.25x5	.054	14.95255	.002	0	y 55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
426	M185	PL2.25X6	.054	15.46155	.011	0	y 55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
427	M287	L2.5x1.25x5	.053	14.95255	.002	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
428	M72	PL2.25X6	.053	15.46156	.011	0	y 56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
429	M120	PL2.25X6	.053	15.46155	.014	0	y 55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
430	M166	PL2.25X6	.053	15.15255	.011	0	y 55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
431	M284	L2.5x1.25x5	.053	14.65356	.002	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
432	M299	L2.5x1.25x5	.053	14.65355	.002	0	y 56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
433	M167	PL2.25X6	.052	15.46155	.012	0	y 55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
434	M285	L2.5x1.25x5	.052	14.95255	.003	29.605	y 55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
435	M53	PL2.25X6	.052	15.15256	.011	0	y 56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
436	M54	PL2.25X6	.051	15.46156	.012	0	y 56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
437	M294	L2.5x1.25x5	.051	14.65356	.003	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
438	M231	L2.5x1.25x5	.051	14.65355	.002	0	y 55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
439	M43	PL2.25X6	.051	15.46155	.013	0	y 55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
440	M302	L2.5x1.25x5	.050	14.95155	.002	0	y 56	16727.63	29003.9...	340.889	1464.224	1...	H2-1
441	M269	L2.5x1.25x5	.050	14.95256	.001	29.605	y 55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
442	M156	PL2.25X6	.050	15.46156	.013	0	y 56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
443	M304	L2.5x1.25x5	.049	14.16255	.003	28.04	y 55	17701.085	29003.9...	340.889	1473.7	1...	H2-1
444	M216	L2.5x1.25x5	.049	13.87856	.001	28.04	y 55	17701.085	29003.9...	340.889	1473.7	1...	H2-1
445	M174	PL2.25X6	.049	15.46156	.013	0	y 56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
446	M150	PL2.25X6	.048	15.15255	.008	15.152	y 55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
447	M61	PL2.25X6	.048	15.46155	.013	0	y 55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
448	M37	PL2.25X6	.047	15.15256	.008	15.152	y 56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
449	M220	L2.5x1.25x5	.047	14.65356	.002	0	y 56	16726.225	29003.9...	340.889	1464.21	1...	H2-1
450	M235	L2.5x1.25x5	.046	14.95255	.001	0	y 55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
451	M276	L2.5x1.25x5	.046	14.65356	.002	29.605	y 55	16726.225	29003.9...	340.889	1464.21	1...	H2-1
452	M188	PL2.25X6	.046	14.99755	.010	0	y 55	9647.761	22781.25	177.98	1067.87	1...	H1-1b
453	M26	PL2.25X6	.046	15.15256	.011	0	y 56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
454	M139	PL2.25X6	.045	15.15255	.011	0	y 55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
455	M273	L2.5x1.25x5	.045	14.95256	.001	0	y 55	16726.225	29003.9...	340.889	1464.21	1...	H2-1



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.05
 Model Name : Catenary Structure Type 5

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn			
456	M8	PL2.25X6	.045	15.152	56	.011	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
457	M131	PL2.25X6	.045	15.461	55	.007	15.152	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
458	M226	L2.5x1.25x5	.044	14.952	56	.002	0	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
459	M52	PL2.25X6	.044	15.152	56	.009	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
460	M121	PL2.25X6	.044	15.152	55	.011	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
461	M165	PL2.25X6	.044	15.152	55	.010	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
462	M19	PL2.25X6	.044	15.152	56	.007	15.152	y	56	9476.738	22781.25	177.98	1067.87	1.4	H1-1b
463	M292	L2.5x1.25x5	.043	14.653	56	.002	0	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
464	M18	PL2.25X6	.043	15.461	56	.006	15.152	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
465	M132	PL2.25X6	.043	15.152	55	.007	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
466	M247	L2.5x1.25x5	.043	14.653	56	.001	29.605	y	55	16726.225	29003.9...	340.889	1464.21	1...	H2-1
467	M183	PL2.25X6	.043	15.461	55	.009	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
468	M189	PL2.25X6	.043	15.152	55	.002	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
469	M240	L2.5x1.25x5	.042	14.952	55	.002	0	y	56	16726.225	29003.9...	340.889	1464.21	1...	H2-1
470	M70	PL2.25X6	.042	15.461	56	.009	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
471	M267	L2.5x1.25x5	.042	14.952	55	.001	29.605	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
472	M36	PL2.25X6	.042	15.461	56	.006	15.152	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
473	M149	PL2.25X6	.042	15.461	55	.006	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
474	M171	PL2.25X6	.041	15.152	55	.003	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
475	M69	PL2.25X6	.041	15.461	56	.008	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
476	M218	L2.5x1.25x5	.041	14.648	56	.003	29.595	y	56	16732.465	29003.9...	340.889	1464.271	1...	H2-1
477	M233	L2.5x1.25x5	.041	14.952	55	.001	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
478	M282	L2.5x1.25x5	.041	14.653	56	.002	0	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
479	M175	PL2.25X6	.041	15.152	56	.010	0	y	56	9476.738	22781.25	177.98	1067.87	1.4	H1-1b
480	M44	PL2.25X6	.041	15.152	55	.010	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
481	M62	PL2.25X6	.040	15.152	55	.010	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
482	M182	PL2.25X6	.040	15.461	55	.008	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
483	M157	PL2.25X6	.040	15.152	56	.010	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
484	M280	L2.5x1.25x5	.040	14.952	55	.002	29.605	y	55	16726.225	29003.9...	340.889	1464.21	1...	H2-1
485	M303	L2.5x1.25x5	.040	14.653	55	.001	0	y	55	16726.225	29003.9...	340.889	1464.21	1...	H2-1
486	M257	L2.5x1.25x5	.040	14.652	55	.003	0	y	55	16727.63	29003.9...	340.889	1464.224	1...	H2-1
487	M271	L2.5x1.25x5	.040	14.952	56	.001	29.605	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
488	M224	L2.5x1.25x5	.040	14.952	56	.002	0	y	55	16726.225	29003.9...	340.889	1464.21	1...	H2-1
489	M164	PL2.25X6	.040	15.461	55	.007	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
490	M51	PL2.25X6	.040	15.461	56	.007	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
491	M375	PL2.25X5	.039	23.938	56	.002	24.427	y	56	2317.827	18981	123.75	891	2...	H1-1b
492	M296	L2.5x1.25x5	.039	14.653	55	.002	29.605	y	55	16726.225	29003.9...	340.889	1464.21	1...	H2-1
493	M50	PL2.25X6	.039	15.461	56	.006	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
494	M163	PL2.25X6	.038	15.461	55	.007	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
495	M130	PL2.25X6	.038	15.461	56	.005	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
496	M228	L2.5x1.25x5	.038	14.952	56	.002	0	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
497	M249	L2.5x1.25x5	.037	14.653	55	.003	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
498	M376	PL2.25X5	.037	23.938	56	.002	24.427	y	56	2317.827	18981	123.75	891	1...	H1-1b
499	M17	PL2.25X6	.036	15.461	55	.005	15.152	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
500	M140	PL2.25X6	.036	15.152	55	.008	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
501	M222	L2.5x1.25x5	.035	11.879	55	.001	0	y	56	20199.817	29003.9...	340.889	1494.276	1...	H2-1
502	M254	L2.5x1.25x5	.035	14.653	55	.003	29.605	y	56	16726.225	29003.9...	340.889	1464.21	1...	H2-1
503	M305	L2.5x1.25x5	.035	14.232	55	.004	0	y	55	17255.841	29003.9...	340.889	1469.346	1...	H2-1
504	M75	PL2.25X6	.035	15.303	56	.009	0	y	56	9647.761	22781.25	177.98	1067.87	1...	H1-1b
505	M76	PL2.25X6	.035	15.152	55	.003	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
506	M27	PL2.25X6	.035	15.152	56	.008	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
507	M148	PL2.25X6	.035	15.461	56	.006	15.152	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
508	M134	PL2.25X6	.035	15.303	56	.004	0	y	56	9647.761	22781.25	177.98	1067.87	1...	H1-1b
509	M147	PL2.25X6	.035	15.461	56	.005	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
510	M9	PL2.25X6	.035	15.152	56	.008	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
511	M122	PL2.25X6	.034	15.152	55	.008	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
512	M268	L2.5x1.25x5	.034	11.879	56	.001	0	y	55	20199.817	29003.9...	340.889	1494.276	1...	H2-1



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.05
 Model Name : Catenary Structure Type 5

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
513	M181	PL2.25X6	.034	15.461	55	.006	0	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
514	M35	PL2.25X6	.034	15.461	55	.006	15.152	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
515	M68	PL2.25X6	.034	15.461	56	.006	0	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
516	M301	L2.5x1.25x5	.034	14.654	55	.002	0	y 56	16724.892	29003.9...	340.889	1464.197 1...	H2-1
517	M58	PL2.25X6	.034	15.152	56	.003	0	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
518	M153	PL2.25X6	.034	15.152	55	.003	15.461	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
519	M290	L2.5x1.25x5	.034	14.653	56	.001	29.605	y 55	16726.225	29003.9...	340.889	1464.21 1...	H2-1
520	M261	L2.5x1.25x5	.034	14.532	55	.004	0	y 56	17244.099	29003.9...	340.889	1469.232 1...	H2-1
521	M45	PL2.25X6	.034	15.152	55	.007	0	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
522	M34	PL2.25X6	.034	15.461	55	.004	0	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
523	M21	PL2.25X6	.033	15.303	55	.004	0	y 55	9647.761	22781.25	177.98	1067.87 1...	H1-1b
524	M57	PL2.25X6	.033	15.303	55	.009	0	y 56	9647.761	22781.25	177.98	1067.87 1...	H1-1b
525	M40	PL2.25X6	.033	15.152	56	.003	15.461	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
526	M22	PL2.25X6	.032	15.152	56	.002	15.461	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
527	M158	PL2.25X6	.032	15.152	56	.007	0	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
528	M67	PL2.25X6	.032	15.461	56	.004	0	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
529	M63	PL2.25X6	.032	15.152	55	.007	0	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
530	M135	PL2.25X6	.032	15.152	55	.002	15.461	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
531	M265	L2.5x1.25x5	.031	14.652	56	.002	0	y 55	16727.63	29003.9...	340.889	1464.224 1...	H2-1
532	M176	PL2.25X6	.031	15.152	56	.007	0	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
533	M129	PL2.25X6	.031	15.461	56	.005	15.152	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
534	M180	PL2.25X6	.031	15.461	55	.005	0	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
535	M291	L2.5x1.25x5	.031	14.952	56	.002	29.605	y 56	16726.261	29003.9...	340.889	1464.211 1...	H2-1
536	M152	PL2.25X6	.031	15.303	56	.005	14.997	y 55	9647.761	22781.25	177.98	1067.87 1...	H1-1b
537	M16	PL2.25X6	.030	15.461	55	.005	15.152	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
538	M162	PL2.25X6	.030	15.461	55	.004	0	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
539	M251	L2.5x1.25x5	.030	14.653	55	.002	29.605	y 55	16726.261	29003.9...	340.889	1464.211 1...	H2-1
540	M128	PL2.25X6	.030	15.461	56	.004	0	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
541	M49	PL2.25X6	.030	15.461	56	.004	0	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
542	M39	PL2.25X6	.030	15.303	55	.004	14.997	y 56	9647.761	22781.25	177.98	1067.87 1...	H1-1b
543	M259	L2.5x1.25x5	.030	13.878	55	.001	0	y 56	17701.085	29003.9...	340.889	1473.7 1...	H2-1
544	M246	L2.5x1.25x5	.029	14.952	56	.003	0	y 56	16726.261	29003.9...	340.889	1464.211 1...	H2-1
545	M237	L2.5x1.25x5	.029	14.952	55	.001	0	y 55	16726.225	29003.9...	340.889	1464.21 1...	H2-1
546	M146	PL2.25X6	.029	15.461	56	.004	15.152	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
547	M15	PL2.25X6	.029	15.461	55	.003	0	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
548	M33	PL2.25X6	.029	15.461	55	.004	0	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
549	M219	L2.5x1.25x5	.028	14.951	56	.003	29.603	y 56	16727.63	29003.9...	340.889	1464.224 1...	H2-1
550	M244	L2.5x1.25x5	.028	14.952	56	.002	29.605	y 55	16726.225	29003.9...	340.889	1464.21 1...	H2-1
551	M286	L2.5x1.25x5	.028	14.653	56	.001	0	y 56	16726.225	29003.9...	340.889	1464.21 1...	H2-1
552	M170	PL2.25X6	.028	14.997	55	.009	0	y 55	9647.761	22781.25	177.98	1067.87 1...	H1-1b
553	M145	PL2.25X6	.028	15.461	56	.002	0	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
554	M48	PL2.25X6	.027	15.461	56	.002	0	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
555	M123	PL2.25X6	.027	15.152	55	.005	0	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
556	M234	L2.5x1.25x5	.027	14.653	55	.002	0	y 55	16726.225	29003.9...	340.889	1464.21 1...	H2-1
557	M28	PL2.25X6	.027	15.152	56	.005	0	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
558	M281	L2.5x1.25x5	.027	14.653	55	.001	0	y 55	16726.261	29003.9...	340.889	1464.211 1...	H2-1
559	M10	PL2.25X6	.027	15.152	56	.005	0	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
560	M64	PL2.25X6	.027	15.152	55	.005	0	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
561	M161	PL2.25X6	.027	15.461	55	.003	0	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
562	M263	L2.5x1.25x5	.027	14.647	56	.002	29.593	y 55	16733.833	29003.9...	340.889	1464.284 1...	H2-1
563	M141	PL2.25X6	.027	15.152	55	.005	0	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
564	M32	PL2.25X6	.026	15.461	55	.002	15.461	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
565	M243	L2.5x1.25x5	.026	14.653	56	.001	0	y 55	16726.261	29003.9...	340.889	1464.211 1...	H2-1
566	M239	L2.5x1.25x5	.026	14.653	55	.002	0	y 55	16726.261	29003.9...	340.889	1464.211 1...	H2-1
567	M127	PL2.25X6	.025	15.461	56	.003	15.152	y 55	9476.738	22781.25	177.98	1067.87 1...	H1-1b
568	M177	PL2.25X6	.025	15.152	56	.005	0	y 56	9476.738	22781.25	177.98	1067.87 1...	H1-1b
569	M232	L2.5x1.25x5	.025	11.879	55	.001	0	y 55	20199.817	29003.9...	340.889	1494.276 1...	H2-1



Company : Black & Veatch
 Designer : DPBrankovich
 Job Number : Project 190407 Calculation File: 51.2400.05
 Model Name : Catenary Structure Type 5

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear	...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn v	phi*Mn z	Cb	Egn
570	M293	L2.5x1.25x5	.025	14.952	56	.001	0	y	55	16726.225	29003.9...	340.889	1464.21	1...	H2-1
571	M46	PL2.25X6	.025	15.152	55	.005	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
572	M14	PL2.25X6	.025	15.461	55	.003	15.461	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
573	M179	PL2.25X6	.025	15.461	55	.002	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
574	M241	L2.5x1.25x5	.025	14.653	55	.002	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
575	M66	PL2.25X6	.025	15.461	56	.002	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
576	M264	L2.5x1.25x5	.025	14.947	56	.002	0	y	55	16732.465	29003.9...	340.889	1464.271	1...	H2-1
577	M159	PL2.25X6	.024	15.152	56	.005	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
578	M279	L2.5x1.25x5	.024	14.653	55	.002	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
579	M266	L2.5x1.25x5	.024	14.952	56	.002	0	y	56	16726.225	29003.9...	340.889	1464.21	1...	H2-1
580	M221	L2.5x1.25x5	.023	14.653	55	.002	29.605	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
581	M236	L2.5x1.25x5	.023	14.653	55	.002	0	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
582	M331	L3x2.5x5	.023	22.056	56	.001	0	z	56	32987.716	44010	1270.778	2996.056	1...	H2-1
583	M283	L2.5x1.25x5	.023	14.952	56	.001	0	y	56	16726.225	29003.9...	340.889	1464.21	1...	H2-1
584	M126	PL2.25X6	.022	15.461	56	.002	15.461	y	56	9476.738	22781.25	177.98	1067.87	2...	H1-1b
585	M289	L2.5x1.25x5	.022	14.653	55	.001	0	y	55	16726.261	29003.9...	340.889	1464.211	1...	H2-1
586	M65	PL2.25X6	.022	15.461	56	.003	0	y	55	9476.738	22781.25	177.98	1067.87	2...	H1-1b
587	M144	PL2.25X6	.021	15.461	56	.002	15.461	y	56	9476.738	22781.25	177.98	1067.87	2...	H1-1b
588	M47	PL2.25X6	.021	15.152	55	.003	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
589	M13	PL2.25X6	.021	15.461	55	.002	15.461	y	55	9476.738	22781.25	177.98	1067.87	2...	H1-1b
590	M31	PL2.25X6	.021	15.461	55	.002	15.461	y	55	9476.738	22781.25	177.98	1067.87	2...	H1-1b
591	M215	L2.5x1.25x5	.021	14.812	56	.007	29.328	y	56	16898.734	29003.9...	340.889	1465.879	1...	H2-1
592	M142	PL2.25X6	.021	15.152	55	.003	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
593	M262	L2.5x1.25x5	.021	14.162	56	.003	0	y	56	17701.085	29003.9...	340.889	1473.7	1...	H2-1
594	M178	PL2.25X6	.021	15.461	55	.003	0	y	56	9476.738	22781.25	177.98	1067.87	2...	H1-1b
595	M29	PL2.25X6	.021	15.152	56	.003	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
596	M11	PL2.25X6	.021	15.152	56	.003	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
597	M124	PL2.25X6	.020	15.152	55	.003	0	y	55	9476.738	22781.25	177.98	1067.87	1...	H1-1b
598	M160	PL2.25X6	.020	15.152	56	.003	0	y	56	9476.738	22781.25	177.98	1067.87	1...	H1-1b
599	M143	PL2.25X6	.019	15.461	56	.002	15.461	y	56	9476.738	22781.25	177.98	1067.87	3...	H1-1b
600	M30	PL2.25X6	.017	15.461	55	.001	15.461	y	55	9476.738	22781.25	177.98	1067.87	3...	H1-1b
601	M368	L3x2.5x5	.017	19.935	56	.001	0	z	56	32987.716	44010	1270.778	2996.056	1...	H2-1
602	M125	PL2.25X6	.017	15.461	56	.002	15.461	y	56	9476.738	22781.25	177.98	1067.87	2...	H1-1b
603	M12	PL2.25X6	.017	15.461	55	.002	15.461	y	55	9476.738	22781.25	177.98	1067.87	2...	H1-1b
604	M217	L2.5x1.25x5	.017	14.946	56	.002	29.593	y	55	16733.833	29003.9...	340.889	1464.284	1...	H2-1
605	M288	L2.5x1.25x5	.017	11.879	55	.001	0	y	56	20199.817	29003.9...	340.889	1494.276	1...	H2-1
606	M278	L2.5x1.25x5	.015	11.879	55	.001	0	y	56	20199.817	29003.9...	340.889	1494.276	1...	H2-1
607	M316	L3x2.5x5	.014	19.935	56	.001	0	z	56	32987.716	44010	1270.778	2996.056	1...	H2-1
608	M238	L2.5x1.25x5	.014	14.952	56	.001	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...	H2-1
609	M111	PL5x0.3125	.013	12.121	55	.001	0	y	56	4987.193	42187.5	274.658	3911.694	1...	H1-1b
610	M208	PL5x0.3125	.013	11.879	56	.001	0	y	55	4987.193	42187.5	274.658	3911.694	1...	H1-1b
611	M242	L2.5x1.25x5	.012	11.879	55	.001	0	y	56	20199.817	29003.9...	340.889	1494.276	1...	H2-1
612	M252	L2.5x1.25x5	.012	11.879	55	.001	0	y	55	20199.817	29003.9...	340.889	1494.276	1...	H2-1
613	M317	L3x2.5x5	.010	22.056	55	.001	0	z	56	32987.716	44010	1270.778	2982.261	1...	H2-1
614	M330	L3x2.5x5	.010	22.056	55	.001	0	z	55	32987.716	44010	1270.778	2982.261	1...	H2-1
615	M369	L3x2.5x5	.009	19.935	55	.002	0	z	56	32987.716	44010	1270.778	2982.261	1...	H2-1
616	M298	L2.5x1.25x5	.009	11.879	55	.001	0	y	55	20199.817	29003.9...	340.889	1494.276	1...	H2-1
617	M367	L3x2.5x5	.005	22.056	56	.001	0	z	56	32987.716	44010	1270.778	2996.056	1...	H2-1
618	M366	L3x2.5x5	.004	22.056	55	.001	0	z	55	32987.716	44010	1270.778	2982.261	1...	H2-1



Milvon to West River Catenary Structure Assessment

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-R

STRUCTURE TYPE 5 FIELD CONDITION NESC 1961 **COMPLETE MEMBER RESULTS**



Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
1	M83	6H25	1.100	43.921	56	.295	41.725	y 56	32380.313	215681.4	21582	40822.49	1	H1-1b
2	M573	6H25	1.100	43.921	55	.295	41.725	y 55	32380.313	215681.4	21582	40822.49	1	H1-1b
3	M571	L6x4x6	1.036	71.273	55	.037	71.273	y 56	28958.752	97470	4257.614	12612.4...	1	H2-1
4	M81	L6x4x6	1.036	96.727	56	.037	96.727	y 56	28958.752	97470	4257.614	12612.4...	1	H2-1
5	M481	PL2.25X5	.877	11.133	55	.009	0	y 55	9622.426	18981	123.75	891	1...	H1-1a
6	M413	PL2.25X5	.874	11.133	55	.009	0	y 55	9622.426	18981	123.75	891	1...	H1-1a
7	M445	PL2.25X5	.866	15.489	55	.004	15.489	y 55	5391.51	18981	123.75	891	1...	H1-1a
8	M513	PL2.25X5	.865	15.489	55	.004	15.173	y 55	5391.51	18981	123.75	891	1...	H1-1a
9	M464	PL2.25X5	.863	11.133	56	.009	0	y 56	9622.426	18981	123.75	891	1...	H1-1a
10	M396	PL2.25X5	.863	11.133	56	.009	0	y 56	9622.426	18981	123.75	891	1...	H1-1a
11	M499	PL2.25X5	.856	11.397	55	.007	0	y 55	9326.899	18981	123.75	891	1...	H1-1a
12	M431	PL2.25X5	.853	11.397	55	.007	0	y 55	9326.899	18981	123.75	891	1...	H1-1a
13	M394	PL2.25X5	.853	15.489	56	.004	15.489	y 56	5391.51	18981	123.75	891	1...	H1-1a
14	M462	PL2.25X5	.849	15.489	56	.004	15.173	y 56	5391.51	18981	123.75	891	1...	H1-1a
15	M448	PL2.25X5	.842	11.397	56	.007	0	y 56	9326.899	18981	123.75	891	1...	H1-1a
16	M380	PL2.25X5	.842	11.397	56	.007	0	y 56	9326.899	18981	123.75	891	1.8	H1-1a
17	M483	PL2.25X5	.835	11.665	55	.005	0	y 55	9027.817	18981	123.75	891	1...	H1-1a
18	M415	PL2.25X5	.832	11.665	55	.005	0	y 55	9027.817	18981	123.75	891	1...	H1-1a
19	M497	PL2.25X5	.828	10.876	55	.011	0	y 55	9913.38	18981	123.75	891	1...	H1-1a
20	M429	PL2.25X5	.826	10.876	55	.011	0	y 55	9913.38	18981	123.75	891	1...	H1-1a
21	M466	PL2.25X5	.822	11.665	56	.005	0	y 56	9027.817	18981	123.75	891	1...	H1-1a
22	M398	PL2.25X5	.822	11.665	56	.005	0	y 56	9027.817	18981	123.75	891	1...	H1-1a
23	M378	PL2.25X5	.817	10.876	56	.011	0	y 56	9913.38	18981	123.75	891	1...	H1-1a
24	M446	PL2.25X5	.816	10.876	56	.011	0	y 56	9913.38	18981	123.75	891	1...	H1-1a
25	M493	PL2.25X5	.815	14.564	55	.005	14.266	y 55	6084.943	18981	123.75	891	1...	H1-1a
26	M501	PL2.25X5	.814	11.938	55	.004	0	y 55	8726.166	18981	123.75	891	2...	H1-1a
27	M509	PL2.25X5	.813	14.26	55	.004	13.969	y 55	6341.715	18981	123.75	891	1...	H1-1a
28	M425	PL2.25X5	.813	14.564	55	.004	14.266	y 55	6084.943	18981	123.75	891	1...	H1-1a
29	M441	PL2.25X5	.811	14.26	55	.004	13.969	y 55	6341.715	18981	123.75	891	1...	H1-1a
30	M433	PL2.25X5	.811	11.938	55	.003	0	y 55	8726.166	18981	123.75	891	2...	H1-1a
31	M342	L2.5X1.5X5	.810	27.229	55	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...	H2-1
32	M491	PL2.25X5	.808	13.958	55	.004	13.673	y 55	6612.528	18981	123.75	891	1...	H1-1a
33	M489	PL2.25X5	.805	13.39	55	.003	13.39	y 55	7169.732	18981	123.75	891	1...	H1-1a
34	M423	PL2.25X5	.805	13.958	55	.003	13.673	y 55	6612.528	18981	123.75	891	1...	H1-1a
35	M507	PL2.25X5	.803	13.66	55	.004	13.381	y 55	6898.148	18981	123.75	891	1...	H1-1a
36	M421	PL2.25X5	.802	13.39	55	.003	13.39	y 55	7169.732	18981	123.75	891	1...	H1-1a
37	M450	PL2.25X5	.801	11.938	56	.004	0	y 56	8726.166	18981	123.75	891	2...	H1-1a
38	M485	PL2.25X5	.801	12.215	55	.003	0	y 55	8422.9	18981	123.75	891	2...	H1-1a
39	M439	PL2.25X5	.801	13.66	55	.003	0	y 56	6898.148	18981	123.75	891	1...	H1-1a
40	M390	PL2.25X5	.801	14.26	56	.004	13.969	y 56	6341.716	18981	123.75	891	1...	H1-1a
41	M382	PL2.25X5	.800	11.938	56	.004	0	y 56	8726.166	18981	123.75	891	2...	H1-1a
42	M408	PL2.25X5	.800	14.564	56	.004	14.266	y 56	6084.943	18981	123.75	891	1...	H1-1a
43	M458	PL2.25X5	.799	14.26	56	.004	13.969	y 56	6341.716	18981	123.75	891	1...	H1-1a
44	M476	PL2.25X5	.799	14.564	56	.005	14.266	y 56	6084.943	18981	123.75	891	1.4	H1-1a
45	M503	PL2.25X5	.798	12.497	55	.002	0	y 55	8118.935	18981	123.75	891	1...	H1-1a
46	M417	PL2.25X5	.797	12.215	55	.003	0	y 55	8422.9	18981	123.75	891	2...	H1-1a
47	M487	PL2.25X5	.797	12.783	55	.003	12.783	y 55	7815.149	18981	123.75	891	1...	H1-1a
48	M435	PL2.25X5	.795	12.497	55	.002	12.497	y 56	8118.935	18981	123.75	891	1...	H1-1a
49	M406	PL2.25X5	.795	13.958	56	.003	13.673	y 56	6612.528	18981	123.75	891	1...	H1-1a
50	M419	PL2.25X5	.794	12.783	55	.002	12.783	y 55	7815.149	18981	123.75	891	1...	H1-1a
51	M474	PL2.25X5	.793	13.958	56	.004	13.673	y 56	6612.528	18981	123.75	891	1...	H1-1a
52	M404	PL2.25X5	.793	13.39	56	.003	13.39	y 56	7169.732	18981	123.75	891	1...	H1-1a
53	M505	PL2.25X5	.792	13.043	55	.003	13.043	y 55	7544.204	18981	123.75	891	1...	H1-1a
54	M472	PL2.25X5	.792	13.39	56	.003	13.39	y 56	7169.732	18981	123.75	891	1...	H1-1a
55	M388	PL2.25X5	.791	13.66	56	.003	13.66	y 56	6898.148	18981	123.75	891	1...	H1-1a
56	M456	PL2.25X5	.790	13.66	56	.004	13.381	y 56	6898.148	18981	123.75	891	1...	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
57	M437	PL2.25X5	.788	13.043	55	.003	13.043	y 55	7544.204	18981	123.75	891	1...H1-1a
58	M400	PL2.25X5	.788	12.215	56	.003	0	y 56	8422.9	18981	123.75	891	2...H1-1a
59	M468	PL2.25X5	.787	12.215	56	.003	0	y 56	8422.9	18981	123.75	891	2...H1-1a
60	M511	PL2.25X5	.787	14.87	55	.005	14.567	y 55	5841.463	18981	123.75	891	1.4 H1-1a
61	M384	PL2.25X5	.785	12.497	56	.002	0	y 56	8118.935	18981	123.75	891	1...H1-1a
62	M443	PL2.25X5	.785	14.87	55	.004	14.567	y 55	5841.463	18981	123.75	891	1...H1-1a
63	M402	PL2.25X5	.784	12.783	56	.002	12.783	y 56	7815.148	18981	123.75	891	1...H1-1a
64	M452	PL2.25X5	.784	12.497	56	.002	0	y 56	8118.935	18981	123.75	891	1...H1-1a
65	M470	PL2.25X5	.783	12.783	56	.003	12.783	y 56	7815.149	18981	123.75	891	1...H1-1a
66	M338	L2.5X1.5X5	.781	27.229	55	.002	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
67	M386	PL2.25X5	.779	13.043	56	.003	13.043	y 56	7544.204	18981	123.75	891	1...H1-1a
68	M454	PL2.25X5	.778	13.043	56	.003	13.043	y 56	7544.204	18981	123.75	891	1...H1-1a
69	M495	PL2.25X5	.777	15.179	55	.005	14.869	y 55	5610.551	18981	123.75	891	1...H1-1a
70	M392	PL2.25X5	.775	14.87	56	.004	14.567	y 56	5841.463	18981	123.75	891	1...H1-1a
71	M460	PL2.25X5	.774	14.87	56	.005	14.567	y 56	5841.463	18981	123.75	891	1...H1-1a
72	M427	PL2.25X5	.773	15.179	55	.005	15.179	y 55	5610.551	18981	123.75	891	1...H1-1a
73	M410	PL2.25X5	.761	15.179	56	.005	15.179	y 56	5610.551	18981	123.75	891	1...H1-1a
74	M478	PL2.25X5	.759	15.179	56	.005	14.869	y 56	5610.551	18981	123.75	891	1...H1-1a
75	M498	PL2.25X5	.751	11.133	56	.008	11.133	y 55	9622.426	18981	123.75	891	1...H1-1a
76	M430	PL2.25X5	.747	11.133	56	.008	11.133	y 55	9622.426	18981	123.75	891	1...H1-1a
77	M379	PL2.25X5	.736	11.133	55	.009	11.133	y 56	9622.426	18981	123.75	891	1...H1-1a
78	M447	PL2.25X5	.732	11.133	55	.008	11.133	y 56	9622.426	18981	123.75	891	1...H1-1a
79	M482	PL2.25X5	.731	11.397	56	.007	11.397	y 55	9326.899	18981	123.75	891	1...H1-1a
80	M414	PL2.25X5	.728	11.397	56	.006	0	y 56	9326.899	18981	123.75	891	1...H1-1a
81	M343	L2.5X1.5X5	.718	27.229	55	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
82	M397	PL2.25X5	.717	11.397	55	.007	0	y 55	9326.899	18981	123.75	891	1...H1-1a
83	M333	L2.5X1.5X5	.716	22.214	56	.001	0	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
84	M465	PL2.25X5	.713	11.397	55	.007	11.397	y 56	9326.899	18981	123.75	891	1...H1-1a
85	M500	PL2.25X5	.712	11.665	56	.005	11.665	y 55	9027.817	18981	123.75	891	1...H1-1a
86	M432	PL2.25X5	.710	11.665	56	.005	11.665	y 55	9027.817	18981	123.75	891	1...H1-1a
87	M340	L2.5X1.5X5	.706	22.214	56	.002	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
88	M480	PL2.25X5	.703	10.876	56	.011	10.876	y 55	9913.38	18981	123.75	891	1...H1-1a
89	M412	PL2.25X5	.702	10.876	56	.011	10.876	y 55	9913.38	18981	123.75	891	1...H1-1a
90	M381	PL2.25X5	.699	11.665	55	.005	0	y 55	9027.817	18981	123.75	891	1...H1-1a
91	M213	L6x4x8	.699	38.385	55	.094	46.063	y 55	118844.707	128250	5530.762	14152.4...	1 H2-1
92	M449	PL2.25X5	.694	11.665	55	.005	11.665	y 56	9027.817	18981	123.75	891	1...H1-1a
93	M395	PL2.25X5	.694	10.876	55	.012	10.876	y 56	9913.38	18981	123.75	891	1...H1-1a
94	M484	PL2.25X5	.693	11.938	56	.004	11.938	y 55	8726.166	18981	123.75	891	1...H1-1a
95	M568	L3x2.5x5	.691	72.94	55	.064	108....	z 55	40948.468	44010	1270.778	2996.056	1 H2-1
96	M78	L3x2.5x5	.691	68.649	56	.064	32.894	z 56	40948.468	44010	1270.778	2996.056	1 H2-1
97	M416	PL2.25X5	.691	11.938	56	.004	11.938	y 55	8726.166	18981	123.75	891	1...H1-1a
98	M214	L6x4x8	.689	721....	55	.096	713....	y 55	118844.707	128250	5530.762	14152.4...	1 H2-1
99	M77	L3x2.5x5	.686	72.94	56	.061	108....	z 56	40948.468	44010	1270.778	2996.056	1 H2-1
100	M567	L3x2.5x5	.685	68.649	55	.061	32.894	z 55	40948.468	44010	1270.778	2996.056	1 H2-1
101	M463	PL2.25X5	.685	10.876	55	.011	10.876	y 56	9913.38	18981	123.75	891	1...H1-1a
102	M494	PL2.25X5	.684	14.87	56	.005	30.043	y 55	5841.463	18981	123.75	891	1...H1-1a
103	M426	PL2.25X5	.682	14.87	56	.004	30.043	y 55	5841.463	18981	123.75	891	1...H1-1a
104	M399	PL2.25X5	.681	11.938	55	.004	11.938	y 56	8726.166	18981	123.75	891	1...H1-1a
105	M502	PL2.25X5	.677	12.215	56	.003	12.215	y 55	8422.9	18981	123.75	891	1...H1-1a
106	M510	PL2.25X5	.676	14.564	56	.005	29.424	y 55	6084.943	18981	123.75	891	1...H1-1a
107	M467	PL2.25X5	.676	11.938	55	.004	11.938	y 56	8726.166	18981	123.75	891	1...H1-1a
108	M442	PL2.25X5	.675	14.564	56	.004	29.424	y 55	6084.943	18981	123.75	891	1...H1-1a
109	M434	PL2.25X5	.675	12.215	56	.003	12.215	y 55	8422.9	18981	123.75	891	1...H1-1a
110	M492	PL2.25X5	.674	14.26	56	.005	28.81	y 55	6341.715	18981	123.75	891	1...H1-1a
111	M334	L2.5X1.5X5	.674	27.229	55	.001	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
112	M409	PL2.25X5	.673	14.87	55	.004	30.043	y 56	5841.463	18981	123.75	891	1...H1-1a
113	M424	PL2.25X5	.673	14.26	56	.004	28.81	y 55	6341.715	18981	123.75	891	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
114	M508	PL2.25X5	.671	13.95856	.004	28.201	y 55	6612.528	18981	123.75	891	1...H1-1a
115	M440	PL2.25X5	.670	13.95856	.004	28.201	y 55	6612.528	18981	123.75	891	1...H1-1a
116	M506	PL2.25X5	.668	13.3956	.004	27.054	y 55	7169.732	18981	123.75	891	1...H1-1a
117	M438	PL2.25X5	.667	13.3956	.003	13.39	y 56	7169.732	18981	123.75	891	1...H1-1a
118	M490	PL2.25X5	.667	13.6656	.004	27.598	y 55	6898.148	18981	123.75	891	1...H1-1a
119	M422	PL2.25X5	.666	13.6656	.003	13.66	y 56	6898.148	18981	123.75	891	1...H1-1a
120	M477	PL2.25X5	.665	14.8755	.005	30.043	y 56	5841.463	18981	123.75	891	1...H1-1a
121	M383	PL2.25X5	.664	12.21555	.003	12.215	y 56	8422.9	18981	123.75	891	2...H1-1a
122	M407	PL2.25X5	.664	14.2655	.004	28.81	y 56	6341.716	18981	123.75	891	1...H1-1a
123	M486	PL2.25X5	.664	12.49756	.003	12.497	y 55	8118.935	18981	123.75	891	2...H1-1a
124	M391	PL2.25X5	.664	14.56455	.004	29.424	y 56	6084.943	18981	123.75	891	1...H1-1a
125	M418	PL2.25X5	.662	12.75256	.002	12.497	y 55	8118.935	18981	123.75	891	2...H1-1a
126	M389	PL2.25X5	.661	13.95855	.004	28.201	y 56	6612.528	18981	123.75	891	1...H1-1a
127	M504	PL2.25X5	.661	12.78356	.002	0	y 55	7815.149	18981	123.75	891	1...H1-1a
128	M512	PL2.25X5	.660	15.17956	.005	30.667	y 55	5610.551	18981	123.75	891	1...H1-1a
129	M436	PL2.25X5	.660	12.78356	.002	12.783	y 56	7815.149	18981	123.75	891	1...H1-1a
130	M444	PL2.25X5	.660	15.17956	.005	0	y 55	5610.551	18981	123.75	891	1...H1-1a
131	M451	PL2.25X5	.660	12.21555	.003	12.215	y 56	8422.9	18981	123.75	891	1...H1-1a
132	M387	PL2.25X5	.659	13.3955	.003	0	y 56	7169.732	18981	123.75	891	1...H1-1a
133	M405	PL2.25X5	.658	13.6655	.003	27.598	y 56	6898.148	18981	123.75	891	1...H1-1a
134	M488	PL2.25X5	.657	13.04356	.003	26.352	y 55	7544.204	18981	123.75	891	1...H1-1a
135	M420	PL2.25X5	.656	13.04356	.003	13.043	y 56	7544.204	18981	123.75	891	1...H1-1a
136	M337	L2.5X1.5X5	.656	22.21456	.001	0	y 55	11300.048	31113.2...	475.557	1515.611	1...H2-1
137	M475	PL2.25X5	.655	14.2655	.005	28.81	y 56	6341.716	18981	123.75	891	1...H1-1a
138	M459	PL2.25X5	.655	14.56455	.005	29.424	y 56	6084.943	18981	123.75	891	1...H1-1a
139	M401	PL2.25X5	.653	12.49755	.002	12.497	y 56	8118.935	18981	123.75	891	2...H1-1a
140	M457	PL2.25X5	.652	13.95855	.004	28.201	y 56	6612.528	18981	123.75	891	1...H1-1a
141	M385	PL2.25X5	.652	12.78355	.002	0	y 56	7815.148	18981	123.75	891	1...H1-1a
142	M393	PL2.25X5	.650	15.17955	.005	0	y 56	5610.551	18981	123.75	891	1...H1-1a
143	M455	PL2.25X5	.650	13.3955	.003	27.054	y 56	7169.732	18981	123.75	891	1...H1-1a
144	M473	PL2.25X5	.649	13.6655	.004	27.598	y 56	6898.148	18981	123.75	891	1...H1-1a
145	M403	PL2.25X5	.648	13.04355	.002	0	y 56	7544.204	18981	123.75	891	1...H1-1a
146	M469	PL2.25X5	.647	12.49755	.003	12.497	y 56	8118.935	18981	123.75	891	2...H1-1a
147	M461	PL2.25X5	.643	15.17955	.005	30.667	y 56	5610.551	18981	123.75	891	1...H1-1a
148	M453	PL2.25X5	.643	12.78355	.002	0	y 56	7815.149	18981	123.75	891	1...H1-1a
149	M471	PL2.25X5	.639	13.04355	.003	13.043	y 55	7544.204	18981	123.75	891	1...H1-1a
150	M336	L2.5X1.5X5	.637	22.21456	.002	0	y 55	11300.048	31113.2...	475.557	1515.611	1...H2-1
151	M115	L6x6x10	.608	30.06955	.050	22.552	y 55	190937.059	192510	13542.2...	30578.6...	2...H2-1
152	M1	L6x6x10	.607	30.06956	.050	22.552	y 56	190937.059	192510	13542.2...	30578.6...	2...H2-1
153	M2	L6x6x10	.605	342....56	.050	349....	y 56	190937.059	192510	13542.2...	30578.6...	2...H2-1
154	M114	L6x6x10	.605	342....55	.050	349....	y 55	190937.059	192510	13542.2...	30578.6...	2...H2-1
155	M616	PL2.25X4	.600	10.21755	.029	0	y 55	6269.147	15201	78.75	711	1...H1-1a
156	M546	PL2.25X4	.599	10.21756	.029	0	y 56	6269.147	15201	78.75	711	1...H1-1a
157	M548	PL2.25X4	.598	10.21756	.025	0	y 56	6269.147	15201	78.75	711	1...H1-1a
158	M618	PL2.25X4	.597	10.21755	.025	0	y 55	6269.147	15201	78.75	711	1...H1-1a
159	M329	L2.5X1.5X5	.592	27.22955	.002	49.92	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
160	M514	PL2.25X5	.587	15.18156	.009	15.479	y 56	5674.836	18981	123.75	891	1...H1-1a
161	M572	L6x4x6	.587	58.66755	.134	58.667	y 55	43003.777	97470	4257.614	12792.4...	1 H2-1
162	M82	L6x4x6	.586	73.33356	.134	73.333	y 55	43003.777	97470	4257.614	12792.4...	1 H2-1
163	M584	PL2.25X5	.585	15.18155	.009	15.479	y 55	5674.836	18981	123.75	891	1...H1-1a
164	M358	L2.5x2x5	.584	26.72655	.001	0	y 55	19175.995	35640	809.265	1908.803	1...H2-1
165	M79	L3x2.5x5	.584	68.64955	.054	32.894	z 55	40948.468	44010	1270.778	2996.056	1 H2-1
166	M570	L3x2.5x5	.583	68.64956	.053	32.894	z 56	40948.468	44010	1270.778	2996.056	1 H2-1
167	M569	L3x2.5x5	.583	72.9456	.054	108....	z 56	40948.468	44010	1270.778	2996.056	1 H2-1
168	M80	L3x2.5x5	.583	72.9455	.053	108....	z 55	40948.468	44010	1270.778	2996.056	1 H2-1
169	M116	L6x6x10	.581	30.06955	.052	338....	z 55	190937.059	192510	13542.2...	21627.3...	1 H2-1
170	M117	L6x6x10	.577	342....55	.055	33.827	z 55	190937.059	192510	13542.2...	21627.3...	1 H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
171	M585	PL2.25X5	.577	15.181	55	.011	29.469	y 56	5674.836	18981	123.75	891	1...H1-1a
172	M4	L6x6x10	.575	30.069	56	.053	338....	z 56	190937.059	192510	13542.2...	21627.3...	1 H2-1
173	M515	PL2.25X5	.574	15.181	56	.011	29.469	y 55	5674.836	18981	123.75	891	1...H1-1a
174	M3	L6x6x10	.574	342....	56	.050	33.827	z 56	190937.059	192510	13542.2...	21627.3...	1 H2-1
175	M359	L2.5x2x5	.571	26.726	55	.001	0	y 56	19175.995	35640	809.265	1908.803	1...H2-1
176	M328	L2.5X1.5X5	.563	27.229	55	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
177	M312	L2.5x2x5	.550	22.707	56	.001	48.869	y 55	19678.445	35640	809.265	1914.416	1...H2-1
178	M211	L6x4x9	.544	715....	55	.035	723....	y 56	132785.254	143370	6117.855	15040.0...	1 H2-1
179	M212	L6x4x9	.542	46.182	55	.031	738....	y 56	132785.254	143370	6117.855	15040.0...	1 H2-1
180	M355	L2.5x2x5	.541	26.725	55	.001	0	y 56	19176.963	35640	809.265	1908.814	1...H2-1
181	M523	L4x3x6	.536	9.414	56	.179	7.685	z 56	64643.067	67230	2238.689	5885.484	1...H2-1
182	M351	L2.5x2x5	.534	26.725	55	.002	0	y 56	19176.963	35640	809.265	1908.814	1...H2-1
183	M593	L4x3x6	.533	9.606	55	.179	11.336	z 55	64643.067	67230	2238.689	5885.484	1...H2-1
184	M327	L2.5x2x5	.532	22.708	56	.001	0	y 55	19677.524	35640	809.265	1914.406	1...H2-1
185	M339	L2.5X1.5X5	.531	27.229	55	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
186	M587	PL2.25X5	.530	15.181	56	.011	29.469	y 55	5674.836	18981	123.75	891	1...H1-1a
187	M354	L2.5x2x5	.530	26.725	55	.001	49.92	y 56	19176.963	35640	809.265	1908.814	1...H2-1
188	M556	PL2.25X4	.523	8.823	56	.023	0	y 56	7875.296	15201	78.75	711	1...H1-1a
189	M626	PL2.25X4	.523	8.823	55	.023	0	y 55	7875.296	15201	78.75	711	1...H1-1a
190	M592	L4x3x6	.522	9.606	55	.166	7.685	z 56	64643.067	67230	2238.689	5885.484	1...H2-1
191	M517	PL2.25X5	.522	15.181	55	.011	29.469	y 56	5674.836	18981	123.75	891	1...H1-1a
192	M335	L2.5X1.5X5	.521	27.229	55	.001	0	y 56	10830.232	31113.2...	475.557	1510.603	1...H2-1
193	M516	PL2.25X5	.520	15.181	55	.008	29.469	y 56	5674.836	18981	123.75	891	1...H1-1a
194	M624	PL2.25X4	.520	8.823	55	.027	0	y 55	7875.296	15201	78.75	711	1...H1-1a
195	M554	PL2.25X4	.520	8.823	56	.027	0	y 56	7875.296	15201	78.75	711	1...H1-1a
196	M522	L4x3x6	.519	9.414	56	.168	11.336	z 55	64643.067	67230	2238.689	5885.484	1...H2-1
197	M344	L2.5X1.5X5	.512	22.214	56	.001	0	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
198	M586	PL2.25X5	.511	15.181	56	.008	29.469	y 55	5674.836	18981	123.75	891	1...H1-1a
199	M362	L2.5x2x5	.510	26.176	55	.002	47.116	y 55	20519.432	35640	809.265	1923.882	1...H2-1
200	M319	L2.5x2x5	.506	22.708	56	.001	0	y 55	19677.524	35640	809.265	1914.406	1...H2-1
201	M323	L2.5x2x5	.504	22.708	56	.001	48.871	y 55	19677.524	35640	809.265	1914.406	1...H2-1
202	M363	L2.5x2x5	.502	26.176	55	.001	0	y 56	20519.432	35640	809.265	1923.882	1...H2-1
203	M564	PL2.25X4	.493	7.863	56	.018	0	y 56	8996.512	15201	78.75	711	1...H1-1a
204	M576	L3x2.5x6	.493	4.545	55	.117	9	z 55	51421.803	52110	1486.645	3490.361	1...H2-1
205	M86	L3x2.5x6	.493	4.455	56	.117	0	z 56	51421.803	52110	1486.645	3490.361	1...H2-1
206	M634	PL2.25X4	.493	7.863	55	.018	0	y 55	8996.512	15201	78.75	711	1...H1-1a
207	M87	L3x2.5x6	.492	4.545	56	.117	9	z 56	51421.803	52110	1486.645	3490.361	1...H2-1
208	M577	L3x2.5x6	.492	4.455	55	.117	0	z 55	51421.803	52110	1486.645	3490.361	1...H2-1
209	M632	PL2.25X4	.492	7.863	55	.022	0	y 55	8996.512	15201	78.75	711	1...H1-1a
210	M562	PL2.25X4	.492	7.863	56	.022	0	y 56	8996.512	15201	78.75	711	1...H1-1a
211	M332	L2.5X1.5X5	.483	22.214	56	.001	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...H2-1
212	M308	L2.5x2x5	.481	20.087	56	.002	46.247	y 56	20937.986	35640	809.265	1928.635	1...H2-1
213	M347	L2.5x2x5	.477	26.725	55	.001	0	y 56	19176.963	35640	809.265	1908.814	1...H2-1
214	M313	L2.5x2x5	.475	22.707	56	.001	48.869	y 55	19678.445	35640	809.265	1914.416	1...H2-1
215	M318	L2.5x2x5	.472	22.708	56	.001	48.871	y 55	19677.524	35640	809.265	1914.406	1...H2-1
216	M322	L2.5x2x5	.465	22.708	56	.001	0	y 55	19677.524	35640	809.265	1914.406	1...H2-1
217	M350	L2.5x2x5	.448	26.725	55	.001	49.92	y 56	19176.963	35640	809.265	1908.814	1...H2-1
218	M346	L2.5x2x5	.438	26.725	55	.001	49.92	y 56	19176.963	35640	809.265	1908.814	1...H2-1
219	M617	PL2.25X4	.427	10.217	56	.028	10.217	y 55	6269.147	15201	78.75	711	1...H1-1a
220	M547	PL2.25X4	.427	10.217	55	.028	10.217	y 56	6269.147	15201	78.75	711	1...H1-1a
221	M549	PL2.25X4	.418	10.217	55	.025	10.217	y 56	6269.147	15201	78.75	711	1...H1-1a
222	M619	PL2.25X4	.417	10.217	56	.025	10.217	y 55	6269.147	15201	78.75	711	1...H1-1a
223	M496	PL2.25X5	.415	15.489	56	.006	31.295	y 55	5391.51	18981	123.75	891	1...H1-1a
224	M428	PL2.25X5	.414	15.489	56	.005	0	y 55	5391.51	18981	123.75	891	1...H1-1a
225	M309	L2.5x2x5	.413	20.087	56	.001	0	y 55	20937.986	35640	809.265	1928.635	1...H2-1
226	M411	PL2.25X5	.412	15.489	55	.005	0	y 56	5391.51	18981	123.75	891	1...H1-1a
227	M479	PL2.25X5	.401	15.489	55	.005	31.295	y 56	5391.51	18981	123.75	891	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
228	M610	L6x4x6	.393	6.74 55 .124	6.74	z 55	91550.116	97470	4257.614	12792.4...	1...	H2-1
229	M540	L6x4x6	.393	6.878 56 .124	6.878	z 56	91550.116	97470	4257.614	12792.4...	1...	H2-1
230	M541	L6x4x6	.385	6.878 56 .134	6.878	z 56	91550.116	97470	4257.614	12792.4...	1...	H2-1
231	M611	L6x4x6	.385	6.74 55 .134	6.74	z 55	91550.116	97470	4257.614	12681.3...	1...	H2-1
232	M190	L2.5x2.5x5	.378	47.432 56 .002	0	z 56	24053.796	39420	1096.767	2551.08	1...	H2-1
233	M591	PL2.25X5	.378	18.733 56 .009	19.093	y 55	3742.008	18981	123.75	891	1...	H1-1a
234	M345	L2.5x1.5x5	.378	22.214 56 .001	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
235	M191	L2.5x2.5x5	.374	4.64 56 .003	0	z 55	24053.796	39420	1096.767	2551.08	1...	H2-1
236	M94	L2.5x2.5x5	.368	5.671 55 .002	0	z 56	24053.796	39420	1096.767	2551.08	1...	H2-1
237	M625	PL2.25X4	.366	8.823 56 .026	8.823	y 55	7875.296	15201	78.75	711	1...	H1-1a
238	M555	PL2.25X4	.366	8.823 55 .026	8.823	y 56	7875.296	15201	78.75	711	1...	H1-1a
239	M557	PL2.25X4	.365	8.823 55 .023	8.823	y 56	7875.296	15201	78.75	711	1...	H1-1a
240	M627	PL2.25X4	.364	8.823 56 .023	8.823	y 55	7875.296	15201	78.75	711	1...	H1-1a
241	M95	L2.5x2.5x5	.362	46.4 55 .003	51.04	z 56	24053.796	39420	1096.767	2551.08	1...	H2-1
242	M521	PL2.25X5	.361	18.733 55 .009	19.093	y 56	3742.008	18981	123.75	891	1...	H1-1a
243	M633	PL2.25X4	.347	7.863 56 .020	7.863	y 55	8996.512	15201	78.75	711	1...	H1-1a
244	M563	PL2.25X4	.346	7.863 55 .020	7.863	y 56	8996.512	15201	78.75	711	1...	H1-1a
245	M565	PL2.25X4	.345	7.863 55 .017	7.863	y 56	8996.512	15201	78.75	711	1...	H1-1a
246	M635	PL2.25X4	.344	7.863 56 .017	7.863	y 55	8996.512	15201	78.75	711	1...	H1-1a
247	M373	PL2.25X5	.342	23.45 56 .003	0	y 56	2317.827	18981	123.75	840.113	1...	H1-1a
248	M519	PL2.25X5	.338	18.733 55 .009	35.664	y 55	3742.008	18981	123.75	891	1...	H1-1a
249	M360	L2.5x2x5	.329	24.681 55 .001	0	y 55	19678.445	35640	809.265	1914.416	1...	H2-1
250	M310	L2.5x2x5	.328	24.709 56 .001	0	y 56	19175.995	35640	809.265	1908.803	1...	H2-1
251	M589	PL2.25X5	.321	18.733 56 .008	35.664	y 56	3742.008	18981	123.75	891	1...	H1-1a
252	M361	L2.5x2x5	.320	24.681 55 .001	48.869	y 55	19678.445	35640	809.265	1914.416	1...	H2-1
253	M325	L2.5x2x5	.314	26.725 55 .001	49.92	y 55	19176.963	35640	809.265	1908.814	1...	H2-1
254	M341	L2.5x1.5x5	.311	22.214 56 .001	48.871	y 56	11300.048	31113.2...	475.557	1515.611	1...	H2-1
255	M314	L2.5x2x5	.311	24.708 56 .001	49.92	y 56	19176.963	35640	809.265	1908.814	1...	H2-1
256	M590	PL2.25X5	.310	18.733 55 .009	19.093	y 56	3742.008	18981	123.75	891	1...	H1-1a
257	M326	L2.5x2x5	.309	22.708 56 .001	48.871	y 55	19677.524	35640	809.265	1914.406	1...	H2-1
258	M524	PL2.25X4	.308	14.763 56 .027	14.763	y 56	4052.628	15201	78.75	711	2...	H1-1b
259	M594	PL2.25X4	.307	14.763 55 .027	14.763	y 55	4052.628	15201	78.75	711	2...	H1-1b
260	M520	PL2.25X5	.306	18.733 56 .009	35.664	y 56	3742.008	18981	123.75	891	1...	H1-1a
261	M518	PL2.25X5	.302	18.733 56 .010	35.664	y 56	3742.008	18981	123.75	891	1...	H1-1a
262	M595	PL2.25X4	.301	14.763 55 .027	14.763	y 55	4052.628	15201	78.75	711	2...	H1-1b
263	M525	PL2.25X4	.301	14.763 56 .027	14.763	y 56	4052.628	15201	78.75	711	2...	H1-1b
264	M588	PL2.25X5	.299	18.733 55 .010	35.664	y 55	3742.008	18981	123.75	891	1...	H1-1a
265	M357	L2.5x2x5	.298	24.682 55 .001	0	y 56	19677.524	35640	809.265	1914.406	1...	H2-1
266	M353	L2.5x2x5	.297	22.708 56 .001	0	y 56	19677.524	35640	809.265	1914.406	1...	H2-1
267	M370	PL2.25X5	.293	22.961 56 .003	0	y 56	2317.827	18981	123.75	802.513	1...	H1-1a
268	M321	L2.5x2x5	.293	24.708 56 .001	49.92	y 56	19176.963	35640	809.265	1908.814	1...	H2-1
269	M348	L2.5x2x5	.287	22.708 56 .001	0	y 55	19677.524	35640	809.265	1914.406	1...	H2-1
270	M356	L2.5x2x5	.287	24.682 55 .001	48.871	y 55	19677.524	35640	809.265	1914.406	1...	H2-1
271	M311	L2.5x2x5	.284	24.709 56 .001	49.922	y 56	19175.995	35640	809.265	1908.803	1...	H2-1
272	M374	PL2.25X5	.281	22.961 56 .003	23.938	y 55	2317.827	18981	123.75	891	1...	H1-1a
273	M352	L2.5x2x5	.278	24.682 55 .001	48.871	y 55	19677.524	35640	809.265	1914.406	1...	H2-1
274	M542	PL2.25X4	.278	9.809 56 .033	9.809	y 56	8183.037	15201	78.75	711	2...	H1-1b
275	M612	PL2.25X4	.278	9.809 55 .033	9.809	y 55	8183.037	15201	78.75	711	2...	H1-1b
276	M613	PL2.25X4	.277	9.809 55 .032	9.809	y 55	8183.037	15201	78.75	711	2...	H1-1b
277	M543	PL2.25X4	.277	9.809 56 .032	9.809	y 56	8183.037	15201	78.75	711	2...	H1-1b
278	M315	L2.5x2x5	.272	24.708 56 .001	49.92	y 56	19176.963	35640	809.265	1908.814	1...	H2-1
279	M597	PL2.25X4	.271	14.763 56 .026	27.577	y 55	4052.628	15201	78.75	711	2...	H1-1b
280	M320	L2.5x2x5	.270	24.708 56 .001	0	y 56	19176.963	35640	809.265	1908.814	1...	H2-1
281	M527	PL2.25X4	.269	14.763 55 .026	27.577	y 56	4052.628	15201	78.75	711	2...	H1-1b
282	M526	PL2.25X4	.269	14.763 55 .025	14.763	y 55	4052.628	15201	78.75	711	2...	H1-1b
283	M596	PL2.25X4	.267	14.763 56 .025	14.763	y 56	4052.628	15201	78.75	711	2...	H1-1b
284	M349	L2.5x2x5	.263	24.682 55 .001	48.871	y 55	19677.524	35640	809.265	1914.406	1...	H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt	phi*Mn y	phi*Mn z	Cb	Eqn	
285	M532	PL2.25X4	.252	12.585	56	.026	0	y 56	4201.337	15201	78.75	711	1...H1-1b
286	M602	PL2.25X4	.251	12.585	55	.026	0	y 55	4201.337	15201	78.75	711	1...H1-1b
287	M324	L2.5x2x5	.251	24.708	56	.001	0	y 56	19176.963	35640	809.265	1908.814	1...H2-1
288	M603	PL2.25X4	.250	12.585	55	.028	0	y 55	4201.337	15201	78.75	711	1...H1-1b
289	M533	PL2.25X4	.249	12.585	56	.028	0	y 56	4201.337	15201	78.75	711	1...H1-1b
290	M544	PL2.25X4	.230	9.809	56	.032	18.322	y 56	8183.037	15201	78.75	711	2...H1-1b
291	M614	PL2.25X4	.230	9.809	55	.032	18.322	y 55	8183.037	15201	78.75	711	2...H1-1b
292	M615	PL2.25X4	.229	9.809	55	.030	18.322	y 55	8183.037	15201	78.75	711	2...H1-1b
293	M545	PL2.25X4	.229	9.809	56	.030	18.322	y 56	8183.037	15201	78.75	711	2...H1-1b
294	M605	PL2.25X4	.209	12.585	56	.025	0	y 56	4201.337	15201	78.75	711	1...H1-1b
295	M534	PL2.25X4	.207	12.585	55	.026	12.585	y 56	4201.337	15201	78.75	711	1...H1-1b
296	M535	PL2.25X4	.206	12.585	55	.025	0	y 55	4201.337	15201	78.75	711	1...H1-1b
297	M604	PL2.25X4	.204	12.585	56	.026	12.585	y 55	4201.337	15201	78.75	711	1...H1-1b
298	M623	PL2.25X4	.201	8.252	55	.031	8.252	y 55	8492.403	15201	78.75	711	1...H1-1b
299	M553	PL2.25X4	.201	8.252	56	.031	8.252	y 56	8492.403	15201	78.75	711	1...H1-1b
300	M552	PL2.25X4	.200	8.252	56	.029	8.252	y 56	8492.403	15201	78.75	711	1...H1-1b
301	M622	PL2.25X4	.200	8.252	55	.029	8.252	y 55	8492.403	15201	78.75	711	1...H1-1b
302	M621	PL2.25X4	.190	8.252	55	.032	0	y 55	8492.403	15201	78.75	711	1...H1-1b
303	M551	PL2.25X4	.190	8.252	56	.032	0	y 56	8492.403	15201	78.75	711	1...H1-1b
304	M620	PL2.25X4	.190	8.252	55	.031	0	y 55	8492.403	15201	78.75	711	1...H1-1b
305	M550	PL2.25X4	.190	8.252	56	.031	0	y 56	8492.403	15201	78.75	711	1...H1-1b
306	M539	PL2.25X4	.165	14.092	56	.012	14.092	y 56	4714.98	15201	78.75	711	1...H1-1b
307	M609	PL2.25X4	.165	14.092	55	.012	14.092	y 55	4714.98	15201	78.75	711	1...H1-1b
308	M607	PL2.25X4	.151	14.092	55	.014	14.092	y 55	4714.98	15201	78.75	711	1.5H1-1b
309	M537	PL2.25X4	.150	14.092	56	.014	14.092	y 56	4714.98	15201	78.75	711	1.5H1-1b
310	M559	PL2.25X4	.140	7.482	56	.019	0	y 56	9416.916	15201	78.75	711	1...H1-1b
311	M629	PL2.25X4	.140	7.482	55	.019	0	y 55	9416.916	15201	78.75	711	1...H1-1b
312	M529	PL2.25X4	.140	16.057	55	.015	16.36	y 56	2619.675	15201	78.75	711	1...H1-1b
313	M151	PL2.25X5	.139	15.31	56	.009	15.31	y 55	5666.526	18981	123.75	891	1...H1-1b
314	M628	PL2.25X4	.137	7.482	55	.020	0	y 55	9416.916	15201	78.75	711	1...H1-1b
315	M558	PL2.25X4	.137	7.482	56	.020	0	y 56	9416.916	15201	78.75	711	1...H1-1b
316	M364	L2.5x2.5x5	.136	23.201	55	.001	45.937	y 55	26420.266	39420	1096.767	2551.08	1...H2-1
317	M599	PL2.25X4	.135	16.057	56	.015	16.36	y 55	2619.675	15201	78.75	711	1...H1-1b
318	M38	PL2.25X5	.133	15.31	55	.009	15.31	y 56	5666.526	18981	123.75	891	1...H1-1b
319	M306	L2.5x2.5x5	.132	22.735	56	.001	45.934	y 56	26421.669	39420	1096.767	2551.08	1...H2-1
320	M606	PL2.25X4	.132	13.831	55	.017	0	y 55	3535.554	15201	78.75	711	1...H1-1b
321	M536	PL2.25X4	.132	13.831	56	.016	0	y 56	3535.554	15201	78.75	711	1...H1-1b
322	M365	L2.5x2.5x5	.131	23.201	55	.001	45.937	y 55	26420.266	39420	1096.767	2551.08	1...H2-1
323	M538	PL2.25X4	.129	13.831	56	.013	0	y 56	3535.554	15201	78.75	711	1...H1-1b
324	M608	PL2.25X4	.129	13.831	55	.013	0	y 55	3535.554	15201	78.75	711	1...H1-1b
325	M133	PL2.25X5	.128	15.31	56	.010	15.31	y 55	5666.526	18981	123.75	891	1...H1-1b
326	M23	PL2.25X5	.127	15.461	56	.017	0	y 56	5785.218	18981	123.75	891	1...H1-1b
327	M136	PL2.25X5	.125	15.461	55	.017	0	y 55	5785.218	18981	123.75	891	1...H1-1b
328	M20	PL2.25X5	.125	15.31	55	.010	15.31	y 56	5666.526	18981	123.75	891	1...H1-1b
329	M118	PL2.25X5	.122	15.461	55	.017	0	y 55	5785.218	18981	123.75	891	1...H1-1b
330	M5	PL2.25X5	.121	15.461	56	.017	0	y 56	5785.218	18981	123.75	891	1...H1-1b
331	M561	PL2.25X4	.119	7.482	56	.018	7.482	y 56	9416.916	15201	78.75	711	1...H1-1b
332	M74	PL2.25X5	.119	15.31	56	.017	0	y 56	5666.526	18981	123.75	891	1...H1-1b
333	M631	PL2.25X4	.119	7.482	55	.018	7.482	y 55	9416.916	15201	78.75	711	1...H1-1b
334	M601	PL2.25X4	.118	16.057	56	.010	16.36	y 55	2619.675	15201	78.75	711	1...H1-1b
335	M56	PL2.25X5	.118	15.31	56	.018	0	y 56	5666.526	18981	123.75	891	1...H1-1b
336	M630	PL2.25X4	.116	7.482	55	.019	7.482	y 55	9416.916	15201	78.75	711	1...H1-1b
337	M560	PL2.25X4	.116	7.482	56	.019	7.482	y 56	9416.916	15201	78.75	711	1...H1-1b
338	M531	PL2.25X4	.114	16.057	55	.010	29.994	y 55	2619.675	15201	78.75	711	1...H1-1b
339	M253	L2.5x1.25x5	.114	14.952	55	.002	0	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1
340	M154	PL2.25X5	.113	15.461	56	.016	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b
341	M223	L2.5x1.25x5	.112	14.653	56	.001	29.605	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
342	M41	PL2.25X5	.112	15.46155	.016	15.152	y 56	5785.218	18981	123.75	891	1...H1-1b
343	M307	L2.5x2.5x5	.110	22.73556	.001	0	y 56	26421.669	39420	1096.767	2551.08	1...H2-1
344	M59	PL2.25X5	.107	15.46155	.016	15.152	y 56	5785.218	18981	123.75	891	1...H1-1b
345	M172	PL2.25X5	.107	15.46156	.016	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b
346	M528	PL2.25X4	.106	16.05756	.012	16.36	y 55	2619.675	15201	78.75	711	1...H1-1b
347	M598	PL2.25X4	.105	16.05755	.012	16.36	y 56	2619.675	15201	78.75	711	1...H1-1b
348	M371	PL2.25X5	.104	23.93855	.003	24.427	y 56	2317.827	18981	123.75	891	1...H1-1b
349	M227	L2.5x1.25x5	.100	14.65356	.002	0	y 55	16726.225	29003.9	340.889	1464.21	1...H2-1
350	M258	L2.5x1.25x5	.100	14.95255	.001	0	y 55	16726.225	29003.9	340.889	1464.21	1...H2-1
351	M377	PL2.25X5	.099	23.93856	.003	23.938	y 56	2317.827	18981	123.75	754.098	1...H1-1b
352	M277	L2.5x1.25x5	.098	14.95255	.002	29.605	y 55	16726.261	29003.9	340.889	1464.211	1...H2-1
353	M187	PL2.25X5	.097	15.3155	.017	0	y 55	5666.526	18981	123.75	891	1...H1-1b
354	M225	L2.5x1.25x5	.093	14.65356	.001	29.605	y 56	16726.261	29003.9	340.889	1464.211	1...H2-1
355	M600	PL2.25X4	.093	16.3656	.011	0	y 55	3503.195	15201	78.75	711	1...H1-1b
356	M169	PL2.25X5	.092	15.3155	.018	0	y 55	5666.526	18981	123.75	891	1...H1-1b
357	M530	PL2.25X4	.092	16.3655	.011	0	y 56	3503.195	15201	78.75	711	1...H1-1b
358	M250	L2.5x1.25x5	.091	14.95255	.002	29.605	y 56	16726.225	29003.9	340.889	1464.21	1...H2-1
359	M248	L2.5x1.25x5	.090	14.95255	.002	0	y 56	16726.261	29003.9	340.889	1464.211	1...H2-1
360	M230	L2.5x1.25x5	.085	14.95255	.002	0	y 55	16726.225	29003.9	340.889	1464.21	1...H2-1
361	M272	L2.5x1.25x5	.085	14.65356	.002	0	y 55	16726.261	29003.9	340.889	1464.211	1...H2-1
362	M260	L2.5x1.25x5	.084	14.80255	.008	29.308	y 55	16910.955	29003.9	340.889	1465.997	1...H2-1
363	M274	L2.5x1.25x5	.077	14.65356	.003	0	y 56	16726.261	29003.9	340.889	1464.211	1...H2-1
364	M194	L2.5x2.5x5	.077	0	.002	0	z 55	35341.325	39420	1096.767	2551.08	1...H2-1
365	M98	L2.5x2.5x5	.077	24	.002	0	z 55	35341.325	39420	1096.767	2551.08	1...H2-1
366	M195	L2.5x2.5x5	.076	24	.024	16	y 55	35341.325	39420	1096.767	2551.08	1...H2-1
367	M275	L2.5x1.25x5	.076	14.95255	.003	29.605	y 55	16726.261	29003.9	340.889	1464.211	1...H2-1
368	M245	L2.5x1.25x5	.076	14.65356	.002	29.605	y 56	16726.261	29003.9	340.889	1464.211	1...H2-1
369	M256	L2.5x1.25x5	.074	14.95355	.002	29.607	y 55	16724.892	29003.9	340.889	1464.197	1...H2-1
370	M155	PL2.25X5	.073	15.15255	.018	0	y 56	5785.218	18981	123.75	891	1...H1-1b
371	M270	L2.5x1.25x5	.072	14.65356	.002	0	y 55	16726.225	29003.9	340.889	1464.21	1...H2-1
372	M300	L2.5x1.25x5	.072	14.95255	.002	29.605	y 56	16726.225	29003.9	340.889	1464.21	1...H2-1
373	M168	PL2.25X5	.072	15.15255	.014	0	y 55	5785.218	18981	123.75	891	1...H1-1b
374	M55	PL2.25X5	.071	15.15256	.013	0	y 56	5785.218	18981	123.75	891	1...H1-1b
375	M137	PL2.25X5	.071	15.15256	.020	0	y 55	5785.218	18981	123.75	891	1...H1-1b
376	M295	L2.5x1.25x5	.071	14.95255	.003	29.605	y 56	16726.261	29003.9	340.889	1464.211	1...H2-1
377	M42	PL2.25X5	.071	15.15256	.018	0	y 55	5785.218	18981	123.75	891	1...H1-1b
378	M24	PL2.25X5	.070	15.15255	.020	0	y 56	5785.218	18981	123.75	891	1...H1-1b
379	M25	PL2.25X5	.070	15.46156	.015	0	y 56	5785.218	18981	123.75	891	1...H1-1b
380	M297	L2.5x1.25x5	.069	14.95255	.002	0	y 56	16726.261	29003.9	340.889	1464.211	1...H2-1
381	M186	PL2.25X5	.068	15.15255	.015	0	y 55	5785.218	18981	123.75	891	1...H1-1b
382	M119	PL2.25X5	.068	15.15255	.020	0	y 55	5785.218	18981	123.75	891	1...H1-1b
383	M138	PL2.25X5	.068	15.46155	.015	0	y 55	5785.218	18981	123.75	891	1...H1-1b
384	M6	PL2.25X5	.068	15.15256	.020	0	y 56	5785.218	18981	123.75	891	1...H1-1b
385	M73	PL2.25X5	.067	15.15256	.014	0	y 56	5785.218	18981	123.75	891	1...H1-1b
386	M185	PL2.25X5	.066	15.46155	.012	0	y 55	5785.218	18981	123.75	891	1...H1-1b
387	M229	L2.5x1.25x5	.066	14.65356	.002	0	y 55	16726.261	29003.9	340.889	1464.211	1...H2-1
388	M287	L2.5x1.25x5	.065	14.95255	.002	0	y 56	16726.261	29003.9	340.889	1464.211	1...H2-1
389	M134	PL2.25X5	.065	15.30356	.004	0	y 56	5905.645	18981	123.75	891	2...H1-1b
390	M72	PL2.25X5	.064	15.46156	.012	0	y 56	5785.218	18981	123.75	891	1...H1-1b
391	M372	PL2.25X5	.064	23.93855	.004	24.427	y 56	2317.827	18981	123.75	891	1...H1-1b
392	M184	PL2.25X5	.064	15.15255	.012	0	y 55	5785.218	18981	123.75	891	1...H1-1b
393	M120	PL2.25X5	.064	15.46155	.015	0	y 55	5785.218	18981	123.75	891	1...H1-1b
394	M231	L2.5x1.25x5	.064	14.65355	.002	29.605	y 55	16726.261	29003.9	340.889	1464.211	1...H2-1
395	M285	L2.5x1.25x5	.063	14.95255	.003	0	y 55	16726.261	29003.9	340.889	1464.211	1...H2-1
396	M156	PL2.25X5	.063	15.46156	.014	0	y 56	5785.218	18981	123.75	891	1...H1-1b
397	M302	L2.5x1.25x5	.063	14.95155	.002	0	y 56	16727.63	29003.9	340.889	1464.224	1...H2-1
398	M7	PL2.25X5	.063	15.46156	.015	0	y 56	5785.218	18981	123.75	891	1...H1-1b



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt	phi*Mn y	phi*Mn z	Cb	Eqn	
399	M43	PL2.25X5	.063	15.46155	.014	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
400	M54	PL2.25X5	.062	15.46156	.013	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
401	M60	PL2.25X5	.062	15.15255	.018	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
402	M173	PL2.25X5	.062	15.15256	.018	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
403	M21	PL2.25X5	.062	15.30355	.004	14.997	y 56	5905.645	18981	123.75	891	2...H1-1b	
404	M284	L2.5x1.25x5	.062	14.65356	.003	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1	
405	M167	PL2.25X5	.062	15.46155	.013	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
406	M299	L2.5x1.25x5	.062	14.65355	.002	0	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1	
407	M304	L2.5x1.25x5	.062	14.16255	.003	28.04	y 55	17701.085	29003.9...	340.889	1473.7	1...H2-1	
408	M131	PL2.25X5	.061	15.46155	.008	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b	
409	M18	PL2.25X5	.061	15.46156	.007	15.152	y 56	5785.218	18981	123.75	891	1...H1-1b	
410	M99	L2.5x2.5x5	.061	0	.56	.022	24	y 55	35341.325	39420	1096.767	2551.08	1...H2-1
411	M216	L2.5x1.25x5	.061	13.87856	.001	0	y 56	17701.085	29003.9...	340.889	1473.7	1...H2-1	
412	M71	PL2.25X5	.061	15.15256	.011	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
413	M188	PL2.25X5	.060	14.99755	.011	0	y 55	5905.645	18981	123.75	891	1...H1-1b	
414	M235	L2.5x1.25x5	.059	14.95255	.001	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1	
415	M269	L2.5x1.25x5	.059	14.95256	.001	29.605	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1	
416	M37	PL2.25X5	.059	15.15256	.009	15.152	y 56	5785.218	18981	123.75	891	1...H1-1b	
417	M189	PL2.25X5	.059	15.15255	.003	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
418	M220	L2.5x1.25x5	.058	14.65356	.001	0	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1	
419	M76	PL2.25X5	.058	15.15255	.003	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
420	M149	PL2.25X5	.058	15.46155	.007	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
421	M150	PL2.25X5	.057	15.15255	.010	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b	
422	M61	PL2.25X5	.057	15.46155	.013	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
423	M174	PL2.25X5	.057	15.46156	.014	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
424	M152	PL2.25X5	.056	15.30356	.005	14.997	y 55	5905.645	18981	123.75	891	2...H1-1b	
425	M165	PL2.25X5	.056	15.15255	.010	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
426	M36	PL2.25X5	.056	15.46156	.006	15.152	y 56	5785.218	18981	123.75	891	1...H1-1b	
427	M294	L2.5x1.25x5	.056	14.65356	.003	0	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1	
428	M39	PL2.25X5	.056	15.30355	.005	14.997	y 56	5905.645	18981	123.75	891	2...H1-1b	
429	M273	L2.5x1.25x5	.055	14.95256	.002	0	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1	
430	M226	L2.5x1.25x5	.055	14.95256	.002	0	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1	
431	M292	L2.5x1.25x5	.055	14.65356	.003	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1	
432	M52	PL2.25X5	.055	15.46156	.010	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
433	M247	L2.5x1.25x5	.055	14.65356	.001	29.605	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1	
434	M171	PL2.25X5	.054	15.15255	.004	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
435	M26	PL2.25X5	.054	15.15256	.012	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
436	M157	PL2.25X5	.054	15.15255	.011	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
437	M282	L2.5x1.25x5	.053	14.65356	.002	29.605	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1	
438	M139	PL2.25X5	.053	15.15256	.012	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
439	M135	PL2.25X5	.053	15.15255	.002	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b	
440	M218	L2.5x1.25x5	.053	14.64856	.001	29.595	y 56	16732.465	29003.9...	340.889	1464.271	1...H2-1	
441	M22	PL2.25X5	.053	15.15256	.002	15.152	y 56	5785.218	18981	123.75	891	1...H1-1b	
442	M44	PL2.25X5	.053	15.15256	.010	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
443	M276	L2.5x1.25x5	.052	14.65356	.002	29.605	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1	
444	M132	PL2.25X5	.052	15.15255	.009	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b	
445	M121	PL2.25X5	.052	15.15255	.012	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
446	M53	PL2.25X5	.052	15.15256	.010	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
447	M166	PL2.25X5	.051	15.46155	.011	0	y 55	5785.218	18981	123.75	891	1...H1-1b	
448	M8	PL2.25X5	.051	15.15256	.012	0	y 56	5785.218	18981	123.75	891	1...H1-1b	
449	M240	L2.5x1.25x5	.051	14.95255	.002	0	y 56	16726.225	29003.9...	340.889	1464.21	1...H2-1	
450	M57	PL2.25X5	.051	15.30355	.009	0	y 56	5905.645	18981	123.75	891	1...H1-1b	
451	M233	L2.5x1.25x5	.051	14.95255	.001	0	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1	
452	M224	L2.5x1.25x5	.051	14.95256	.002	0	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1	
453	M153	PL2.25X5	.050	15.15255	.003	15.461	y 55	5785.218	18981	123.75	891	1...H1-1b	
454	M19	PL2.25X5	.050	15.15256	.008	15.152	y 56	5785.218	18981	123.75	891	1...H1-1b	
455	M182	PL2.25X5	.050	15.46155	.008	0	y 55	5785.218	18981	123.75	891	1...H1-1b	



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
456	M280	L2.5x1.25x5	.050	14.952	55	.002	29.605	y 55	16726.225	29003.9...	340.889	1464.21	1... H2-1
457	M40	PL2.25X5	.049	15.152	56	.003	15.461	y 56	5785.218	18981	123.75	891	1... H1-1b
458	M271	L2.5x1.25x5	.049	14.952	56	.001	29.605	y 55	16726.261	29003.9...	340.889	1464.211	1... H2-1
459	M257	L2.5x1.25x5	.049	14.652	55	.001	0	y 56	16727.63	29003.9...	340.889	1464.224	1... H2-1
460	M69	PL2.25X5	.049	15.461	56	.008	0	y 56	5785.218	18981	123.75	891	1... H1-1b
461	M303	L2.5x1.25x5	.049	14.653	55	.001	0	y 55	16726.225	29003.9...	340.889	1464.21	1... H2-1
462	M183	PL2.25X5	.049	15.461	55	.009	0	y 55	5785.218	18981	123.75	891	1... H1-1b
463	M296	L2.5x1.25x5	.049	14.653	55	.002	29.605	y 55	16726.225	29003.9...	340.889	1464.21	1... H2-1
464	M249	L2.5x1.25x5	.048	14.653	55	.004	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1... H2-1
465	M228	L2.5x1.25x5	.048	14.952	56	.003	0	y 55	16726.261	29003.9...	340.889	1464.211	1... H2-1
466	M62	PL2.25X5	.048	15.152	55	.011	0	y 55	5785.218	18981	123.75	891	1... H1-1b
467	M163	PL2.25X5	.048	15.461	55	.007	0	y 55	5785.218	18981	123.75	891	1... H1-1b
468	M175	PL2.25X5	.047	15.152	56	.011	0	y 56	5785.218	18981	123.75	891	1... H1-1b
469	M70	PL2.25X5	.047	15.461	56	.009	0	y 56	5785.218	18981	123.75	891	1... H1-1b
470	M267	L2.5x1.25x5	.046	14.952	55	.001	29.605	y 55	16726.261	29003.9...	340.889	1464.211	1... H2-1
471	M50	PL2.25X5	.046	15.461	56	.006	0	y 56	5785.218	18981	123.75	891	1... H1-1b
472	M164	PL2.25X5	.046	15.461	55	.007	0	y 55	5785.218	18981	123.75	891	1... H1-1b
473	M75	PL2.25X5	.045	15.303	56	.010	0	y 56	5905.645	18981	123.75	891	1... H1-1b
474	M254	L2.5x1.25x5	.045	14.653	55	.002	29.605	y 56	16726.225	29003.9...	340.889	1464.21	1... H2-1
475	M58	PL2.25X5	.045	15.152	56	.003	0	y 56	5785.218	18981	123.75	891	1... H1-1b
476	M290	L2.5x1.25x5	.044	14.653	56	.002	29.605	y 55	16726.225	29003.9...	340.889	1464.21	1... H2-1
477	M51	PL2.25X5	.044	15.461	56	.007	0	y 56	5785.218	18981	123.75	891	1... H1-1b
478	M148	PL2.25X5	.044	15.461	55	.006	15.152	y 55	5785.218	18981	123.75	891	1... H1-1b
479	M130	PL2.25X5	.044	15.461	56	.006	0	y 56	5785.218	18981	123.75	891	1... H1-1b
480	M35	PL2.25X5	.043	15.461	56	.006	15.152	y 56	5785.218	18981	123.75	891	1... H1-1b
481	M17	PL2.25X5	.042	15.461	56	.005	15.152	y 56	5785.218	18981	123.75	891	1... H1-1b
482	M305	L2.5x1.25x5	.042	14.232	55	.005	0	y 55	17255.841	29003.9...	340.889	1469.346	1... H2-1
483	M375	PL2.25X5	.042	23.938	56	.003	24.427	y 56	2317.827	18981	123.75	891	2... H1-1b
484	M27	PL2.25X5	.042	15.152	56	.008	0	y 56	5785.218	18981	123.75	891	1... H1-1b
485	M34	PL2.25X5	.042	15.461	55	.004	15.152	y 56	5785.218	18981	123.75	891	1... H1-1b
486	M147	PL2.25X5	.042	15.461	56	.005	0	y 56	5785.218	18981	123.75	891	1... H1-1b
487	M301	L2.5x1.25x5	.042	14.654	55	.002	0	y 56	16724.892	29003.9...	340.889	1464.197	1... H2-1
488	M9	PL2.25X5	.042	15.152	56	.009	0	y 56	5785.218	18981	123.75	891	1... H1-1b
489	M181	PL2.25X5	.041	15.461	55	.006	0	y 55	5785.218	18981	123.75	891	1... H1-1b
490	M237	L2.5x1.25x5	.041	14.952	55	.001	29.605	y 55	16726.225	29003.9...	340.889	1464.21	1... H2-1
491	M45	PL2.25X5	.040	15.152	55	.009	0	y 55	5785.218	18981	123.75	891	1... H1-1b
492	M140	PL2.25X5	.040	15.152	55	.008	0	y 55	5785.218	18981	123.75	891	1... H1-1b
493	M122	PL2.25X5	.040	15.152	55	.009	0	y 55	5785.218	18981	123.75	891	1... H1-1b
494	M158	PL2.25X5	.040	15.152	56	.008	0	y 56	5785.218	18981	123.75	891	1... H1-1b
495	M180	PL2.25X5	.040	15.461	55	.005	0	y 55	5785.218	18981	123.75	891	1... H1-1b
496	M261	L2.5x1.25x5	.040	14.532	55	.005	0	y 56	17244.099	29003.9...	340.889	1469.232	1... H2-1
497	M68	PL2.25X5	.039	15.461	56	.006	0	y 56	5785.218	18981	123.75	891	1... H1-1b
498	M265	L2.5x1.25x5	.039	14.652	56	.001	29.603	y 55	16727.63	29003.9...	340.889	1464.224	1... H2-1
499	M251	L2.5x1.25x5	.039	14.653	55	.001	29.605	y 55	16726.261	29003.9...	340.889	1464.211	1... H2-1
500	M376	PL2.25X5	.039	23.938	56	.002	24.427	y 56	2317.827	18981	123.75	891	1... H1-1b
501	M67	PL2.25X5	.039	15.461	56	.004	0	y 56	5785.218	18981	123.75	891	1... H1-1b
502	M259	L2.5x1.25x5	.039	13.878	55	.001	0	y 55	17701.085	29003.9...	340.889	1473.7	1... H2-1
503	M222	L2.5x1.25x5	.038	11.879	55	.001	0	y 55	20199.817	29003.9...	340.889	1494.276	1... H2-1
504	M170	PL2.25X5	.038	15.303	56	.009	0	y 55	5905.645	18981	123.75	891	1... H1-1b
505	M176	PL2.25X5	.038	15.152	56	.008	0	y 56	5785.218	18981	123.75	891	1... H1-1b
506	M63	PL2.25X5	.038	15.152	55	.007	0	y 55	5785.218	18981	123.75	891	1... H1-1b
507	M243	L2.5x1.25x5	.038	14.653	56	.001	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1... H2-1
508	M246	L2.5x1.25x5	.037	14.952	56	.003	0	y 56	16726.261	29003.9...	340.889	1464.211	1... H2-1
509	M268	L2.5x1.25x5	.037	11.879	56	.001	0	y 55	20199.817	29003.9...	340.889	1494.276	1... H2-1
510	M291	L2.5x1.25x5	.037	14.952	56	.002	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1... H2-1
511	M128	PL2.25X5	.037	15.461	56	.004	0	y 56	5785.218	18981	123.75	891	1... H1-1b
512	M15	PL2.25X5	.037	15.461	55	.003	15.152	y 56	5785.218	18981	123.75	891	1... H1-1b



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
513	M129	PL2.25X5	.036	15.461	56	.005	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b
514	M162	PL2.25X5	.036	15.461	55	.004	0	y 55	5785.218	18981	123.75	891	1...H1-1b
515	M16	PL2.25X5	.036	15.461	55	.005	0	y 55	5785.218	18981	123.75	891	1...H1-1b
516	M161	PL2.25X5	.036	15.461	55	.003	15.461	y 55	5785.218	18981	123.75	891	2...H1-1b
517	M244	L2.5x1.25x5	.035	14.952	56	.002	29.605	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1
518	M219	L2.5x1.25x5	.035	14.951	56	.001	0	y 55	16727.63	29003.9...	340.889	1464.224	1...H2-1
519	M49	PL2.25X5	.035	15.461	56	.004	0	y 56	5785.218	18981	123.75	891	1...H1-1b
520	M48	PL2.25X5	.035	15.461	56	.003	15.461	y 56	5785.218	18981	123.75	891	2...H1-1b
521	M263	L2.5x1.25x5	.035	14.647	56	.002	29.593	y 55	16733.833	29003.9...	340.889	1464.284	1...H2-1
522	M10	PL2.25X5	.034	15.152	56	.006	0	y 56	5785.218	18981	123.75	891	1...H1-1b
523	M32	PL2.25X5	.034	15.461	55	.002	15.461	y 55	5785.218	18981	123.75	891	1...H1-1b
524	M145	PL2.25X5	.034	15.461	56	.003	15.461	y 56	5785.218	18981	123.75	891	1...H1-1b
525	M234	L2.5x1.25x5	.034	14.653	55	.002	0	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1
526	M64	PL2.25X5	.034	15.152	55	.006	0	y 55	5785.218	18981	123.75	891	1...H1-1b
527	M286	L2.5x1.25x5	.034	14.653	56	.001	0	y 56	16726.225	29003.9...	340.889	1464.21	1...H2-1
528	M146	PL2.25X5	.034	15.461	56	.004	15.152	y 55	5785.218	18981	123.75	891	1...H1-1b
529	M177	PL2.25X5	.034	15.152	56	.005	0	y 56	5785.218	18981	123.75	891	1...H1-1b
530	M33	PL2.25X5	.034	15.461	55	.005	15.461	y 55	5785.218	18981	123.75	891	1...H1-1b
531	M28	PL2.25X5	.033	15.152	56	.006	0	y 56	5785.218	18981	123.75	891	1...H1-1b
532	M281	L2.5x1.25x5	.033	14.653	55	.001	0	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1
533	M123	PL2.25X5	.032	15.152	55	.005	0	y 55	5785.218	18981	123.75	891	1...H1-1b
534	M141	PL2.25X5	.031	15.152	55	.006	0	y 55	5785.218	18981	123.75	891	1...H1-1b
535	M293	L2.5x1.25x5	.031	14.952	56	.001	29.605	y 55	16726.225	29003.9...	340.889	1464.21	1...H2-1
536	M179	PL2.25X5	.031	15.461	55	.002	15.461	y 55	5785.218	18981	123.75	891	2...H1-1b
537	M46	PL2.25X5	.030	15.152	55	.005	0	y 55	5785.218	18981	123.75	891	1...H1-1b
538	M159	PL2.25X5	.030	15.152	56	.005	0	y 56	5785.218	18981	123.75	891	1...H1-1b
539	M279	L2.5x1.25x5	.030	14.653	55	.002	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1
540	M239	L2.5x1.25x5	.030	14.653	55	.003	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1
541	M236	L2.5x1.25x5	.030	14.653	55	.002	0	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1
542	M127	PL2.25X5	.030	15.461	56	.003	30.614	y 55	5785.218	18981	123.75	891	2...H1-1b
543	M14	PL2.25X5	.030	15.461	55	.004	15.461	y 55	5785.218	18981	123.75	891	2...H1-1b
544	M264	L2.5x1.25x5	.030	14.947	56	.001	29.595	y 55	16732.465	29003.9...	340.889	1464.271	1...H2-1
545	M232	L2.5x1.25x5	.030	11.879	55	.001	0	y 56	20199.817	29003.9...	340.889	1494.276	1...H2-1
546	M178	PL2.25X5	.029	15.461	55	.003	0	y 56	5785.218	18981	123.75	891	2...H1-1b
547	M283	L2.5x1.25x5	.029	14.952	56	.001	29.605	y 56	16726.225	29003.9...	340.889	1464.21	1...H2-1
548	M66	PL2.25X5	.029	15.461	56	.003	0	y 55	5785.218	18981	123.75	891	2...H1-1b
549	M241	L2.5x1.25x5	.029	14.653	55	.002	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1
550	M266	L2.5x1.25x5	.029	14.952	56	.001	0	y 56	16726.225	29003.9...	340.889	1464.21	1...H2-1
551	M215	L2.5x1.25x5	.029	14.812	56	.008	29.328	y 56	16898.734	29003.9...	340.889	1465.879	1...H2-1
552	M47	PL2.25X5	.028	15.152	55	.004	0	y 55	5785.218	18981	123.75	891	1...H1-1b
553	M65	PL2.25X5	.028	15.461	56	.003	15.461	y 56	5785.218	18981	123.75	891	3...H1-1b
554	M13	PL2.25X5	.028	15.461	55	.002	15.461	y 55	5785.218	18981	123.75	891	2...H1-1b
555	M160	PL2.25X5	.028	15.152	56	.003	0	y 56	5785.218	18981	123.75	891	1...H1-1b
556	M126	PL2.25X5	.028	15.461	56	.003	15.461	y 56	5785.218	18981	123.75	891	2...H1-1b
557	M29	PL2.25X5	.028	15.152	56	.003	0	y 56	5785.218	18981	123.75	891	1...H1-1b
558	M11	PL2.25X5	.026	15.152	56	.004	0	y 56	5785.218	18981	123.75	891	1...H1-1b
559	M144	PL2.25X5	.026	15.461	56	.002	15.461	y 56	5785.218	18981	123.75	891	2...H1-1b
560	M31	PL2.25X5	.026	15.461	55	.004	15.461	y 55	5785.218	18981	123.75	891	2...H1-1b
561	M142	PL2.25X5	.026	15.152	55	.003	0	y 55	5785.218	18981	123.75	891	1...H1-1b
562	M289	L2.5x1.25x5	.025	14.653	55	.001	29.605	y 56	16726.261	29003.9...	340.889	1464.211	1...H2-1
563	M262	L2.5x1.25x5	.025	14.162	56	.003	0	y 56	17701.085	29003.9...	340.889	1473.7	1...H2-1
564	M124	PL2.25X5	.025	15.152	55	.004	0	y 55	5785.218	18981	123.75	891	1...H1-1b
565	M30	PL2.25X5	.025	15.461	55	.002	0	y 56	5785.218	18981	123.75	891	2...H1-1b
566	M331	L3x2.5x5	.024	22.056	56	.002	0	z 56	32987.716	44010	1270.778	2996.056	1...H2-1
567	M221	L2.5x1.25x5	.024	14.653	55	.001	29.605	y 55	16726.261	29003.9...	340.889	1464.211	1...H2-1
568	M143	PL2.25X5	.024	15.461	56	.002	15.461	y 56	5785.218	18981	123.75	891	2...H1-1b
569	M217	L2.5x1.25x5	.022	14.946	56	.001	29.593	y 55	16733.833	29003.9...	340.889	1464.284	1...H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
570	M125	PL2.25X5	.021	15.461	56	.002	15.461	y	56	5785.218	18981	123.75	891	2...H1-1b
571	M12	PL2.25X5	.021	15.461	55	.003	15.461	y	55	5785.218	18981	123.75	891	2...H1-1b
572	M368	L3x2.5x5	.019	19.935	56	.001	0	z	56	32987.716	44010	1270.778	2996.056	1...H2-1
573	M238	L2.5x1.25x5	.018	14.653	55	.002	29.605	y	56	16726.261	29003.9...	340.889	1464.211	1...H2-1
574	M278	L2.5x1.25x5	.017	11.879	55	.001	0	y	55	20199.817	29003.9...	340.889	1494.276	1...H2-1
575	M316	L3x2.5x5	.016	19.935	56	.001	0	z	56	32987.716	44010	1270.778	2996.056	1...H2-1
576	M288	L2.5x1.25x5	.016	11.879	55	.001	0	y	56	20199.817	29003.9...	340.889	1494.276	1...H2-1
577	M252	L2.5x1.25x5	.013	11.879	55	.001	0	y	55	20199.817	29003.9...	340.889	1494.276	1...H2-1
578	M242	L2.5x1.25x5	.011	11.879	55	.001	0	y	56	20199.817	29003.9...	340.889	1494.276	1...H2-1
579	M317	L3x2.5x5	.011	22.056	55	.001	0	z	56	32987.716	44010	1270.778	2982.261	1...H2-1
580	M330	L3x2.5x5	.011	22.056	55	.001	0	z	55	32987.716	44010	1270.778	2982.261	1...H2-1
581	M369	L3x2.5x5	.010	19.935	55	.002	0	z	56	32987.716	44010	1270.778	2982.261	1...H2-1
582	M298	L2.5x1.25x5	.009	11.879	55	.001	0	y	55	20199.817	29003.9...	340.889	1494.276	1...H2-1
583	M367	L3x2.5x5	.005	22.056	56	.002	0	z	56	32987.716	44010	1270.778	2996.056	1...H2-1
584	M366	L3x2.5x5	.004	22.056	55	.002	0	z	56	32987.716	44010	1270.778	2982.261	1...H2-1



Milvon to West River Catenary Structure Assessment

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-S
STRUCTURE TYPE 5 FIELD CONDITION
NESC 2012, UI CRITERIA, AND HURRICANE CATEGORY 3
COMPLETE MEMBER RESULTS



Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
1	M83	6H25	4.385	43.921	75	9.999	122....	z 71	32380.313	215681.4	21582	40822.49	1	H1-1b
2	M573	6H25	4.385	43.921	74	9.999	122....	z 70	32380.313	215681.4	21582	40822.49	1	H1-1b
3	M526	PL2.25X4	4.345	14.485	71	.045	14.485	y 74	3160.048	15201	78.75	711	1...	H1-1a
4	M596	PL2.25X4	4.345	14.485	70	.045	14.485	y 75	3160.048	15201	78.75	711	1...	H1-1a
5	M525	PL2.25X4	4.226	14.485	71	.048	27.577	y 74	3160.048	15201	78.75	711	1...	H1-1a
6	M595	PL2.25X4	4.226	14.485	70	.048	27.577	y 75	3160.048	15201	78.75	711	1...	H1-1a
7	M534	PL2.25X4	3.885	12.585	71	.066	12.827	y 71	4201.337	15201	78.75	711	1...	H1-1a
8	M604	PL2.25X4	3.885	12.585	70	.066	12.827	y 70	4201.337	15201	78.75	711	1...	H1-1a
9	M533	PL2.25X4	3.362	12.585	71	.050	0	y 75	4201.337	15201	78.75	711	1...	H1-1a
10	M603	PL2.25X4	3.361	12.585	70	.050	0	y 74	4201.337	15201	78.75	711	1...	H1-1a
11	M571	L6x4x6	3.272	71.273	74	.224	76.364	z 70	28958.752	97470	4257.614	12612.4...	1	H2-1
12	M81	L6x4x6	3.272	96.727	75	.224	72.97	z 71	28958.752	97470	4257.614	12612.4...	1	H2-1
13	M591	PL2.25X5	3.114	18.733	70	.040	19.093	y 74	3742.008	18981	123.75	891	1...	H1-1a
14	M521	PL2.25X5	3.108	18.733	71	.040	19.093	y 75	3742.008	18981	123.75	891	1...	H1-1a
15	M632	PL2.25X4	2.693	8.014	70	.959	14.969	y 70	10169.427	15201	78.75	711	2...	H1-1a
16	M562	PL2.25X4	2.693	8.014	71	.958	14.969	y 71	10169.427	15201	78.75	711	2...	H1-1a
17	M624	PL2.25X4	2.659	8.993	70	.567	16.798	y 70	9140.318	15201	78.75	711	3...	H1-1a
18	M554	PL2.25X4	2.659	8.993	71	.567	16.798	y 71	9140.318	15201	78.75	711	3...	H1-1a
19	M569	L3x2.5x5	2.531	42.906	70	3.041	0	z 70	40948.468	44010	1270.778	2564.462	1...	H2-1
20	M79	L3x2.5x5	2.530	98.683	71	3.039	141....	z 71	40948.468	44010	1270.778	2569.393	1...	H2-1
21	M619	PL2.25X4	2.454	10.217	70	.228	10.413	y 70	6269.147	15201	78.75	711	1...	H1-1a
22	M549	PL2.25X4	2.453	10.217	71	.228	10.413	y 71	6269.147	15201	78.75	711	1...	H1-1a
23	M616	PL2.25X4	2.299	10.413	70	.332	19.451	y 70	7711.625	15201	78.75	711	2...	H1-1a
24	M546	PL2.25X4	2.299	10.413	71	.332	19.451	y 71	7711.625	15201	78.75	711	2...	H1-1a
25	M565	PL2.25X4	2.251	8.014	71	.860	8.014	y 71	10169.427	15201	78.75	711	1...	H1-1a
26	M635	PL2.25X4	2.251	8.014	70	.860	8.014	y 70	10169.427	15201	78.75	711	1...	H1-1a
27	M590	PL2.25X5	2.233	18.733	74	.042	0	y 74	3742.008	18981	123.75	891	1...	H1-1a
28	M520	PL2.25X5	2.233	18.733	75	.042	0	y 75	3742.008	18981	123.75	891	1...	H1-1a
29	M87	L3x2.5x6	2.130	4.455	71	.692	.545	y 71	51421.803	52110	1486.645	3490.361	1...	H2-1
30	M577	L3x2.5x6	2.130	4.545	70	.693	4.545	y 70	51421.803	52110	1486.645	3490.361	2...	H2-1
31	M592	L4x3x6	2.127	9.414	74	.416	11.336	z 75	64643.067	67230	2238.689	5885.484	1...	H2-1
32	M522	L4x3x6	2.126	9.606	75	.415	7.685	z 74	64643.067	67230	2238.689	5885.484	1...	H2-1
33	M627	PL2.25X4	2.061	8.823	70	.458	16.798	y 70	7875.296	15201	78.75	711	1...	H1-1a
34	M557	PL2.25X4	2.061	8.823	71	.458	16.798	y 71	7875.296	15201	78.75	711	1...	H1-1a
35	M633	PL2.25X4	2.002	8.014	70	.901	8.014	y 70	10169.427	15201	78.75	711	1...	H1-1a
36	M563	PL2.25X4	2.002	8.014	71	.901	8.014	y 71	10169.427	15201	78.75	711	1...	H1-1a
37	M82	L6x4x6	1.986	73.333	71	.762	66.667	z 71	43003.777	97470	4257.614	10951.9...	1	H2-1
38	M572	L6x4x6	1.986	58.667	70	.762	60	z 70	43003.777	97470	4257.614	10951.9...	1	H2-1
39	M576	L3x2.5x6	1.946	4.455	70	1.062	0	y 70	51421.803	52110	1486.645	3490.361	1...	H2-1
40	M86	L3x2.5x6	1.946	4.545	71	1.062	4.545	y 71	51421.803	52110	1486.645	3490.361	3...	H2-1
41	M523	L4x3x6	1.854	9.414	74	.360	11.336	y 69	64643.067	67230	2238.689	5885.484	1...	H2-1
42	M634	PL2.25X4	1.853	8.014	70	.558	8.014	y 70	10169.427	15201	78.75	711	2...	H1-1a
43	M564	PL2.25X4	1.853	8.014	71	.559	8.014	y 71	10169.427	15201	78.75	711	2...	H1-1a
44	M593	L4x3x6	1.847	9.606	75	.375	9.606	z 69	64643.067	67230	2238.689	5885.484	1...	H2-1
45	M601	PL2.25X4	1.821	16.057	70	.081	16.36	y 74	2619.675	15201	78.75	711	2...	H1-1a
46	M531	PL2.25X4	1.820	16.057	71	.081	16.36	y 75	2619.675	15201	78.75	711	2...	H1-1a
47	M543	PL2.25X4	1.794	9.624	71	.083	9.809	y 71	7062.974	15201	78.75	711	2...	H1-1a
48	M613	PL2.25X4	1.794	9.624	70	.083	9.809	y 70	7062.974	15201	78.75	711	2...	H1-1a
49	M570	L3x2.5x5	1.767	68.649	75	3.058	137....	z 70	40948.468	44010	1270.778	2996.056	1	H2-1
50	M80	L3x2.5x5	1.767	72.94	74	3.058	4.291	z 71	40948.468	44010	1270.778	2996.056	1	H2-1
51	M559	PL2.25X4	1.743	7.628	71	.296	7.628	y 71	10275.222	15201	78.75	711	2...	H1-1a
52	M629	PL2.25X4	1.743	7.628	70	.296	7.628	y 70	10275.222	15201	78.75	711	2...	H1-1a
53	M609	PL2.25X4	1.656	13.831	70	.070	0	y 75	3535.554	15201	78.75	711	1...	H1-1a
54	M539	PL2.25X4	1.656	13.831	71	.070	0	y 74	3535.554	15201	78.75	711	1...	H1-1a
55	M551	PL2.25X4	1.594	8.413	71	.185	8.413	y 71	9438.032	15201	78.75	711	2...	H1-1a
56	M621	PL2.25X4	1.594	8.413	70	.185	8.413	y 70	9438.032	15201	78.75	711	2...	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt	phi*Mn y	phi*Mn z	Cb	Eqn
57	M625	PL2.25X4	1.572	8.823	70 .488	8.993	y 70	7875.296	15201	78.75	711	1...	H1-1a
58	M555	PL2.25X4	1.572	8.823	71 .487	8.993	y 71	7875.296	15201	78.75	711	1...	H1-1a
59	M626	PL2.25X4	1.545	8.993	70 .489	8.993	y 70	9140.318	15201	78.75	711	1...	H1-1a
60	M556	PL2.25X4	1.544	8.993	71 .489	8.993	y 71	9140.318	15201	78.75	711	1...	H1-1a
61	M77	L3x2.5x5	1.510	128....	74 3.124	4.291	z 71	40948.468	44010	1270.778	2996.056	1	H2-1
62	M567	L3x2.5x5	1.508	67.219	75 3.125	137....	z 70	40948.468	44010	1270.778	2996.056	1	H2-1
63	M78	L3x2.5x5	1.502	12.872	75 3.048	141....	z 71	40948.468	44010	1270.778	2996.056	1	H2-1
64	M568	L3x2.5x5	1.502	128....	74 3.049	0	z 70	40948.468	44010	1270.778	2996.056	1	H2-1
65	M585	PL2.25X5	1.440	15.181	70 .030	0	y 70	5674.836	18981	123.75	891	1...	H1-1a
66	M515	PL2.25X5	1.440	15.181	71 .031	0	y 71	5674.836	18981	123.75	891	1...	H1-1a
67	M617	PL2.25X4	1.423	10.217	70 .218	10.413	y 70	6269.147	15201	78.75	711	1...	H1-1a
68	M547	PL2.25X4	1.423	10.217	71 .217	10.413	y 71	6269.147	15201	78.75	711	1...	H1-1a
69	M541	L6x4x6	1.416	6.74	75 .521	6.74	z 71	91550.116	97470	4257.614	12502.5...	1...	H2-1
70	M611	L6x4x6	1.416	6.878	74 .521	6.878	z 70	91550.116	97470	4257.614	12523.4...	1...	H2-1
71	M22	PL2.25X5	1.360	15.461	75 .037	30.614	y 71	5785.218	18981	123.75	891	1...	H1-1a
72	M135	PL2.25X5	1.358	15.461	74 .038	30.614	y 70	5785.218	18981	123.75	891	1...	H1-1a
73	M535	PL2.25X4	1.352	12.827	71 .053	23.96	y 75	5346.424	15201	78.75	711	1...	H1-1a
74	M605	PL2.25X4	1.352	12.827	70 .053	23.96	y 74	5346.424	15201	78.75	711	1...	H1-1a
75	M618	PL2.25X4	1.295	10.413	70 .284	10.413	y 70	7711.625	15201	78.75	711	2...	H1-1a
76	M548	PL2.25X4	1.295	10.413	71 .284	10.413	y 71	7711.625	15201	78.75	711	2...	H1-1a
77	M552	PL2.25X4	1.258	8.413	71 .208	8.413	y 71	9438.032	15201	78.75	711	1...	H1-1a
78	M622	PL2.25X4	1.257	8.413	70 .208	8.413	y 70	9438.032	15201	78.75	711	1...	H1-1a
79	M558	PL2.25X4	1.232	7.628	71 .295	14.523	y 71	10275.222	15201	78.75	711	1...	H1-1a
80	M628	PL2.25X4	1.232	7.628	70 .295	14.523	y 70	10275.222	15201	78.75	711	1...	H1-1a
81	M560	PL2.25X4	1.226	7.628	71 .483	7.628	y 71	10275.222	15201	78.75	711	1...	H1-1a
82	M630	PL2.25X4	1.225	7.628	70 .483	7.628	y 70	10275.222	15201	78.75	711	1...	H1-1a
83	M597	PL2.25X4	1.214	14.763	70 .046	27.577	y 74	4052.628	15201	78.75	711	1...	H1-1a
84	M527	PL2.25X4	1.214	14.763	71 .046	27.577	y 75	4052.628	15201	78.75	711	1...	H1-1a
85	M561	PL2.25X4	1.203	7.628	71 .384	14.523	y 71	10275.222	15201	78.75	711	1...	H1-1a
86	M631	PL2.25X4	1.203	7.628	70 .383	14.523	y 70	10275.222	15201	78.75	711	1...	H1-1a
87	M119	PL2.25X5	1.195	15.461	75 .024	0	y 74	5785.218	18981	123.75	891	1...	H1-1a
88	M6	PL2.25X5	1.194	15.461	74 .024	0	y 75	5785.218	18981	123.75	891	1...	H1-1a
89	M114	L6x6x10	1.178	311....	75 .090	0	y 70	190937.059	192510	13542.2...	30578.6...	1...	H2-1
90	M116	L6x6x10	1.173	60.138	74 .071	0	y 75	190937.059	192510	13542.2...	30578.6...	1...	H2-1
91	M598	PL2.25X4	1.173	16.36	70 .064	29.994	y 74	3503.195	15201	78.75	711	2...	H1-1a
92	M528	PL2.25X4	1.172	16.36	71 .064	29.994	y 75	3503.195	15201	78.75	711	2...	H1-1a
93	M25	PL2.25X5	1.172	15.152	75 .019	30.614	y 74	5785.218	18981	123.75	891	1...	H1-1a
94	M138	PL2.25X5	1.170	15.152	74 .018	30.614	y 75	5785.218	18981	123.75	891	1...	H1-1a
95	M1	L6x6x10	1.170	60.138	74 .090	368....	y 71	190937.059	192510	13542.2...	30578.6...	1...	H2-1
96	M3	L6x6x10	1.167	311....	75 .070	368....	y 74	190937.059	192510	13542.2...	30578.6...	1...	H2-1
97	M155	PL2.25X5	1.157	15.461	74 .021	0	y 75	5785.218	18981	123.75	891	1...	H1-1a
98	M42	PL2.25X5	1.154	15.461	75 .021	0	y 74	5785.218	18981	123.75	891	1...	H1-1a
99	M516	PL2.25X5	1.139	15.181	71 .033	15.479	y 74	5674.836	18981	123.75	891	1...	H1-1a
100	M586	PL2.25X5	1.117	15.181	70 .033	15.479	y 75	5674.836	18981	123.75	891	1...	H1-1a
101	M174	PL2.25X5	1.113	15.152	75 .017	30.614	y 74	5785.218	18981	123.75	891	1...	H1-1a
102	M115	L6x6x10	1.112	60.138	74 .085	368....	y 70	190937.059	192510	13542.2...	21627.3...	1	H2-1
103	M2	L6x6x10	1.112	311....	75 .084	0	y 71	190937.059	192510	13542.2...	21627.3...	1	H2-1
104	M61	PL2.25X5	1.111	15.152	74 .017	30.614	y 75	5785.218	18981	123.75	891	1...	H1-1a
105	M117	L6x6x10	1.105	311....	75 .062	315....	z 74	190937.059	192510	13542.2...	21627.3...	1	H2-1
106	M4	L6x6x10	1.103	60.138	74 .062	56.379	z 75	190937.059	192510	13542.2...	21627.3...	1	H2-1
107	M550	PL2.25X4	1.098	8.413	71 .178	16.018	y 71	9438.032	15201	78.75	711	1...	H1-1a
108	M620	PL2.25X4	1.098	8.413	70 .178	16.018	y 70	9438.032	15201	78.75	711	1...	H1-1a
109	M27	PL2.25X5	1.096	15.152	75 .020	0	y 75	5785.218	18981	123.75	891	1...	H1-1a
110	M140	PL2.25X5	1.094	15.152	74 .019	0	y 74	5785.218	18981	123.75	891	1...	H1-1a
111	M10	PL2.25X5	1.093	15.152	75 .018	0	y 75	5785.218	18981	123.75	891	1...	H1-1a
112	M123	PL2.25X5	1.091	15.152	74 .018	0	y 74	5785.218	18981	123.75	891	1...	H1-1a
113	M29	PL2.25X5	1.087	15.152	75 .017	0	y 75	5785.218	18981	123.75	891	1...	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
114	M142	PL2.25X5	1.086	15.15274	.016	0	y 74	5785.218	18981	123.75	891	1...H1-1a
115	M8	PL2.25X5	1.083	15.15275	.023	0	y 75	5785.218	18981	123.75	891	1...H1-1a
116	M121	PL2.25X5	1.081	15.15274	.023	0	y 74	5785.218	18981	123.75	891	1...H1-1a
117	M12	PL2.25X5	1.077	15.15275	.015	0	y 75	5785.218	18981	123.75	891	1...H1-1a
118	M125	PL2.25X5	1.076	15.15274	.015	0	y 74	5785.218	18981	123.75	891	1...H1-1a
119	M31	PL2.25X5	1.072	15.15275	.015	0	y 74	5785.218	18981	123.75	891	1...H1-1a
120	M144	PL2.25X5	1.071	15.15274	.014	0	y 75	5785.218	18981	123.75	891	1...H1-1a
121	M14	PL2.25X5	1.069	15.15274	.015	0	y 74	5785.218	18981	123.75	891	1...H1-1a
122	M127	PL2.25X5	1.069	15.15275	.014	0	y 75	5785.218	18981	123.75	891	1...H1-1a
123	M37	PL2.25X5	1.066	15.46175	.020	30.614	y 71	5785.218	18981	123.75	891	1...H1-1a
124	M33	PL2.25X5	1.065	15.15274	.015	0	y 74	5785.218	18981	123.75	891	1...H1-1a
125	M150	PL2.25X5	1.065	15.46174	.021	30.614	y 70	5785.218	18981	123.75	891	1...H1-1a
126	M146	PL2.25X5	1.065	15.15275	.014	0	y 75	5785.218	18981	123.75	891	1...H1-1a
127	M16	PL2.25X5	1.064	15.15274	.015	0	y 74	5785.218	18981	123.75	891	1...H1-1a
128	M544	PL2.25X4	1.064	9.80971	.108	9.809	y 71	8183.037	15201	78.75	711	1...H1-1a
129	M614	PL2.25X4	1.064	9.80970	.108	9.809	y 70	8183.037	15201	78.75	711	1...H1-1a
130	M129	PL2.25X5	1.063	15.15275	.014	0	y 75	5785.218	18981	123.75	891	1...H1-1a
131	M148	PL2.25X5	1.057	15.15275	.015	30.614	y 70	5785.218	18981	123.75	891	1...H1-1a
132	M35	PL2.25X5	1.057	15.15274	.015	0	y 74	5785.218	18981	123.75	891	1...H1-1a
133	M18	PL2.25X5	1.054	15.46175	.017	30.614	y 71	5785.218	18981	123.75	891	1...H1-1a
134	M133	PL2.25X5	1.054	15.3175	.023	30.933	y 70	5666.526	18981	123.75	891	1...H1-1a
135	M20	PL2.25X5	1.053	15.3174	.021	30.933	y 71	5666.526	18981	123.75	891	1...H1-1a
136	M131	PL2.25X5	1.052	15.46174	.018	30.614	y 70	5785.218	18981	123.75	891	1...H1-1a
137	M176	PL2.25X5	1.050	15.15274	.018	0	y 75	5785.218	18981	123.75	891	1...H1-1a
138	M63	PL2.25X5	1.048	15.15275	.018	0	y 74	5785.218	18981	123.75	891	1...H1-1a
139	M159	PL2.25X5	1.046	15.15274	.016	0	y 75	5785.218	18981	123.75	891	1...H1-1a
140	M178	PL2.25X5	1.046	15.15274	.015	0	y 75	5785.218	18981	123.75	891	1...H1-1a
141	M46	PL2.25X5	1.044	15.15275	.016	0	y 74	5785.218	18981	123.75	891	1...H1-1a
142	M65	PL2.25X5	1.043	15.15275	.014	0	y 74	5785.218	18981	123.75	891	1...H1-1a
143	M161	PL2.25X5	1.043	15.15274	.014	0	y 74	5785.218	18981	123.75	891	1...H1-1a
144	M48	PL2.25X5	1.041	15.15275	.013	0	y 75	5785.218	18981	123.75	891	1...H1-1a
145	M180	PL2.25X5	1.040	15.15274	.014	0	y 74	5785.218	18981	123.75	891	1...H1-1a
146	M163	PL2.25X5	1.040	15.15274	.014	0	y 74	5785.218	18981	123.75	891	1...H1-1a
147	M67	PL2.25X5	1.038	15.15275	.014	0	y 75	5785.218	18981	123.75	891	1...H1-1a
148	M50	PL2.25X5	1.038	15.15275	.014	0	y 75	5785.218	18981	123.75	891	1...H1-1a
149	M182	PL2.25X5	1.036	15.15274	.014	0	y 74	5785.218	18981	123.75	891	1...H1-1a
150	M165	PL2.25X5	1.035	15.15274	.014	0	y 74	5785.218	18981	123.75	891	1...H1-1a
151	M157	PL2.25X5	1.035	15.15274	.021	0	y 75	5785.218	18981	123.75	891	1...H1-1a
152	M184	PL2.25X5	1.034	15.15274	.014	0	y 74	5785.218	18981	123.75	891	1...H1-1a
153	M52	PL2.25X5	1.034	15.15275	.014	0	y 75	5785.218	18981	123.75	891	1...H1-1a
154	M69	PL2.25X5	1.033	15.15275	.014	0	y 75	5785.218	18981	123.75	891	1...H1-1a
155	M44	PL2.25X5	1.033	15.15275	.021	0	y 74	5785.218	18981	123.75	891	1...H1-1a
156	M71	PL2.25X5	1.030	15.15275	.014	0	y 75	5785.218	18981	123.75	891	1...H1-1a
157	M39	PL2.25X5	1.027	14.99774	.029	30.3	y 71	5905.645	18981	123.75	891	1...H1-1a
158	M152	PL2.25X5	1.025	14.99775	.030	30.3	y 70	5905.645	18981	123.75	891	1...H1-1a
159	M23	PL2.25X5	1.022	15.15275	.019	0	y 78	5785.218	18981	123.75	891	1...H1-1a
160	M136	PL2.25X5	1.020	15.15274	.019	0	y 77	5785.218	18981	123.75	891	1...H1-1a
161	M167	PL2.25X5	1.013	15.15274	.014	0	y 74	5785.218	18981	123.75	891	1...H1-1a
162	M54	PL2.25X5	1.010	15.15275	.014	0	y 75	5785.218	18981	123.75	891	1...H1-1a
163	M186	PL2.25X5	1.008	15.15274	.015	0	y 59	5785.218	18981	123.75	891	1...H1-1a
164	M615	PL2.25X4	1.007	9.80970	.165	18.322	y 70	8183.037	15201	78.75	711	1...H1-1a
165	M545	PL2.25X4	1.007	9.80971	.165	18.322	y 71	8183.037	15201	78.75	711	1...H1-1a
166	M73	PL2.25X5	1.005	15.15275	.015	0	y 60	5785.218	18981	123.75	891	1...H1-1a
167	M553	PL2.25X4	.991	8.41371	.266	16.018	y 71	9438.032	15201	78.75	711	1...H1-1a
168	M623	PL2.25X4	.990	8.41370	.266	16.018	y 70	9438.032	15201	78.75	711	1...H1-1a
169	M56	PL2.25X5	.990	15.3175	.018	0	y 60	5666.526	18981	123.75	891	1...H1-1a
170	M532	PL2.25X4	.986	12.58571	.043	12.827	y 75	4201.337	15201	78.75	711	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt	phi*Mn y	phi*Mn z	Cb	Eqn
171	M602	PL2.25X4	.986	12.58570	.043	12.827	y 74	4201.337	15201	78.75	711	1...H1-1a
172	M606	PL2.25X4	.985	13.83170	.072	13.831	y 75	3535.554	15201	78.75	711	1...H1-1a
173	M536	PL2.25X4	.985	13.83171	.072	13.831	y 74	3535.554	15201	78.75	711	1...H1-1a
174	M169	PL2.25X5	.984	15.3174	.019	0	y 59	5666.526	18981	123.75	891	1...H1-1a
175	M524	PL2.25X4	.978	14.76371	.048	14.763	y 75	4052.628	15201	78.75	711	1...H1-1a
176	M594	PL2.25X4	.978	14.76370	.048	14.763	y 74	4052.628	15201	78.75	711	1...H1-1a
177	M172	PL2.25X5	.967	15.15275	.018	15.152	y 77	5785.218	18981	123.75	891	1...H1-1a
178	M59	PL2.25X5	.967	15.15274	.018	15.152	y 78	5785.218	18981	123.75	891	1...H1-1a
179	M171	PL2.25X5	.964	15.15275	.013	0	y 70	5785.218	18981	123.75	891	1...H1-1a
180	M58	PL2.25X5	.945	15.15274	.015	30.614	y 71	5785.218	18981	123.75	891	1...H1-1a
181	M481	PL2.25X5	.940	11.13377	.042	0	y 74	9622.426	18981	123.75	891	1...H1-1a
182	M413	PL2.25X5	.939	11.13377	.038	10.906	y 75	9622.426	18981	123.75	891	1...H1-1a
183	M464	PL2.25X5	.936	11.13378	.042	0	y 75	9622.426	18981	123.75	891	1...H1-1a
184	M396	PL2.25X5	.933	11.13378	.038	10.906	y 74	9622.426	18981	123.75	891	1...H1-1a
185	M499	PL2.25X5	.913	11.39777	.036	0	y 74	9326.899	18981	123.75	891	1...H1-1a
186	M431	PL2.25X5	.911	11.39777	.035	11.164	y 75	9326.899	18981	123.75	891	1...H1-1a
187	M448	PL2.25X5	.908	11.39778	.036	0	y 75	9326.899	18981	123.75	891	1...H1-1a
188	M380	PL2.25X5	.905	11.39778	.035	11.164	y 74	9326.899	18981	123.75	891	1...H1-1a
189	M342	L2.5X1.5X5	.902	27.73377	.002	0	z 65	10830.232	31113.2...	475.557	1578.654	1...H2-1
190	M514	PL2.25X5	.899	15.18178	.030	15.479	y 75	5674.836	18981	123.75	891	1...H1-1a
191	M584	PL2.25X5	.896	15.18177	.030	15.479	y 74	5674.836	18981	123.75	891	1...H1-1a
192	M338	L2.5X1.5X5	.894	27.73377	.002	49.92	z 65	10830.232	31113.2...	475.557	1578.654	1...H2-1
193	M497	PL2.25X5	.889	10.87677	.042	10.876	y 75	9913.38	18981	123.75	891	1...H1-1a
194	M429	PL2.25X5	.888	10.87677	.039	21.973	y 74	9913.38	18981	123.75	891	1...H1-1a
195	M483	PL2.25X5	.886	11.66577	.030	0	y 74	9027.817	18981	123.75	891	1...H1-1a
196	M446	PL2.25X5	.885	10.87678	.041	10.876	y 74	9913.38	18981	123.75	891	1...H1-1a
197	M415	PL2.25X5	.884	11.66577	.029	11.427	y 75	9027.817	18981	123.75	891	1...H1-1a
198	M378	PL2.25X5	.884	10.87678	.039	21.973	y 75	9913.38	18981	123.75	891	1...H1-1a
199	M466	PL2.25X5	.881	11.66578	.030	0	y 75	9027.817	18981	123.75	891	1.8 H1-1a
200	M343	L2.5X1.5X5	.880	27.73377	.002	0	z 66	10830.232	31113.2...	475.557	1578.654	1...H2-1
201	M398	PL2.25X5	.879	11.66578	.030	11.427	y 74	9027.817	18981	123.75	891	1...H1-1a
202	M188	PL2.25X5	.876	15.30375	.011	0	y 59	5905.645	18981	123.75	891	1...H1-1a
203	M445	PL2.25X5	.870	15.48959	.010	31.295	y 70	5391.51	18981	123.75	891	1...H1-1a
204	M513	PL2.25X5	.869	15.48959	.012	15.489	y 70	5391.51	18981	123.75	891	1...H1-1a
205	M587	PL2.25X5	.859	15.18178	.035	29.469	y 74	5674.836	18981	123.75	891	1...H1-1a
206	M501	PL2.25X5	.858	11.93877	.027	0	y 74	8726.166	18981	123.75	891	2...H1-1a
207	M394	PL2.25X5	.857	15.48960	.009	15.173	y 75	5391.51	18981	123.75	891	1...H1-1a
208	M433	PL2.25X5	.856	11.93877	.026	11.694	y 75	8726.166	18981	123.75	891	2...H1-1a
209	M450	PL2.25X5	.853	11.93878	.027	0	y 75	8726.166	18981	123.75	891	2...H1-1a
210	M462	PL2.25X5	.853	15.48960	.014	15.489	y 71	5391.51	18981	123.75	891	1...H1-1a
211	M517	PL2.25X5	.852	15.18177	.035	29.469	y 75	5674.836	18981	123.75	891	1...H1-1a
212	M382	PL2.25X5	.851	11.93878	.026	11.694	y 74	8726.166	18981	123.75	891	2...H1-1a
213	M75	PL2.25X5	.847	14.99774	.013	30.3	y 71	5905.645	18981	123.75	891	1...H1-1a
214	M542	PL2.25X4	.846	9.62471	.061	9.809	y 71	7062.974	15201	78.75	711	1...H1-1a
215	M612	PL2.25X4	.846	9.62470	.061	9.809	y 70	7062.974	15201	78.75	711	1...H1-1a
216	M498	PL2.25X5	.843	11.13378	.040	0	y 75	9622.426	18981	123.75	891	1...H1-1a
217	M430	PL2.25X5	.841	11.13378	.037	10.906	y 74	9622.426	18981	123.75	891	1...H1-1a
218	M379	PL2.25X5	.836	11.13377	.037	10.906	y 75	9622.426	18981	123.75	891	1...H1-1a
219	M447	PL2.25X5	.834	11.13377	.040	0	y 74	9622.426	18981	123.75	891	1...H1-1a
220	M485	PL2.25X5	.834	12.21577	.023	0	y 74	8422.9	18981	123.75	891	3...H1-1a
221	M417	PL2.25X5	.832	12.21577	.023	11.966	y 75	8422.9	18981	123.75	891	3...H1-1a
222	M540	L6x4x6	.829	6.87871	.401	6.878	z 71	91550.116	97470	4257.614	12792.4...	1...H2-1
223	M610	L6x4x6	.829	6.7470	.401	6.74	z 70	91550.116	97470	4257.614	12792.4...	1...H2-1
224	M468	PL2.25X5	.829	12.21578	.023	0	y 75	8422.9	18981	123.75	891	3...H1-1a
225	M400	PL2.25X5	.828	12.21578	.023	11.966	y 74	8422.9	18981	123.75	891	2...H1-1a
226	M503	PL2.25X5	.826	12.49777	.021	0	y 75	8118.935	18981	123.75	891	1...H1-1a
227	M334	L2.5X1.5X5	.826	27.73377	.002	49.92	z 66	10830.232	31113.2...	475.557	1578.654	1...H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
228	M435	PL2.25X5	.824	12.49777	.021	12.242	y 74	8118.935	18981	123.75	891	1...H1-1a
229	M452	PL2.25X5	.821	12.49778	.021	0	y 74	8118.935	18981	123.75	891	1...H1-1a
230	M384	PL2.25X5	.820	12.49778	.021	12.242	y 74	8118.935	18981	123.75	891	1...H1-1a
231	M487	PL2.25X5	.820	12.78377	.019	0	y 75	7815.149	18981	123.75	891	1...H1-1a
232	M419	PL2.25X5	.818	12.78377	.019	12.522	y 74	7815.149	18981	123.75	891	1...H1-1a
233	M493	PL2.25X5	.818	14.56459	.012	0	y 75	6084.943	18981	123.75	891	1...H1-1a
234	M489	PL2.25X5	.817	13.3977	.016	0	y 75	7169.732	18981	123.75	891	1...H1-1a
235	M509	PL2.25X5	.816	14.2659	.013	0	y 75	6341.715	18981	123.75	891	1...H1-1a
236	M421	PL2.25X5	.816	13.3977	.016	13.117	y 74	7169.732	18981	123.75	891	1...H1-1a
237	M482	PL2.25X5	.816	11.39778	.035	0	y 75	9326.899	18981	123.75	891	1...H1-1a
238	M425	PL2.25X5	.815	14.56459	.012	14.266	y 74	6084.943	18981	123.75	891	1...H1-1a
239	M333	L2.5X1.5X5	.815	22.21478	.002	48.871	z 66	11300.048	31113.2...	475.557	1584.382	1...H2-1
240	M470	PL2.25X5	.814	12.78378	.020	0	y 74	7815.149	18981	123.75	891	1...H1-1a
241	M414	PL2.25X5	.814	11.39778	.033	11.164	y 74	9326.899	18981	123.75	891	1...H1-1a
242	M402	PL2.25X5	.814	12.78378	.019	12.522	y 75	7815.148	18981	123.75	891	1...H1-1a
243	M441	PL2.25X5	.814	14.2659	.013	13.969	y 74	6341.715	18981	123.75	891	1...H1-1a
244	M472	PL2.25X5	.812	13.3978	.017	0	y 74	7169.732	18981	123.75	891	1...H1-1a
245	M404	PL2.25X5	.812	13.3978	.016	13.117	y 75	7169.732	18981	123.75	891	1...H1-1a
246	M530	PL2.25X4	.811	16.3674	.065	16.36	y 74	3503.195	15201	78.75	711	2...H1-1a
247	M491	PL2.25X5	.810	13.95859	.014	0	y 75	6612.528	18981	123.75	891	1...H1-1a
248	M337	L2.5X1.5X5	.810	22.21478	.002	48.871	z 66	11300.048	31113.2...	475.557	1584.382	1...H2-1
249	M507	PL2.25X5	.810	13.6677	.015	0	y 75	6898.148	18981	123.75	891	1...H1-1a
250	M505	PL2.25X5	.809	13.04377	.018	0	y 75	7544.204	18981	123.75	891	1...H1-1a
251	M397	PL2.25X5	.809	11.39777	.033	11.164	y 75	9326.899	18981	123.75	891	1...H1-1a
252	M439	PL2.25X5	.808	13.6677	.015	13.381	y 74	6898.148	18981	123.75	891	1...H1-1a
253	M600	PL2.25X4	.808	16.3675	.065	16.36	y 75	3503.195	15201	78.75	711	2...H1-1a
254	M423	PL2.25X5	.808	13.95859	.014	13.673	y 74	6612.528	18981	123.75	891	1...H1-1a
255	M437	PL2.25X5	.807	13.04377	.018	12.777	y 74	7544.204	18981	123.75	891	1...H1-1a
256	M465	PL2.25X5	.807	11.39777	.034	0	y 74	9326.899	18981	123.75	891	1...H1-1a
257	M456	PL2.25X5	.804	13.6678	.016	0	y 74	6898.148	18981	123.75	891	1...H1-1a
258	M388	PL2.25X5	.804	13.6678	.015	13.381	y 75	6898.148	18981	123.75	891	1...H1-1a
259	M454	PL2.25X5	.804	13.04378	.018	0	y 74	7544.204	18981	123.75	891	1...H1-1a
260	M390	PL2.25X5	.804	14.2660	.013	13.969	y 75	6341.716	18981	123.75	891	1...H1-1a
261	M386	PL2.25X5	.803	13.04378	.018	12.777	y 75	7544.204	18981	123.75	891	1...H1-1a
262	M458	PL2.25X5	.803	14.2660	.013	0	y 74	6341.716	18981	123.75	891	1...H1-1a
263	M408	PL2.25X5	.803	14.56460	.012	14.266	y 75	6084.943	18981	123.75	891	1...H1-1a
264	M474	PL2.25X5	.802	13.95878	.014	0	y 74	6612.528	18981	123.75	891	1...H1-1a
265	M406	PL2.25X5	.802	13.95878	.014	13.673	y 75	6612.528	18981	123.75	891	1...H1-1a
266	M476	PL2.25X5	.802	14.56460	.012	0	y 74	6084.943	18981	123.75	891	1...H1-1a
267	M340	L2.5X1.5X5	.796	22.21478	.002	0	y 69	11300.048	31113.2...	475.557	1584.382	1...H2-1
268	M500	PL2.25X5	.790	11.66578	.029	0	y 75	9027.817	18981	123.75	891	1...H1-1a
269	M511	PL2.25X5	.789	14.8759	.011	14.87	y 70	5841.463	18981	123.75	891	1...H1-1a
270	M480	PL2.25X5	.788	10.87678	.044	10.876	y 74	9913.38	18981	123.75	891	1...H1-1a
271	M432	PL2.25X5	.788	11.66578	.028	11.427	y 74	9027.817	18981	123.75	891	1...H1-1a
272	M412	PL2.25X5	.788	10.87678	.040	21.973	y 75	9913.38	18981	123.75	891	1...H1-1a
273	M443	PL2.25X5	.787	14.8759	.011	14.567	y 74	5841.463	18981	123.75	891	1...H1-1a
274	M395	PL2.25X5	.784	10.87677	.040	21.973	y 74	9913.38	18981	123.75	891	1...H1-1a
275	M336	L2.5X1.5X5	.783	22.21478	.002	48.871	z 66	11300.048	31113.2...	475.557	1584.382	1...H2-1
276	M381	PL2.25X5	.783	11.66577	.028	11.427	y 75	9027.817	18981	123.75	891	1...H1-1a
277	M449	PL2.25X5	.781	11.66577	.028	0	y 74	9027.817	18981	123.75	891	1...H1-1a
278	M463	PL2.25X5	.779	10.87677	.044	10.876	y 75	9913.38	18981	123.75	891	1...H1-1a
279	M495	PL2.25X5	.779	15.17959	.012	15.179	y 70	5610.551	18981	123.75	891	1...H1-1a
280	M392	PL2.25X5	.778	14.8760	.011	14.567	y 75	5841.463	18981	123.75	891	1...H1-1a
281	M460	PL2.25X5	.777	14.8760	.013	14.87	y 71	5841.463	18981	123.75	891	1...H1-1a
282	M427	PL2.25X5	.775	15.17959	.010	14.869	y 74	5610.551	18981	123.75	891	1...H1-1a
283	M484	PL2.25X5	.764	11.93878	.025	0	y 75	8726.166	18981	123.75	891	1...H1-1a
284	M410	PL2.25X5	.763	15.17960	.010	14.869	y 75	5610.551	18981	123.75	891	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
285	M416	PL2.25X5	.762	11.93878	.024	11.694	y 74	8726.166	18981	123.75	891	1...	H1-1a	
286	M478	PL2.25X5	.762	15.17960	.014	15.179	y 71	5610.551	18981	123.75	891	1...	H1-1a	
287	M399	PL2.25X5	.757	11.93877	.024	11.694	y 75	8726.166	18981	123.75	891	1...	H1-1a	
288	M467	PL2.25X5	.755	11.93877	.025	0	y 74	8726.166	18981	123.75	891	1...	H1-1a	
289	M329	L2.5X1.5X5	.751	27.73377	.002	49.92	z 65	10830.232	31113.2...	475.557	1578.654	1...	H2-1	
290	M213	L6x4x8	.750	38.38577	.099	46.063	y 59	118844.707	128250	5530.762	14152.4...	1	H2-1	
291	M328	L2.5X1.5X5	.748	27.73377	.002	49.92	z 65	10830.232	31113.2...	475.557	1578.654	1...	H2-1	
292	M214	L6x4x8	.746	721....	.77	.099	713....	y 59	118844.707	128250	5530.762	14152.4...	1	H2-1
293	M98	L2.5x2.5x5	.743	0	.71	.062	0	z 71	35341.325	39420	1096.767	2551.08	2...	H2-1
294	M502	PL2.25X5	.741	12.21578	.022	0	y 75	8422.9	18981	123.75	891	1...	H1-1a	
295	M434	PL2.25X5	.740	12.21578	.021	11.966	y 74	8422.9	18981	123.75	891	1...	H1-1a	
296	M383	PL2.25X5	.735	12.21577	.021	24.68	y 74	8422.9	18981	123.75	891	1...	H1-1a	
297	M451	PL2.25X5	.733	12.21577	.022	0	y 75	8422.9	18981	123.75	891	1...	H1-1a	
298	M335	L2.5X1.5X5	.725	27.73377	.002	49.92	z 65	10830.232	31113.2...	475.557	1578.654	1...	H2-1	
299	M486	PL2.25X5	.721	12.49778	.020	0	y 74	8118.935	18981	123.75	891	1...	H1-1a	
300	M418	PL2.25X5	.720	12.49778	.018	25.249	y 74	8118.935	18981	123.75	891	1...	H1-1a	
301	M194	L2.5x2.5x5	.720	24	.70	.062	24	z 70	35341.325	39420	1096.767	2551.08	2...	H2-1
302	M401	PL2.25X5	.715	12.49777	.019	25.249	y 75	8118.935	18981	123.75	891	2...	H1-1a	
303	M469	PL2.25X5	.713	12.49777	.020	0	y 75	8118.935	18981	123.75	891	1...	H1-1a	
304	M504	PL2.25X5	.709	12.78378	.018	0	y 74	7815.149	18981	123.75	891	1...	H1-1a	
305	M436	PL2.25X5	.709	12.78378	.017	25.826	y 74	7815.149	18981	123.75	891	1...	H1-1a	
306	M506	PL2.25X5	.706	13.3978	.015	0	y 74	7169.732	18981	123.75	891	1...	H1-1a	
307	M385	PL2.25X5	.705	12.78377	.017	25.826	y 75	7815.148	18981	123.75	891	1...	H1-1a	
308	M438	PL2.25X5	.705	13.3978	.015	27.054	y 74	7169.732	18981	123.75	891	1...	H1-1a	
309	M387	PL2.25X5	.702	13.3977	.015	27.054	y 75	7169.732	18981	123.75	891	1...	H1-1a	
310	M453	PL2.25X5	.700	12.78377	.018	12.783	y 74	7815.149	18981	123.75	891	1...	H1-1a	
311	M488	PL2.25X5	.700	13.04378	.017	0	y 74	7544.204	18981	123.75	891	1...	H1-1a	
312	M420	PL2.25X5	.699	13.04378	.016	26.352	y 74	7544.204	18981	123.75	891	1...	H1-1a	
313	M490	PL2.25X5	.699	13.6678	.014	13.66	y 75	6898.148	18981	123.75	891	1...	H1-1a	
314	M422	PL2.25X5	.699	13.6678	.014	27.598	y 74	6898.148	18981	123.75	891	1...	H1-1a	
315	M508	PL2.25X5	.697	13.95878	.013	13.958	y 75	6612.528	18981	123.75	891	1...	H1-1a	
316	M455	PL2.25X5	.697	13.3977	.015	13.39	y 74	7169.732	18981	123.75	891	1...	H1-1a	
317	M440	PL2.25X5	.697	13.95878	.013	28.201	y 74	6612.528	18981	123.75	891	1...	H1-1a	
318	M403	PL2.25X5	.696	13.04377	.016	26.352	y 75	7544.204	18981	123.75	891	1...	H1-1a	
319	M405	PL2.25X5	.695	13.6677	.014	27.598	y 75	6898.148	18981	123.75	891	1...	H1-1a	
320	M492	PL2.25X5	.694	14.2678	.012	14.26	y 75	6341.715	18981	123.75	891	1...	H1-1a	
321	M424	PL2.25X5	.694	14.2678	.012	28.81	y 74	6341.715	18981	123.75	891	1...	H1-1a	
322	M389	PL2.25X5	.693	13.95877	.013	28.201	y 75	6612.528	18981	123.75	891	1...	H1-1a	
323	M339	L2.5X1.5X5	.693	27.73377	.002	49.92	z 65	10830.232	31113.2...	475.557	1578.654	1...	H2-1	
324	M494	PL2.25X5	.692	14.8778	.010	14.87	y 75	5841.463	18981	123.75	891	1...	H1-1a	
325	M471	PL2.25X5	.691	13.04377	.017	13.043	y 74	7544.204	18981	123.75	891	1...	H1-1a	
326	M426	PL2.25X5	.691	14.8778	.010	30.043	y 74	5841.463	18981	123.75	891	1...	H1-1a	
327	M473	PL2.25X5	.690	13.6677	.014	13.66	y 74	6898.148	18981	123.75	891	1...	H1-1a	
328	M407	PL2.25X5	.690	14.2677	.012	28.81	y 75	6341.716	18981	123.75	891	1...	H1-1a	
329	M510	PL2.25X5	.690	14.56478	.011	14.564	y 75	6084.943	18981	123.75	891	1...	H1-1a	
330	M442	PL2.25X5	.689	14.56478	.011	29.424	y 74	6084.943	18981	123.75	891	1...	H1-1a	
331	M457	PL2.25X5	.688	13.95877	.013	13.958	y 74	6612.528	18981	123.75	891	1...	H1-1a	
332	M409	PL2.25X5	.688	14.8777	.010	30.043	y 75	5841.463	18981	123.75	891	1...	H1-1a	
333	M475	PL2.25X5	.685	14.2677	.012	14.26	y 74	6341.716	18981	123.75	891	1...	H1-1a	
334	M519	PL2.25X5	.685	18.73371	.037	35.664	y 74	3742.008	18981	123.75	891	1...	H1-1a	
335	M589	PL2.25X5	.684	18.73370	.037	35.664	y 75	3742.008	18981	123.75	891	1...	H1-1a	
336	M391	PL2.25X5	.683	14.56477	.011	29.424	y 75	6084.943	18981	123.75	891	1...	H1-1a	
337	M477	PL2.25X5	.683	14.8777	.010	14.87	y 74	5841.463	18981	123.75	891	1...	H1-1a	
338	M607	PL2.25X4	.681	13.83170	.065	13.831	y 74	3535.554	15201	78.75	711	1...	H1-1a	
339	M537	PL2.25X4	.681	13.83171	.065	13.831	y 75	3535.554	15201	78.75	711	1...	H1-1a	
340	M459	PL2.25X5	.678	14.56477	.011	14.564	y 74	6084.943	18981	123.75	891	1...	H1-1a	
341	M344	L2.5X1.5X5	.667	22.21478	.002	48.871	z 66	11300.048	31113.2...	475.557	1584.382	1...	H2-1	



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
342	M512	PL2.25X5	.662	15.179	78	.009	15.179	y	75	5610.551	18981	123.75	891	1...H1-1a
343	M444	PL2.25X5	.662	15.179	78	.009	30.667	y	74	5610.551	18981	123.75	891	1...H1-1a
344	M393	PL2.25X5	.658	15.179	77	.009	30.667	y	75	5610.551	18981	123.75	891	1...H1-1a
345	M189	PL2.25X5	.658	15.461	70	.017	15.461	y	70	5785.218	18981	123.75	891	3...H1-1a
346	M461	PL2.25X5	.654	15.179	77	.009	0	y	71	5610.551	18981	123.75	891	1...H1-1a
347	M358	L2.5x2x5	.641	26.726	77	.002	0	z	65	19175.995	35640	809.265	1951.095	1...H2-1
348	M211	L6x4x9	.633	731....	70	.059	23.091	y	71	132785.254	143370	6117.855	15040.0...	1 H2-1
349	M173	PL2.25X5	.631	15.152	66	.020	0	y	78	5785.218	18981	123.75	891	1...H1-1a
350	M359	L2.5x2x5	.630	26.726	77	.002	49.922	z	66	19175.995	35640	809.265	1951.095	1...H2-1
351	M60	PL2.25X5	.623	15.152	66	.020	0	y	77	5785.218	18981	123.75	891	1...H1-1a
352	M332	L2.5x1.5x5	.621	22.214	78	.002	48.871	z	66	11300.048	31113.2...	475.557	1584.382	1...H2-1
353	M212	L6x4x9	.620	30.788	77	.055	723....	y	74	132785.254	143370	6117.855	15040.0...	1 H2-1
354	M312	L2.5x2x5	.611	23.201	78	.002	0	z	65	19678.445	35640	809.265	1951.095	1...H2-1
355	M156	PL2.25X5	.598	15.152	66	.017	15.152	y	74	5785.218	18981	123.75	891	1...H1-1a
356	M354	L2.5x2x5	.594	26.725	77	.002	49.92	y	78	19176.963	35640	809.265	1951.095	1...H2-1
357	M43	PL2.25X5	.591	15.152	66	.017	15.152	y	75	5785.218	18981	123.75	891	1...H1-1a
358	M351	L2.5x2x5	.580	26.725	77	.002	0	z	66	19176.963	35640	809.265	1951.095	1...H2-1
359	M76	PL2.25X5	.577	15.461	71	.014	15.461	y	71	5785.218	18981	123.75	891	2...H1-1a
360	M355	L2.5x2x5	.575	26.725	77	.002	0	z	66	19176.963	35640	809.265	1951.095	1...H2-1
361	M175	PL2.25X5	.574	15.152	66	.019	15.152	y	74	5785.218	18981	123.75	891	1...H1-1a
362	M158	PL2.25X5	.572	15.152	66	.016	15.152	y	74	5785.218	18981	123.75	891	1...H1-1a
363	M327	L2.5x2x5	.572	23.202	78	.002	0	z	66	19677.524	35640	809.265	1951.095	1...H2-1
364	M319	L2.5x2x5	.570	23.202	78	.002	0	z	66	19677.524	35640	809.265	1951.095	1...H2-1
365	M62	PL2.25X5	.567	15.152	66	.019	15.152	y	75	5785.218	18981	123.75	891	1...H1-1a
366	M323	L2.5x2x5	.565	23.202	78	.002	0	z	66	19677.524	35640	809.265	1951.095	1...H2-1
367	M45	PL2.25X5	.565	15.152	66	.016	15.152	y	75	5785.218	18981	123.75	891	1...H1-1a
368	M362	L2.5x2x5	.563	24.748	77	.002	47.116	y	70	20519.432	35640	809.265	1951.095	1...H2-1
369	M177	PL2.25X5	.561	15.152	66	.014	15.152	y	74	5785.218	18981	123.75	891	1...H1-1a
370	M363	L2.5x2x5	.556	24.748	77	.002	0	y	78	20519.432	35640	809.265	1951.095	1...H2-1
371	M64	PL2.25X5	.554	15.152	66	.014	15.152	y	75	5785.218	18981	123.75	891	1...H1-1a
372	M318	L2.5x2x5	.553	23.202	78	.002	0	z	65	19677.524	35640	809.265	1951.095	1...H2-1
373	M347	L2.5x2x5	.553	26.725	77	.002	0	y	71	19176.963	35640	809.265	1951.095	1...H2-1
374	M313	L2.5x2x5	.553	23.201	78	.002	48.869	y	74	19678.445	35640	809.265	1951.095	1...H2-1
375	M160	PL2.25X5	.550	15.152	66	.013	15.461	y	75	5785.218	18981	123.75	891	1...H1-1a
376	M588	PL2.25X5	.550	18.733	70	.030	18.733	y	75	3742.008	18981	123.75	891	2...H1-1a
377	M322	L2.5x2x5	.547	23.202	78	.002	0	z	65	19677.524	35640	809.265	1951.095	1...H2-1
378	M345	L2.5x1.5x5	.546	22.214	78	.002	48.871	z	66	11300.048	31113.2...	475.557	1584.382	1...H2-1
379	M47	PL2.25X5	.543	15.152	66	.012	15.461	y	75	5785.218	18981	123.75	891	1...H1-1a
380	M518	PL2.25X5	.542	18.733	71	.030	18.733	y	74	3742.008	18981	123.75	891	2...H1-1a
381	M179	PL2.25X5	.539	15.152	66	.012	15.461	y	74	5785.218	18981	123.75	891	1...H1-1a
382	M341	L2.5x1.5x5	.537	22.214	78	.002	48.871	z	66	11300.048	31113.2...	475.557	1584.382	1...H2-1
383	M308	L2.5x2x5	.532	22.423	78	.003	46.247	y	71	20937.986	35640	809.265	1951.095	1...H2-1
384	M66	PL2.25X5	.532	15.152	66	.012	15.461	y	75	5785.218	18981	123.75	891	1...H1-1a
385	M154	PL2.25X5	.531	15.152	66	.018	15.152	y	77	5785.218	18981	123.75	891	1...H1-1a
386	M162	PL2.25X5	.528	15.152	66	.012	15.461	y	74	5785.218	18981	123.75	891	1...H1-1a
387	M346	L2.5x2x5	.526	26.725	77	.002	0	z	65	19176.963	35640	809.265	1951.095	1...H2-1
388	M41	PL2.25X5	.524	15.152	66	.018	15.152	y	78	5785.218	18981	123.75	891	1...H1-1a
389	M49	PL2.25X5	.521	15.152	66	.011	15.461	y	75	5785.218	18981	123.75	891	1...H1-1a
390	M181	PL2.25X5	.517	15.152	66	.011	15.461	y	74	5785.218	18981	123.75	891	1...H1-1a
391	M68	PL2.25X5	.510	15.152	66	.011	15.461	y	75	5785.218	18981	123.75	891	1...H1-1a
392	M350	L2.5x2x5	.508	26.725	77	.002	0	z	65	19176.963	35640	809.265	1951.095	1...H2-1
393	M164	PL2.25X5	.505	15.152	66	.011	15.461	y	74	5785.218	18981	123.75	891	1...H1-1a
394	M51	PL2.25X5	.498	15.152	66	.011	15.461	y	75	5785.218	18981	123.75	891	1...H1-1a
395	M183	PL2.25X5	.495	15.152	66	.011	15.461	y	74	5785.218	18981	123.75	891	1...H1-1a
396	M70	PL2.25X5	.487	15.152	66	.010	15.461	y	75	5785.218	18981	123.75	891	1...H1-1a
397	M166	PL2.25X5	.484	15.152	66	.011	0	y	59	5785.218	18981	123.75	891	1...H1-1a
398	M187	PL2.25X5	.482	15.31	66	.017	0	y	59	5666.526	18981	123.75	891	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
399	M309	L2.5x2x5	.479	22.42378	.002	46.247	z 66	20937.986	35640	809.265	1951.095	1...	H2-1	
400	M53	PL2.25X5	.476	15.15266	.011	0	y 60	5785.218	18981	123.75	891	1...	H1-1a	
401	M72	PL2.25X5	.468	15.15266	.012	0	y 60	5785.218	18981	123.75	891	1...	H1-1a	
402	M185	PL2.25X5	.463	15.15266	.012	0	y 59	5785.218	18981	123.75	891	1...	H1-1a	
403	M195	L2.5x2.5x5	.461	8	.70	.101	24	y 75	35341.325	39420	1096.767	2551.08	1...	H2-1
404	M599	PL2.25X4	.461	16.36	.70	.075	29.994	y 75	3503.195	15201	78.75	711	1...	H1-1a
405	M529	PL2.25X4	.461	16.36	.71	.075	29.994	y 74	3503.195	15201	78.75	711	1.6	H1-1a
406	M608	PL2.25X4	.458	13.831	.74	.082	0	y 74	3535.554	15201	78.75	711	1...	H1-1b
407	M538	PL2.25X4	.458	13.831	.75	.082	0	y 75	3535.554	15201	78.75	711	1...	H1-1b
408	M137	PL2.25X5	.455	15.15275	.023	0	y 77	5785.218	18981	123.75	891	1...	H1-1a	
409	M168	PL2.25X5	.454	15.15266	.014	0	y 59	5785.218	18981	123.75	891	1...	H1-1a	
410	M24	PL2.25X5	.454	15.15274	.023	0	y 78	5785.218	18981	123.75	891	1...	H1-1a	
411	M55	PL2.25X5	.448	15.15266	.014	0	y 60	5785.218	18981	123.75	891	1...	H1-1a	
412	M190	L2.5x2.5x5	.445	0	.78	.009	3.093	y 70	24053.796	39420	1096.767	2551.08	1...	H2-1
413	M99	L2.5x2.5x5	.444	0	.71	.101	0	y 74	35341.325	39420	1096.767	2551.08	1...	H2-1
414	M191	L2.5x2.5x5	.438	51.04	.78	.005	4.124	y 70	24053.796	39420	1096.767	2551.08	1...	H2-1
415	M94	L2.5x2.5x5	.438	51.04	.77	.007	21.138	y 71	24053.796	39420	1096.767	2551.08	1...	H2-1
416	M95	L2.5x2.5x5	.434	0	.77	.007	1.031	y 71	24053.796	39420	1096.767	2551.08	1...	H2-1
417	M120	PL2.25X5	.434	15.15275	.018	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a	
418	M7	PL2.25X5	.433	15.15274	.018	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a	
419	M373	PL2.25X5	.432	23.938	.78	.005	48.365	y 70	2317.827	18981	123.75	872.958	1...	H1-1a
420	M170	PL2.25X5	.432	15.30370	.015	15.303	y 70	5905.645	18981	123.75	891	2...	H1-1a	
421	M325	L2.5x2x5	.410	26.725	.77	.002	49.92	y 71	19176.963	35640	809.265	1951.095	1...	H2-1
422	M321	L2.5x2x5	.408	26.725	.77	.002	49.92	y 71	19176.963	35640	809.265	1951.095	1...	H2-1
423	M26	PL2.25X5	.407	15.461	.75	.020	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
424	M9	PL2.25X5	.407	15.461	.75	.019	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a
425	M122	PL2.25X5	.407	15.15275	.018	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a	
426	M139	PL2.25X5	.407	15.461	.74	.020	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a
427	M496	PL2.25X5	.406	15.489	.60	.009	0	y 74	5391.51	18981	123.75	891	1...	H1-1a
428	M428	PL2.25X5	.404	15.489	.60	.007	31.295	y 74	5391.51	18981	123.75	891	1...	H1-1a
429	M411	PL2.25X5	.402	15.489	.59	.007	31.295	y 75	5391.51	18981	123.75	891	1...	H1-1a
430	M5	PL2.25X5	.400	15.461	.75	.019	0	y 78	5785.218	18981	123.75	891	1...	H1-1a
431	M118	PL2.25X5	.400	15.461	.74	.019	0	y 77	5785.218	18981	123.75	891	1...	H1-1a
432	M141	PL2.25X5	.398	15.15275	.017	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a	
433	M28	PL2.25X5	.398	15.15274	.017	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a	
434	M348	L2.5x2x5	.396	23.202	.78	.002	48.871	y 70	19677.524	35640	809.265	1951.095	1...	H2-1
435	M124	PL2.25X5	.392	15.15274	.016	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a	
436	M11	PL2.25X5	.392	15.15275	.016	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a	
437	M143	PL2.25X5	.391	15.15274	.015	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a	
438	M326	L2.5x2x5	.391	23.202	.78	.002	0	z 65	19677.524	35640	809.265	1951.095	1...	H2-1
439	M30	PL2.25X5	.391	15.15275	.015	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a	
440	M479	PL2.25X5	.390	15.489	.59	.010	0	y 71	5391.51	18981	123.75	891	1...	H1-1a
441	M126	PL2.25X5	.390	15.15274	.014	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a	
442	M261	L2.5x1.25x5	.389	14.241	.71	.006	0	z 78	17244.099	29003.9...	340.889	1469.232	1...	H2-1
443	M13	PL2.25X5	.389	15.15275	.015	15.461	y 74	5785.218	18981	123.75	891	1...	H1-1a	
444	M145	PL2.25X5	.389	15.15274	.014	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a	
445	M32	PL2.25X5	.388	15.15275	.014	15.461	y 74	5785.218	18981	123.75	891	1...	H1-1a	
446	M128	PL2.25X5	.387	15.15274	.014	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a	
447	M15	PL2.25X5	.386	15.15275	.014	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a	
448	M147	PL2.25X5	.385	15.15274	.014	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a	
449	M151	PL2.25X5	.385	15.31	.74	.023	15.31	y 70	5666.526	18981	123.75	891	1...	H1-1a
450	M34	PL2.25X5	.384	15.15275	.014	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a	
451	M38	PL2.25X5	.384	15.31	.75	.022	15.31	y 71	5666.526	18981	123.75	891	1...	H1-1a
452	M130	PL2.25X5	.383	15.15274	.014	15.152	y 74	5785.218	18981	123.75	891	1...	H1-1a	
453	M17	PL2.25X5	.383	15.15275	.014	15.152	y 75	5785.218	18981	123.75	891	1...	H1-1a	
454	M353	L2.5x2x5	.377	23.202	.78	.002	48.871	y 70	19677.524	35640	809.265	1951.095	1...	H2-1
455	M40	PL2.25X5	.376	15.461	.74	.036	15.461	y 71	5785.218	18981	123.75	891	1...	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
456	M153	PL2.25X5	.376	15.46175	.035	15.461	y 70	5785.218	18981	123.75	891	1...	H1-1a
457	M149	PL2.25X5	.376	15.15274	.016	15.152	y 70	5785.218	18981	123.75	891	1...	H1-1a
458	M36	PL2.25X5	.375	15.15275	.016	15.461	y 71	5785.218	18981	123.75	891	1...	H1-1a
459	M315	L2.5x2x5	.373	26.72577	.002	49.92	y 71	19176.963	35640	809.265	1951.095	1...	H2-1
460	M57	PL2.25X5	.370	15.30371	.014	0	y 71	5905.645	18981	123.75	891	2...	H1-1a
461	M132	PL2.25X5	.368	15.46175	.020	15.152	y 70	5785.218	18981	123.75	891	1...	H1-1a
462	M19	PL2.25X5	.368	15.46174	.019	15.152	y 71	5785.218	18981	123.75	891	1...	H1-1a
463	M349	L2.5x2x5	.367	23.20278	.002	0	z 65	19677.524	35640	809.265	1951.095	1...	H2-1
464	M360	L2.5x2x5	.367	24.68177	.002	48.869	y 70	19678.445	35640	809.265	1914.416	1...	H2-1
465	M310	L2.5x2x5	.367	24.70978	.001	49.922	z 65	19175.995	35640	809.265	1908.803	1...	H2-1
466	M311	L2.5x2x5	.365	26.72677	.002	0	y 71	19175.995	35640	809.265	1951.095	1...	H2-1
467	M74	PL2.25X5	.360	15.3166	.017	0	y 60	5666.526	18981	123.75	891	1...	H1-1a
468	M361	L2.5x2x5	.359	24.68177	.002	0	y 77	19678.445	35640	809.265	1914.416	1...	H2-1
469	M21	PL2.25X5	.354	14.99775	.028	15.303	y 71	5905.645	18981	123.75	891	1.4	H1-1a
470	M314	L2.5x2x5	.354	24.70878	.002	49.92	y 71	19176.963	35640	809.265	1908.814	1...	H2-1
471	M134	PL2.25X5	.353	14.99774	.027	15.303	y 70	5905.645	18981	123.75	891	1...	H1-1a
472	M357	L2.5x2x5	.347	23.20278	.002	48.871	y 70	19677.524	35640	809.265	1951.095	1...	H2-1
473	M320	L2.5x2x5	.330	26.72577	.002	49.92	y 71	19176.963	35640	809.265	1951.095	1...	H2-1
474	M324	L2.5x2x5	.330	26.72577	.002	0	y 71	19176.963	35640	809.265	1951.095	1...	H2-1
475	M352	L2.5x2x5	.323	24.68277	.002	0	y 70	19677.524	35640	809.265	1914.406	1...	H2-1
476	M356	L2.5x2x5	.321	24.68277	.002	0	z 65	19677.524	35640	809.265	1914.406	1...	H2-1
477	M370	PL2.25X5	.301	22.96160	.005	0	y 71	2317.827	18981	123.75	800.016	1...	H1-1a
478	M374	PL2.25X5	.288	22.47360	.004	23.938	y 70	2317.827	18981	123.75	891	1...	H1-1a
479	M258	L2.5x1.25x5	.245	14.95270	.002	0	y 70	16726.225	29003.9...	340.889	1464.21	1...	H2-1
480	M305	L2.5x1.25x5	.243	14.23270	.006	0	z 77	17255.841	29003.9...	340.889	1469.346	1...	H2-1
481	M304	L2.5x1.25x5	.239	14.16270	.004	0	z 77	17701.085	29003.9...	340.889	1473.7	1...	H2-1
482	M253	L2.5x1.25x5	.232	14.95270	.003	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
483	M223	L2.5x1.25x5	.222	14.65371	.002	29.605	z 77	16726.261	29003.9...	340.889	1464.211	1...	H2-1
484	M227	L2.5x1.25x5	.221	14.65371	.002	29.605	y 69	16726.225	29003.9...	340.889	1464.21	1...	H2-1
485	M256	L2.5x1.25x5	.214	14.95370	.003	0	z 77	16724.892	29003.9...	340.889	1464.197	1...	H2-1
486	M218	L2.5x1.25x5	.213	14.64871	.002	0	z 78	16732.465	29003.9...	340.889	1464.271	1...	H2-1
487	M225	L2.5x1.25x5	.212	14.65371	.002	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
488	M245	L2.5x1.25x5	.209	14.65371	.003	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
489	M230	L2.5x1.25x5	.207	14.95270	.004	0	y 69	16726.225	29003.9...	340.889	1464.21	1...	H2-1
490	M250	L2.5x1.25x5	.206	14.95270	.003	0	z 78	16726.225	29003.9...	340.889	1464.21	1...	H2-1
491	M220	L2.5x1.25x5	.203	14.65371	.002	0	z 77	16726.225	29003.9...	340.889	1464.21	1...	H2-1
492	M235	L2.5x1.25x5	.202	14.95270	.002	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
493	M248	L2.5x1.25x5	.199	14.95270	.004	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
494	M247	L2.5x1.25x5	.193	14.65371	.003	0	z 77	16726.225	29003.9...	340.889	1464.21	1...	H2-1
495	M237	L2.5x1.25x5	.192	14.95270	.002	0	z 78	16726.225	29003.9...	340.889	1464.21	1...	H2-1
496	M277	L2.5x1.25x5	.189	14.95270	.004	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
497	M300	L2.5x1.25x5	.185	14.95270	.003	0	z 78	16726.225	29003.9...	340.889	1464.21	1...	H2-1
498	M272	L2.5x1.25x5	.181	14.65371	.003	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
499	M233	L2.5x1.25x5	.178	14.95270	.003	29.605	z 78	16726.261	29003.9...	340.889	1464.211	1...	H2-1
500	M215	L2.5x1.25x5	.177	14.81270	.009	29.328	z 78	16898.734	29003.9...	340.889	1465.879	1...	H2-1
501	M364	L2.5x2.5x5	.176	23.66570	.008	0	y 70	26420.266	39420	1096.767	2551.08	1...	H2-1
502	M274	L2.5x1.25x5	.175	14.65371	.006	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
503	M371	PL2.25X5	.175	23.93877	.004	24.427	y 71	2317.827	18981	123.75	891	1...	H1-1b
504	M231	L2.5x1.25x5	.174	14.65371	.004	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
505	M297	L2.5x1.25x5	.174	14.95270	.003	29.605	z 78	16726.261	29003.9...	340.889	1464.211	1...	H2-1
506	M270	L2.5x1.25x5	.174	14.65371	.002	29.605	y 69	16726.225	29003.9...	340.889	1464.21	1...	H2-1
507	M243	L2.5x1.25x5	.170	14.65371	.002	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
508	M282	L2.5x1.25x5	.169	14.95270	.004	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
509	M229	L2.5x1.25x5	.168	14.65371	.004	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
510	M302	L2.5x1.25x5	.168	14.95170	.003	29.603	z 78	16727.63	29003.9...	340.889	1464.224	1...	H2-1
511	M240	L2.5x1.25x5	.166	14.65371	.003	0	y 69	16726.225	29003.9...	340.889	1464.21	1...	H2-1
512	M292	L2.5x1.25x5	.166	14.65371	.003	0	z 78	16726.261	29003.9...	340.889	1464.211	1...	H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt	phi*Mn y	phi*Mn z	Cb	Eqn
513	M295	L2.5x1.25x5	.166	14.95270	.005	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
514	M265	L2.5x1.25x5	.165	14.65271	.002	0	z 77	16727.63	29003.9...	340.889	1464.224	1...	H2-1
515	M306	L2.5x2.5x5	.165	22.27171	.010	0	y 71	26421.669	39420	1096.767	2551.08	1...	H2-1
516	M290	L2.5x1.25x5	.165	14.65371	.003	29.605	y 69	16726.225	29003.9...	340.889	1464.21	1...	H2-1
517	M365	L2.5x2.5x5	.162	23.20177	.010	45.937	y 70	26420.266	39420	1096.767	2551.08	1...	H2-1
518	M377	PL2.25X5	.162	23.93878	.003	23.938	y 60	2317.827	18981	123.75	891	1...	H1-1b
519	M267	L2.5x1.25x5	.159	14.65371	.002	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
520	M249	L2.5x1.25x5	.158	14.65371	.006	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
521	M257	L2.5x1.25x5	.157	14.65271	.002	0	z 78	16727.63	29003.9...	340.889	1464.224	1...	H2-1
522	M260	L2.5x1.25x5	.157	15.09865	.009	0	z 77	16910.955	29003.9...	340.889	1465.997	1...	H2-1
523	M280	L2.5x1.25x5	.156	14.95270	.003	29.605	z 77	16726.225	29003.9...	340.889	1464.21	1...	H2-1
524	M254	L2.5x1.25x5	.155	14.65371	.003	0	z 78	16726.225	29003.9...	340.889	1464.21	1...	H2-1
525	M263	L2.5x1.25x5	.154	14.64771	.002	0	z 77	16733.833	29003.9...	340.889	1464.284	1...	H2-1
526	M276	L2.5x1.25x5	.154	14.65371	.002	29.605	z 77	16726.225	29003.9...	340.889	1464.21	1...	H2-1
527	M259	L2.5x1.25x5	.154	13.87871	.002	0	y 70	17701.085	29003.9...	340.889	1473.7	1...	H2-1
528	M219	L2.5x1.25x5	.153	14.95170	.002	0	z 77	16727.63	29003.9...	340.889	1464.224	1...	H2-1
529	M251	L2.5x1.25x5	.152	14.65371	.003	29.605	z 77	16726.261	29003.9...	340.889	1464.211	1...	H2-1
530	M275	L2.5x1.25x5	.152	14.95270	.006	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
531	M217	L2.5x1.25x5	.150	14.94670	.002	29.593	y 71	16733.833	29003.9...	340.889	1464.284	1...	H2-1
532	M226	L2.5x1.25x5	.150	14.95270	.003	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
533	M372	PL2.25X5	.149	23.93877	.005	23.938	y 70	2317.827	18981	123.75	891	1...	H1-1b
534	M307	L2.5x2.5x5	.145	22.73578	.008	0	y 71	26421.669	39420	1096.767	2551.08	1...	H2-1
535	M224	L2.5x1.25x5	.143	14.95270	.003	0	z 77	16726.225	29003.9...	340.889	1464.21	1...	H2-1
536	M216	L2.5x1.25x5	.143	13.87871	.003	0	y 75	17701.085	29003.9...	340.889	1473.7	1...	H2-1
537	M221	L2.5x1.25x5	.141	14.95270	.002	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
538	M375	PL2.25X5	.140	23.93878	.003	24.427	y 71	2317.827	18981	123.75	891	2...	H1-1b
539	M244	L2.5x1.25x5	.139	14.95270	.004	29.605	y 69	16726.225	29003.9...	340.889	1464.21	1...	H2-1
540	M262	L2.5x1.25x5	.139	14.16271	.004	28.04	z 78	17701.085	29003.9...	340.889	1473.7	1...	H2-1
541	M246	L2.5x1.25x5	.138	14.95270	.005	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
542	M236	L2.5x1.25x5	.137	14.65371	.005	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
543	M376	PL2.25X5	.137	23.93878	.002	48.365	z 78	2317.827	18981	123.75	826.401	1...	H1-1b
544	M284	L2.5x1.25x5	.136	14.95270	.005	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
545	M241	L2.5x1.25x5	.136	14.95270	.003	0	z 78	16726.261	29003.9...	340.889	1464.211	1...	H2-1
546	M299	L2.5x1.25x5	.135	14.65371	.003	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
547	M294	L2.5x1.25x5	.135	14.65371	.006	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
548	M287	L2.5x1.25x5	.134	14.65371	.003	29.605	z 78	16726.261	29003.9...	340.889	1464.211	1...	H2-1
549	M228	L2.5x1.25x5	.133	14.95270	.004	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
550	M296	L2.5x1.25x5	.133	14.65371	.003	29.605	z 77	16726.225	29003.9...	340.889	1464.21	1...	H2-1
551	M238	L2.5x1.25x5	.130	14.65371	.003	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
552	M285	L2.5x1.25x5	.130	14.65371	.005	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
553	M239	L2.5x1.25x5	.129	14.95270	.006	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
554	M234	L2.5x1.25x5	.124	14.65371	.003	29.605	z 77	16726.225	29003.9...	340.889	1464.21	1...	H2-1
555	M303	L2.5x1.25x5	.124	14.65371	.003	0	y 70	16726.225	29003.9...	340.889	1464.21	1...	H2-1
556	M279	L2.5x1.25x5	.122	14.65371	.003	29.605	z 78	16726.261	29003.9...	340.889	1464.211	1...	H2-1
557	M269	L2.5x1.25x5	.118	14.95270	.002	29.605	y 70	16726.261	29003.9...	340.889	1464.211	1...	H2-1
558	M301	L2.5x1.25x5	.117	14.65471	.002	0	z 78	16724.892	29003.9...	340.889	1464.197	1...	H2-1
559	M293	L2.5x1.25x5	.115	14.95270	.002	0	z 77	16726.225	29003.9...	340.889	1464.21	1...	H2-1
560	M266	L2.5x1.25x5	.115	14.95270	.002	0	z 77	16726.225	29003.9...	340.889	1464.21	1...	H2-1
561	M264	L2.5x1.25x5	.112	14.94770	.002	0	z 77	16732.465	29003.9...	340.889	1464.271	1...	H2-1
562	M273	L2.5x1.25x5	.108	14.95271	.002	29.605	y 70	16726.225	29003.9...	340.889	1464.21	1...	H2-1
563	M271	L2.5x1.25x5	.105	14.95270	.002	29.605	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
564	M286	L2.5x1.25x5	.100	14.95270	.002	0	z 78	16726.225	29003.9...	340.889	1464.21	1...	H2-1
565	M291	L2.5x1.25x5	.099	14.95270	.003	29.605	z 78	16726.261	29003.9...	340.889	1464.211	1...	H2-1
566	M283	L2.5x1.25x5	.098	14.65371	.002	0	z 78	16726.225	29003.9...	340.889	1464.21	1...	H2-1
567	M281	L2.5x1.25x5	.098	14.65370	.002	29.605	z 77	16726.261	29003.9...	340.889	1464.211	1...	H2-1
568	M289	L2.5x1.25x5	.092	14.95270	.002	0	y 69	16726.261	29003.9...	340.889	1464.211	1...	H2-1
569	M268	L2.5x1.25x5	.048	11.87978	.003	0	y 71	20199.817	29003.9...	340.889	1494.276	1...	H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear	...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
570	M222	L2.5x1.25x5	.048	11.87977	.003	0	y	71	20199.817	29003.9...	340.889	1494.276	1...	H2-1
571	M331	L3x2.5x5	.037	21.20778	.003	0	z	78	32987.716	44010	1270.778	2996.056	1...	H2-1
572	M288	L2.5x1.25x5	.035	11.87977	.002	0	z	78	20199.817	29003.9...	340.889	1494.276	1...	H2-1
573	M232	L2.5x1.25x5	.030	11.87959	.004	0	y	70	20199.817	29003.9...	340.889	1494.276	1...	H2-1
574	M368	L3x2.5x5	.030	20.78378	.003	0	z	71	32987.716	44010	1270.778	2996.056	1...	H2-1
575	M242	L2.5x1.25x5	.027	11.87977	.002	0	y	71	20199.817	29003.9...	340.889	1494.276	1...	H2-1
576	M330	L3x2.5x5	.026	21.20777	.004	0	z	70	32987.716	44010	1270.778	2982.261	1...	H2-1
577	M316	L3x2.5x5	.025	20.78378	.003	41.991	z	71	32987.716	44010	1270.778	2996.056	1...	H2-1
578	M278	L2.5x1.25x5	.024	11.87977	.004	0	y	70	20199.817	29003.9...	340.889	1494.276	1...	H2-1
579	M252	L2.5x1.25x5	.021	11.87977	.002	0	z	77	20199.817	29003.9...	340.889	1494.276	1...	H2-1
580	M369	L3x2.5x5	.021	20.78377	.003	0	z	78	32987.716	44010	1270.778	2982.261	1...	H2-1
581	M298	L2.5x1.25x5	.020	11.87977	.002	0	z	77	20199.817	29003.9...	340.889	1494.276	1...	H2-1
582	M317	L3x2.5x5	.019	20.78378	.003	41.991	z	71	32987.716	44010	1270.778	2996.056	1...	H2-1
583	M366	L3x2.5x5	.015	21.20777	.002	0	z	78	32987.716	44010	1270.778	2982.261	1...	H2-1
584	M367	L3x2.5x5	.014	21.20777	.002	0	z	70	32987.716	44010	1270.778	2982.261	1...	H2-1



Milvon to West River Catenary Structure Assessment

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-T

STRUCTURE TYPE 6 AS DESIGNED NESC 1961 COMPLETE MEMBER RESULTS



Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [...]	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	M449	L6x6x6	1.329	2.288	61	.114	1.698	z	61	110179.703	118260	9137.172	10106.9...	1	H2-1
2	M3	L6x6x6	1.326	4.797	62	.114	5.388	z	62	110179.703	118260	9137.172	10106.9...	1	H2-1
3	M447	L6x6x6	1.321	4.797	61	.099	5.388	z	62	110179.703	118260	9137.172	10106.9...	1	H2-1
4	M1	L6x6x6	1.317	2.288	62	.097	1.698	z	61	110179.703	118260	9137.172	10106.9...	1	H2-1
5	M448	L6x6x6	1.206	2.288	62	.108	1.698	z	61	110179.703	118260	9137.172	10106.9...	1	H2-1
6	M450	L6x6x6	1.201	4.797	62	.104	5.388	z	62	110179.703	118260	9137.172	10106.9...	1	H2-1
7	M2	L6x6x6	1.194	4.797	61	.108	5.388	z	62	110179.703	118260	9137.172	10106.9...	1	H2-1
8	M4	L6x6x6	1.193	2.288	61	.103	1.698	z	61	110179.703	118260	9137.172	10106.9...	1	H2-1
9	M200	L6x4x7	1.186	2.795	61	.100	86.637	y	62	105209.703	112860	4892.152	12198.3...	1	H2-1
10	M201	L6x4x7	1.169	86.637	61	.100	86.637	y	61	105209.703	112860	4892.152	12198.3...	1	H2-1
11	M652	6H25	1.070	4.01	61	.275	3.819	y	61	32380.313	215681.4	21582	40822.49	1	H1-1b
12	M191	6H25	1.062	4.01	62	.273	3.819	y	62	32380.313	215681.4	21582	40822.49	1	H1-1b
13	M189	L6x4x6	1.009	8.167	62	.037	8.167	y	62	29768.748	97470	4257.614	12648.6...	1	H2-1
14	M650	L6x4x6	1.009	5.833	61	.037	5.833	y	61	29768.748	97470	4257.614	12648.6...	1	H2-1
15	M466	PL2.25x0.375	.928	1.356	61	.006	1.356	y	61	8214.099	22788	177.75	1068.75	1...	H1-1a
16	M483	PL2.25x0.375	.920	1.356	61	.007	1.356	y	61	8214.099	22788	177.75	1068.75	1...	H1-1a
17	M37	PL2.25x0.375	.916	1.356	62	.006	1.356	y	62	8214.099	22788	177.75	1068.75	1...	H1-1a
18	M20	PL2.25x0.375	.914	1.356	62	.006	1.356	y	62	8214.099	22788	177.75	1068.75	1...	H1-1a
19	M586	L2.5x2.5x5	.886	1.401	62	.076	1.401	y	62	23575.103	39420	1096.767	2509.3	1	H2-1
20	M499	PL2.25x0.375	.886	1.302	61	.005	1.275	y	61	8923.162	22788	177.75	1068.75	1...	H1-1a
21	M585	L2.5x2.5x5	.885	0	62	.072	0	y	62	23575.103	39420	1096.767	2509.3	1	H2-1
22	M592	L2.5x2.5x5	.884	1.401	62	.076	1.401	z	62	7115.391	39420	1096.767	2509.3	1	H2-1
23	M591	L2.5x2.5x5	.883	0	62	.072	0	z	62	7115.391	39420	1096.767	2509.3	1	H2-1
24	M516	PL2.25x0.375	.877	1.302	61	.005	1.275	y	61	8923.162	22788	177.75	1068.75	1...	H1-1a
25	M435	L2.5x2.5x5	.875	0	61	.075	0	y	61	22009.245	39420	1096.767	2483.488	1	H2-1
26	M434	L2.5x2.5x5	.875	1.47	61	.071	1.47	y	61	22009.245	39420	1096.767	2483.488	1	H2-1
27	M70	PL2.25x0.375	.873	1.302	62	.005	1.275	y	62	8923.162	22788	177.75	1068.75	1...	H1-1a
28	M441	L2.5x2.5x5	.873	0	61	.075	0	z	61	7115.391	39420	1096.767	2483.488	1	H2-1
29	M440	L2.5x2.5x5	.872	1.47	61	.071	1.47	z	61	7115.391	39420	1096.767	2483.488	1	H2-1
30	M53	PL2.25x0.375	.871	1.302	62	.005	1.275	y	62	8923.162	22788	177.75	1068.75	1...	H1-1a
31	M464	PL2.25x0.375	.848	1.25	61	.004	1.224	y	61	9607.569	22788	177.75	1068.75	1...	H1-1a
32	M481	PL2.25x0.375	.839	1.25	61	.004	1.224	y	61	9607.569	22788	177.75	1068.75	1...	H1-1a
33	M35	PL2.25x0.375	.836	1.25	62	.004	1.224	y	62	9607.569	22788	177.75	1068.75	1...	H1-1a
34	M18	PL2.25x0.375	.834	1.25	62	.004	1.224	y	62	9607.569	22788	177.75	1068.75	1...	H1-1a
35	M497	PL2.25x0.375	.813	1.2	61	.004	1.2	y	61	10280.607	22788	177.75	1068.75	1...	H1-1a
36	M514	PL2.25x0.375	.805	1.2	61	.004	1.2	y	61	10280.607	22788	177.75	1068.75	1...	H1-1a
37	M68	PL2.25x0.375	.802	1.2	62	.004	1.2	y	62	10280.607	22788	177.75	1068.75	1...	H1-1a
38	M51	PL2.25x0.375	.800	1.2	62	.003	1.2	y	62	10280.607	22788	177.75	1068.75	1...	H1-1a
39	M462	PL2.25x0.375	.781	1.153	61	.003	1.153	y	61	10936.608	22788	177.75	1068.75	1...	H1-1a
40	M479	PL2.25x0.375	.773	1.153	61	.003	1.153	y	61	10936.608	22788	177.75	1068.75	1...	H1-1a
41	M587	L2.5x2.5x5	.772	0	62	.033	1.436	y	61	23575.103	39420	1096.767	2196.74	1	H2-1
42	M588	L2.5x2.5x5	.771	1.437	62	.050	0	y	62	23575.103	39420	1096.767	2196.74	1	H2-1
43	M593	L2.5x2.5x5	.770	0	62	.033	1.436	z	61	7115.391	39420	1096.767	2196.74	1	H2-1
44	M33	PL2.25x0.375	.770	1.153	62	.003	1.153	y	62	10936.608	22788	177.75	1068.75	1...	H1-1a
45	M594	L2.5x2.5x5	.769	1.437	62	.050	0	z	62	7115.391	39420	1096.767	2196.74	1	H2-1
46	M16	PL2.25x0.375	.768	1.153	62	.003	1.153	y	62	10936.608	22788	177.75	1068.75	1...	H1-1a
47	M471	PL2.25x0.375	.764	.827	61	.023	0	y	61	15771.84	22788	177.75	1068.75	1...	H1-1a
48	M454	PL2.25x0.375	.762	.827	61	.024	0	y	61	15771.84	22788	177.75	1068.75	1...	H1-1a
49	M436	L2.5x2.5x5	.762	1.436	61	.033	0	y	62	22009.245	39420	1096.767	2196.74	1	H2-1
50	M25	PL2.25x0.375	.761	.827	62	.023	0	y	62	15771.84	22788	177.75	1068.75	1...	H1-1a
51	M437	L2.5x2.5x5	.761	0	61	.049	1.437	y	61	23575.103	39420	1096.767	2196.74	1	H2-1
52	M442	L2.5x2.5x5	.759	1.436	61	.033	0	z	62	7115.391	39420	1096.767	2196.74	1	H2-1
53	M443	L2.5x2.5x5	.758	0	61	.049	1.437	z	61	7115.391	39420	1096.767	2196.74	1	H2-1
54	M487	PL2.25x0.375	.757	.797	61	.027	.814	y	62	16190.594	22788	177.75	1068.75	1...	H1-1a
55	M451	Reinf1 L6x6...	.756	18.69	61	.221	18.69	y	61	171286.771	189216	9820.329	46437.8...	1	H2-1
56	M578	Reinf1 L6x6...	.756	5.233	61	.221	5.233	y	61	171286.771	189216	9820.329	46437.8...	1	H2-1

By comparison to member M132, reinforced section is failing by inspection.



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
57	M504	PL2.25x0.375	.752	.797 61 .028 .814	y	62	16190.594	22788	177.75	1068.75	1...	H1-1a
58	M8	PL2.25x0.375	.751	.827 62 .024 0	y	62	15771.84	22788	177.75	1068.75	1...	H1-1a
59	M495	PL2.25x0.375	.750	1.107 61 .003 1.107	y	61	11574.824	22788	177.75	1068.75	1...	H1-1a
60	M58	PL2.25x0.375	.749	.797 62 .028 .814	y	61	16190.594	22788	177.75	1068.75	1...	H1-1a
61	M489	PL2.25x0.375	.749	.859 61 .022 0	y	61	15228.726	22788	177.75	1068.75	1...	H1-1a
62	M456	PL2.25x0.375	.748	.892 61 .020 0	y	62	171286.771	189216	9820.329	46437.8...	1	H2-1
63	M41	PL2.25x0.375	.747	.797 62 .027 .814	y	62	16190.594	22788	177.75	1068.75	1...	H1-1a
64	M491	PL2.25x0.375	.745	.927 61 .012 0	y	61	14363.301	22788	177.75	1068.75	1...	H1-1a
65	M512	PL2.25x0.375	.743	1.107 61 .002 1.107	y	61	11574.824	22788	177.75	1068.75	1...	H1-1a
66	M506	PL2.25x0.375	.741	.859 61 .025 0	y	61	15328.726	22788	177.75	1068.75	1...	H1-1a
67	M5	Reinf1 L6x6...	.740	5.233 62 .217 5.233	y	62	171286.771	189216	9820.329	46437.8...	1	H2-1
68	M132	Reinf1 L6x6...	.740	18.69 62 .219 18.69	y	62	171286.771	189216	9820.329	46437.8...	1	H2-1
69	M66	PL2.25x0.375	.739	1.107 62 .002 1.107	y	61	11574.824	22788	177.75	1068.75	1...	H1-1a
70	M60	PL2.25x0.375	.739	.859 62 .025 0	y	61	14363.301	22788	177.75	1068.75	1...	H1-1a
71	M43	PL2.25x0.375	.738	.859 62 .022 0	y	61	14363.301	22788	177.75	1068.75	1...	H1-1a
72	M49	PL2.25x0.375	.738	1.107 62 .002 1.107	y	61	12192.201	22788	177.75	1068.75	1...	H1-1a
73	M10	PL2.25x0.375	.737	.892 62 .020 0	y	62	14858.781	22788	177.75	1068.75	1...	H1-1a
74	M45	PL2.25x0.375	.734	.927 62 .013 0	y	62	14363.301	22788	177.75	1068.75	1...	H1-1a
75	M508	PL2.25x0.375	.731	.927 61 .012 0	y	61	14363.301	22788	177.75	1068.75	1...	H1-1a
76	M62	PL2.25x0.375	.729	.927 62 .012 0	y	62	14363.301	22788	177.75	1068.75	1...	H1-1a
77	M460	PL2.25x0.375	.728	1.064 61 .003 0	y	61	12192.201	22788	177.75	1068.75	1...	H1-1a
78	M473	PL2.25x0.375	.725	.892 61 .019 0	y	61	14858.781	22788	177.75	1068.75	1...	H1-1a
79	M500	PL2.25x0.375	.723	1.356 62 .006 2.713	y	61	8214.099	22788	177.75	1068.75	1...	H1-1a
80	M27	PL2.25x0.375	.723	.892 62 .019 0	y	62	14858.781	22788	177.75	1068.75	1...	H1-1a
81	M493	PL2.25x0.375	.722	1.023 61 .005 0	y	61	12787.684	22788	177.75	1068.75	2...	H1-1a
82	M477	PL2.25x0.375	.720	1.064 61 .003 0	y	61	12192.201	22788	177.75	1068.75	2...	H1-1a
83	M517	PL2.25x0.375	.719	1.356 62 .006 2.713	y	61	8214.099	22788	177.75	1068.75	1...	H1-1a
84	M103	PL2.25x0.4...	.717	1.582 62 .031 1.582	y	62	9847.221	26578.1...	242.249	1245.85	1...	H1-1a
85	M31	PL2.25x0.375	.717	1.064 62 .003 0	y	62	12192.201	22788	177.75	1068.75	2...	H1-1a
86	M510	PL2.25x0.375	.717	1.023 61 .005 0	y	61	12787.684	22788	177.75	1068.75	2...	H1-1a
87	M14	PL2.25x0.375	.716	1.064 62 .003 0	y	62	12192.201	22788	177.75	1068.75	2...	H1-1a
88	M465	PL2.25x0.375	.715	1.302 62 .006 2.604	y	61	8923.162	22788	177.75	1068.75	1...	H1-1a
89	M458	PL2.25x0.375	.715	.984 61 .006 0	y	61	13357.873	22788	177.75	1068.75	2...	H1-1a
90	M64	PL2.25x0.375	.714	1.023 62 .005 0	y	62	12787.684	22788	177.75	1068.75	2...	H1-1a
91	M71	PL2.25x0.375	.714	1.356 61 .006 2.713	y	62	8214.099	22788	177.75	1068.75	1...	H1-1a
92	M47	PL2.25x0.375	.712	1.023 62 .005 0	y	62	12787.684	22788	177.75	1068.75	2...	H1-1a
93	M475	PL2.25x0.375	.711	.984 61 .006 0	y	61	13357.873	22788	177.75	1068.75	1...	H1-1a
94	M482	PL2.25x0.375	.711	1.302 62 .005 2.604	y	61	8923.162	22788	177.75	1068.75	1...	H1-1a
95	M549	PL2.25x0.4...	.710	1.582 61 .031 1.582	y	61	9847.221	26578.1...	242.249	1245.85	1...	H1-1a
96	M29	PL2.25x0.375	.709	.984 62 .006 0	y	62	13357.873	22788	177.75	1068.75	1...	H1-1a
97	M54	PL2.25x0.375	.709	1.356 61 .006 2.713	y	62	8214.099	22788	177.75	1068.75	1...	H1-1a
98	M36	PL2.25x0.375	.705	1.302 61 .005 2.604	y	62	8923.162	22788	177.75	1068.75	1...	H1-1a
99	M12	PL2.25x0.375	.705	.984 62 .006 0	y	62	13357.873	22788	177.75	1068.75	1...	H1-1a
100	M19	PL2.25x0.375	.701	1.302 61 .005 2.604	y	62	8923.162	22788	177.75	1068.75	1...	H1-1a
101	M212	L2.5x2x5	.698	3.236 62 .001 0	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
102	M198	L6x4x7	.689	86.865 61 .025 40.163	y	61	105209.703	112860	4892.152	10937.7...	1	H2-1
103	M214	L2.5x2x5	.686	3.236 62 .001 5.449	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
104	M249	L2.5x2x5	.684	2.214 62 .001 0	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
105	M199	L6x4x7	.683	2.802 61 .033 44.833	y	61	105209.703	112860	4892.152	10937.7...	1	H2-1
106	M498	PL2.25x0.375	.679	1.25 62 .005 2.499	y	61	9607.569	22788	177.75	1068.75	1...	H1-1a
107	M515	PL2.25x0.375	.675	1.25 62 .004 2.499	y	61	9607.569	22788	177.75	1068.75	1...	H1-1a
108	M75	PL2.25x0.4...	.671	1.582 61 .028 1.582	y	62	9847.221	26578.1...	242.249	1245.85	1...	H1-1a
109	M69	PL2.25x0.375	.670	1.25 61 .005 2.499	y	62	9607.569	22788	177.75	1068.75	1...	H1-1a
110	M521	PL2.25x0.4...	.668	1.582 62 .028 1.582	y	61	9847.221	26578.1...	242.249	1245.85	1...	H1-1a
111	M600	L3x2.5x5	.666	6.403 61 .048 8.62	z	61	39023.547	44010	1270.778	2996.056	1	H2-1
112	M52	PL2.25x0.375	.665	1.25 61 .004 2.499	y	62	9607.569	22788	177.75	1068.75	1...	H1-1a
113	M139	L3x2.5x5	.664	5.418 62 .048 3.202	z	62	39023.547	44010	1270.778	2996.056	1	H2-1

By comparison to member M132, reinforced section is failing by inspection.

Hand calculated reinforced section properties yield member utilization of 107%. Member is failing.



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 6 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
114	M190	L6x4x6	.663	6.188	62 .122	6.188	y 61	44440.683	97470	4257.614	12792.4...	1	H2-1
115	M501	PL2.25x0.4...	.663	1.414	61 .008	1.384	y 61	11683.111	26578.1...	242.249	1245.85	1...	H1-1a
116	M264	L2.5x2x5	.658	3.236	61 .001	0	y 62	12301.91	35640	809.265	1830.737	1...	H2-1
117	M601	L3x2.5x5	.657	5.418	61 .040	3.202	z 61	39023.547	44010	1270.778	2996.056	1	H2-1
118	M518	PL2.25x0.4...	.656	1.414	61 .007	1.414	y 61	11683.111	26578.1...	242.249	1245.85	1...	H1-1a
119	M468	PL2.25x0.4...	.655	1.474	61 .007	1.443	y 61	10874.424	26578.1...	242.249	1245.85	1...	H1-1a
120	M140	L3x2.5x5	.654	6.403	62 .040	8.62	z 62	39023.547	44010	1270.778	2996.056	1	H2-1
121	M584	L2.5x2.5x5	.653	1.436	62 .035	0	y 61	23575.103	39420	1096.767	2196.74	1	H2-1
122	M72	PL2.25x0.4...	.653	1.414	62 .007	1.384	y 62	11683.111	26578.1...	242.249	1245.85	1...	H1-1a
123	M583	L2.5x2.5x5	.653	0	62 .045	1.448	y 61	23575.103	39420	1096.767	2196.74	1	H2-1
124	M251	L2.5x2x5	.652	2.214	62 .001	5.449	y 61	12301.91	35640	809.265	1830.737	1...	H2-1
125	M266	L2.5x2x5	.652	3.236	61 .001	0	y 62	12301.91	35640	809.265	1830.737	1...	H2-1
126	M55	PL2.25x0.4...	.652	1.414	62 .007	1.384	y 62	11683.111	26578.1...	242.249	1245.85	1...	H1-1a
127	M216	L2.5x2x5	.652	3.235	62 .001	5.449	y 61	12302.09	35640	809.265	1830.739	1...	H2-1
128	M590	L2.5x2.5x5	.651	1.436	62 .035	0	z 61	7115.391	39420	1096.767	2196.74	1	H2-1
129	M589	L2.5x2.5x5	.651	0	62 .045	1.448	z 61	7115.391	39420	1096.767	2196.74	1	H2-1
130	M463	PL2.25x0.375	.650	1.2	62 .004	2.4	y 61	10280.607	22788	177.75	1068.75	1...	H1-1a
131	M485	PL2.25x0.4...	.649	1.474	61 .006	1.443	y 61	10874.424	26578.1...	242.249	1245.85	1...	H1-1a
132	M39	PL2.25x0.4...	.647	1.474	62 .007	1.443	y 62	10874.424	26578.1...	242.249	1245.85	1...	H1-1a
133	M480	PL2.25x0.375	.646	1.2	62 .003	2.4	y 61	10280.607	22788	177.75	1068.75	1...	H1-1a
134	M22	PL2.25x0.4...	.645	1.474	62 .006	1.443	y 62	10874.424	26578.1...	242.249	1245.85	1...	H1-1a
135	M433	L2.5x2.5x5	.644	0	61 .035	1.436	y 62	22009.245	39420	1096.767	2196.74	1	H2-1
136	M432	L2.5x2.5x5	.644	1.448	61 .044	0	y 62	22009.245	39420	1096.767	2196.74	1	H2-1
137	M439	L2.5x2.5x5	.642	0	61 .035	1.436	z 62	7115.391	39420	1096.767	2196.74	1	H2-1
138	M34	PL2.25x0.375	.642	1.2	61 .004	2.4	y 62	10280.607	22788	177.75	1068.75	1...	H1-1a
139	M438	L2.5x2.5x5	.641	1.448	61 .044	0	z 62	7115.391	39420	1096.767	2196.74	1	H2-1
140	M689	L3x3x3	.641	.375	61 .189	.75	y 61	27653.061	29430	1100.081	2421.005	1...	H2-1
141	M17	PL2.25x0.375	.637	1.2	61 .003	2.4	y 62	10280.607	22788	177.75	1068.75	1...	H1-1a
142	M685	L3x3x3	.636	.375	62 .187	.75	z 62	27653.061	29430	1100.081	2421.005	1...	H2-1
143	M687	L3x3x3	.636	.375	61 .189	.75	z 61	27653.061	29430	1100.081	2421.005	1...	H2-1
144	M505	PL2.25x0.375	.631	.827	62 .025	.845	y 61	15771.84	22788	177.75	1068.75	1...	H1-1a
145	M684	L3x3x3	.630	.375	62 .187	.75	y 62	27653.061	29430	1100.081	2421.005	1...	H2-1
146	M59	PL2.25x0.375	.627	.827	61 .024	.845	y 62	15771.84	22788	177.75	1068.75	1...	H1-1a
147	M496	PL2.25x0.375	.625	1.153	62 .003	2.305	y 61	10936.608	22788	177.75	1068.75	1...	H1-1a
148	M470	PL2.25x0.375	.623	.797	62 .032	.814	y 61	16190.594	22788	177.75	1068.75	1...	H1-1a
149	M488	PL2.25x0.375	.622	.827	62 .025	.845	y 61	15771.84	22788	177.75	1068.75	1...	H1-1a
150	M453	PL2.25x0.375	.621	.797	62 .031	.814	y 61	16190.594	22788	177.75	1068.75	1...	H1-1a
151	M513	PL2.25x0.375	.621	1.153	62 .002	0	y 61	10936.608	22788	177.75	1068.75	1...	H1-1a
152	M24	PL2.25x0.375	.618	.797	61 .032	.814	y 62	16190.594	22788	177.75	1068.75	1...	H1-1a
153	M67	PL2.25x0.375	.616	1.153	61 .003	2.305	y 62	10936.608	22788	177.75	1068.75	1...	H1-1a
154	M50	PL2.25x0.375	.612	1.153	61 .002	0	y 62	10936.608	22788	177.75	1068.75	1...	H1-1a
155	M42	PL2.25x0.375	.611	.827	61 .025	.845	y 62	15771.84	22788	177.75	1068.75	1...	H1-1a
156	M7	PL2.25x0.375	.610	.797	61 .031	.814	y 62	16190.594	22788	177.75	1068.75	1...	H1-1a
157	M472	PL2.25x0.375	.610	.859	62 .023	0	y 62	15328.726	22788	177.75	1068.75	1...	H1-1a
158	M455	PL2.25x0.375	.609	.859	62 .021	.859	y 61	15328.726	22788	177.75	1068.75	1...	H1-1a
159	M490	PL2.25x0.375	.608	.892	62 .018	0	y 62	14858.781	22788	177.75	1068.75	1...	H1-1a
160	M227	L2.5x2x5	.608	2.214	61 .001	5.449	y 62	12301.91	35640	809.265	1830.737	1...	H2-1
161	M457	PL2.25x0.375	.607	.927	62 .011	0	y 62	14363.301	22788	177.75	1068.75	1...	H1-1a
162	M26	PL2.25x0.375	.606	.859	61 .023	0	y 61	15328.726	22788	177.75	1068.75	1...	H1-1a
163	M474	PL2.25x0.375	.600	.927	62 .012	0	y 62	14363.301	22788	177.75	1068.75	1...	H1-1a
164	M461	PL2.25x0.375	.599	1.107	62 .002	1.107	y 61	11574.824	22788	177.75	1068.75	2...	H1-1a
165	M9	PL2.25x0.375	.598	.859	61 .021	.859	y 62	15328.726	22788	177.75	1068.75	1...	H1-1a
166	M459	PL2.25x0.375	.598	1.023	62 .006	0	y 62	12787.684	22788	177.75	1068.75	1...	H1-1a
167	M44	PL2.25x0.375	.597	.892	61 .018	0	y 61	14858.781	22788	177.75	1068.75	1...	H1-1a
168	M229	L2.5x2x5	.596	2.214	61 .001	5.449	y 62	12301.91	35640	809.265	1830.737	1...	H2-1
169	M28	PL2.25x0.375	.596	.927	61 .012	0	y 61	14363.301	22788	177.75	1068.75	1...	H1-1a
170	M478	PL2.25x0.375	.595	1.107	62 .002	1.107	y 61	11574.824	22788	177.75	1068.75	2...	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
171	M11	PL2.25x0.375	.595	.927	61	.012	.947	y 62	14363.301	22788	177.75	1068.75	1... H1-1a
172	M651	L6x4x6	.593	4.813	61	.122	4.813	y 62	44440.683	97470	4257.614	12792.4...	1 H2-1
173	M476	PL2.25x0.375	.593	1.023	62	.006	0	y 62	12787.684	22788	177.75	1068.75	1... H1-1a
174	M507	PL2.25x0.375	.593	.892	62	.017	0	y 62	14858.781	22788	177.75	1068.75	1... H1-1a
175	M492	PL2.25x0.375	.593	.984	62	.006	0	y 62	13357.873	22788	177.75	1068.75	1... H1-1a
176	M577	Reinf1 L6x6...	.591	17.444	61	.057	18.69	y 61	171286.771	189216	9820.329	14276.0...	1 H2-1
177	M32	PL2.25x0.375	.591	1.107	61	.003	1.107	y 62	11574.824	22788	177.75	1068.75	2... H1-1a
178	M452	Reinf1 L6x6...	.591	6.479	61	.058	5.233	y 61	171286.771	189216	9820.329	14276.0...	1 H2-1
179	M494	PL2.25x0.375	.590	1.064	62	.003	0	y 62	12192.201	22788	177.75	1068.75	2... H1-1a
180	M509	PL2.25x0.375	.590	.984	62	.006	0	y 62	13357.873	22788	177.75	1068.75	1... H1-1a
181	M61	PL2.25x0.375	.589	.892	61	.017	0	y 61	14858.781	22788	177.75	1068.75	1... H1-1a
182	M30	PL2.25x0.375	.589	1.023	61	.006	0	y 61	12787.684	22788	177.75	1068.75	1... H1-1a
183	M274	L2.5x2.5x5	.587	3.292	61	.001	5.449	y 61	17522.255	39420	1096.767	2468.79	1... H2-1
184	M13	PL2.25x0.375	.586	1.023	61	.006	0	y 61	12787.684	22788	177.75	1068.75	1... H1-1a
185	M15	PL2.25x0.375	.586	1.107	61	.002	1.107	y 62	11574.824	22788	177.75	1068.75	2... H1-1a
186	M63	PL2.25x0.375	.586	.984	61	.006	0	y 61	13357.873	22788	177.75	1068.75	1... H1-1a
187	M511	PL2.25x0.375	.586	1.064	62	.004	0	y 62	12192.201	22788	177.75	1068.75	2... H1-1a
188	M225	L2.5x2x5	.585	2.214	61	.001	5.449	y 62	12302.09	35640	809.265	1830.739	1... H2-1
189	M6	Reinf1 L6x6...	.584	17.444	62	.057	18.69	y 62	171286.771	189216	9820.329	14276.0...	1 H2-1
190	M46	PL2.25x0.375	.582	.984	61	.006	0	y 61	13357.873	22788	177.75	1068.75	1... H1-1a
191	M65	PL2.25x0.375	.582	1.064	61	.004	0	y 61	12192.201	22788	177.75	1068.75	2... H1-1a
192	M48	PL2.25x0.375	.579	1.064	61	.003	0	y 61	12192.201	22788	177.75	1068.75	1... H1-1a
193	M131	Reinf1 L6x6...	.579	6.479	62	.056	5.233	y 62	171286.771	189216	9820.329	14276.0...	1 H2-1
194	M241	L2.5x2.5x5	.579	2.157	62	.001	5.449	y 61	17522.255	39420	1096.767	2468.79	1... H2-1
195	M137	L3x2.5x5	.574	6.403	61	.046	8.62	z 61	39023.547	44010	1270.778	2996.056	1 H2-1
196	M503	PL2.25x0.4...	.573	1.503	61	.008	1.503	y 61	10508.193	26578.1...	242.249	1245.85	1... H1-1a
197	M598	L3x2.5x5	.571	5.418	62	.046	3.202	z 62	39023.547	44010	1270.778	2996.056	1 H2-1
198	M272	L2.5x2.5x5	.570	3.292	61	.001	0	y 62	17522.048	39420	1096.767	2468.787	1... H2-1
199	M138	L3x2.5x5	.569	5.418	61	.040	3.202	z 61	39023.547	44010	1270.778	2996.056	1 H2-1
200	M520	PL2.25x0.4...	.567	1.503	61	.007	1.503	y 61	10508.193	26578.1...	242.249	1245.85	1... H1-1a
201	M599	L3x2.5x5	.567	6.403	62	.039	8.62	z 62	39023.547	44010	1270.778	2996.056	1 H2-1
202	M74	PL2.25x0.4...	.564	1.503	62	.009	1.503	y 62	10508.193	26578.1...	242.249	1245.85	1... H1-1a
203	M270	L2.5x2.5x5	.562	3.292	61	.001	5.449	y 62	17522.048	39420	1096.767	2468.787	1... H2-1
204	M57	PL2.25x0.4...	.562	1.503	62	.006	1.503	y 62	10508.193	26578.1...	242.249	1245.85	1... H1-1a
205	M237	L2.5x2.5x5	.560	2.157	61	.002	5.449	y 61	17522.255	39420	1096.767	2468.79	1... H2-1
206	M253	L2.5x2x5	.556	2.214	62	.001	5.449	y 61	12302.09	35640	809.265	1830.739	1... H2-1
207	M243	L2.5x2.5x5	.544	2.157	62	.001	5.449	y 61	17522.048	39420	1096.767	2468.787	1... H2-1
208	M220	L2.5x2x5	.542	3.236	62	.001	5.449	y 61	12301.91	35640	809.265	1830.737	1... H2-1
209	M218	L2.5x2x5	.539	3.236	62	.001	0	y 61	12301.91	35640	809.265	1830.737	1... H2-1
210	M223	L2.5x2x5	.539	2.214	61	.001	5.449	y 62	12301.91	35640	809.265	1830.737	1... H2-1
211	M204	L2.5x2.5x5	.534	3.292	62	.002	0	y 62	17522.255	39420	1096.767	2468.79	1... H2-1
212	M245	L2.5x2.5x5	.532	2.157	62	.001	5.449	y 61	17522.048	39420	1096.767	2468.787	1... H2-1
213	M239	L2.5x2.5x5	.531	0	62	.001	5.277	y 61	18428.357	39420	1096.767	2481.474	1... H2-1
214	M276	L2.5x2.5x5	.527	5.277	61	.001	0	y 62	18428.357	39420	1096.767	2481.474	1... H2-1
215	M221	L2.5x2x5	.526	2.214	61	.001	0	y 62	12301.91	35640	809.265	1830.737	1... H2-1
216	M235	L2.5x2.5x5	.526	2.157	61	.001	0	y 62	17522.048	39420	1096.767	2468.787	1... H2-1
217	M233	L2.5x2.5x5	.522	2.157	61	.001	0	y 62	17522.048	39420	1096.767	2468.787	1... H2-1
218	M206	L2.5x2.5x5	.522	3.292	62	.001	0	y 61	17522.048	39420	1096.767	2468.787	1... H2-1
219	M247	L2.5x2.5x5	.514	2.157	62	.001	5.449	y 61	17522.255	39420	1096.767	2468.79	1... H2-1
220	M502	PL2.25x0.4...	.514	1.474	62	.007	2.948	y 61	10874.424	26578.1...	242.249	1245.85	1... H1-1a
221	M277	L2.5x2.5x5	.513	0	61	.001	0	y 62	18428.357	39420	1096.767	2481.474	1... H2-1
222	M519	PL2.25x0.4...	.511	1.474	62	.006	0	y 61	10874.424	26578.1...	242.249	1245.85	1... H1-1a
223	M73	PL2.25x0.4...	.507	1.474	61	.007	2.948	y 62	10874.424	26578.1...	242.249	1245.85	1... H1-1a
224	M208	L2.5x2.5x5	.506	3.292	62	.001	5.449	y 61	17522.048	39420	1096.767	2468.787	1... H2-1
225	M260	L2.5x2x5	.506	3.236	61	.001	0	y 62	12301.91	35640	809.265	1830.737	1... H2-1
226	M56	PL2.25x0.4...	.504	1.474	61	.006	0	y 62	10874.424	26578.1...	242.249	1245.85	1... H1-1a
227	M258	L2.5x2x5	.502	3.236	61	.001	0	y 62	12301.91	35640	809.265	1830.737	1... H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 6 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Egn
228	M262	L2.5x2x5	.500	3.235	61	.001	0	y	62	12302.09	35640	809.265	1830.739	1...	H2-1
229	M255	L2.5x2x5	.493	2.214	62	.001	5.449	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
230	M268	L2.5x2.5x5	.492	3.292	61	.001	0	y	62	17522.255	39420	1096.767	2468.79	1...	H2-1
231	M210	L2.5x2.5x5	.491	3.292	62	.001	5.449	y	61	17522.255	39420	1096.767	2468.79	1...	H2-1
232	M256	L2.5x2x5	.485	3.235	61	.001	5.449	y	62	12302.09	35640	809.265	1830.739	1...	H2-1
233	M202	L2.5x2.5x5	.481	5.277	62	.001	5.277	y	61	18428.357	39420	1096.767	2481.474	1...	H2-1
234	M467	PL2.25x0.4...	.481	1.414	62	.008	0	y	61	11683.111	26578.1...	242.249	1245.85	1...	H1-1a
235	M259	L2.5x2x5	.481	2.214	62	.001	5.449	y	61	12302.09	35640	809.265	1830.739	1...	H2-1
236	M257	L2.5x2x5	.478	2.214	62	.001	0	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
237	M484	PL2.25x0.4...	.478	1.414	62	.008	0	y	61	11683.111	26578.1...	242.249	1245.85	1...	H1-1a
238	M38	PL2.25x0.4...	.475	1.414	61	.008	0	y	62	11683.111	26578.1...	242.249	1245.85	1...	H1-1a
239	M21	PL2.25x0.4...	.471	1.414	61	.007	0	y	62	11683.111	26578.1...	242.249	1245.85	1...	H1-1a
240	M579	L2.5x2.5x5	.462	2.748	62	.002	0	z	62	16679.435	39420	1096.767	2456.949	1...	H2-1
241	M580	L2.5x2.5x5	.461	2.748	62	.002	5.612	y	62	16679.435	39420	1096.767	2456.949	1...	H2-1
242	M134	L2.5x2.5x5	.455	2.748	61	.002	5.612	z	61	16679.435	39420	1096.767	2456.949	1...	H2-1
243	M133	L2.5x2.5x5	.452	2.748	61	.002	5.612	y	61	16679.435	39420	1096.767	2456.949	1...	H2-1
244	M222	L2.5x2x5	.446	3.235	62	.001	5.449	y	61	12302.09	35640	809.265	1830.739	1...	H2-1
245	M231	L2.5x2.5x5	.427	2.157	61	.001	5.449	y	62	17522.255	39420	1096.767	2468.79	1...	H2-1
246	M224	L2.5x2x5	.426	3.236	62	.001	5.449	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
247	M413	PL2.25x0.3...	.425	2.795	62	.002	2.795	y	62	1149.04	18984.3...	123.597	889.893	1...	H1-1a
248	M261	L2.5x2x5	.420	2.214	62	.001	0	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
249	M178	PL2.25x0.5	.416	1.678	62	.019	3.158	y	61	12660.887	30375	316.406	1423.828	1...	H1-1a
250	M639	PL2.25x0.5	.414	1.678	61	.019	3.158	y	62	12660.887	30375	316.406	1423.828	1...	H1-1a
251	M638	PL2.25x0.5	.414	1.678	61	.023	3.158	y	62	12660.887	30375	316.406	1423.828	1...	H1-1a
252	M177	PL2.25x0.5	.409	1.678	62	.023	3.158	y	61	12660.887	30375	316.406	1423.828	1...	H1-1a
253	M226	L2.5x2x5	.407	3.236	62	.001	5.449	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
254	M217	L2.5x2x5	.399	2.214	61	.001	5.449	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
255	M215	L2.5x2x5	.397	2.214	61	.001	0	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
256	M228	L2.5x2x5	.394	3.235	62	.001	0	y	61	12302.09	35640	809.265	1830.739	1...	H2-1
257	M678	L6x4x6	.390	.66	61	.119	.33	z	61	91219.353	97470	4257.614	12407.8...	1...	H2-1
258	M675	L6x4x6	.388	.66	62	.118	.991	z	62	91219.353	97470	4257.614	12408.9...	1...	H2-1
259	M679	L6x4x6	.386	.66	61	.113	.33	z	61	91219.353	97470	4257.614	12792.4...	1...	H2-1
260	M263	L2.5x2x5	.386	2.214	62	.001	0	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
261	M612	PL2.25x0.3...	.384	.75	61	.017	0	y	61	12250.848	18984.3...	123.597	889.893	1...	H1-1a
262	M624	PL2.25x0.3...	.383	.75	61	.020	0	y	61	12250.848	18984.3...	123.597	889.893	1...	H1-1a
263	M151	PL2.25x0.3...	.382	.75	62	.017	0	y	62	12250.848	18984.3...	123.597	889.893	1...	H1-1a
264	M674	L6x4x6	.382	.66	62	.112	.991	z	62	91219.353	97470	4257.614	12792.4...	1...	H2-1
265	M163	PL2.25x0.3...	.380	.75	62	.020	0	y	62	12250.848	18984.3...	123.597	889.893	1...	H1-1a
266	M252	L2.5x2x5	.377	3.236	61	.001	5.449	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
267	M626	PL2.25x0.5	.374	1.678	62	.025	3.158	y	61	12660.887	30375	316.406	1423.828	1...	H1-1a
268	M165	PL2.25x0.5	.373	1.678	61	.025	3.158	y	62	12660.887	30375	316.406	1423.828	1...	H1-1a
269	M219	L2.5x2x5	.373	2.214	61	.001	5.449	y	62	12302.09	35640	809.265	1830.739	1...	H2-1
270	M166	PL2.25x0.5	.372	1.678	61	.020	3.158	y	62	12660.887	30375	316.406	1423.828	1...	H1-1a
271	M213	L2.5x2x5	.370	2.214	61	.001	5.449	y	62	12302.09	35640	809.265	1830.739	1...	H2-1
272	M627	PL2.25x0.5	.368	1.678	62	.020	3.158	y	61	12660.887	30375	316.406	1423.828	1...	H1-1a
273	M254	L2.5x2x5	.365	3.236	61	.001	0	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
274	M610	PL2.25x0.3...	.364	.797	61	.021	0	y	61	11474.558	18984.3...	123.597	889.893	1...	H1-1a
275	M149	PL2.25x0.3...	.363	.797	62	.021	0	y	62	11474.558	18984.3...	123.597	889.893	1...	H1-1a
276	M620	PL2.25x0.3...	.362	.895	61	.027	0	y	61	10124.841	18984.3...	123.597	889.893	1...	H1-1a
277	M622	PL2.25x0.3...	.362	.797	61	.025	0	y	61	11474.558	18984.3...	123.597	889.893	1...	H1-1a
278	M608	PL2.25x0.3...	.360	.895	61	.022	0	y	61	10124.841	18984.3...	123.597	889.893	1...	H1-1a
279	M159	PL2.25x0.3...	.360	.895	62	.027	0	y	62	10124.841	18984.3...	123.597	889.893	1...	H1-1a
280	M161	PL2.25x0.3...	.359	.797	62	.024	0	y	62	11474.558	18984.3...	123.597	889.893	1...	H1-1a
281	M147	PL2.25x0.3...	.359	.895	62	.022	0	y	62	10124.841	18984.3...	123.597	889.893	1...	H1-1a
282	M230	L2.5x2x5	.340	3.236	62	.001	5.449	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
283	M677	L6x4x6	.326	.977	62	.118	.488	z	62	89734.047	97470	4257.614	12792.4...	1...	H2-1
284	M680	L6x4x6	.323	.977	62	.117	1.465	z	61	89734.047	97470	4257.614	12792.4...	1...	H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
285	M211	L2.5x2x5	.318	2.214	61	.001	0	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
286	M681	L6x4x6	.317	.977	61	.108	.488	z	62	89734.047	97470	4257.614	12456.9...	1...	H2-1
287	M676	L6x4x6	.316	.977	61	.108	1.465	z	61	89734.047	97470	4257.614	12792.4...	1...	H2-1
288	M469	PL2.25x0.4...	.311	1.503	62	.008	3.006	y	61	10508.193	26578.1...	242.249	1245.85	1...	H1-1a
289	M486	PL2.25x0.4...	.307	1.503	62	.007	0	y	61	10508.193	26578.1...	242.249	1245.85	1...	H1-1a
290	M40	PL2.25x0.4...	.305	1.503	61	.008	0	y	62	10508.193	26578.1...	242.249	1245.85	1...	H1-1a
291	M267	L2.5x2x5	.303	2.214	62	.001	5.449	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
292	M265	L2.5x2x5	.301	2.214	62	.001	0	y	61	12302.09	35640	809.265	1830.739	1...	H2-1
293	M23	PL2.25x0.4...	.301	1.503	61	.007	3.006	y	62	10508.193	26578.1...	242.249	1245.85	1...	H1-1a
294	M535	PL2.25x0.4...	.288	1.582	61	.028	1.582	y	62	9847.221	26578.1...	242.249	1245.85	1...	H1-1a
295	M89	PL2.25x0.4...	.286	1.582	62	.028	1.582	y	61	9847.221	26578.1...	242.249	1245.85	1...	H1-1a
296	M563	PL2.25x0.4...	.283	1.582	62	.032	1.582	y	61	9847.221	26578.1...	242.249	1245.85	1...	H1-1a
297	M275	L2.5x2.5x5	.280	2.781	61	.002	0	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
298	M240	L2.5x2.5x5	.280	2.668	62	.003	0	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
299	M117	PL2.25x0.4...	.280	1.582	61	.032	1.582	y	62	9847.221	26578.1...	242.249	1245.85	1...	H1-1a
300	M164	PL2.25x0.3...	.278	.75	61	.020	.75	y	62	12250.848	18984.3...	123.597	889.893	1...	H1-1a
301	M152	PL2.25x0.3...	.276	.75	61	.018	.75	y	62	12250.848	18984.3...	123.597	889.893	1...	H1-1a
302	M625	PL2.25x0.3...	.276	.75	62	.020	.75	y	61	12250.848	18984.3...	123.597	889.893	1...	H1-1a
303	M613	PL2.25x0.3...	.274	.75	62	.018	.75	y	61	12250.848	18984.3...	123.597	889.893	1...	H1-1a
304	M238	L2.5x2.5x5	.271	2.668	61	.002	0	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
305	M273	L2.5x2.5x5	.269	2.781	61	.002	5.449	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
306	M160	PL2.25x0.3...	.268	.895	61	.026	.895	y	62	10124.841	18984.3...	123.597	889.893	1...	H1-1a
307	M242	L2.5x2.5x5	.267	2.668	62	.002	0	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
308	M621	PL2.25x0.3...	.266	.895	62	.026	.895	y	61	10124.841	18984.3...	123.597	889.893	1...	H1-1a
309	M271	L2.5x2.5x5	.262	2.781	61	.001	5.449	y	61	17522.255	39420	1096.767	2468.79	1...	H2-1
310	M162	PL2.25x0.3...	.261	.797	61	.025	.797	y	62	11474.558	18984.3...	123.597	889.893	1...	H1-1a
311	M248	L2.5x2x5	.260	2.668	62	.001	0	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
312	M148	PL2.25x0.3...	.259	.895	61	.022	.895	y	62	10124.841	18984.3...	123.597	889.893	1...	H1-1a
313	M407	PL2.25x0.3...	.259	2.795	61	.002	2.795	y	62	1149.04	18984.3...	123.597	889.893	1...	H1-1a
314	M236	L2.5x2.5x5	.259	2.668	61	.002	0	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
315	M203	L2.5x2.5x5	.257	2.781	62	.002	5.449	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
316	M609	PL2.25x0.3...	.257	.895	62	.022	.895	y	61	10124.841	18984.3...	123.597	889.893	1...	H1-1a
317	M244	L2.5x2.5x5	.253	2.668	62	.002	0	y	62	17522.255	39420	1096.767	2468.79	1...	H2-1
318	M246	L2.5x2.5x5	.247	2.668	62	.001	0	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
319	M205	L2.5x2.5x5	.246	2.781	62	.002	5.449	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
320	M234	L2.5x2.5x5	.244	2.668	61	.001	5.449	y	61	17522.255	39420	1096.767	2468.79	1...	H2-1
321	M250	L2.5x2x5	.243	3.235	61	.001	5.449	y	62	12302.09	35640	809.265	1830.739	1...	H2-1
322	M207	L2.5x2.5x5	.242	2.781	62	.001	5.449	y	62	17522.255	39420	1096.767	2468.79	1...	H2-1
323	M269	L2.5x2.5x5	.237	2.781	61	.001	5.449	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
324	M643	PL2.25x0.375	.236	1.301	61	.025	0	y	61	9164.807	22788	177.75	1068.75	1...	H1-1b
325	M642	PL2.25x0.375	.235	1.301	61	.024	0	y	61	9164.807	22788	177.75	1068.75	1...	H1-1b
326	M209	L2.5x2.5x5	.235	2.781	62	.001	0	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
327	M182	PL2.25x0.375	.235	1.301	62	.025	0	y	62	9164.807	22788	177.75	1068.75	1...	H1-1b
328	M181	PL2.25x0.375	.234	1.301	62	.024	0	y	62	9164.807	22788	177.75	1068.75	1...	H1-1b
329	M645	PL2.25x0.3...	.230	.893	61	.040	.893	y	61	11968.128	18984.3...	123.597	889.893	2.5	H1-1b
330	M644	PL2.25x0.3...	.229	.893	61	.041	.893	y	61	11968.128	18984.3...	123.597	889.893	2...	H1-1b
331	M184	PL2.25x0.3...	.229	.893	62	.039	.893	y	62	11968.128	18984.3...	123.597	889.893	2...	H1-1b
332	M183	PL2.25x0.3...	.228	.893	62	.040	.893	y	62	11968.128	18984.3...	123.597	889.893	2...	H1-1b
333	M232	L2.5x2.5x5	.218	2.668	61	.001	0	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
334	M641	PL2.25x0.375	.217	1.401	61	.036	1.401	y	61	10631.822	22788	177.75	1068.75	3...	H1-1b
335	M640	PL2.25x0.375	.217	1.401	61	.037	1.401	y	61	10631.822	22788	177.75	1068.75	2...	H1-1b
336	M180	PL2.25x0.375	.216	1.401	62	.036	1.401	y	62	10631.822	22788	177.75	1068.75	3...	H1-1b
337	M179	PL2.25x0.375	.216	1.401	62	.037	1.401	y	62	10631.822	22788	177.75	1068.75	2...	H1-1b
338	M632	PL2.25x0.3...	.201	.893	61	.040	1.649	y	61	11968.128	18984.3...	123.597	889.893	2...	H1-1b
339	M633	PL2.25x0.3...	.200	.893	61	.038	1.649	y	61	11968.128	18984.3...	123.597	889.893	2...	H1-1b
340	M171	PL2.25x0.3...	.199	.893	62	.040	1.649	y	62	11968.128	18984.3...	123.597	889.893	2...	H1-1b
341	M172	PL2.25x0.3...	.199	.893	62	.038	1.649	y	62	11968.128	18984.3...	123.597	889.893	2...	H1-1b



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
342	M170	PL2.25x0.375	.191	1.301	61	.022	0	y	61	9164.807	22788	177.75	1068.75	1...	H1-1b
343	M169	PL2.25x0.375	.191	1.301	61	.021	1.326	y	61	9164.807	22788	177.75	1068.75	1...	H1-1b
344	M630	PL2.25x0.375	.190	1.301	62	.021	2.402	y	61	9164.807	22788	177.75	1068.75	1...	H1-1b
345	M631	PL2.25x0.375	.190	1.301	62	.022	0	y	62	9164.807	22788	177.75	1068.75	1...	H1-1b
346	M628	PL2.25x0.375	.188	1.401	61	.034	2.586	y	61	10631.822	22788	177.75	1068.75	2...	H1-1b
347	M167	PL2.25x0.375	.187	1.401	62	.034	2.586	y	62	10631.822	22788	177.75	1068.75	2...	H1-1b
348	M629	PL2.25x0.375	.186	1.401	61	.033	1.401	y	62	10631.822	22788	177.75	1068.75	2...	H1-1b
349	M168	PL2.25x0.375	.185	1.401	61	.033	1.401	y	61	10631.822	22788	177.75	1068.75	3...	H1-1b
350	M623	PL2.25x0.3...	.179	.797	61	.025	.797	y	61	11474.558	18984.3...	123.597	889.893	1...	H1-1b
351	M611	PL2.25x0.3...	.178	.797	61	.022	.797	y	61	11474.558	18984.3...	123.597	889.893	1...	H1-1b
352	M150	PL2.25x0.3...	.177	.797	62	.022	.797	y	62	11474.558	18984.3...	123.597	889.893	1...	H1-1b
353	M634	PL2.25x0.3...	.165	.785	61	.043	1.478	y	61	11699.802	18984.3...	123.597	889.893	1...	H1-1b
354	M173	PL2.25x0.3...	.164	.785	62	.042	1.478	y	62	11699.802	18984.3...	123.597	889.893	1...	H1-1b
355	M635	PL2.25x0.3...	.164	.785	61	.041	1.478	y	61	11699.802	18984.3...	123.597	889.893	1...	H1-1b
356	M174	PL2.25x0.3...	.162	.785	62	.041	1.478	y	62	11699.802	18984.3...	123.597	889.893	1...	H1-1b
357	M646	PL2.25x0.3...	.161	.785	61	.045	.801	y	61	11699.802	18984.3...	123.597	889.893	1...	H1-1b
358	M185	PL2.25x0.3...	.160	.785	62	.044	.801	y	62	11699.802	18984.3...	123.597	889.893	1...	H1-1b
359	M647	PL2.25x0.3...	.160	.785	61	.043	.801	y	61	11699.802	18984.3...	123.597	889.893	1...	H1-1b
360	M186	PL2.25x0.3...	.159	.785	62	.043	.801	y	62	11699.802	18984.3...	123.597	889.893	1...	H1-1b
361	M661	L2.5x2.5x5	.150	2.661	61	.002	5.214	y	61	18763.279	39420	1096.767	2486.157	1...	H2-1
362	M406	PL2.25x0.3...	.146	2.795	62	.002	2.795	y	62	1149.04	18984.3...	123.597	706.31	1.1	H1-1b
363	M279	L2.5x2.5x5	.144	2.553	62	.001	5.214	y	62	18763.279	39420	1096.767	2486.157	1...	H2-1
364	M536	PL2.25x0.4...	.143	1.582	61	.021	0	y	62	9847.221	26578.1...	242.249	1245.85	1...	H1-1b
365	M90	PL2.25x0.4...	.139	1.582	62	.020	0	y	61	9847.221	26578.1...	242.249	1245.85	1...	H1-1b
366	M648	PL2.25x0.3...	.138	.729	61	.024	0	y	61	12400.264	18984.3...	123.597	889.893	1...	H1-1b
367	M187	PL2.25x0.3...	.137	.729	62	.024	0	y	62	12400.264	18984.3...	123.597	889.893	1...	H1-1b
368	M564	PL2.25x0.4...	.136	1.582	62	.023	0	y	61	9847.221	26578.1...	242.249	1245.85	1...	H1-1b
369	M662	L2.5x2.5x5	.136	2.553	61	.001	5.214	y	61	18763.279	39420	1096.767	2486.157	1...	H2-1
370	M607	PL2.25x0.375	.136	1.327	61	.018	1.353	y	61	8760.04	22788	177.75	1068.75	1...	H1-1b
371	M146	PL2.25x0.375	.135	1.327	62	.018	1.353	y	62	8760.04	22788	177.75	1068.75	1...	H1-1b
372	M649	PL2.25x0.3...	.134	.729	61	.023	.743	y	61	12400.264	18984.3...	123.597	889.893	1...	H1-1b
373	M188	PL2.25x0.3...	.133	.729	62	.023	.743	y	62	12400.264	18984.3...	123.597	889.893	1...	H1-1b
374	M278	L2.5x2.5x5	.133	2.661	62	.002	5.214	y	62	18763.279	39420	1096.767	2486.157	1...	H2-1
375	M104	PL2.25x0.4...	.133	1.582	62	.023	0	y	62	9847.221	26578.1...	242.249	1245.85	1...	H1-1b
376	M118	PL2.25x0.4...	.132	1.582	61	.023	0	y	62	9847.221	26578.1...	242.249	1245.85	1...	H1-1b
377	M550	PL2.25x0.4...	.131	1.582	61	.023	0	y	61	9847.221	26578.1...	242.249	1245.85	1...	H1-1b
378	M424	PL2.25x0.3...	.127	2.795	61	.002	2.795	y	61	1149.04	18984.3...	123.597	729.621	1...	H1-1b
379	M619	PL2.25x0.375	.127	1.327	61	.022	1.353	y	61	8760.04	22788	177.75	1068.75	1...	H1-1b
380	M158	PL2.25x0.375	.125	1.327	62	.021	1.353	y	62	8760.04	22788	177.75	1068.75	1...	H1-1b
381	M418	PL2.25x0.3...	.121	2.795	62	.002	2.795	y	61	1149.04	18984.3...	123.597	793.33	1...	H1-1b
382	M618	PL2.25x0.375	.120	1.327	61	.016	1.353	y	62	8760.04	22788	177.75	1068.75	1...	H1-1b
383	M157	PL2.25x0.375	.118	1.327	62	.016	1.353	y	61	8760.04	22788	177.75	1068.75	1...	H1-1b
384	M606	PL2.25x0.375	.117	1.327	61	.017	1.353	y	62	8760.04	22788	177.75	1068.75	1...	H1-1b
385	M145	PL2.25x0.375	.117	1.327	62	.017	1.353	y	61	8760.04	22788	177.75	1068.75	1...	H1-1b
386	M76	PL2.25x0.4...	.116	1.582	61	.021	0	y	61	9847.221	26578.1...	242.249	1245.85	1...	H1-1b
387	M400	PL2.25x0.3...	.116	2.795	62	.002	2.795	y	62	1149.04	18984.3...	123.597	804.522	1...	H1-1b
388	M636	PL2.25x0.3...	.116	.729	61	.023	1.372	y	61	12400.264	18984.3...	123.597	889.893	1...	H1-1b
389	M522	PL2.25x0.4...	.116	1.582	62	.021	0	y	62	9847.221	26578.1...	242.249	1245.85	1...	H1-1b
390	M175	PL2.25x0.3...	.116	.729	62	.023	.729	y	62	12400.264	18984.3...	123.597	889.893	1...	H1-1b
391	M114	PL2.25x0.4...	.115	1.627	61	.014	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
392	M560	PL2.25x0.4...	.115	1.627	62	.014	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
393	M574	PL2.25x0.4...	.113	1.627	62	.015	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
394	M637	PL2.25x0.3...	.113	.729	61	.022	1.372	y	61	12400.264	18984.3...	123.597	889.893	1...	H1-1b
395	M176	PL2.25x0.3...	.112	.729	62	.022	1.372	y	62	12400.264	18984.3...	123.597	889.893	1...	H1-1b
396	M419	PL2.25x0.3...	.111	2.795	61	.002	2.795	y	61	1149.04	18984.3...	123.597	709.855	1...	H1-1b
397	M617	PL2.25x0.375	.109	1.439	61	.017	1.439	y	61	10235.187	22788	177.75	1068.75	1...	H1-1b
398	M128	PL2.25x0.4...	.109	1.627	61	.014	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b



Company : B&V
Designer : S.Suntum
Job Number : 190704
Model Name : Type 6 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
399	M156	PL2.25x0.375	.107	1.439	62	.017	1.439	y	62	10235.187	22788	177.75	1068.75	1...	H1-1b
400	M603	PL2.25x0.5	.105	1.73	62	.010	3.256	y	62	11935.209	30375	316.406	1423.828	1...	H1-1b
401	M431	PL2.25x0.3...	.105	2.795	61	.002	2.795	y	61	1149.04	18984.3...	123.597	801.723	1...	H1-1b
402	M671	L2.5x2.5x5	.104	1.25	61	.001	0	y	61	33235.431	39420	1096.767	2551.08	1...	H2-1
403	M142	PL2.25x0.5	.104	1.73	61	.010	3.256	y	61	11935.209	30375	316.406	1423.828	1...	H1-1b
404	M401	PL2.25x0.3...	.103	2.795	61	.002	2.795	y	62	1149.04	18984.3...	123.597	872.733	1...	H1-1b
405	M673	L2.5x2.5x5	.103	1.25	62	.001	0	z	62	33235.431	39420	1096.767	2551.08	1...	H2-1
406	M425	PL2.25x0.3...	.102	2.795	62	.002	2.795	y	61	1149.04	18984.3...	123.597	799.035	1...	H1-1b
407	M154	PL2.25x0.5	.098	1.73	61	.015	3.256	y	61	11935.209	30375	316.406	1423.828	1...	H1-1b
408	M615	PL2.25x0.5	.097	1.73	62	.015	3.256	y	62	11935.209	30375	316.406	1423.828	1...	H1-1b
409	M602	PL2.25x0.5	.095	1.73	61	.014	3.256	y	61	11935.209	30375	316.406	1423.828	1...	H1-1b
410	M141	PL2.25x0.5	.093	1.73	62	.013	3.256	y	62	11935.209	30375	316.406	1423.828	1...	H1-1b
411	M153	PL2.25x0.5	.092	1.73	62	.015	3.256	y	62	11935.209	30375	316.406	1423.828	1...	H1-1b
412	M605	PL2.25x0.375	.092	1.439	61	.013	1.439	y	61	10235.187	22788	177.75	1068.75	1...	H1-1b
413	M144	PL2.25x0.375	.092	1.439	62	.013	1.439	y	62	10235.187	22788	177.75	1068.75	1...	H1-1b
414	M614	PL2.25x0.5	.090	1.73	61	.015	3.256	y	61	11935.209	30375	316.406	1423.828	1...	H1-1b
415	M565	PL2.25x0.4...	.088	1.627	61	.013	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
416	M155	PL2.25x0.375	.088	1.439	61	.014	1.439	y	61	10235.187	22788	177.75	1068.75	1...	H1-1b
417	M531	PL2.25x0.4...	.088	1.627	61	.018	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
418	M616	PL2.25x0.375	.087	1.439	62	.014	1.439	y	62	10235.187	22788	177.75	1068.75	1...	H1-1b
419	M143	PL2.25x0.375	.086	1.439	61	.013	1.439	y	61	10235.187	22788	177.75	1068.75	1...	H1-1b
420	M604	PL2.25x0.375	.086	1.439	62	.013	1.439	y	62	10235.187	22788	177.75	1068.75	1...	H1-1b
421	M119	PL2.25x0.4...	.083	1.627	62	.013	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
422	M537	PL2.25x0.4...	.082	1.627	62	.013	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
423	M430	PL2.25x0.3...	.081	2.795	62	.002	2.795	y	61	1149.04	18984.3...	123.597	889.893	1...	H1-1b
424	M105	PL2.25x0.4...	.081	1.627	62	.013	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
425	M85	PL2.25x0.4...	.080	1.627	62	.016	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
426	M532	PL2.25x0.4...	.080	1.627	61	.022	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
427	M544	PL2.25x0.4...	.080	1.627	61	.018	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
428	M546	PL2.25x0.4...	.079	1.627	61	.024	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
429	M99	PL2.25x0.4...	.078	1.627	62	.018	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
430	M91	PL2.25x0.4...	.078	1.627	61	.013	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
431	M545	PL2.25x0.4...	.078	1.627	61	.016	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
432	M86	PL2.25x0.4...	.077	1.627	62	.023	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
433	M551	PL2.25x0.4...	.076	1.627	61	.013	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
434	M100	PL2.25x0.4...	.076	1.627	62	.022	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
435	M670	L2.5x2.5x5	.075	.495	61	.020	.495	z	61	33235.431	39420	1096.767	2551.08	1...	H2-1
436	M98	PL2.25x0.4...	.073	1.627	62	.017	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
437	M84	PL2.25x0.4...	.071	1.627	62	.018	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
438	M575	PL2.25x0.4...	.068	1.627	62	.007	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
439	M113	PL2.25x0.4...	.068	1.627	62	.011	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
440	M573	PL2.25x0.4...	.067	1.627	61	.011	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
441	M77	PL2.25x0.4...	.067	1.627	61	.013	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
442	M530	PL2.25x0.4...	.067	1.627	61	.017	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
443	M596	PL2.25x0.3...	.067	1.147	62	.001	2.247	y	62	1778.441	18984.3...	123.597	889.893	1...	H1-1b
444	M533	PL2.25x0.4...	.067	1.627	61	.013	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
445	M597	PL2.25x0.3...	.067	1.147	62	.002	2.247	y	62	1778.44	18984.3...	123.597	889.893	1...	H1-1b
446	M129	PL2.25x0.4...	.066	1.627	61	.007	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
447	M543	PL2.25x0.4...	.066	1.627	61	.014	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
448	M445	PL2.25x0.3...	.066	1.147	61	.002	0	y	61	1778.441	18984.3...	123.597	889.893	1...	H1-1b
449	M529	PL2.25x0.4...	.066	1.627	61	.014	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
450	M446	PL2.25x0.3...	.066	1.147	61	.001	0	y	61	1778.44	18984.3...	123.597	889.893	1...	H1-1b
451	M672	L2.5x2.5x5	.065	2.005	62	.018	2.005	y	62	33235.431	39420	1096.767	2551.08	1...	H2-1
452	M559	PL2.25x0.4...	.065	1.627	61	.012	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
453	M97	PL2.25x0.4...	.064	1.627	62	.014	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
454	M523	PL2.25x0.4...	.064	1.627	62	.013	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
455	M561	PL2.25x0.4...	.064	1.627	62	.008	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 6 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn v	phi*Mn z	Cb	Ean
456	M115	PL2.25x0.4...	.064	1.627	61	.008	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
457	M412	PL2.25x0.3...	.063	2.795	62	.002	2.795	y	62	1149.04	18984.3...	123.597	889.893	1...	H1-1b
458	M83	PL2.25x0.4...	.063	1.627	62	.013	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
459	M547	PL2.25x0.4...	.063	1.627	61	.010	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
460	M127	PL2.25x0.4...	.062	1.627	62	.011	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
461	M87	PL2.25x0.4...	.062	1.627	62	.010	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
462	M542	PL2.25x0.4...	.061	1.627	61	.011	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
463	M106	PL2.25x0.4...	.061	1.627	61	.006	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
464	M101	PL2.25x0.4...	.060	1.627	62	.012	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
465	M566	PL2.25x0.4...	.059	1.627	62	.006	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
466	M552	PL2.25x0.4...	.057	1.627	62	.006	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
467	M126	PL2.25x0.4...	.056	1.627	62	.009	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
468	M96	PL2.25x0.4...	.055	1.627	62	.010	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
469	M120	PL2.25x0.4...	.055	1.627	61	.006	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
470	M538	PL2.25x0.4...	.055	1.627	61	.006	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
471	M558	PL2.25x0.4...	.054	1.627	61	.009	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
472	M528	PL2.25x0.4...	.054	1.627	61	.010	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
473	M527	PL2.25x0.4...	.054	1.627	61	.008	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
474	M389	L2.5x1.25x5	.054	1.444	62	.005	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
475	M112	PL2.25x0.4...	.054	1.627	62	.009	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
476	M572	PL2.25x0.4...	.054	1.627	61	.009	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
477	M82	PL2.25x0.4...	.053	1.627	62	.010	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
478	M340	L2.5x1.25x5	.053	1.443	61	.005	0	y	61	13653.181	29003.9...	340.889	1494.276	1...	H2-1
479	M379	L2.5x1.25x5	.052	1.444	62	.001	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
480	M78	PL2.25x0.4...	.052	1.627	61	.006	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
481	M92	PL2.25x0.4...	.051	1.627	62	.006	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
482	M377	L2.5x1.25x5	.051	1.444	62	.001	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
483	M534	PL2.25x0.4...	.051	1.627	61	.002	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
484	M524	PL2.25x0.4...	.050	1.627	62	.006	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
485	M682	L3x3x3	.050	.375	62	.015	.375	z	62	27653.061	29430	1100.081	2421.005	1...	H2-1
486	M323	L2.5x1.25x5	.049	1.444	62	.001	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
487	M88	PL2.25x0.4...	.049	1.627	62	.004	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
488	M688	L3x3x3	.049	.375	61	.015	.375	y	61	27653.061	29430	1100.081	2421.005	1...	H2-1
489	M374	L2.5x1.25x5	.049	1.444	61	.001	2.887	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
490	M683	L3x3x3	.048	.375	62	.015	.375	y	62	27653.061	29430	1100.081	2421.005	1...	H2-1
491	M81	PL2.25x0.4...	.048	1.627	62	.007	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
492	M354	L2.5x1.25x5	.048	1.444	61	.001	2.887	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
493	M686	L3x3x3	.048	.375	61	.015	.375	z	61	27653.061	29430	1100.081	2421.005	1...	H2-1
494	M125	PL2.25x0.4...	.047	1.627	61	.007	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
495	M381	L2.5x1.25x5	.047	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
496	M111	PL2.25x0.4...	.047	1.627	62	.007	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
497	M541	PL2.25x0.4...	.047	1.627	61	.007	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
498	M356	L2.5x1.25x5	.047	1.444	61	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
499	M557	PL2.25x0.4...	.046	1.627	61	.008	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
500	M95	PL2.25x0.4...	.046	1.627	62	.008	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
501	M571	PL2.25x0.4...	.046	1.627	61	.007	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
502	M548	PL2.25x0.4...	.044	1.627	61	.004	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
503	M286	L2.5x1.25x5	.043	1.444	61	.001	2.887	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
504	M344	L2.5x1.25x5	.042	1.444	61	.005	2.887	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
505	M298	L2.5x1.25x5	.042	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
506	M102	PL2.25x0.4...	.041	1.627	62	.003	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
507	M110	PL2.25x0.4...	.040	1.627	61	.006	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
508	M124	PL2.25x0.4...	.040	1.627	62	.005	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1.4	H1-1b
509	M314	L2.5x1.25x5	.039	1.444	62	.001	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
510	M556	PL2.25x0.4...	.039	1.627	61	.005	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1.4	H1-1b
511	M540	PL2.25x0.4...	.039	1.627	61	.005	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
512	M305	L2.5x1.25x5	.039	1.444	61	.002	2.887	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
513	M526	PL2.25x0.4...	.039	1.627	61	.005	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
514	M373	L2.5x1.25x5	.038	1.444	62	.001	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
515	M570	PL2.25x0.4...	.038	1.627	61	.006	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
516	M350	L2.5x1.25x5	.038	1.444	61	.001	0	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
517	M395	L2.5x1.25x5	.038	1.388	62	.002	0	y	62	14441.904	29003.9...	340.889	1494.276	1...	H2-1
518	M123	PL2.25x0.4...	.037	1.627	61	.004	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
519	M80	PL2.25x0.4...	.036	1.627	62	.005	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
520	M385	L2.5x1.25x5	.036	1.444	62	.002	2.887	y	62	13646.695	29003.9...	340.889	1494.276	1...	H2-1
521	M427	L2.5x1.25x5	.036	1.25	62	.000	0	y	61	16480.621	29003.9...	340.889	1494.276	1...	H2-1
522	M576	PL2.25x0.4...	.036	1.627	61	.004	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
523	M339	L2.5x1.25x5	.036	1.422	62	.013	0	y	62	13953.051	29003.9...	340.889	1494.276	1...	H2-1
524	M426	L2.5x1.25x5	.035	1.25	61	.001	2.5	y	61	16480.621	29003.9...	340.889	1461.213	1...	H2-1
525	M94	PL2.25x0.4...	.035	1.627	62	.004	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
526	M331	L2.5x1.25x5	.034	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
527	M116	PL2.25x0.4...	.034	1.627	62	.004	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
528	M555	PL2.25x0.4...	.034	1.627	62	.004	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
529	M569	PL2.25x0.4...	.034	1.627	62	.004	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
530	M358	L2.5x1.25x5	.033	1.444	61	.001	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
531	M367	L2.5x1.25x5	.033	1.444	61	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
532	M299	L2.5x1.25x5	.033	1.444	62	.002	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
533	M130	PL2.25x0.4...	.033	1.627	62	.003	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
534	M539	PL2.25x0.4...	.033	1.627	62	.003	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
535	M383	L2.5x1.25x5	.033	1.444	62	.002	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
536	M562	PL2.25x0.4...	.032	1.627	61	.004	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
537	M397	L2.5x1.25x5	.032	1.25	61	.001	0	y	62	16480.621	29003.9...	340.889	1494.276	1...	H2-1
538	M387	L2.5x1.25x5	.032	1.444	62	.003	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
539	M109	PL2.25x0.4...	.031	1.627	61	.004	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
540	M296	L2.5x1.25x5	.031	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
541	M327	L2.5x1.25x5	.031	1.444	62	.001	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
542	M396	L2.5x1.25x5	.031	1.25	62	.001	0	y	61	16480.621	29003.9...	340.889	1461.213	1...	H2-1
543	M321	L2.5x1.25x5	.031	1.444	61	.002	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
544	M107	PL2.25x0.4...	.031	1.627	62	.002	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
545	M391	L2.5x1.25x5	.030	1.444	62	.007	0	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
546	M525	PL2.25x0.4...	.030	1.627	61	.002	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
547	M352	L2.5x1.25x5	.030	1.444	61	.001	2.887	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
548	M420	L2.5x1.25x5	.030	1.25	61	.001	0	y	61	16480.621	29003.9...	340.889	1461.213	1...	H2-1
549	M355	L2.5x1.25x5	.030	1.444	61	.002	0	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
550	M93	PL2.25x0.4...	.029	1.627	61	.003	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
551	M378	L2.5x1.25x5	.029	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
552	M319	L2.5x1.25x5	.029	1.444	61	.001	2.887	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
553	M302	L2.5x1.25x5	.029	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
554	M365	L2.5x1.25x5	.029	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
555	M370	L2.5x1.25x5	.029	1.444	61	.001	2.887	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
556	M392	L2.5x1.25x5	.028	1.444	62	.008	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
557	M380	L2.5x1.25x5	.028	1.444	62	.001	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
558	M567	PL2.25x0.4...	.028	1.627	61	.002	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
559	M287	L2.5x1.25x5	.028	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
560	M351	L2.5x1.25x5	.028	1.444	61	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
561	M371	L2.5x1.25x5	.027	1.444	61	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
562	M368	L2.5x1.25x5	.027	1.444	61	.001	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
563	M318	L2.5x1.25x5	.027	1.444	61	.002	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
564	M325	L2.5x1.25x5	.027	1.444	62	.002	0	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
565	M349	L2.5x1.25x5	.027	1.444	61	.002	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
566	M79	PL2.25x0.4...	.026	1.627	61	.003	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
567	M122	PL2.25x0.4...	.026	1.627	62	.002	3.255	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
568	M410	L3x2.5x5	.026	2.656	62	.001	5	z	61	24430.323	44010	1270.778	2935.268	1...	H2-1
569	M386	L2.5x1.25x5	.026	1.444	62	.003	0	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 6 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn v	phi*Mn z	Cb	Egn
570	M372	L2.5x1.25x5	.026	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
571	M393	L2.5x1.25x5	.026	1.443	62	.008	2.886	y	62	13652.825	29003.9...	340.889	1494.276	1...	H2-1
572	M553	PL2.25x0.4...	.025	1.627	61	.002	0	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
573	M304	L2.5x1.25x5	.025	1.444	62	.001	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
574	M297	L2.5x1.25x5	.025	1.444	62	.001	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
575	M384	L2.5x1.25x5	.025	1.444	62	.002	0	y	62	13646.481	29003.9...	340.889	1494.276	1...	H2-1
576	M411	L3x2.5x5	.025	2.344	62	.001	5	z	62	24430.323	44010	1270.778	2935.268	1...	H2-1
577	M280	L2.5x1.25x5	.025	1.395	61	.004	0	y	62	14342.333	29003.9...	340.889	1440.76	1...	H2-1
578	M332	L2.5x1.25x5	.025	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
579	M568	PL2.25x0.4...	.025	1.627	62	.002	1.627	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
580	M282	L2.5x1.25x5	.024	1.443	61	.001	0	y	61	13652.647	29003.9...	340.889	1434.176	1...	H2-1
581	M303	L2.5x1.25x5	.024	1.444	61	.001	2.887	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
582	M382	L2.5x1.25x5	.024	1.444	62	.001	0	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
583	M409	L2.5x1.25x5	.024	1.25	62	.001	2.5	y	61	16480.621	29003.9...	340.889	1494.276	1...	H2-1
584	M295	L2.5x1.25x5	.024	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
585	M360	L2.5x1.25x5	.024	1.444	62	.002	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
586	M554	PL2.25x0.4...	.024	1.627	61	.002	3.255	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
587	M348	L2.5x1.25x5	.024	1.444	61	.002	2.887	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
588	M320	L2.5x1.25x5	.024	1.444	61	.001	0	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
589	M359	L2.5x1.25x5	.024	1.444	62	.001	0	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
590	M369	L2.5x1.25x5	.024	1.444	61	.001	2.887	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
591	M362	L2.5x1.25x5	.024	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
592	M357	L2.5x1.25x5	.024	1.444	61	.002	0	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
593	M294	L2.5x1.25x5	.024	1.444	62	.001	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
594	M290	L2.5x1.25x5	.024	1.444	62	.001	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
595	M307	L2.5x1.25x5	.024	1.444	62	.001	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
596	M292	L2.5x1.25x5	.024	1.444	62	.001	2.887	y	61	13646.481	29003.9...	340.889	1434.117	1...	H2-1
597	M121	PL2.25x0.4...	.024	1.627	62	.002	0	y	62	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
598	M366	L2.5x1.25x5	.023	1.444	62	.001	2.887	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
599	M108	PL2.25x0.4...	.023	1.627	61	.002	1.627	y	61	9301.815	26578.1...	242.249	1245.85	1...	H1-1b
600	M301	L2.5x1.25x5	.023	1.444	61	.002	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
601	M388	L2.5x1.25x5	.023	1.444	62	.004	0	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
602	M421	L2.5x1.25x5	.023	1.25	62	.001	2.5	y	61	16480.621	29003.9...	340.889	1494.276	1...	H2-1
603	M322	L2.5x1.25x5	.023	1.444	61	.002	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
604	M361	L2.5x1.25x5	.022	1.444	62	.001	0	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
605	M316	L2.5x1.25x5	.022	1.444	62	.002	2.887	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
606	M300	L2.5x1.25x5	.022	1.444	62	.001	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
607	M317	L2.5x1.25x5	.022	1.444	61	.002	2.887	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
608	M288	L2.5x1.25x5	.021	1.444	61	.001	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
609	M595	PL5x0.3125	.021	1.25	62	.001	0	y	61	3191.804	42187.5	274.658	3610.918	1...	H1-1b
610	M444	PL5x0.3125	.021	1.25	61	.001	0	y	62	3191.804	42187.5	274.658	3610.918	1...	H1-1b
611	M345	L2.5x1.25x5	.021	1.444	61	.004	2.887	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
612	M326	L2.5x1.25x5	.021	1.444	61	.002	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
613	M284	L2.5x1.25x5	.021	1.444	61	.001	2.887	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
614	M415	L2.5x1.25x5	.021	1.25	62	.001	2.5	y	61	16480.621	29003.9...	340.889	1494.276	1...	H2-1
615	M402	L2.5x1.25x5	.020	1.25	61	.001	0	y	61	16480.621	29003.9...	340.889	1461.213	1...	H2-1
616	M364	L2.5x1.25x5	.020	1.444	62	.001	0	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
617	M403	L2.5x1.25x5	.020	1.25	61	.001	2.5	y	61	16480.621	29003.9...	340.889	1494.276	1...	H2-1
618	M291	L2.5x1.25x5	.020	1.444	62	.001	0	y	62	13646.695	29003.9...	340.889	1434.119	1...	H2-1
619	M376	L2.5x1.25x5	.020	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
620	M414	L2.5x1.25x5	.020	1.25	61	.001	0	y	61	16480.621	29003.9...	340.889	1461.213	1...	H2-1
621	M309	L2.5x1.25x5	.020	1.444	62	.001	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
622	M394	L2.5x1.25x5	.020	1.443	62	.004	0	y	62	13652.647	29003.9...	340.889	1494.276	1...	H2-1
623	M293	L2.5x1.25x5	.019	1.444	62	.001	2.887	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
624	M283	L2.5x1.25x5	.019	1.443	62	.001	2.886	y	62	13652.825	29003.9...	340.889	1434.178	1...	H2-1
625	M341	L2.5x1.25x5	.019	1.443	61	.007	0	y	61	13652.469	29003.9...	340.889	1494.276	1...	H2-1
626	M289	L2.5x1.25x5	.019	1.444	62	.001	2.887	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 6 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [...]	phi*Mn y...	phi*Mn z...	Cb	Eqn
627	M315	L2.5x1.25x5	.018	1.444	61	.001	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
628	M363	L2.5x1.25x5	.018	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
629	M375	L2.5x1.25x5	.018	1.444	62	.001	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
630	M660	L2.5x1.25x5	.018	1.422	62	.013	2.844	y	61	13953.051	29003.9...	340.889	1494.276	1...	H2-1
631	M310	L2.5x1.25x5	.018	1.444	62	.002	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
632	M347	L2.5x1.25x5	.018	1.444	61	.003	0	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
633	M353	L2.5x1.25x5	.017	1.444	61	.001	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
634	M417	L3x2.5x5	.017	2.344	62	.001	5	z	62	24430.323	44010	1270.778	2935.268	1...	H2-1
635	M306	L2.5x1.25x5	.017	1.444	61	.002	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
636	M343	L2.5x1.25x5	.017	1.444	61	.006	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
637	M285	L2.5x1.25x5	.017	1.444	62	.002	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
638	M324	L2.5x1.25x5	.017	1.444	61	.001	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
639	M346	L2.5x1.25x5	.017	1.444	61	.004	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
640	M311	L2.5x1.25x5	.017	1.444	62	.001	2.887	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
641	M312	L2.5x1.25x5	.017	1.444	61	.001	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
642	M408	L2.5x1.25x5	.016	1.25	61	.001	0	y	61	16480.621	29003.9...	340.889	1461.213	1...	H2-1
643	M336	L2.5x1.25x5	.015	1.443	61	.001	0	y	61	13653.181	29003.9...	340.889	1434.182	1...	H2-1
644	M333	L2.5x1.25x5	.015	1.444	62	.002	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
645	M281	L2.5x1.25x5	.014	1.388	62	.003	0	y	62	14441.904	29003.9...	340.889	1441.709	1...	H2-1
646	M399	L3x2.5x5	.014	2.344	62	.001	0	z	62	24430.323	44010	1270.778	2935.268	1...	H2-1
647	M390	L2.5x1.25x5	.014	1.444	61	.005	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
648	M428	L3x2.5x5	.013	2.656	61	.001	0	z	61	24430.323	44010	1270.778	2836.636	1...	H2-1
649	M338	L2.5x1.25x5	.013	1.388	62	.002	0	y	61	14441.746	29003.9...	340.889	1494.276	1...	H2-1
650	M329	L2.5x1.25x5	.013	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
651	M342	L2.5x1.25x5	.013	1.444	62	.008	0	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
652	M313	L2.5x1.25x5	.012	1.444	62	.001	2.887	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
653	M328	L2.5x1.25x5	.012	1.444	61	.001	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
654	M308	L2.5x1.25x5	.012	1.444	61	.002	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
655	M335	L2.5x1.25x5	.012	1.443	62	.001	0	y	62	13652.469	29003.9...	340.889	1434.175	1...	H2-1
656	M337	L2.5x1.25x5	.012	1.388	62	.002	0	y	61	14441.746	29003.9...	340.889	1441.708	1...	H2-1
657	M334	L2.5x1.25x5	.011	1.444	61	.001	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
658	M398	L3x2.5x5	.011	2.656	61	.001	5	z	62	24430.323	44010	1270.778	2836.636	1...	H2-1
659	M659	L2.5x1.25x5	.011	1.395	61	.004	0	y	61	14342.333	29003.9...	340.889	1440.76	1...	H2-1
660	M330	L2.5x1.25x5	.011	1.444	61	.001	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
661	M422	L3x2.5x5	.011	2.656	62	.001	0	z	61	24430.323	44010	1270.778	2935.268	1...	H2-1
662	M429	L3x2.5x5	.011	2.344	62	.001	0	z	61	24430.323	44010	1270.778	2935.268	1...	H2-1
663	M423	L3x2.5x5	.010	2.344	61	.001	5	z	61	24430.323	44010	1270.778	2836.636	1...	H2-1
664	M404	L3x2.5x5	.009	2.656	61	.001	5	z	61	24430.323	44010	1270.778	2836.636	1...	H2-1
665	M405	L3x2.5x5	.008	2.344	62	.001	0	z	61	24430.323	44010	1270.778	2935.268	1...	H2-1
666	M416	L3x2.5x5	.007	2.448	61	.001	0	z	61	24430.323	44010	1270.778	2836.636	1...	H2-1



Milvon to West River Catenary Structure Assessment

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-U

STRUCTURE TYPE 6 FIELD CONDITION NESC 1961 COMPLETE MEMBER RESULTS



Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
1	M466	PL2.25x0.3...	1.630	1.356 61 .009	1.356	y	61	4928.46	18981	123.75	891	1...	H1-1a
2	M483	PL2.25x0.3...	1.612	1.356 61 .009	1.356	y	61	4928.46	18981	123.75	891	1...	H1-1a
3	M37	PL2.25x0.3...	1.607	1.356 62 .009	1.356	y	62	4928.46	18981	123.75	891	1.4	H1-1a
4	M20	PL2.25x0.3...	1.596	1.356 62 .009	1.356	y	62	4928.46	18981	123.75	891	1...	H1-1a
5	M499	PL2.25x0.3...	1.558	1.302 61 .008	1.302	y	61	5352.969	18981	123.75	891	1...	H1-1a
6	M516	PL2.25x0.3...	1.541	1.302 61 .009	1.302	y	61	5352.969	18981	123.75	891	1...	H1-1a
7	M70	PL2.25x0.3...	1.537	1.302 62 .008	1.302	y	62	5352.969	18981	123.75	891	1...	H1-1a
8	M53	PL2.25x0.3...	1.525	1.302 62 .008	1.302	y	62	5352.969	18981	123.75	891	1...	H1-1a
9	M464	PL2.25x0.3...	1.474	1.25 61 .008	1.25	y	61	5810.995	18981	123.75	891	1...	H1-1a
10	M481	PL2.25x0.3...	1.458	1.25 61 .008	1.25	y	61	5810.995	18981	123.75	891	1...	H1-1a
11	M35	PL2.25x0.3...	1.454	1.25 62 .008	1.25	y	62	5810.995	18981	123.75	891	1...	H1-1a
12	M449	L6x6x6	1.448	2.288 61 .123	1.698	z	61	110179.703	118260	9137.172	10106.9...	1	H2-1
13	M3	L6x6x6	1.445	4.797 62 .122	5.388	z	62	110179.703	118260	9137.172	10106.9...	1	H2-1
14	M18	PL2.25x0.3...	1.443	1.25 62 .008	1.25	y	62	5810.995	18981	123.75	891	1...	H1-1a
15	M447	L6x6x6	1.402	4.797 61 .116	5.388	z	62	110179.703	118260	9137.172	10106.9...	1	H2-1
16	M1	L6x6x6	1.402	2.288 62 .114	1.698	z	61	110179.703	118260	9137.172	10106.9...	1	H2-1
17	M497	PL2.25x0.3...	1.394	1.2 61 .007	1.2	y	61	6305.296	18981	123.75	891	1...	H1-1a
18	M201	L6x4x7	1.387	86.637 61 .115	86.637	y	61	105209.703	112860	4892.152	9096.457	3...	H2-1
19	M514	PL2.25x0.3...	1.378	1.2 61 .007	1.2	y	61	6305.296	18981	123.75	891	1...	H1-1a
20	M68	PL2.25x0.3...	1.375	1.2 62 .006	1.2	y	62	6305.296	18981	123.75	891	1...	H1-1a
21	M51	PL2.25x0.3...	1.365	1.2 62 .006	1.2	y	62	6305.296	18981	123.75	891	1...	H1-1a
22	M200	L6x4x7	1.362	2.795 61 .114	86.637	y	62	105209.703	112860	4892.152	9849.195	4...	H2-1
23	M450	L6x6x6	1.344	4.797 62 .117	5.388	z	62	110179.703	118260	9137.172	10106.9...	1	H2-1
24	M4	L6x6x6	1.340	2.288 61 .117	1.698	z	61	110179.703	118260	9137.172	10106.9...	1	H2-1
25	M448	L6x6x6	1.334	2.288 62 .128	1.698	z	61	110179.703	118260	9137.172	10106.9...	1	H2-1
26	M2	L6x6x6	1.318	4.797 61 .127	5.388	z	62	110179.703	118260	9137.172	10106.9...	1	H2-1
27	M462	PL2.25x0.3...	1.316	1.153 61 .005	1.153	y	61	6836.576	18981	123.75	891	1...	H1-1a
28	M500	PL2.25x0.3...	1.315	1.356 62 .009	0	y	61	4928.46	18981	123.75	891	1...	H1-1a
29	M479	PL2.25x0.3...	1.300	1.153 61 .005	1.153	y	61	6836.576	18981	123.75	891	1...	H1-1a
30	M33	PL2.25x0.3...	1.297	1.153 62 .005	1.153	y	62	6836.576	18981	123.75	891	1...	H1-1a
31	M517	PL2.25x0.3...	1.296	1.356 62 .009	0	y	61	4928.46	18981	123.75	891	1...	H1-1a
32	M71	PL2.25x0.3...	1.295	1.356 61 .009	0	y	62	4928.46	18981	123.75	891	1...	H1-1a
33	M16	PL2.25x0.3...	1.287	1.153 62 .005	1.153	y	62	6836.576	18981	123.75	891	1...	H1-1a
34	M54	PL2.25x0.3...	1.275	1.356 61 .009	0	y	62	4928.46	18981	123.75	891	1...	H1-1a
35	M465	PL2.25x0.3...	1.265	1.302 62 .008	0	y	61	5352.969	18981	123.75	891	1...	H1-1a
36	M482	PL2.25x0.3...	1.247	1.302 62 .008	0	y	61	5352.969	18981	123.75	891	1.4	H1-1a
37	M36	PL2.25x0.3...	1.246	1.302 61 .008	0	y	62	5352.969	18981	123.75	891	1...	H1-1a
38	M495	PL2.25x0.3...	1.238	1.107 61 .003	1.107	y	61	7411.618	18981	123.75	891	1...	H1-1a
39	M19	PL2.25x0.3...	1.227	1.302 61 .008	0	y	62	5352.969	18981	123.75	891	1...	H1-1a
40	M451	L6x6x6	1.224	18.69 61 .239	18.69	y	61	110179.703	118260	9137.172	10106.9...	1	H2-1
41	M512	PL2.25x0.3...	1.223	1.107 61 .003	1.107	y	62	7411.618	18981	123.75	891	1...	H1-1a
42	M578	L6x6x6	1.222	5.233 61 .239	5.233	y	61	110179.703	118260	9137.172	10106.9...	1	H2-1
43	M66	PL2.25x0.3...	1.220	1.107 62 .003	1.107	y	62	7411.618	18981	123.75	891	1...	H1-1a
44	M49	PL2.25x0.3...	1.211	1.107 62 .003	1.107	y	61	7411.618	18981	123.75	891	1...	H1-1a
45	M132	L6x6x6	1.206	18.69 62 .235	18.69	y	62	110179.703	118260	9137.172	10106.9...	1	H2-1
46	M5	L6x6x6	1.203	5.233 62 .234	5.233	y	62	110179.703	118260	9137.172	10106.9...	1	H2-1
47	M498	PL2.25x0.3...	1.195	1.25 62 .007	0	y	61	5810.995	18981	123.75	891	1...	H1-1a
48	M515	PL2.25x0.3...	1.178	1.25 62 .007	0	y	61	5810.995	18981	123.75	891	1...	H1-1a
49	M69	PL2.25x0.3...	1.177	1.25 61 .007	0	y	62	5810.995	18981	123.75	891	1...	H1-1a
50	M460	PL2.25x0.3...	1.173	1.064 61 .005	0	y	61	7966.034	18981	123.75	891	3...	H1-1a
51	M477	PL2.25x0.3...	1.161	1.064 61 .005	0	y	61	7966.034	18981	123.75	891	2...	H1-1a
52	M52	PL2.25x0.3...	1.159	1.25 61 .007	0	y	62	5810.995	18981	123.75	891	1...	H1-1a
53	M31	PL2.25x0.3...	1.158	1.064 62 .005	0	y	62	7966.034	18981	123.75	891	2...	H1-1a
54	M14	PL2.25x0.3...	1.151	1.064 62 .005	0	y	62	7966.034	18981	123.75	891	2...	H1-1a
55	M493	PL2.25x0.3...	1.135	1.023 61 .009	0	y	61	8511.226	18981	123.75	891	2...	H1-1a
56	M463	PL2.25x0.3...	1.130	1.2 62 .005	0	y	61	6305.296	18981	123.75	891	1...	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
57	M510	PL2.25x0.3...	1.126	1.023	61	.008	0	y	61	8511.226	18981	123.75	891	2...	H1-1a
58	M491	PL2.25x0.3...	1.123	.947	61	.015	0	y	61	9558.647	18981	123.75	891	1...	H1-1a
59	M64	PL2.25x0.3...	1.123	1.023	62	.008	0	y	62	8511.226	18981	123.75	891	2...	H1-1a
60	M47	PL2.25x0.3...	1.114	1.023	62	.008	0	y	62	8511.226	18981	123.75	891	2...	H1-1a
61	M480	PL2.25x0.3...	1.113	1.2	62	.005	0	y	61	6305.296	18981	123.75	891	1...	H1-1a
62	M456	PL2.25x0.3...	1.113	.892	61	.023	0	y	61	10483.172	18981	123.75	891	1...	H1-1a
63	M34	PL2.25x0.3...	1.112	1.2	61	.005	0	y	62	6305.296	18981	123.75	891	1...	H1-1a
64	M458	PL2.25x0.3...	1.110	.984	61	.012	0	y	61	9042.588	18981	123.75	891	1...	H1-1a
65	M475	PL2.25x0.3...	1.105	.984	61	.011	0	y	61	9042.588	18981	123.75	891	1...	H1-1a
66	M45	PL2.25x0.3...	1.103	.947	62	.015	0	y	62	9558.647	18981	123.75	891	1...	H1-1a
67	M29	PL2.25x0.3...	1.102	.984	62	.011	0	y	62	9042.588	18981	123.75	891	1...	H1-1a
68	M508	PL2.25x0.3...	1.096	.947	61	.015	0	y	61	9558.647	18981	123.75	891	1...	H1-1a
69	M17	PL2.25x0.3...	1.095	1.2	61	.005	0	y	62	6305.296	18981	123.75	891	1...	H1-1a
70	M62	PL2.25x0.3...	1.093	.947	62	.015	0	y	62	9558.647	18981	123.75	891	1...	H1-1a
71	M12	PL2.25x0.3...	1.091	.984	62	.011	0	y	62	9042.588	18981	123.75	891	1...	H1-1a
72	M10	PL2.25x0.3...	1.090	.892	62	.022	0	y	62	10483.172	18981	123.75	891	1...	H1-1a
73	M468	PL2.25x0.375	1.085	1.474	61	.010	1.443	y	61	6952.75	22788	177.75	1068.75	1...	H1-1a
74	M489	PL2.25x0.3...	1.079	.859	61	.025	0	y	61	10946.255	18981	123.75	891	1...	H1-1a
75	M103	PL2.25x0.375	1.078	1.582	62	.034	1.582	y	62	6271.599	22788	177.75	1068.75	1...	H1-1a
76	M501	PL2.25x0.375	1.078	1.414	61	.010	1.414	y	61	7559.514	22788	177.75	1068.75	1...	H1-1a
77	M471	PL2.25x0.3...	1.077	.827	61	.025	0	y	61	11387.981	18981	123.75	891	1...	H1-1a
78	M25	PL2.25x0.3...	1.076	.827	62	.025	0	y	62	11387.981	18981	123.75	891	1...	H1-1a
79	M473	PL2.25x0.3...	1.074	.892	61	.021	0	y	61	10483.172	18981	123.75	891	1...	H1-1a
80	M485	PL2.25x0.375	1.073	1.474	61	.010	1.443	y	61	6952.75	22788	177.75	1068.75	1...	H1-1a
81	M27	PL2.25x0.3...	1.073	.892	62	.021	0	y	62	10483.172	18981	123.75	891	1...	H1-1a
82	M454	PL2.25x0.3...	1.072	.827	61	.027	0	y	61	11387.981	18981	123.75	891	1...	H1-1a
83	M503	PL2.25x0.375	1.072	1.503	61	.011	1.503	y	61	6696.061	22788	177.75	1068.75	1...	H1-1a
84	M39	PL2.25x0.375	1.070	1.474	62	.010	1.443	y	62	6952.75	22788	177.75	1068.75	1...	H1-1a
85	M652	6H25	1.070	4.01	61	.275	3.819	y	61	32380.313	215681.4	21582	40822.49	1	H1-1b
86	M506	PL2.25x0.3...	1.066	.859	61	.027	0	y	61	10946.255	18981	123.75	891	1...	H1-1a
87	M518	PL2.25x0.375	1.066	1.414	61	.010	1.414	y	61	7559.514	22788	177.75	1068.75	1...	H1-1a
88	M60	PL2.25x0.3...	1.065	.859	62	.027	0	y	62	10946.255	18981	123.75	891	1...	H1-1a
89	M496	PL2.25x0.3...	1.065	1.153	62	.003	0	y	61	6836.576	18981	123.75	891	1...	H1-1a
90	M72	PL2.25x0.375	1.063	1.414	62	.010	1.414	y	62	7559.514	22788	177.75	1068.75	1...	H1-1a
91	M549	PL2.25x0.375	1.063	1.582	61	.034	1.582	y	61	6271.599	22788	177.75	1068.75	1...	H1-1a
92	M22	PL2.25x0.375	1.063	1.474	62	.010	1.443	y	62	6952.75	22788	177.75	1068.75	1...	H1-1a
93	M191	6H25	1.062	4.01	62	.273	3.819	y	62	32380.313	215681.4	21582	40822.49	1	H1-1b
94	M520	PL2.25x0.375	1.060	1.503	61	.010	1.472	y	61	6696.061	22788	177.75	1068.75	1...	H1-1a
95	M43	PL2.25x0.3...	1.057	.859	62	.024	0	y	62	10946.255	18981	123.75	891	1...	H1-1a
96	M74	PL2.25x0.375	1.055	1.503	62	.011	1.503	y	62	6696.061	22788	177.75	1068.75	1...	H1-1a
97	M55	PL2.25x0.375	1.055	1.414	62	.010	1.414	y	62	7559.514	22788	177.75	1068.75	1...	H1-1a
98	M8	PL2.25x0.3...	1.050	.827	62	.026	0	y	62	11387.981	18981	123.75	891	1...	H1-1a
99	M513	PL2.25x0.3...	1.049	1.153	62	.004	0	y	61	6836.576	18981	123.75	891	1...	H1-1a
100	M67	PL2.25x0.3...	1.049	1.153	61	.003	0	y	62	6836.576	18981	123.75	891	1...	H1-1a
101	M57	PL2.25x0.375	1.045	1.503	62	.010	1.472	y	62	6696.061	22788	177.75	1068.75	1...	H1-1a
102	M50	PL2.25x0.3...	1.032	1.153	61	.003	0	y	62	6836.576	18981	123.75	891	1...	H1-1a
103	M487	PL2.25x0.3...	1.029	.797	61	.029	.814	y	62	11809.877	18981	123.75	891	1...	H1-1a
104	M504	PL2.25x0.3...	1.023	.797	61	.029	.814	y	62	11809.877	18981	123.75	891	1...	H1-1a
105	M58	PL2.25x0.3...	1.022	.797	62	.030	.814	y	61	11809.877	18981	123.75	891	1...	H1-1a
106	M75	PL2.25x0.375	1.016	1.582	61	.030	1.582	y	62	6271.599	22788	177.75	1068.75	1...	H1-1a
107	M189	L6x4x6	1.009	8.167	62	.037	8.167	y	62	29768.748	97470	4257.614	12648.6...	1	H2-1
108	M650	L6x4x6	1.009	5.833	61	.037	5.833	y	61	29768.748	97470	4257.614	12648.6...	1	H2-1
109	M41	PL2.25x0.3...	1.009	.797	62	.029	1.628	y	62	11809.877	18981	123.75	891	1...	H1-1a
110	M461	PL2.25x0.3...	1.006	1.107	62	.004	0	y	62	7411.618	18981	123.75	891	2...	H1-1a
111	M521	PL2.25x0.375	1.006	1.582	62	.031	1.582	y	61	6271.599	22788	177.75	1068.75	1...	H1-1a
112	M478	PL2.25x0.3...	.992	1.107	62	.003	1.107	y	61	7411.618	18981	123.75	891	2...	H1-1a
113	M32	PL2.25x0.3...	.990	1.107	61	.004	0	y	61	7411.618	18981	123.75	891	2...	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
114	M15	PL2.25x0.3...	.979	1.107	61	.003	1.107	y	62	7411.618	18981	123.75	891	2...	H1-1a
115	M494	PL2.25x0.3...	.973	1.064	62	.006	0	y	62	7966.034	18981	123.75	891	1...	H1-1a
116	M511	PL2.25x0.3...	.959	1.064	62	.005	0	y	62	7966.034	18981	123.75	891	1...	H1-1a
117	M65	PL2.25x0.3...	.957	1.064	61	.006	0	y	61	7966.034	18981	123.75	891	1...	H1-1a
118	M48	PL2.25x0.3...	.947	1.064	61	.005	0	y	61	7966.034	18981	123.75	891	1...	H1-1a
119	M459	PL2.25x0.3...	.944	1.023	62	.009	0	y	62	8511.226	18981	123.75	891	1...	H1-1a
120	M457	PL2.25x0.3...	.933	.947	62	.014	0	y	62	9558.647	18981	123.75	891	1...	H1-1a
121	M476	PL2.25x0.3...	.933	1.023	62	.008	0	y	62	8511.226	18981	123.75	891	1...	H1-1a
122	M30	PL2.25x0.3...	.931	1.023	61	.009	0	y	61	8511.226	18981	123.75	891	1...	H1-1a
123	M492	PL2.25x0.3...	.928	.984	62	.011	0	y	62	9042.588	18981	123.75	891	1...	H1-1a
124	M509	PL2.25x0.3...	.919	.984	62	.010	0	y	62	9042.588	18981	123.75	891	1...	H1-1a
125	M13	PL2.25x0.3...	.919	1.023	61	.008	0	y	61	8511.226	18981	123.75	891	1...	H1-1a
126	M63	PL2.25x0.3...	.918	.984	61	.011	0	y	61	9042.588	18981	123.75	891	1...	H1-1a
127	M502	PL2.25x0.375	.916	1.474	62	.009	2.948	y	61	6952.75	22788	177.75	1068.75	1...	H1-1a
128	M490	PL2.25x0.3...	.915	.911	62	.020	0	y	62	10058.454	18981	123.75	891	1...	H1-1a
129	M474	PL2.25x0.3...	.907	.947	62	.014	0	y	62	9558.647	18981	123.75	891	1...	H1-1a
130	M11	PL2.25x0.3...	.907	.947	61	.014	.947	y	62	9558.647	18981	123.75	891	1...	H1-1a
131	M28	PL2.25x0.3...	.906	.947	61	.014	0	y	61	9558.647	18981	123.75	891	1...	H1-1a
132	M519	PL2.25x0.375	.904	1.474	62	.009	0	y	61	6952.75	22788	177.75	1068.75	1...	H1-1a
133	M46	PL2.25x0.3...	.902	.984	61	.010	0	y	61	9042.588	18981	123.75	891	1...	H1-1a
134	M73	PL2.25x0.375	.902	1.474	61	.009	2.948	y	62	6952.75	22788	177.75	1068.75	1...	H1-1a
135	M505	PL2.25x0.3...	.890	.845	62	.027	.845	y	61	11000.676	18981	123.75	891	1...	H1-1a
136	M56	PL2.25x0.375	.890	1.474	61	.009	0	y	62	6952.75	22788	177.75	1068.75	1...	H1-1a
137	M44	PL2.25x0.3...	.889	.911	61	.019	0	y	61	10058.454	18981	123.75	891	1...	H1-1a
138	M59	PL2.25x0.3...	.889	.827	61	.027	.845	y	62	11387.981	18981	123.75	891	1...	H1-1a
139	M455	PL2.25x0.3...	.884	.859	62	.022	.859	y	61	10946.255	18981	123.75	891	1...	H1-1a
140	M488	PL2.25x0.3...	.880	.827	62	.028	.845	y	61	11387.981	18981	123.75	891	1...	H1-1a
141	M467	PL2.25x0.375	.879	1.414	62	.010	2.827	y	61	7559.514	22788	177.75	1068.75	1...	H1-1a
142	M61	PL2.25x0.3...	.878	.892	61	.019	0	y	61	10483.172	18981	123.75	891	1...	H1-1a
143	M507	PL2.25x0.3...	.878	.892	62	.018	0	y	62	10483.172	18981	123.75	891	1...	H1-1a
144	M26	PL2.25x0.3...	.877	.859	61	.024	0	y	61	10946.255	18981	123.75	891	1...	H1-1a
145	M472	PL2.25x0.3...	.877	.859	62	.024	0	y	62	10946.255	18981	123.75	891	1...	H1-1a
146	M484	PL2.25x0.375	.866	1.414	62	.010	2.827	y	61	7559.514	22788	177.75	1068.75	1...	H1-1a
147	M38	PL2.25x0.375	.865	1.414	61	.010	2.827	y	62	7559.514	22788	177.75	1068.75	1...	H1-1a
148	M9	PL2.25x0.3...	.857	.859	61	.022	.859	y	62	10946.255	18981	123.75	891	1...	H1-1a
149	M42	PL2.25x0.3...	.853	.827	61	.027	.845	y	62	11387.981	18981	123.75	891	1...	H1-1a
150	M21	PL2.25x0.375	.852	1.414	61	.009	2.827	y	62	7559.514	22788	177.75	1068.75	1...	H1-1a
151	M453	PL2.25x0.3...	.846	.797	62	.034	.814	y	61	11809.877	18981	123.75	891	1...	H1-1a
152	M470	PL2.25x0.3...	.845	.814	62	.034	.814	y	61	11441.918	18981	123.75	891	1...	H1-1a
153	M24	PL2.25x0.3...	.843	.797	61	.034	.814	y	62	11809.877	18981	123.75	891	1...	H1-1a
154	M452	L6x6x6	.825	6.728	62	.050	5.233	y	61	110179.703	118260	9137.172	10106.9...	1	H2-1
155	M7	PL2.25x0.3...	.821	.797	61	.033	.814	y	62	11809.877	18981	123.75	891	1...	H1-1a
156	M577	L6x6x6	.817	17.195	62	.052	18.69	y	61	110179.703	118260	9137.172	10106.9...	1	H2-1
157	M131	L6x6x6	.810	6.728	61	.050	5.233	y	62	110179.703	118260	9137.172	10106.9...	1	H2-1
158	M6	L6x6x6	.798	17.195	61	.052	18.69	y	62	110179.703	118260	9137.172	10106.9...	1	H2-1
159	M600	L3x2.5x5	.748	8.127	61	.054	8.374	y	61	39023.547	44010	1270.778	1314.901	1	H2-1
160	M139	L3x2.5x5	.744	3.694	62	.053	3.448	y	62	39023.547	44010	1270.778	1314.901	1	H2-1
161	M212	L2.5x2x5	.710	3.236	62	.001	0	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
162	M601	L3x2.5x5	.702	3.694	61	.042	3.448	y	62	39023.547	44010	1270.778	1314.901	1	H2-1
163	M140	L3x2.5x5	.700	8.127	62	.043	8.374	y	61	39023.547	44010	1270.778	1314.901	1	H2-1
164	M214	L2.5x2x5	.696	3.236	62	.001	0	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
165	M249	L2.5x2x5	.678	2.214	62	.001	5.449	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
166	M264	L2.5x2x5	.671	3.236	61	.001	0	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
167	M599	L3x2.5x5	.670	6.28	61	.041	8.374	y	61	39023.547	44010	1270.778	1314.901	1	H2-1
168	M138	L3x2.5x5	.666	5.541	62	.041	3.448	y	62	39023.547	44010	1270.778	1314.901	1	H2-1
169	M190	L6x4x6	.662	6.188	62	.122	6.188	y	61	44440.683	97470	4257.614	12792.4...	1	H2-1
170	M216	L2.5x2x5	.661	3.235	62	.001	0	y	61	12302.09	35640	809.265	1830.739	1...	H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
171	M137	L3x2.5x5	.660	8.127	61	.050	8.62	z	61	39023.547	44010	1270.778	1314.901	1	H2-1
172	M598	L3x2.5x5	.660	3.694	62	.050	3.202	z	62	39023.547	44010	1270.778	1314.901	1	H2-1
173	M469	PL2.25x0.375	.659	1.503	62	.010	0	y	61	6696.061	22788	177.75	1068.75	1...	H1-1a
174	M198	L6x4x7	.656	86.865	61	.026	40.163	y	61	105209.703	112860	4892.152	10937.7...	1	H2-1
175	M266	L2.5x2x5	.656	3.236	61	.001	0	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
176	M199	L6x4x7	.656	2.802	61	.042	44.833	y	61	105209.703	112860	4892.152	10937.7...	1	H2-1
177	M40	PL2.25x0.375	.648	1.503	61	.009	0	y	62	6696.061	22788	177.75	1068.75	1...	H1-1a
178	M251	L2.5x2x5	.648	2.214	62	.001	5.449	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
179	M486	PL2.25x0.375	.644	1.503	62	.010	0	y	61	6696.061	22788	177.75	1068.75	1...	H1-1a
180	M23	PL2.25x0.375	.631	1.503	61	.010	0	y	62	6696.061	22788	177.75	1068.75	1...	H1-1a
181	M227	L2.5x2x5	.605	2.214	61	.001	0	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
182	M651	L6x4x6	.595	4.813	61	.122	4.813	y	62	44440.683	97470	4257.614	12792.4...	1	H2-1
183	M274	L2.5x2.5x5	.592	3.292	61	.001	5.449	y	62	17522.255	39420	1096.767	2468.79	1...	H2-1
184	M225	L2.5x2x5	.587	2.214	61	.001	5.449	y	62	12302.09	35640	809.265	1830.739	1...	H2-1
185	M229	L2.5x2x5	.587	2.214	61	.001	0	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
186	M272	L2.5x2.5x5	.580	3.292	61	.001	5.449	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
187	M270	L2.5x2.5x5	.574	3.292	61	.001	5.449	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
188	M241	L2.5x2.5x5	.571	2.157	62	.001	0	y	61	17522.255	39420	1096.767	2468.79	1...	H2-1
189	M237	L2.5x2.5x5	.566	2.157	61	.001	5.449	y	62	17522.255	39420	1096.767	2468.79	1...	H2-1
190	M620	PL2.25 x 1/...	.563	.895	61	.024	0	y	61	5812.002	15201	78.75	711	1...	H1-1a
191	M612	PL2.25 x 1/...	.563	.75	61	.016	0	y	61	7786.608	15201	78.75	711	1...	H1-1a
192	M624	PL2.25 x 1/...	.561	.75	61	.020	0	y	61	7786.608	15201	78.75	711	1...	H1-1a
193	M159	PL2.25 x 1/...	.560	.895	62	.024	0	y	62	5812.002	15201	78.75	711	1...	H1-1a
194	M151	PL2.25 x 1/...	.559	.75	62	.016	0	y	62	7786.608	15201	78.75	711	1...	H1-1a
195	M608	PL2.25 x 1/...	.558	.895	61	.020	0	y	61	5812.002	15201	78.75	711	1...	H1-1a
196	M163	PL2.25 x 1/...	.558	.75	62	.020	0	y	62	7786.608	15201	78.75	711	1...	H1-1a
197	M220	L2.5x2x5	.555	3.236	62	.001	0	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
198	M147	PL2.25 x 1/...	.554	.895	62	.020	0	y	62	5812.002	15201	78.75	711	1...	H1-1a
199	M218	L2.5x2x5	.554	3.236	62	.001	0	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
200	M253	L2.5x2x5	.553	2.214	62	.001	5.449	y	61	12302.09	35640	809.265	1830.739	1...	H2-1
201	M677	L4x3x6	.553	.977	62	.128	.488	z	62	63338.614	67230	2238.689	5885.484	1...	H2-1
202	M276	L2.5x2.5x5	.549	5.277	61	.002	5.277	y	61	18428.357	39420	1096.767	2481.474	1...	H2-1
203	M680	L4x3x6	.548	.977	61	.128	1.465	z	61	63338.614	67230	2238.689	5885.484	1...	H2-1
204	M204	L2.5x2.5x5	.543	3.292	62	.001	5.449	y	61	17522.255	39420	1096.767	2468.79	1...	H2-1
205	M239	L2.5x2.5x5	.541	0	62	.001	5.277	y	61	18428.357	39420	1096.767	2481.474	1...	H2-1
206	M243	L2.5x2.5x5	.539	2.157	62	.001	5.449	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
207	M277	L2.5x2.5x5	.536	0	61	.001	0	y	62	18428.357	39420	1096.767	2481.474	1...	H2-1
208	M610	PL2.25 x 1/...	.533	.797	61	.020	0	y	61	7045.78	15201	78.75	711	1...	H1-1a
209	M681	L4x3x6	.533	.977	61	.117	.488	z	62	63338.614	67230	2238.689	5885.484	1...	H2-1
210	M233	L2.5x2.5x5	.532	2.157	61	.001	5.449	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
211	M206	L2.5x2.5x5	.532	3.292	62	.001	0	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
212	M235	L2.5x2.5x5	.530	2.157	61	.001	0	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
213	M149	PL2.25 x 1/...	.530	.797	62	.020	0	y	62	7045.78	15201	78.75	711	1...	H1-1a
214	M676	L4x3x6	.530	.977	61	.117	1.465	z	61	63338.614	67230	2238.689	5885.484	1...	H2-1
215	M622	PL2.25 x 1/...	.528	.797	61	.024	0	y	61	7045.78	15201	78.75	711	1...	H1-1a
216	M245	L2.5x2.5x5	.526	2.157	62	.001	5.449	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
217	M161	PL2.25 x 1/...	.526	.797	62	.023	0	y	62	7045.78	15201	78.75	711	1...	H1-1a
218	M223	L2.5x2x5	.524	2.214	61	.001	5.449	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
219	M221	L2.5x2x5	.523	2.214	61	.001	0	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
220	M687	L3x2.5x6	.519	.375	61	.121	.75	z	61	51421.803	52110	1486.645	3490.361	1...	H2-1
221	M685	L3x2.5x6	.518	.375	62	.120	.75	z	62	51421.803	52110	1486.645	3490.361	1...	H2-1
222	M208	L2.5x2.5x5	.516	3.292	62	.001	5.449	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
223	M579	L2.5x2.5x5	.511	2.748	62	.001	5.612	z	62	16679.435	39420	1096.767	2456.949	1...	H2-1
224	M178	PL2.25x0.4...	.509	1.678	62	.022	1.711	y	62	8535.498	26578.1...	242.249	1245.85	1...	H1-1a
225	M639	PL2.25x0.4...	.509	1.678	61	.022	1.711	y	61	8535.498	26578.1...	242.249	1245.85	1...	H1-1a
226	M247	L2.5x2.5x5	.509	2.157	62	.001	5.449	y	61	17522.255	39420	1096.767	2468.79	1...	H2-1
227	M580	L2.5x2.5x5	.507	2.748	62	.002	0	y	62	16679.435	39420	1096.767	2456.949	1...	H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [l...]	phi*Mn y...	phi*Mn z...	Cb	Eqn
228	M202	L2.5x2.5x5	.506	5.277	62	.002	5.277	y	61	18428.357	39420	1096.767	2481.474	1...	H2-1
229	M638	PL2.25x0.4...	.506	1.678	61	.024	3.158	y	62	8535.498	26578.1...	242.249	1245.85	1...	H1-1a
230	M268	L2.5x2.5x5	.505	3.292	61	.001	0	y	62	17522.255	39420	1096.767	2468.79	1...	H2-1
231	M210	L2.5x2.5x5	.501	3.292	62	.001	0	y	61	17522.255	39420	1096.767	2468.79	1...	H2-1
232	M177	PL2.25x0.4...	.501	1.678	62	.024	3.158	y	61	8535.498	26578.1...	242.249	1245.85	1...	H1-1a
233	M134	L2.5x2.5x5	.500	2.748	61	.001	0	z	61	16679.435	39420	1096.767	2456.949	1...	H2-1
234	M133	L2.5x2.5x5	.498	2.748	61	.002	5.612	y	61	16679.435	39420	1096.767	2456.949	1...	H2-1
235	M255	L2.5x2x5	.493	2.214	62	.001	0	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
236	M258	L2.5x2x5	.490	3.236	61	.001	5.449	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
237	M260	L2.5x2x5	.487	3.236	61	.001	5.449	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
238	M259	L2.5x2x5	.478	2.214	62	.001	0	y	61	12302.09	35640	809.265	1830.739	1...	H2-1
239	M256	L2.5x2x5	.477	3.235	61	.001	5.449	y	62	12302.09	35640	809.265	1830.739	1...	H2-1
240	M257	L2.5x2x5	.474	2.214	62	.001	5.449	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
241	M262	L2.5x2x5	.471	3.235	61	.001	0	y	62	12302.09	35640	809.265	1830.739	1...	H2-1
242	M689	L3x2.5x6	.467	.375	61	.106	.75	y	61	51421.803	52110	1486.645	3490.361	1...	H2-1
243	M684	L3x2.5x6	.460	.375	62	.106	.75	y	62	51421.803	52110	1486.645	3490.361	1...	H2-1
244	M626	PL2.25x0.4...	.452	1.678	62	.025	3.158	y	61	8535.498	26578.1...	242.249	1245.85	1...	H1-1a
245	M166	PL2.25x0.4...	.450	1.678	61	.022	1.711	y	61	8535.498	26578.1...	242.249	1245.85	1...	H1-1a
246	M165	PL2.25x0.4...	.450	1.678	61	.025	3.158	y	62	8535.498	26578.1...	242.249	1245.85	1...	H1-1a
247	M627	PL2.25x0.4...	.445	1.678	62	.022	1.711	y	62	8535.498	26578.1...	242.249	1245.85	1...	H1-1a
248	M413	PL2.25x0.3...	.439	2.795	62	.002	2.795	y	62	1149.04	18984.3...	123.597	889.893	1...	H1-1a
249	M222	L2.5x2x5	.429	3.235	62	.001	5.449	y	61	12302.09	35640	809.265	1830.739	1...	H2-1
250	M261	L2.5x2x5	.418	2.214	62	.001	0	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
251	M160	PL2.25 x 1/...	.418	.895	61	.023	.895	y	62	5812.002	15201	78.75	711	1...	H1-1a
252	M224	L2.5x2x5	.416	3.236	62	.001	5.449	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
253	M621	PL2.25 x 1/...	.415	.895	62	.023	.895	y	61	5812.002	15201	78.75	711	1...	H1-1a
254	M231	L2.5x2.5x5	.413	2.157	61	.001	5.449	y	62	17522.255	39420	1096.767	2468.79	1...	H2-1
255	M164	PL2.25 x 1/...	.408	.75	61	.020	.75	y	62	7786.608	15201	78.75	711	1...	H1-1a
256	M152	PL2.25 x 1/...	.405	.75	61	.017	.75	y	62	7786.608	15201	78.75	711	1...	H1-1a
257	M625	PL2.25 x 1/...	.404	.75	62	.020	.75	y	61	7786.608	15201	78.75	711	1...	H1-1a
258	M148	PL2.25 x 1/...	.404	.895	61	.020	.895	y	62	5812.002	15201	78.75	711	1...	H1-1a
259	M613	PL2.25 x 1/...	.402	.75	62	.017	.75	y	61	7786.608	15201	78.75	711	1...	H1-1a
260	M609	PL2.25 x 1/...	.401	.895	62	.020	.895	y	61	5812.002	15201	78.75	711	1...	H1-1a
261	M226	L2.5x2x5	.395	3.236	62	.001	0	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
262	M678	L6x4x6	.386	.66	61	.119	.33	z	61	91219.353	97470	4257.614	12406.1...	1...	H2-1
263	M679	L6x4x6	.384	.66	61	.114	.33	z	61	91219.353	97470	4257.614	12792.4...	1...	H2-1
264	M675	L6x4x6	.384	.66	62	.118	.991	z	62	91219.353	97470	4257.614	12407.2...	1...	H2-1
265	M162	PL2.25 x 1/...	.383	.797	61	.024	.797	y	62	7045.78	15201	78.75	711	1...	H1-1a
266	M228	L2.5x2x5	.382	3.235	62	.001	0	y	61	12302.09	35640	809.265	1830.739	1...	H2-1
267	M150	PL2.25 x 1/...	.382	.797	61	.021	.797	y	62	7045.78	15201	78.75	711	1...	H1-1a
268	M674	L6x4x6	.381	.66	62	.113	.991	z	62	91219.353	97470	4257.614	12792.4...	1...	H2-1
269	M623	PL2.25 x 1/...	.380	.797	62	.024	.797	y	61	7045.78	15201	78.75	711	1...	H1-1a
270	M611	PL2.25 x 1/...	.379	.797	62	.021	.797	y	61	7045.78	15201	78.75	711	1...	H1-1a
271	M263	L2.5x2x5	.376	2.214	62	.001	0	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
272	M114	PL2.25x0.375	.370	1.627	61	.017	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1a
273	M560	PL2.25x0.375	.370	1.627	62	.018	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1a
274	M574	PL2.25x0.375	.368	1.627	62	.018	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1a
275	M252	L2.5x2x5	.357	3.236	61	.001	0	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
276	M217	L2.5x2x5	.353	2.214	61	.001	5.449	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
277	M215	L2.5x2x5	.351	2.214	61	.001	5.449	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
278	M128	PL2.25x0.375	.351	1.627	61	.019	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1a
279	M254	L2.5x2x5	.347	3.236	61	.001	0	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
280	M643	PL2.25x0.3...	.343	1.301	61	.025	1.326	y	61	5510	18981	123.75	891	1...	H1-1a
281	M182	PL2.25x0.3...	.343	1.301	62	.025	1.326	y	62	5510	18981	123.75	891	1...	H1-1a
282	M535	PL2.25x0.375	.342	1.582	61	.030	1.582	y	62	6271.599	22788	177.75	1068.75	1...	H1-1a
283	M89	PL2.25x0.375	.338	1.582	62	.030	1.582	y	61	6271.599	22788	177.75	1068.75	1...	H1-1a
284	M536	PL2.25x0.375	.334	1.582	61	.023	0	y	62	6271.599	22788	177.75	1068.75	1...	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
285	M563	PL2.25x0.375	.332	1.582	62	.035	1.582	y	61	6271.599	22788	177.75	1068.75	1...	H1-1a
286	M117	PL2.25x0.375	.327	1.582	61	.035	1.582	y	62	6271.599	22788	177.75	1068.75	1...	H1-1a
287	M213	L2.5x2x5	.326	2.214	61	.001	5.449	y	62	12302.09	35640	809.265	1830.739	1...	H2-1
288	M230	L2.5x2x5	.325	3.236	62	.001	5.449	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
289	M219	L2.5x2x5	.322	2.214	61	.001	5.449	y	62	12302.09	35640	809.265	1830.739	1...	H2-1
290	M90	PL2.25x0.375	.317	1.582	62	.022	0	y	61	6271.599	22788	177.75	1068.75	1...	H1-1a
291	M564	PL2.25x0.375	.312	1.582	62	.026	0	y	61	6271.599	22788	177.75	1068.75	1...	H1-1a
292	M118	PL2.25x0.375	.294	1.582	61	.025	0	y	62	6271.599	22788	177.75	1068.75	1...	H1-1a
293	M275	L2.5x2.5x5	.289	2.781	61	.001	5.449	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
294	M240	L2.5x2.5x5	.282	2.668	62	.001	5.449	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
295	M238	L2.5x2.5x5	.280	2.668	61	.001	0	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
296	M267	L2.5x2x5	.277	2.214	62	.001	5.449	y	61	12301.91	35640	809.265	1830.737	1...	H2-1
297	M211	L2.5x2x5	.277	2.214	61	.001	5.449	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
298	M273	L2.5x2.5x5	.272	2.781	61	.001	0	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
299	M203	L2.5x2.5x5	.267	2.781	62	.001	5.449	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
300	M271	L2.5x2.5x5	.266	2.781	61	.001	5.449	y	61	17522.255	39420	1096.767	2468.79	1...	H2-1
301	M242	L2.5x2.5x5	.264	2.668	62	.001	0	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
302	M265	L2.5x2x5	.264	2.214	62	.001	0	y	61	12302.09	35640	809.265	1830.739	1...	H2-1
303	M236	L2.5x2.5x5	.262	2.668	61	.001	5.449	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
304	M642	PL2.25x0.3...	.259	1.301	61	.026	1.326	y	61	5510	18981	123.75	891	1...	H1-1b
305	M248	L2.5x2x5	.257	2.668	62	.001	5.449	y	62	12301.91	35640	809.265	1830.737	1...	H2-1
306	M181	PL2.25x0.3...	.257	1.301	62	.026	1.326	y	62	5510	18981	123.75	891	1...	H1-1b
307	M424	PL2.25x0.3...	.255	2.795	61	.002	2.795	y	61	1149.04	18984.3...	123.597	776.722	1...	H1-1a
308	M244	L2.5x2.5x5	.251	2.668	62	.001	0	y	62	17522.255	39420	1096.767	2468.79	1...	H2-1
309	M205	L2.5x2.5x5	.250	2.781	62	.001	5.449	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
310	M207	L2.5x2.5x5	.247	2.781	62	.001	5.449	y	62	17522.255	39420	1096.767	2468.79	1...	H2-1
311	M234	L2.5x2.5x5	.246	2.668	61	.001	0	y	61	17522.255	39420	1096.767	2468.79	1...	H2-1
312	M246	L2.5x2.5x5	.244	2.668	62	.001	0	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
313	M269	L2.5x2.5x5	.243	2.781	61	.001	5.449	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
314	M209	L2.5x2.5x5	.240	2.781	62	.001	5.449	y	62	17522.048	39420	1096.767	2468.787	1...	H2-1
315	M645	PL2.25 x 1/...	.237	.893	61	.039	.893	y	61	7513.847	15201	78.75	711	2...	H1-1b
316	M644	PL2.25 x 1/...	.237	.893	61	.040	.893	y	61	7513.847	15201	78.75	711	2...	H1-1b
317	M184	PL2.25 x 1/...	.236	.893	62	.039	.893	y	62	7513.847	15201	78.75	711	2...	H1-1b
318	M183	PL2.25 x 1/...	.235	.893	62	.040	.893	y	62	7513.847	15201	78.75	711	2...	H1-1b
319	M250	L2.5x2x5	.234	2.668	62	.001	5.449	y	62	12302.09	35640	809.265	1830.739	1...	H2-1
320	M232	L2.5x2.5x5	.219	2.668	61	.001	0	y	61	17522.048	39420	1096.767	2468.787	1...	H2-1
321	M641	PL2.25x0.3...	.211	1.401	61	.039	1.401	y	61	6583.121	18981	123.75	891	2...	H1-1b
322	M180	PL2.25x0.3...	.209	1.401	62	.039	1.401	y	62	6583.121	18981	123.75	891	2...	H1-1b
323	M640	PL2.25x0.3...	.208	1.401	61	.038	1.401	y	61	6583.121	18981	123.75	891	3...	H1-1b
324	M179	PL2.25x0.3...	.207	1.401	62	.038	1.401	y	62	6583.121	18981	123.75	891	3	H1-1b
325	M170	PL2.25x0.3...	.207	1.301	61	.024	1.326	y	61	5510	18981	123.75	891	1...	H1-1b
326	M630	PL2.25x0.3...	.207	1.301	62	.023	1.326	y	62	5510	18981	123.75	891	1...	H1-1b
327	M169	PL2.25x0.3...	.206	1.301	61	.023	1.326	y	61	5510	18981	123.75	891	1...	H1-1b
328	M631	PL2.25x0.3...	.204	1.301	62	.024	1.326	y	62	5510	18981	123.75	891	1...	H1-1b
329	M632	PL2.25 x 1/...	.194	.893	61	.039	1.649	y	61	7513.847	15201	78.75	711	2...	H1-1b
330	M633	PL2.25 x 1/...	.193	.893	61	.038	1.649	y	61	7513.847	15201	78.75	711	2...	H1-1b
331	M171	PL2.25 x 1/...	.193	.893	62	.039	1.649	y	62	7513.847	15201	78.75	711	2...	H1-1b
332	M172	PL2.25 x 1/...	.192	.893	62	.038	1.649	y	62	7513.847	15201	78.75	711	2...	H1-1b
333	M628	PL2.25x0.3...	.188	1.401	61	.036	2.586	y	61	6583.121	18981	123.75	891	2...	H1-1b
334	M167	PL2.25x0.3...	.187	1.401	62	.036	2.586	y	62	6583.121	18981	123.75	891	2...	H1-1b
335	M629	PL2.25x0.3...	.185	1.401	61	.035	1.401	y	62	6583.121	18981	123.75	891	2...	H1-1b
336	M168	PL2.25x0.3...	.183	1.401	62	.035	1.401	y	61	6583.121	18981	123.75	891	2...	H1-1b
337	M634	PL2.25 x 1/...	.166	.785	61	.043	1.478	y	61	7258.096	15201	78.75	711	1...	H1-1b
338	M635	PL2.25 x 1/...	.166	.785	61	.042	1.478	y	61	7258.096	15201	78.75	711	1...	H1-1b
339	M173	PL2.25 x 1/...	.165	.785	62	.042	1.478	y	62	7258.096	15201	78.75	711	1...	H1-1b
340	M174	PL2.25 x 1/...	.165	.785	62	.041	1.478	y	62	7258.096	15201	78.75	711	1...	H1-1b
341	M104	PL2.25x0.375	.159	1.582	62	.026	0	y	62	6271.599	22788	177.75	1068.75	1...	H1-1b



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
342	M607	PL2.25x0.3...	.158	1.327	61	.017	1.353	y	61	5256.024	18981	123.75	891	1...	H1-1b
343	M146	PL2.25x0.3...	.157	1.327	62	.017	1.353	y	62	5256.024	18981	123.75	891	1...	H1-1b
344	M550	PL2.25x0.375	.155	1.582	61	.026	0	y	61	6271.599	22788	177.75	1068.75	1...	H1-1b
345	M407	PL2.25x0.3...	.154	2.795	61	.002	2.795	y	62	1149.04	18984.3...	123.597	889.893	1...	H1-1b
346	M646	PL2.25 x 1/...	.152	.785	61	.044	.801	y	61	7258.096	15201	78.75	711	1...	H1-1b
347	M647	PL2.25 x 1/...	.152	.785	61	.044	.801	y	61	7258.096	15201	78.75	711	1...	H1-1b
348	M185	PL2.25 x 1/...	.151	.785	62	.044	.801	y	62	7258.096	15201	78.75	711	1...	H1-1b
349	M186	PL2.25 x 1/...	.150	.785	62	.043	.801	y	62	7258.096	15201	78.75	711	1...	H1-1b
350	M419	PL2.25x0.3...	.150	2.795	61	.002	2.795	y	61	1149.04	18984.3...	123.597	776.661	1...	H1-1b
351	M546	PL2.25x0.375	.149	1.627	61	.029	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
352	M86	PL2.25x0.375	.149	1.627	62	.028	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
353	M619	PL2.25x0.3...	.148	1.327	61	.021	1.353	y	61	5256.024	18981	123.75	891	1...	H1-1b
354	M100	PL2.25x0.375	.146	1.627	62	.027	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
355	M158	PL2.25x0.3...	.146	1.327	62	.021	1.353	y	62	5256.024	18981	123.75	891	1...	H1-1b
356	M648	PL2.25 x 1/...	.144	.729	61	.025	0	y	61	7932.111	15201	78.75	711	1...	H1-1b
357	M187	PL2.25 x 1/...	.144	.729	62	.025	0	y	62	7932.111	15201	78.75	711	1...	H1-1b
358	M649	PL2.25 x 1/...	.142	.729	61	.024	0	y	61	7932.111	15201	78.75	711	1...	H1-1b
359	M418	PL2.25x0.3...	.141	2.795	62	.002	2.795	y	61	1149.04	18984.3...	123.597	732.071	1...	H1-1b
360	M188	PL2.25 x 1/...	.141	.729	62	.024	0	y	62	7932.111	15201	78.75	711	1...	H1-1b
361	M76	PL2.25x0.375	.139	1.582	61	.023	0	y	61	6271.599	22788	177.75	1068.75	1...	H1-1b
362	M406	PL2.25x0.3...	.137	2.795	62	.002	2.795	y	62	1149.04	18984.3...	123.597	712.035	1...	H1-1b
363	M661	L2.5x2.5x5	.136	2.661	61	.002	0	y	61	18763.279	39420	1096.767	2486.157	1...	H2-1
364	M522	PL2.25x0.375	.136	1.582	62	.023	0	y	62	6271.599	22788	177.75	1068.75	1...	H1-1b
365	M532	PL2.25x0.375	.134	1.627	61	.027	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
366	M603	PL2.25x0.4...	.134	1.73	62	.014	1.764	y	61	7996.165	26578.1...	242.249	1245.85	1...	H1-1b
367	M142	PL2.25x0.4...	.132	1.73	61	.014	1.764	y	62	7996.165	26578.1...	242.249	1245.85	1...	H1-1b
368	M425	PL2.25x0.3...	.127	2.795	62	.002	2.795	y	61	1149.04	18984.3...	123.597	758.751	1...	H1-1b
369	M279	L2.5x2.5x5	.126	2.553	62	.001	0	y	62	18763.279	39420	1096.767	2486.157	1...	H2-1
370	M154	PL2.25x0.4...	.126	1.73	61	.015	3.256	y	61	7996.165	26578.1...	242.249	1245.85	1...	H1-1b
371	M565	PL2.25x0.375	.124	1.627	61	.017	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
372	M615	PL2.25x0.4...	.124	1.73	62	.015	3.256	y	62	7996.165	26578.1...	242.249	1245.85	1...	H1-1b
373	M662	L2.5x2.5x5	.123	2.553	61	.001	5.214	y	61	18763.279	39420	1096.767	2486.157	1...	H2-1
374	M278	L2.5x2.5x5	.121	2.661	62	.001	0	y	62	18763.279	39420	1096.767	2486.157	1...	H2-1
375	M618	PL2.25x0.3...	.119	1.327	61	.016	1.353	y	62	5256.024	18981	123.75	891	1...	H1-1b
376	M431	PL2.25x0.3...	.118	2.795	61	.002	2.795	y	61	1149.04	18984.3...	123.597	819.638	1...	H1-1b
377	M157	PL2.25x0.3...	.118	1.327	62	.016	1.353	y	61	5256.024	18981	123.75	891	1...	H1-1b
378	M606	PL2.25x0.3...	.118	1.327	61	.016	1.353	y	62	5256.024	18981	123.75	891	1...	H1-1b
379	M145	PL2.25x0.3...	.117	1.327	62	.016	1.353	y	61	5256.024	18981	123.75	891	1...	H1-1b
380	M400	PL2.25x0.3...	.115	2.795	62	.002	2.795	y	62	1149.04	18984.3...	123.597	800.697	1...	H1-1b
381	M545	PL2.25x0.375	.115	1.627	61	.020	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
382	M119	PL2.25x0.375	.114	1.627	62	.017	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
383	M602	PL2.25x0.4...	.114	1.73	61	.014	1.764	y	62	7996.165	26578.1...	242.249	1245.85	1...	H1-1b
384	M544	PL2.25x0.375	.113	1.627	61	.019	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
385	M141	PL2.25x0.4...	.113	1.73	62	.014	1.764	y	61	7996.165	26578.1...	242.249	1245.85	1...	H1-1b
386	M636	PL2.25 x 1/...	.112	.729	61	.024	.729	y	61	7932.111	15201	78.75	711	1...	H1-1b
387	M530	PL2.25x0.375	.112	1.627	61	.019	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
388	M175	PL2.25 x 1/...	.111	.729	62	.024	.729	y	62	7932.111	15201	78.75	711	1...	H1-1b
389	M105	PL2.25x0.375	.111	1.627	62	.017	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
390	M531	PL2.25x0.375	.111	1.627	61	.021	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
391	M153	PL2.25x0.4...	.111	1.73	62	.016	3.256	y	62	7996.165	26578.1...	242.249	1245.85	1...	H1-1b
392	M85	PL2.25x0.375	.111	1.627	62	.020	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
393	M537	PL2.25x0.375	.110	1.627	62	.016	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
394	M529	PL2.25x0.375	.110	1.627	61	.015	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
395	M99	PL2.25x0.375	.110	1.627	62	.020	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
396	M637	PL2.25 x 1/...	.110	.729	61	.022	.729	y	61	7932.111	15201	78.75	711	1...	H1-1b
397	M614	PL2.25x0.4...	.109	1.73	61	.016	3.256	y	61	7996.165	26578.1...	242.249	1245.85	1...	H1-1b
398	M176	PL2.25 x 1/...	.109	.729	62	.022	.729	y	62	7932.111	15201	78.75	711	1...	H1-1b



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
399	M617	PL2.25x0.3...	.108	1.439	61	.017	1.439	y	61	6270.415	18981	123.75	891	1...	H1-1b
400	M98	PL2.25x0.375	.108	1.627	62	.019	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
401	M84	PL2.25x0.375	.107	1.627	62	.019	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
402	M156	PL2.25x0.3...	.107	1.439	62	.017	1.439	y	62	6270.415	18981	123.75	891	1...	H1-1b
403	M126	PL2.25x0.375	.105	1.627	62	.013	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
404	M558	PL2.25x0.375	.104	1.627	61	.014	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
405	M551	PL2.25x0.375	.104	1.627	61	.017	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
406	M671	L2.5x2.5x5	.103	1.25	61	.001	0	y	61	33235.431	39420	1096.767	2551.08	1...	H2-1
407	M113	PL2.25x0.375	.102	1.627	62	.016	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
408	M91	PL2.25x0.375	.102	1.627	61	.016	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
409	M673	L2.5x2.5x5	.101	1.25	62	.001	0	z	62	33235.431	39420	1096.767	2551.08	1...	H2-1
410	M573	PL2.25x0.375	.100	1.627	61	.016	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
411	M83	PL2.25x0.375	.100	1.627	62	.015	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
412	M97	PL2.25x0.375	.100	1.627	62	.014	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
413	M575	PL2.25x0.375	.099	1.627	62	.009	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
414	M572	PL2.25x0.375	.098	1.627	61	.014	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
415	M129	PL2.25x0.375	.097	1.627	61	.007	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
416	M576	PL2.25x0.375	.096	1.627	61	.004	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
417	M559	PL2.25x0.375	.095	1.627	61	.016	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
418	M130	PL2.25x0.375	.094	1.627	62	.005	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
419	M562	PL2.25x0.375	.094	1.627	61	.004	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
420	M561	PL2.25x0.375	.093	1.627	62	.008	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
421	M112	PL2.25x0.375	.093	1.627	62	.013	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
422	M116	PL2.25x0.375	.093	1.627	62	.004	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
423	M543	PL2.25x0.375	.092	1.627	61	.015	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
424	M115	PL2.25x0.375	.092	1.627	61	.009	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
425	M605	PL2.25x0.3...	.091	1.439	61	.014	0	y	62	6270.415	18981	123.75	891	1...	H1-1b
426	M144	PL2.25x0.3...	.091	1.439	62	.014	0	y	61	6270.415	18981	123.75	891	1...	H1-1b
427	M127	PL2.25x0.375	.090	1.627	62	.015	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
428	M533	PL2.25x0.375	.089	1.627	61	.015	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
429	M77	PL2.25x0.375	.089	1.627	61	.015	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
430	M547	PL2.25x0.375	.088	1.627	61	.013	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
431	M87	PL2.25x0.375	.085	1.627	62	.013	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
432	M401	PL2.25x0.3...	.085	2.795	61	.002	2.795	y	62	1149.04	18984.3...	123.597	889.893	1...	H1-1b
433	M155	PL2.25x0.3...	.085	1.439	61	.015	1.412	y	61	6270.415	18981	123.75	891	1...	H1-1b
434	M604	PL2.25x0.3...	.084	1.439	62	.016	0	y	61	6270.415	18981	123.75	891	1...	H1-1b
435	M616	PL2.25x0.3...	.084	1.439	62	.014	1.412	y	62	6270.415	18981	123.75	891	1...	H1-1b
436	M542	PL2.25x0.375	.084	1.627	61	.012	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
437	M143	PL2.25x0.3...	.084	1.439	61	.016	0	y	62	6270.415	18981	123.75	891	1...	H1-1b
438	M101	PL2.25x0.375	.084	1.627	62	.014	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
439	M523	PL2.25x0.375	.083	1.627	62	.016	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
440	M430	PL2.25x0.3...	.082	2.795	62	.002	2.795	y	61	1149.04	18984.3...	123.597	889.893	1...	H1-1b
441	M528	PL2.25x0.375	.081	1.627	61	.012	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
442	M527	PL2.25x0.375	.079	1.627	61	.008	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
443	M125	PL2.25x0.375	.079	1.627	61	.010	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
444	M412	PL2.25x0.3...	.077	2.795	61	.002	2.795	y	62	1149.04	18984.3...	123.597	748.188	1...	H1-1b
445	M96	PL2.25x0.375	.077	1.627	62	.012	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
446	M82	PL2.25x0.375	.077	1.627	62	.011	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
447	M557	PL2.25x0.375	.076	1.627	62	.010	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
448	M670	L2.5x2.5x5	.076	.495	61	.021	.495	z	61	33235.431	39420	1096.767	2551.08	1...	H2-1
449	M571	PL2.25x0.375	.074	1.627	62	.010	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
450	M120	PL2.25x0.375	.073	1.627	62	.010	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
451	M552	PL2.25x0.375	.070	1.627	61	.010	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
452	M524	PL2.25x0.375	.070	1.627	62	.010	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
453	M81	PL2.25x0.375	.069	1.627	62	.008	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
454	M95	PL2.25x0.375	.069	1.627	62	.008	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
455	M111	PL2.25x0.375	.068	1.627	61	.010	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
456	M106	PL2.25x0.375	.066	1.627	62	.011	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
457	M566	PL2.25x0.375	.065	1.627	61	.011	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
458	M672	L2.5x2.5x5	.065	2.005	62	.019	.495	y	62	33235.431	39420	1096.767	2551.08	1...	H2-1
459	M541	PL2.25x0.375	.065	1.627	61	.009	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
460	M538	PL2.25x0.375	.063	1.627	62	.010	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
461	M78	PL2.25x0.375	.063	1.627	61	.011	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
462	M92	PL2.25x0.375	.061	1.627	61	.010	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
463	M124	PL2.25x0.375	.060	1.627	62	.008	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
464	M556	PL2.25x0.375	.058	1.627	61	.008	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
465	M110	PL2.25x0.375	.058	1.627	61	.007	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
466	M323	L2.5x1.25x5	.056	1.444	62	.002	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
467	M540	PL2.25x0.375	.054	1.627	61	.005	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
468	M570	PL2.25x0.375	.054	1.627	61	.007	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
469	M356	L2.5x1.25x5	.054	1.444	61	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
470	M123	PL2.25x0.375	.052	1.627	61	.004	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
471	M354	L2.5x1.25x5	.052	1.444	61	.001	2.887	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
472	M526	PL2.25x0.375	.051	1.627	61	.005	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
473	M374	L2.5x1.25x5	.050	1.444	61	.001	2.887	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
474	M555	PL2.25x0.375	.049	1.627	62	.004	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
475	M88	PL2.25x0.375	.049	1.627	62	.005	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
476	M389	L2.5x1.25x5	.048	1.444	62	.001	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
477	M548	PL2.25x0.375	.047	1.627	61	.006	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
478	M534	PL2.25x0.375	.047	1.627	61	.005	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
479	M569	PL2.25x0.375	.047	1.627	62	.005	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
480	M94	PL2.25x0.375	.047	1.627	62	.004	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
481	M525	PL2.25x0.375	.046	1.627	62	.006	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
482	M121	PL2.25x0.375	.046	1.627	62	.005	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
483	M340	L2.5x1.25x5	.046	1.443	61	.002	0	y	61	13653.181	29003.9...	340.889	1494.276	1...	H2-1
484	M80	PL2.25x0.375	.046	1.627	62	.005	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
485	M539	PL2.25x0.375	.046	1.627	62	.005	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
486	M553	PL2.25x0.375	.045	1.627	61	.005	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
487	M93	PL2.25x0.375	.045	1.627	61	.006	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
488	M395	L2.5x1.25x5	.045	1.388	62	.003	0	y	62	14441.904	29003.9...	340.889	1494.276	1...	H2-1
489	M379	L2.5x1.25x5	.045	1.444	62	.001	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
490	M107	PL2.25x0.375	.044	1.627	62	.005	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
491	M109	PL2.25x0.375	.044	1.627	61	.005	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
492	M377	L2.5x1.25x5	.043	1.444	62	.001	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
493	M314	L2.5x1.25x5	.043	1.444	62	.001	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
494	M567	PL2.25x0.375	.042	1.627	61	.005	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
495	M305	L2.5x1.25x5	.042	1.444	61	.002	2.887	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
496	M79	PL2.25x0.375	.042	1.627	61	.005	0	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
497	M381	L2.5x1.25x5	.041	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
498	M102	PL2.25x0.375	.040	1.627	61	.005	0	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
499	M350	L2.5x1.25x5	.038	1.444	61	.001	2.887	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
500	M427	L2.5x1.25x5	.038	1.25	62	.001	0	y	61	16480.621	29003.9...	340.889	1494.276	1...	H2-1
501	M321	L2.5x1.25x5	.037	1.444	61	.002	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
502	M367	L2.5x1.25x5	.037	1.444	61	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
503	M325	L2.5x1.25x5	.036	1.444	62	.002	0	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
504	M298	L2.5x1.25x5	.036	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
505	M286	L2.5x1.25x5	.035	1.444	61	.001	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
506	M349	L2.5x1.25x5	.035	1.444	61	.002	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
507	M426	L2.5x1.25x5	.035	1.25	61	.001	2.5	y	61	16480.621	29003.9...	340.889	1461.213	1...	H2-1
508	M319	L2.5x1.25x5	.035	1.444	61	.002	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
509	M299	L2.5x1.25x5	.035	1.444	61	.002	2.887	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
510	M344	L2.5x1.25x5	.034	1.444	61	.001	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
511	M331	L2.5x1.25x5	.034	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
512	M108	PL2.25x0.375	.034	1.627	61	.002	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y	phi*Mn z	Cb	Eqn
513	M122	PL2.25x0.375	.033	1.627	62	.003	1.627	y	61	5924.235	22788	177.75	1068.75	1...	H1-1b
514	M355	L2.5x1.25x5	.032	1.444	61	.002	0	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
515	M397	L2.5x1.25x5	.032	1.25	61	.001	0	y	62	16480.621	29003.9...	340.889	1494.276	1...	H2-1
516	M327	L2.5x1.25x5	.031	1.444	62	.001	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
517	M420	L2.5x1.25x5	.031	1.25	61	.001	0	y	61	16480.621	29003.9...	340.889	1461.213	1...	H2-1
518	M554	PL2.25x0.375	.031	1.627	62	.003	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
519	M396	L2.5x1.25x5	.030	1.25	62	.001	0	y	61	16480.621	29003.9...	340.889	1461.213	1...	H2-1
520	M307	L2.5x1.25x5	.030	1.444	62	.002	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
521	M385	L2.5x1.25x5	.030	1.444	62	.001	2.887	y	61	13646.695	29003.9...	340.889	1494.276	1...	H2-1
522	M358	L2.5x1.25x5	.030	1.444	61	.001	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
523	M371	L2.5x1.25x5	.030	1.444	61	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
524	M345	L2.5x1.25x5	.030	1.444	61	.001	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
525	M373	L2.5x1.25x5	.030	1.444	62	.001	2.887	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
526	M365	L2.5x1.25x5	.029	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
527	M318	L2.5x1.25x5	.029	1.444	61	.002	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
528	M568	PL2.25x0.375	.029	1.627	62	.002	1.627	y	62	5924.235	22788	177.75	1068.75	1...	H1-1b
529	M351	L2.5x1.25x5	.029	1.444	61	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
530	M352	L2.5x1.25x5	.028	1.444	61	.001	2.887	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
531	M320	L2.5x1.25x5	.027	1.444	61	.001	0	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
532	M339	L2.5x1.25x5	.027	1.422	62	.011	0	y	62	13953.051	29003.9...	340.889	1494.276	1...	H2-1
533	M303	L2.5x1.25x5	.027	1.444	61	.001	2.887	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
534	M376	L2.5x1.25x5	.027	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
535	M316	L2.5x1.25x5	.027	1.444	62	.002	2.887	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
536	M410	L3x2.5x5	.027	2.656	62	.001	5	z	61	24430.323	44010	1270.778	2935.268	1...	H2-1
537	M301	L2.5x1.25x5	.027	1.444	61	.002	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
538	M383	L2.5x1.25x5	.027	1.444	62	.001	0	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
539	M296	L2.5x1.25x5	.027	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
540	M392	L2.5x1.25x5	.026	1.444	62	.001	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
541	M368	L2.5x1.25x5	.026	1.444	61	.001	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
542	M409	L2.5x1.25x5	.026	1.25	62	.001	2.5	y	61	16480.621	29003.9...	340.889	1494.276	1...	H2-1
543	M394	L2.5x1.25x5	.026	1.443	62	.002	0	y	62	13652.647	29003.9...	340.889	1494.276	1...	H2-1
544	M332	L2.5x1.25x5	.026	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
545	M338	L2.5x1.25x5	.026	1.388	61	.004	0	y	61	14441.746	29003.9...	340.889	1494.276	1...	H2-1
546	M287	L2.5x1.25x5	.026	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
547	M370	L2.5x1.25x5	.026	1.444	61	.001	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
548	M387	L2.5x1.25x5	.025	1.444	62	.001	0	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
549	M360	L2.5x1.25x5	.025	1.444	62	.002	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
550	M378	L2.5x1.25x5	.025	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
551	M411	L3x2.5x5	.025	2.344	62	.001	5	z	62	24430.323	44010	1270.778	2935.268	1...	H2-1
552	M302	L2.5x1.25x5	.025	1.444	61	.001	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
553	M322	L2.5x1.25x5	.025	1.444	61	.002	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
554	M421	L2.5x1.25x5	.025	1.25	62	.001	0	y	62	16480.621	29003.9...	340.889	1494.276	1...	H2-1
555	M380	L2.5x1.25x5	.025	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
556	M357	L2.5x1.25x5	.025	1.444	61	.002	0	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
557	M366	L2.5x1.25x5	.025	1.444	62	.001	0	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
558	M359	L2.5x1.25x5	.024	1.444	62	.002	2.887	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
559	M391	L2.5x1.25x5	.024	1.444	62	.001	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
560	M317	L2.5x1.25x5	.024	1.444	61	.002	2.887	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
561	M295	L2.5x1.25x5	.024	1.444	61	.001	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
562	M369	L2.5x1.25x5	.024	1.444	61	.002	2.887	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
563	M361	L2.5x1.25x5	.023	1.444	62	.001	0	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
564	M386	L2.5x1.25x5	.023	1.444	62	.001	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
565	M362	L2.5x1.25x5	.023	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
566	M297	L2.5x1.25x5	.023	1.444	62	.001	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
567	M372	L2.5x1.25x5	.023	1.444	61	.001	2.887	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1
568	M384	L2.5x1.25x5	.022	1.444	62	.001	0	y	61	13646.481	29003.9...	340.889	1494.276	1...	H2-1
569	M312	L2.5x1.25x5	.022	1.444	61	.002	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 6 Structure Field Condition

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn v	phi*Mn z	Cb	Egn
570	M403	L2.5x1.25x5	.022	1.25	61	.001	2.5	y	61	16480.621	29003.9...	340.889	1494.276	1...	H2-1
571	M415	L2.5x1.25x5	.022	1.25	62	.001	0	y	62	16480.621	29003.9...	340.889	1494.276	1...	H2-1
572	M382	L2.5x1.25x5	.021	1.444	62	.001	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
573	M402	L2.5x1.25x5	.021	1.25	61	.001	0	y	61	16480.621	29003.9...	340.889	1461.213	1...	H2-1
574	M414	L2.5x1.25x5	.021	1.25	61	.001	0	y	61	16480.621	29003.9...	340.889	1461.213	1...	H2-1
575	M309	L2.5x1.25x5	.021	1.444	62	.001	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
576	M388	L2.5x1.25x5	.021	1.444	62	.001	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
577	M364	L2.5x1.25x5	.020	1.444	62	.002	0	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
578	M310	L2.5x1.25x5	.020	1.444	62	.002	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
579	M280	L2.5x1.25x5	.020	1.395	61	.003	0	y	62	14342.333	29003.9...	340.889	1440.76	1...	H2-1
580	M328	L2.5x1.25x5	.020	1.444	61	.001	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
581	M315	L2.5x1.25x5	.020	1.444	61	.001	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
582	M326	L2.5x1.25x5	.020	1.444	61	.002	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
583	M294	L2.5x1.25x5	.019	1.444	62	.001	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
584	M304	L2.5x1.25x5	.019	1.444	62	.001	0	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
585	M290	L2.5x1.25x5	.019	1.444	62	.001	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
586	M292	L2.5x1.25x5	.019	1.444	62	.001	2.887	y	61	13646.481	29003.9...	340.889	1434.117	1...	H2-1
587	M417	L3x2.5x5	.019	2.344	62	.001	5	z	62	24430.323	44010	1270.778	2935.268	1...	H2-1
588	M375	L2.5x1.25x5	.019	1.444	61	.001	0	y	61	13646.41	29003.9...	340.889	1494.276	1...	H2-1
589	M348	L2.5x1.25x5	.019	1.444	62	.001	2.887	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
590	M330	L2.5x1.25x5	.019	1.444	61	.001	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
591	M353	L2.5x1.25x5	.018	1.444	61	.001	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
592	M291	L2.5x1.25x5	.018	1.444	62	.001	0	y	61	13646.695	29003.9...	340.889	1434.119	1...	H2-1
593	M311	L2.5x1.25x5	.018	1.444	62	.001	2.887	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
594	M363	L2.5x1.25x5	.018	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
595	M293	L2.5x1.25x5	.017	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
596	M393	L2.5x1.25x5	.017	1.443	62	.001	2.886	y	62	13652.825	29003.9...	340.889	1494.276	1...	H2-1
597	M306	L2.5x1.25x5	.017	1.444	61	.002	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
598	M324	L2.5x1.25x5	.017	1.444	61	.001	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
599	M300	L2.5x1.25x5	.017	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
600	M283	L2.5x1.25x5	.017	1.443	62	.001	0	y	61	13652.825	29003.9...	340.889	1434.178	1...	H2-1
601	M341	L2.5x1.25x5	.017	1.443	61	.001	2.886	y	62	13652.469	29003.9...	340.889	1494.276	1...	H2-1
602	M289	L2.5x1.25x5	.016	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
603	M408	L2.5x1.25x5	.016	1.25	61	.001	0	y	61	16480.621	29003.9...	340.889	1461.213	1...	H2-1
604	M288	L2.5x1.25x5	.016	1.444	62	.001	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
605	M390	L2.5x1.25x5	.016	1.444	62	.001	2.887	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
606	M334	L2.5x1.25x5	.016	1.444	61	.001	0	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
607	M282	L2.5x1.25x5	.015	1.443	61	.001	0	y	61	13652.647	29003.9...	340.889	1434.176	1...	H2-1
608	M346	L2.5x1.25x5	.015	1.444	62	.001	2.887	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
609	M285	L2.5x1.25x5	.015	1.444	62	.001	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
610	M333	L2.5x1.25x5	.015	1.444	62	.001	0	y	61	13646.41	29003.9...	340.889	1434.117	1...	H2-1
611	M308	L2.5x1.25x5	.015	1.444	61	.002	0	y	62	13646.41	29003.9...	340.889	1434.117	1...	H2-1
612	M284	L2.5x1.25x5	.015	1.444	62	.001	2.887	y	61	13646.766	29003.9...	340.889	1434.12	1...	H2-1
613	M660	L2.5x1.25x5	.014	1.422	62	.012	2.844	y	61	13953.051	29003.9...	340.889	1494.276	1...	H2-1
614	M428	L3x2.5x5	.014	2.656	61	.001	0	z	61	24430.323	44010	1270.778	2836.636	1...	H2-1
615	M399	L3x2.5x5	.014	2.344	62	.001	0	z	62	24430.323	44010	1270.778	2935.268	1...	H2-1
616	M347	L2.5x1.25x5	.014	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1494.276	1...	H2-1
617	M343	L2.5x1.25x5	.014	1.444	61	.001	2.887	y	62	13646.41	29003.9...	340.889	1494.276	1...	H2-1
618	M313	L2.5x1.25x5	.013	1.444	62	.001	2.887	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
619	M659	L2.5x1.25x5	.013	1.395	62	.004	0	y	61	14342.333	29003.9...	340.889	1440.76	1...	H2-1
620	M329	L2.5x1.25x5	.013	1.444	62	.001	0	y	62	13646.766	29003.9...	340.889	1434.12	1...	H2-1
621	M422	L3x2.5x5	.012	2.656	62	.001	0	z	61	24430.323	44010	1270.778	2935.268	1...	H2-1
622	M336	L2.5x1.25x5	.012	1.443	61	.001	2.886	y	62	13653.181	29003.9...	340.889	1434.182	1...	H2-1
623	M337	L2.5x1.25x5	.012	1.388	62	.002	0	y	61	14441.746	29003.9...	340.889	1441.708	1...	H2-1
624	M281	L2.5x1.25x5	.012	1.388	62	.002	0	y	62	14441.904	29003.9...	340.889	1441.709	1...	H2-1
625	M423	L3x2.5x5	.012	2.344	61	.001	5	z	61	24430.323	44010	1270.778	2836.636	1...	H2-1
626	M342	L2.5x1.25x5	.011	1.444	62	.002	0	y	61	13646.766	29003.9...	340.889	1494.276	1...	H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 6 Structure Field Condition

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Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [...]	phi*Mn y...	phi*Mn z...	Cb	Eqn
627	M335	L2.5x1.25x5	.011	1.443	62	.001	0	y	62	13652.469	29003.9...	340.889	1434.175	1... H2-1
628	M429	L3x2.5x5	.011	2.344	62	.001	0	z	61	24430.323	44010	1270.778	2935.268	1... H2-1
629	M398	L3x2.5x5	.010	2.656	61	.001	5	z	62	24430.323	44010	1270.778	2836.636	1... H2-1
630	M404	L3x2.5x5	.009	2.656	61	.001	5	z	61	24430.323	44010	1270.778	2836.636	1... H2-1
631	M416	L3x2.5x5	.008	2.656	61	.001	0	z	61	24430.323	44010	1270.778	2836.636	1... H2-1
632	M405	L3x2.5x5	.007	2.344	62	.001	0	z	61	24430.323	44010	1270.778	2935.268	1... H2-1



Milvon to West River Catenary Structure Assessment

The United Illuminating Company
June 30, 2018

ATTACHMENT MWR-V
STRUCTURE TYPE 6 FIELD CONDITION
NESC 2012, UI CRITERIA, AND HURRICANE CATEGORY 3
COMPLETE MEMBER RESULTS



Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
1	M652	6H25	9.999	7.83	76	9.999	4.01	z 76	32380.313	215681.4	21582	40822.49	1 H1-1b
2	M191	6H25	9.999	7.83	77	9.999	4.01	z 77	32380.313	215681.4	21582	40822.49	1 H1-1b
3	M487	PL2.25x0.3...	7.239	.814	81	3.567	.814	y 80	11441.918	18981	123.75	891	1...H1-1b
4	M41	PL2.25x0.3...	7.232	.814	80	3.567	.814	y 81	11441.918	18981	123.75	891	1...H1-1b
5	M453	PL2.25x0.3...	6.616	.814	80	3.569	.814	y 81	11441.918	18981	123.75	891	1...H1-1a
6	M7	PL2.25x0.3...	6.608	.814	81	3.569	.814	y 80	11441.918	18981	123.75	891	1...H1-1a
7	M489	PL2.25x0.3...	4.794	.859	80	3.669	0	y 81	10946.255	18981	123.75	891	1...H1-1a
8	M43	PL2.25x0.3...	4.790	.859	81	3.669	0	y 80	10946.255	18981	123.75	891	1...H1-1a
9	M455	PL2.25x0.3...	4.668	.859	81	3.668	0	y 80	10946.255	18981	123.75	891	1...H1-1a
10	M9	PL2.25x0.3...	4.654	.859	80	3.667	0	y 81	10946.255	18981	123.75	891	1...H1-1a
11	M631	PL2.25x0.3...	3.251	1.301	76	.061	1.326	y 76	5510	18981	123.75	891	1...H1-1a
12	M189	L6x4x6	3.192	8.167	81	.192	7	z 77	29768.748	97470	4257.614	12648.6...	1 H2-1
13	M650	L6x4x6	3.192	5.833	80	.199	7	z 76	29768.748	97470	4257.614	12648.6...	1 H2-1
14	M689	L3x2.5x6	3.189	.375	76	1.194	.375	z 76	51421.803	52110	1486.645	3490.361	1...H2-1
15	M170	PL2.25x0.3...	3.135	1.301	77	.059	1.326	y 77	5510	18981	123.75	891	1...H1-1a
16	M684	L3x2.5x6	3.024	.375	77	.771	0	z 77	51421.803	52110	1486.645	3490.361	1...H2-1
17	M624	PL2.25 x 1/...	2.868	.75	76	.974	1.384	y 76	7786.608	15201	78.75	711	1...H1-1a
18	M685	L3x2.5x6	2.836	.375	77	1.128	.375	y 77	51421.803	52110	1486.645	3490.361	1...H2-1
19	M629	PL2.25x0.3...	2.831	1.374	76	.060	1.401	y 84	4871.762	18981	123.75	891	1...H1-1a
20	M128	PL2.25x0.375	2.812	1.627	81	.557	1.627	y 81	5924.235	22788	177.75	1068.75	1...H1-1a
21	M574	PL2.25x0.375	2.783	1.627	80	.558	1.627	y 80	5924.235	22788	177.75	1068.75	1.5H1-1a
22	M163	PL2.25 x 1/...	2.763	.75	77	.936	1.384	y 77	7786.608	15201	78.75	711	1...H1-1a
23	M168	PL2.25x0.3...	2.730	1.374	77	.060	1.401	y 83	4871.762	18981	123.75	891	1...H1-1a
24	M100	PL2.25x0.375	2.728	1.627	80	.559	1.627	y 80	5924.235	22788	177.75	1068.75	1...H1-1a
25	M546	PL2.25x0.375	2.727	1.627	81	.560	1.627	y 81	5924.235	22788	177.75	1068.75	1...H1-1a
26	M613	PL2.25 x 1/...	2.715	.764	76	.894	.764	y 76	9455.255	15201	78.75	711	2...H1-1a
27	M642	PL2.25x0.3...	2.713	1.301	76	.043	1.326	y 83	5510	18981	123.75	891	1...H1-1a
28	M622	PL2.25 x 1/...	2.691	.813	76	.594	1.501	y 76	8563.269	15201	78.75	711	2...H1-1a
29	M456	PL2.25x0.3...	2.686	.892	80	1.982	0	y 80	10483.172	18981	123.75	891	1...H1-1a
30	M10	PL2.25x0.3...	2.677	.892	81	1.983	0	y 81	10483.172	18981	123.75	891	1...H1-1a
31	M103	PL2.25x0.375	2.619	1.582	81	.609	1.582	y 81	6271.599	22788	177.75	1068.75	1...H1-1a
32	M152	PL2.25 x 1/...	2.615	.764	77	.858	.764	y 77	9455.255	15201	78.75	711	2...H1-1a
33	M549	PL2.25x0.375	2.613	1.582	80	.609	1.582	y 80	6271.599	22788	177.75	1068.75	1...H1-1a
34	M599	L3x2.5x5	2.609	3.817	76	3.509	0	z 76	39023.547	44010	1270.778	1314.901	1 H2-1
35	M181	PL2.25x0.3...	2.606	1.301	77	.043	1.326	y 84	5510	18981	123.75	891	1...H1-1a
36	M161	PL2.25 x 1/...	2.598	.813	77	.573	1.501	y 77	8563.269	15201	78.75	711	2...H1-1a
37	M687	L3x2.5x6	2.591	.375	76	.771	.031	y 76	51421.803	52110	1486.645	3490.361	1...H2-1
38	M490	PL2.25x0.3...	2.555	.892	81	1.981	0	y 81	10483.172	18981	123.75	891	1...H1-1a
39	M44	PL2.25x0.3...	2.540	.892	80	1.981	0	y 80	10483.172	18981	123.75	891	1...H1-1a
40	M138	L3x2.5x5	2.540	8.004	77	3.384	11.821	z 77	39023.547	44010	1270.778	1314.901	1 H2-1
41	M75	PL2.25x0.375	2.533	1.582	80	.608	1.582	y 80	6271.599	22788	177.75	1068.75	1...H1-1a
42	M521	PL2.25x0.375	2.526	1.582	81	.608	1.582	y 81	6271.599	22788	177.75	1068.75	1...H1-1a
43	M190	L6x4x6	2.448	6.188	77	.782	5.5	z 77	44440.683	97470	4257.614	12792.4...	1 H2-1
44	M651	L6x4x6	2.448	4.813	76	.806	4.927	z 76	44440.683	97470	4257.614	10982.7...	1 H2-1
45	M640	PL2.25x0.3...	2.371	1.374	76	.062	1.401	y 83	4871.762	18981	123.75	891	1...H1-1a
46	M488	PL2.25x0.3...	2.359	.845	80	3.354	.845	y 81	11000.676	18981	123.75	891	1...H1-1a
47	M609	PL2.25 x 1/...	2.357	.895	76	.191	.912	y 76	5812.002	15201	78.75	711	1...H1-1a
48	M42	PL2.25x0.3...	2.356	.845	81	3.354	.845	y 80	11000.676	18981	123.75	891	1...H1-1a
49	M454	PL2.25x0.3...	2.278	.845	81	3.355	.845	y 80	11000.676	18981	123.75	891	1...H1-1a
50	M179	PL2.25x0.3...	2.275	1.374	77	.062	1.401	y 84	4871.762	18981	123.75	891	1...H1-1a
51	M148	PL2.25 x 1/...	2.270	.895	77	.182	.912	y 77	5812.002	15201	78.75	711	1...H1-1a
52	M8	PL2.25x0.3...	2.269	.845	80	3.356	.845	y 81	11000.676	18981	123.75	891	1...H1-1a
53	M113	PL2.25x0.375	2.263	1.627	81	1.098	1.627	y 81	5924.235	22788	177.75	1068.75	1...H1-1a
54	M559	PL2.25x0.375	2.261	1.627	80	1.103	1.627	y 80	5924.235	22788	177.75	1068.75	1...H1-1a
55	M620	PL2.25 x 1/...	2.241	.895	76	.339	1.684	y 76	5812.002	15201	78.75	711	1...H1-1a
56	M625	PL2.25 x 1/...	2.222	.764	76	.904	1.384	y 76	9455.255	15201	78.75	711	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
57	M85	PL2.25x0.375	2.193	1.627	80	1.094	1.627	y 80	5924.235	22788	177.75	1068.75	1...H1-1a
58	M531	PL2.25x0.375	2.184	1.627	81	1.095	1.627	y 81	5924.235	22788	177.75	1068.75	1...H1-1a
59	M159	PL2.25 x 1/...	2.147	.895	77	.328	1.684	y 77	5812.002	15201	78.75	711	1...H1-1a
60	M164	PL2.25 x 1/...	2.136	.764	77	.865	1.384	y 77	9455.255	15201	78.75	711	1...H1-1a
61	M648	PL2.25 x 1/...	2.130	.729	76	.335	1.372	y 76	7932.111	15201	78.75	711	1...H1-1a
62	M187	PL2.25 x 1/...	2.067	.729	77	.326	1.372	y 77	7932.111	15201	78.75	711	1...H1-1a
63	M611	PL2.25 x 1/...	2.004	.797	76	.418	.813	y 76	7045.78	15201	78.75	711	1...H1-1a
64	M681	L4x3x6	1.955	.977	80	.247	0	z 80	63338.614	67230	2238.689	5885.484	1...H2-1
65	M118	PL2.25x0.375	1.947	1.582	81	.410	1.582	y 80	6271.599	22788	177.75	1068.75	1...H1-1a
66	M676	L4x3x6	1.944	.977	81	.254	1.465	z 75	63338.614	67230	2238.689	5885.484	1...H2-1
67	M564	PL2.25x0.375	1.941	1.582	80	.410	1.582	y 81	6271.599	22788	177.75	1068.75	1...H1-1a
68	M573	PL2.25x0.375	1.918	1.627	80	.461	1.627	y 80	5924.235	22788	177.75	1068.75	1...H1-1a
69	M150	PL2.25 x 1/...	1.917	.797	77	.400	.813	y 77	7045.78	15201	78.75	711	1...H1-1a
70	M127	PL2.25x0.375	1.912	1.627	81	.460	1.627	y 81	5924.235	22788	177.75	1068.75	1...H1-1a
71	M545	PL2.25x0.375	1.903	1.627	81	.457	1.627	y 81	5924.235	22788	177.75	1068.75	1...H1-1a
72	M99	PL2.25x0.375	1.902	1.627	80	.458	1.627	y 80	5924.235	22788	177.75	1068.75	1...H1-1a
73	M90	PL2.25x0.375	1.892	1.582	80	.411	1.582	y 81	6271.599	22788	177.75	1068.75	1...H1-1a
74	M536	PL2.25x0.375	1.884	1.582	81	.411	1.582	y 80	6271.599	22788	177.75	1068.75	1...H1-1a
75	M114	PL2.25x0.375	1.870	1.627	81	1.055	1.627	y 81	5924.235	22788	177.75	1068.75	1...H1-1a
76	M560	PL2.25x0.375	1.869	1.627	80	1.075	1.627	y 80	5924.235	22788	177.75	1068.75	1...H1-1a
77	M612	PL2.25 x 1/...	1.869	.764	76	.582	1.384	y 76	9455.255	15201	78.75	711	1...H1-1a
78	M447	L6x6x6	1.828	3.985	80	.554	5.388	z 80	110179.703	118260	9137.172	10106.9...	1 H2-1
79	M86	PL2.25x0.375	1.827	1.627	80	1.047	1.627	y 80	5924.235	22788	177.75	1068.75	1...H1-1a
80	M532	PL2.25x0.375	1.822	1.627	81	1.049	1.627	y 81	5924.235	22788	177.75	1068.75	1...H1-1a
81	M1	L6x6x6	1.818	3.1	81	.554	1.698	z 81	110179.703	118260	9137.172	10106.9...	1 H2-1
82	M151	PL2.25 x 1/...	1.786	.764	77	.566	1.384	y 77	9455.255	15201	78.75	711	1...H1-1a
83	M450	L6x6x6	1.763	4.797	80	.149	4.871	y 81	110179.703	118260	9137.172	10106.9...	1 H2-1
84	M646	PL2.25 x 1/...	1.760	.785	76	.204	1.478	y 76	7258.096	15201	78.75	711	1...H1-1a
85	M449	L6x6x6	1.759	3.616	81	.154	2.214	y 80	110179.703	118260	9137.172	10106.9...	1 H2-1
86	M4	L6x6x6	1.755	2.288	81	.148	2.214	y 80	110179.703	118260	9137.172	10106.9...	1 H2-1
87	M3	L6x6x6	1.748	3.469	80	.154	4.871	y 81	110179.703	118260	9137.172	10106.9...	1 H2-1
88	M448	L6x6x6	1.735	3.1	81	.554	1.698	z 81	110179.703	118260	9137.172	10106.9...	1 H2-1
89	M644	PL2.25 x 1/...	1.720	.876	76	.091	.893	y 76	6092.266	15201	78.75	711	1...H1-1a
90	M2	L6x6x6	1.719	3.985	80	.554	5.388	z 80	110179.703	118260	9137.172	10106.9...	1 H2-1
91	M185	PL2.25 x 1/...	1.711	.785	77	.198	1.478	y 77	7258.096	15201	78.75	711	1...H1-1a
92	M677	L4x3x6	1.698	.977	80	.246	.488	z 75	63338.614	67230	2238.689	5885.484	1...H2-1
93	M598	L3x2.5x5	1.694	8.004	76	3.557	11.452	z 76	39023.547	44010	1270.778	1314.901	1 H2-1
94	M680	L4x3x6	1.687	.977	81	.266	1.465	z 75	63338.614	67230	2238.689	5885.484	1...H2-1
95	M183	PL2.25 x 1/...	1.676	.876	77	.087	.893	y 77	6092.266	15201	78.75	711	1...H1-1a
96	M137	L3x2.5x5	1.668	3.817	80	3.392	.369	z 77	39023.547	44010	1270.778	2996.056	1 H2-1
97	M466	PL2.25x0.3...	1.639	1.356	65	.030	0	y 80	4928.46	18981	123.75	891	1...H1-1a
98	M483	PL2.25x0.3...	1.621	1.356	65	.036	2.713	y 81	4928.46	18981	123.75	891	1...H1-1a
99	M37	PL2.25x0.3...	1.616	1.356	66	.035	2.713	y 80	4928.46	18981	123.75	891	1...H1-1a
100	M20	PL2.25x0.3...	1.605	1.356	66	.030	0	y 81	4928.46	18981	123.75	891	1...H1-1a
101	M499	PL2.25x0.3...	1.566	1.302	65	.035	1.302	y 81	5352.969	18981	123.75	891	1...H1-1a
102	M516	PL2.25x0.3...	1.549	1.302	65	.028	2.604	y 81	5352.969	18981	123.75	891	1...H1-1a
103	M577	L6x6x6	1.546	0	81	.223	18.69	y 80	110179.703	118260	9137.172	10106.9...	1 H2-1
104	M140	L3x2.5x5	1.546	8.127	80	3.563	.369	z 77	39023.547	44010	1270.778	1314.901	1 H2-1
105	M70	PL2.25x0.3...	1.545	1.302	66	.027	2.604	y 80	5352.969	18981	123.75	891	1...H1-1a
106	M139	L3x2.5x5	1.541	5.418	80	3.466	11.821	z 77	39023.547	44010	1270.778	1314.901	1 H2-1
107	M600	L3x2.5x5	1.540	6.403	81	3.627	0	z 76	39023.547	44010	1270.778	1314.901	1 H2-1
108	M601	L3x2.5x5	1.538	3.694	81	3.687	11.452	z 76	39023.547	44010	1270.778	1314.901	1 H2-1
109	M131	L6x6x6	1.536	23.923	80	.219	5.233	y 81	110179.703	118260	9137.172	10106.9...	1 H2-1
110	M53	PL2.25x0.3...	1.534	1.302	66	.034	0	y 80	5352.969	18981	123.75	891	1...H1-1a
111	M578	L6x6x6	1.527	23.923	80	.268	5.233	y 81	110179.703	118260	9137.172	10106.9...	1 H2-1
112	M132	L6x6x6	1.519	0	81	.265	18.69	y 80	110179.703	118260	9137.172	10106.9...	1 H2-1
113	M649	PL2.25 x 1/...	1.508	.743	76	.337	.743	y 76	9473.544	15201	78.75	711	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
114	M117	PL2.25x0.375	1.504	1.582	81 .430	3.163	y 81	6271.599	22788	177.75	1068.75	1...	H1-1a
115	M563	PL2.25x0.375	1.502	1.582	80 .430	3.163	y 80	6271.599	22788	177.75	1068.75	1...	H1-1a
116	M89	PL2.25x0.375	1.494	1.582	80 .430	3.163	y 80	6271.599	22788	177.75	1068.75	1...	H1-1a
117	M535	PL2.25x0.375	1.492	1.582	81 .430	3.163	y 81	6271.599	22788	177.75	1068.75	1...	H1-1a
118	M464	PL2.25x0.3...	1.482	1.25	65 .042	0	y 81	5810.995	18981	123.75	891	1...	H1-1a
119	M481	PL2.25x0.3...	1.466	1.25	65 .022	2.499	y 81	5810.995	18981	123.75	891	1...	H1-1a
120	M188	PL2.25 x 1/...	1.463	.743	77 .322	.743	y 77	9473.544	15201	78.75	711	1...	H1-1a
121	M452	L6x6x6	1.462	23.923	80 .169	23.923	z 81	110179.703	118260	9137.172	19567.1...	1	H2-1
122	M35	PL2.25x0.3...	1.462	1.25	66 .021	2.499	y 80	5810.995	18981	123.75	891	1...	H1-1a
123	M610	PL2.25 x 1/...	1.457	.813	76 .447	.813	y 76	8563.269	15201	78.75	711	1...	H1-1a
124	M6	L6x6x6	1.455	0	81 .168	0	z 80	110179.703	118260	9137.172	19567.1...	1	H2-1
125	M18	PL2.25x0.3...	1.452	1.25	66 .042	0	y 80	5810.995	18981	123.75	891	1...	H1-1a
126	M105	PL2.25x0.375	1.449	1.627	81 .342	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
127	M551	PL2.25x0.375	1.443	1.627	80 .342	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
128	M451	L6x6x6	1.429	0	81 .243	18.69	y 65	110179.703	118260	9137.172	19567.1...	1	H2-1
129	M678	L6x4x6	1.428	.66	80 .524	.991	z 76	91219.353	97470	4257.614	12492.1...	1...	H2-1
130	M201	L6x4x7	1.422	86.637	65 .120	86.637	y 65	105209.703	112860	4892.152	9085.094	3...	H2-1
131	M5	L6x6x6	1.417	23.923	80 .238	5.233	y 66	110179.703	118260	9137.172	19567.1...	1	H2-1
132	M675	L6x4x6	1.407	.66	81 .507	.33	z 77	91219.353	97470	4257.614	12498.5...	1...	H2-1
133	M149	PL2.25 x 1/...	1.407	.813	77 .431	.813	y 77	8563.269	15201	78.75	711	1...	H1-1a
134	M497	PL2.25x0.3...	1.402	1.2	65 .056	0	y 81	6305.296	18981	123.75	891	1...	H1-1a
135	M200	L6x4x7	1.393	2.795	65 .118	86.637	y 66	105209.703	112860	4892.152	9855.391	4...	H2-1
136	M514	PL2.25x0.3...	1.386	1.2	65 .022	1.175	y 81	6305.296	18981	123.75	891	1...	H1-1a
137	M126	PL2.25x0.375	1.386	1.627	81 .159	3.255	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
138	M68	PL2.25x0.3...	1.383	1.2	66 .023	1.175	y 80	6305.296	18981	123.75	891	1...	H1-1a
139	M572	PL2.25x0.375	1.382	1.627	80 .160	3.255	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
140	M603	PL2.25x0.4...	1.375	1.73	76 .062	1.764	y 81	7996.165	26578.1...	242.249	1245.85	1...	H1-1a
141	M51	PL2.25x0.3...	1.373	1.2	66 .057	0	y 80	6305.296	18981	123.75	891	1...	H1-1a
142	M623	PL2.25 x 1/...	1.361	.813	76 .435	1.501	y 76	8563.269	15201	78.75	711	1...	H1-1a
143	M607	PL2.25x0.3...	1.360	1.327	76 .066	2.45	y 81	5256.024	18981	123.75	891	1...	H1-1a
144	M77	PL2.25x0.375	1.357	1.627	80 .342	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
145	M523	PL2.25x0.375	1.349	1.627	81 .342	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
146	M142	PL2.25x0.4...	1.346	1.73	77 .061	1.764	y 80	7996.165	26578.1...	242.249	1245.85	1...	H1-1a
147	M146	PL2.25x0.3...	1.324	1.327	77 .066	2.45	y 80	5256.024	18981	123.75	891	1...	H1-1a
148	M462	PL2.25x0.3...	1.323	1.153	65 .082	0	y 80	6836.576	18981	123.75	891	1...	H1-1a
149	M479	PL2.25x0.3...	1.308	1.153	65 .026	1.129	y 81	6836.576	18981	123.75	891	1...	H1-1a
150	M162	PL2.25 x 1/...	1.307	.813	77 .415	1.501	y 77	8563.269	15201	78.75	711	1...	H1-1a
151	M33	PL2.25x0.3...	1.305	1.153	66 .026	1.129	y 80	6836.576	18981	123.75	891	1...	H1-1a
152	M16	PL2.25x0.3...	1.295	1.153	66 .082	0	y 81	6836.576	18981	123.75	891	1...	H1-1a
153	M98	PL2.25x0.375	1.293	1.627	80 .155	3.255	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
154	M544	PL2.25x0.375	1.286	1.627	81 .156	3.255	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
155	M500	PL2.25x0.3...	1.269	1.356	66 .032	0	y 81	4928.46	18981	123.75	891	1...	H1-1a
156	M517	PL2.25x0.3...	1.250	1.356	66 .040	2.713	y 80	4928.46	18981	123.75	891	1...	H1-1a
157	M71	PL2.25x0.3...	1.250	1.356	65 .040	2.713	y 81	4928.46	18981	123.75	891	1...	H1-1a
158	M495	PL2.25x0.3...	1.246	1.107	65 .111	0	y 80	7411.618	18981	123.75	891	1...	H1-1a
159	M512	PL2.25x0.3...	1.231	1.107	65 .029	1.084	y 80	7411.618	18981	123.75	891	1...	H1-1a
160	M54	PL2.25x0.3...	1.229	1.356	65 .031	0	y 80	4928.46	18981	123.75	891	1...	H1-1a
161	M66	PL2.25x0.3...	1.228	1.107	66 .029	1.084	y 80	7411.618	18981	123.75	891	1...	H1-1a
162	M465	PL2.25x0.3...	1.221	1.302	66 .036	0	y 80	5352.969	18981	123.75	891	1...	H1-1a
163	M621	PL2.25 x 1/...	1.220	.895	76 .195	.912	y 76	5812.002	15201	78.75	711	1...	H1-1a
164	M49	PL2.25x0.3...	1.219	1.107	66 .112	0	y 81	7411.618	18981	123.75	891	1...	H1-1a
165	M120	PL2.25x0.375	1.213	1.627	81 .198	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
166	M630	PL2.25x0.3...	1.212	1.326	76 .046	2.402	y 76	7817.836	18981	123.75	891	1...	H1-1a
167	M635	PL2.25 x 1/...	1.209	.785	76 .160	.801	y 76	7258.096	15201	78.75	711	1...	H1-1a
168	M566	PL2.25x0.375	1.206	1.627	80 .198	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
169	M637	PL2.25 x 1/...	1.204	.743	76 .406	.743	y 76	9473.544	15201	78.75	711	1...	H1-1a
170	M482	PL2.25x0.3...	1.203	1.302	66 .032	2.604	y 80	5352.969	18981	123.75	891	1...	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
171	M36	PL2.25x0.3...	1.202	1.302	65 .031	2.604	y 81	5352.969	18981	123.75	891	1...	H1-1a
172	M19	PL2.25x0.3...	1.186	1.302	83 .036	0	y 81	5352.969	18981	123.75	891	1...	H1-1a
173	M141	PL2.25x0.4...	1.184	1.73	81 .045	1.764	y 81	7996.165	26578.1...	242.249	1245.85	1...	H1-1a
174	M608	PL2.25 x 1/...	1.183	.912	76 .239	.912	y 76	7331.491	15201	78.75	711	2...	H1-1a
175	M160	PL2.25 x 1/...	1.180	.895	77 .185	.912	y 77	5812.002	15201	78.75	711	1...	H1-1a
176	M460	PL2.25x0.3...	1.180	1.064	65 .149	0	y 81	7966.034	18981	123.75	891	2...	H1-1a
177	M602	PL2.25x0.4...	1.174	1.73	80 .044	1.764	y 80	7996.165	26578.1...	242.249	1245.85	1...	H1-1a
178	M169	PL2.25x0.3...	1.172	1.326	77 .046	2.402	y 77	7817.836	18981	123.75	891	1...	H1-1a
179	M477	PL2.25x0.3...	1.165	1.064	65 .038	1.042	y 80	7966.034	18981	123.75	891	3	H1-1a
180	M31	PL2.25x0.3...	1.162	1.064	66 .038	1.042	y 81	7966.034	18981	123.75	891	2...	H1-1a
181	M576	PL2.25x0.375	1.157	1.627	80 .037	3.255	y 76	5924.235	22788	177.75	1068.75	1...	H1-1a
182	M174	PL2.25 x 1/...	1.155	.785	77 .153	.801	y 77	7258.096	15201	78.75	711	1...	H1-1a
183	M107	PL2.25x0.375	1.155	1.627	81 .130	0	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
184	M14	PL2.25x0.3...	1.154	1.064	66 .149	0	y 80	7966.034	18981	123.75	891	3...	H1-1a
185	M498	PL2.25x0.3...	1.154	1.25	66 .044	0	y 80	5810.995	18981	123.75	891	1...	H1-1a
186	M553	PL2.25x0.375	1.148	1.627	80 .130	0	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
187	M176	PL2.25 x 1/...	1.146	.743	77 .386	.743	y 77	9473.544	15201	78.75	711	1...	H1-1a
188	M130	PL2.25x0.375	1.141	1.627	81 .035	3.255	y 77	5924.235	22788	177.75	1068.75	1...	H1-1a
189	M69	PL2.25x0.3...	1.140	1.25	83 .025	2.499	y 81	5810.995	18981	123.75	891	1...	H1-1a
190	M147	PL2.25 x 1/...	1.139	.912	77 .231	.912	y 77	7331.491	15201	78.75	711	2...	H1-1a
191	M515	PL2.25x0.3...	1.139	1.25	84 .025	2.499	y 80	5810.995	18981	123.75	891	1...	H1-1a
192	M493	PL2.25x0.3...	1.136	1.023	65 .201	0	y 80	8511.226	18981	123.75	891	2...	H1-1a
193	M122	PL2.25x0.375	1.136	1.627	81 .086	0	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
194	M92	PL2.25x0.375	1.133	1.627	80 .198	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
195	M561	PL2.25x0.375	1.132	1.627	81 .519	0	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
196	M52	PL2.25x0.3...	1.130	1.25	83 .044	0	y 81	5810.995	18981	123.75	891	1...	H1-1a
197	M568	PL2.25x0.375	1.129	1.627	80 .086	0	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
198	M510	PL2.25x0.3...	1.128	1.023	65 .051	1.002	y 80	8511.226	18981	123.75	891	2...	H1-1a
199	M538	PL2.25x0.375	1.126	1.627	81 .199	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
200	M491	PL2.25x0.3...	1.124	.927	65 .315	.947	y 80	10001.049	18981	123.75	891	1...	H1-1a
201	M64	PL2.25x0.3...	1.124	1.023	66 .050	1.002	y 81	8511.226	18981	123.75	891	2...	H1-1a
202	M557	PL2.25x0.375	1.120	1.627	81 .021	3.255	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
203	M647	PL2.25 x 1/...	1.118	.801	76 .188	.801	y 76	8669.579	15201	78.75	711	1...	H1-1a
204	M555	PL2.25x0.375	1.118	1.627	81 .048	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
205	M47	PL2.25x0.3...	1.117	1.023	66 .198	0	y 81	8511.226	18981	123.75	891	2...	H1-1a
206	M115	PL2.25x0.375	1.115	1.627	80 .432	0	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
207	M109	PL2.25x0.375	1.115	1.627	81 .048	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
208	M570	PL2.25x0.375	1.115	1.627	81 .020	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
209	M111	PL2.25x0.375	1.113	1.627	81 .020	3.255	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
210	M124	PL2.25x0.375	1.111	1.627	81 .020	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
211	M458	PL2.25x0.3...	1.111	.984	65 .190	.984	y 80	9042.588	18981	123.75	891	1...	H1-1a
212	M475	PL2.25x0.3...	1.105	.984	65 .064	.963	y 80	9042.588	18981	123.75	891	1...	H1-1a
213	M45	PL2.25x0.3...	1.105	.947	66 .307	.947	y 81	9558.647	18981	123.75	891	1...	H1-1a
214	M29	PL2.25x0.3...	1.102	.984	66 .064	.963	y 81	9042.588	18981	123.75	891	1...	H1-1a
215	M508	PL2.25x0.3...	1.097	.947	65 .081	.927	y 80	9558.647	18981	123.75	891	1...	H1-1a
216	M62	PL2.25x0.3...	1.095	.927	66 .080	.927	y 81	10001.049	18981	123.75	891	1...	H1-1a
217	M463	PL2.25x0.3...	1.092	1.2	84 .059	0	y 80	6305.296	18981	123.75	891	1...	H1-1a
218	M12	PL2.25x0.3...	1.092	.984	66 .194	.984	y 81	9042.588	18981	123.75	891	1...	H1-1a
219	M468	PL2.25x0.375	1.090	1.474	65 .195	1.474	y 80	6952.75	22788	177.75	1068.75	1...	H1-1a
220	M186	PL2.25 x 1/...	1.087	.801	77 .180	.801	y 77	8669.579	15201	78.75	711	1...	H1-1a
221	M34	PL2.25x0.3...	1.085	1.2	83 .020	1.175	y 81	6305.296	18981	123.75	891	1...	H1-1a
222	M480	PL2.25x0.3...	1.084	1.2	84 .020	1.175	y 80	6305.296	18981	123.75	891	1...	H1-1a
223	M501	PL2.25x0.375	1.084	1.414	65 .105	1.414	y 80	7559.514	22788	177.75	1068.75	1...	H1-1a
224	M503	PL2.25x0.375	1.083	1.503	65 .211	0	y 81	6696.061	22788	177.75	1068.75	1...	H1-1a
225	M471	PL2.25x0.3...	1.082	.827	65 .113	1.689	y 81	11387.981	18981	123.75	891	1...	H1-1a
226	M25	PL2.25x0.3...	1.081	.827	66 .113	1.689	y 80	11387.981	18981	123.75	891	1...	H1-1a
227	M633	PL2.25 x 1/...	1.080	.876	76 .078	.893	y 76	6092.266	15201	78.75	711	1...	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
228	M473	PL2.25x0.3...	1.080	.892	65	.095	.892	y	80	10483.172	18981	123.75	891	1...H1-1a
229	M27	PL2.25x0.3...	1.079	.892	66	.095	.892	y	81	10483.172	18981	123.75	891	1...H1-1a
230	M485	PL2.25x0.375	1.078	1.474	65	.090	2.948	y	81	6952.75	22788	177.75	1068.75	1...H1-1a
231	M17	PL2.25x0.3...	1.075	1.2	83	.058	0	y	81	6305.296	18981	123.75	891	1...H1-1a
232	M39	PL2.25x0.375	1.074	1.474	66	.088	2.948	y	80	6952.75	22788	177.75	1068.75	1...H1-1a
233	M79	PL2.25x0.375	1.074	1.627	80	.130	0	y	80	5924.235	22788	177.75	1068.75	1...H1-1a
234	M518	PL2.25x0.375	1.073	1.414	65	.064	2.827	y	81	7559.514	22788	177.75	1068.75	1...H1-1a
235	M506	PL2.25x0.3...	1.071	.859	65	.108	.859	y	80	10946.255	18981	123.75	891	1...H1-1a
236	M520	PL2.25x0.375	1.071	1.503	65	.087	1.472	y	80	6696.061	22788	177.75	1068.75	1...H1-1a
237	M60	PL2.25x0.3...	1.071	.859	66	.108	.859	y	81	10946.255	18981	123.75	891	1...H1-1a
238	M72	PL2.25x0.375	1.070	1.414	66	.062	2.827	y	80	7559.514	22788	177.75	1068.75	1...H1-1a
239	M529	PL2.25x0.375	1.069	1.627	80	.022	3.255	y	81	5924.235	22788	177.75	1068.75	1...H1-1a
240	M636	PL2.25 x 1/...	1.069	.743	76	.311	1.372	y	76	9473.544	15201	78.75	711	1...H1-1a
241	M22	PL2.25x0.375	1.068	1.474	66	.198	1.474	y	81	6952.75	22788	177.75	1068.75	1...H1-1a
242	M525	PL2.25x0.375	1.066	1.627	81	.130	0	y	81	5924.235	22788	177.75	1068.75	1...H1-1a
243	M74	PL2.25x0.375	1.066	1.503	66	.087	1.472	y	81	6696.061	22788	177.75	1068.75	1...H1-1a
244	M540	PL2.25x0.375	1.065	1.627	80	.087	0	y	81	5924.235	22788	177.75	1068.75	1...H1-1a
245	M638	PL2.25x0.4...	1.064	1.678	76	.036	3.158	y	80	8535.498	26578.1...	242.249	1245.85	1...H1-1a
246	M55	PL2.25x0.375	1.062	1.414	66	.103	1.414	y	81	7559.514	22788	177.75	1068.75	1...H1-1a
247	M527	PL2.25x0.375	1.059	1.627	80	.049	0	y	81	5924.235	22788	177.75	1068.75	1...H1-1a
248	M94	PL2.25x0.375	1.058	1.627	80	.086	0	y	80	5924.235	22788	177.75	1068.75	1...H1-1a
249	M542	PL2.25x0.375	1.057	1.627	80	.019	0	y	81	5924.235	22788	177.75	1068.75	1...H1-1a
250	M83	PL2.25x0.375	1.057	1.627	81	.023	3.255	y	80	5924.235	22788	177.75	1068.75	1...H1-1a
251	M57	PL2.25x0.375	1.056	1.503	66	.210	0	y	80	6696.061	22788	177.75	1068.75	1...H1-1a
252	M81	PL2.25x0.375	1.049	1.627	81	.048	0	y	80	5924.235	22788	177.75	1068.75	1...H1-1a
253	M104	PL2.25x0.375	1.048	1.582	81	.694	1.582	y	81	6271.599	22788	177.75	1068.75	1...H1-1a
254	M550	PL2.25x0.375	1.047	1.582	80	.694	1.582	y	80	6271.599	22788	177.75	1068.75	1...H1-1a
255	M96	PL2.25x0.375	1.046	1.627	81	.019	0	y	80	5924.235	22788	177.75	1068.75	1...H1-1a
256	M496	PL2.25x0.3...	1.037	1.153	84	.082	0	y	81	6836.576	18981	123.75	891	1...H1-1a
257	M67	PL2.25x0.3...	1.030	1.153	83	.024	1.129	y	81	6836.576	18981	123.75	891	1...H1-1a
258	M513	PL2.25x0.3...	1.029	1.153	84	.024	1.129	y	80	6836.576	18981	123.75	891	1...H1-1a
259	M177	PL2.25x0.4...	1.029	1.678	77	.036	3.158	y	81	8535.498	26578.1...	242.249	1245.85	1...H1-1a
260	M504	PL2.25x0.3...	1.029	.797	65	.101	1.628	y	81	11809.877	18981	123.75	891	1...H1-1a
261	M58	PL2.25x0.3...	1.028	.797	66	.101	1.628	y	80	11809.877	18981	123.75	891	1...H1-1a
262	M172	PL2.25 x 1/...	1.024	.876	77	.076	.893	y	77	6092.266	15201	78.75	711	1...H1-1a
263	M175	PL2.25 x 1/...	1.024	.743	77	.304	1.372	y	77	9473.544	15201	78.75	711	1...H1-1a
264	M76	PL2.25x0.375	1.023	1.582	80	.692	1.582	y	80	6271.599	22788	177.75	1068.75	1...H1-1a
265	M522	PL2.25x0.375	1.022	1.582	81	.692	1.582	y	81	6271.599	22788	177.75	1068.75	1...H1-1a
266	M50	PL2.25x0.3...	1.021	1.153	83	.082	0	y	80	6836.576	18981	123.75	891	1...H1-1a
267	M679	L6x4x6	1.011	.66	76	.429	.33	z	76	91219.353	97470	4257.614	12792.4...	1...H2-1
268	M461	PL2.25x0.3...	.992	1.107	84	.111	0	y	81	7411.618	18981	123.75	891	1...H1-1a
269	M478	PL2.25x0.3...	.985	1.107	84	.029	1.084	y	81	7411.618	18981	123.75	891	1...H1-1a
270	M32	PL2.25x0.3...	.985	1.107	83	.029	1.084	y	80	7411.618	18981	123.75	891	1...H1-1a
271	M15	PL2.25x0.3...	.979	1.107	83	.112	0	y	80	7411.618	18981	123.75	891	1...H1-1a
272	M674	L6x4x6	.970	.66	77	.411	.991	z	77	91219.353	97470	4257.614	12792.4...	1...H2-1
273	M494	PL2.25x0.3...	.965	1.064	84	.152	0	y	80	7966.034	18981	123.75	891	1...H1-1a
274	M511	PL2.25x0.3...	.958	1.064	84	.038	1.042	y	81	7966.034	18981	123.75	891	1...H1-1a
275	M65	PL2.25x0.3...	.957	1.064	83	.038	1.042	y	80	7966.034	18981	123.75	891	1...H1-1a
276	M48	PL2.25x0.3...	.952	1.064	83	.150	0	y	81	7966.034	18981	123.75	891	1...H1-1a
277	M459	PL2.25x0.3...	.942	1.023	84	.199	0	y	81	8511.226	18981	123.75	891	1...H1-1a
278	M476	PL2.25x0.3...	.937	1.023	84	.050	1.002	y	81	8511.226	18981	123.75	891	1...H1-1a
279	M457	PL2.25x0.3...	.937	.947	84	.308	0	y	81	9558.647	18981	123.75	891	1...H1-1a
280	M30	PL2.25x0.3...	.937	1.023	83	.050	1.002	y	80	8511.226	18981	123.75	891	1...H1-1a
281	M13	PL2.25x0.3...	.930	1.023	83	.199	0	y	80	8511.226	18981	123.75	891	1...H1-1a
282	M492	PL2.25x0.3...	.930	.984	84	.194	.984	y	81	9042.588	18981	123.75	891	1...H1-1a
283	M509	PL2.25x0.3...	.928	.984	84	.064	.963	y	81	9042.588	18981	123.75	891	1...H1-1a
284	M63	PL2.25x0.3...	.927	.984	83	.064	.963	y	80	9042.588	18981	123.75	891	1...H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
285	M628	PL2.25x0.3...	.925	1.401	76 .061	2.586	y 83	6583.121	18981	123.75	891	1...	H1-1a
286	M11	PL2.25x0.3...	.924	.947	83 .307	0	y 80	9558.647	18981	123.75	891	1...	H1-1a
287	M474	PL2.25x0.3...	.919	.947	84 .081	.927	y 81	9558.647	18981	123.75	891	1...	H1-1a
288	M28	PL2.25x0.3...	.919	.947	83 .081	.927	y 80	9558.647	18981	123.75	891	1...	H1-1a
289	M87	PL2.25x0.375	.918	1.627	80 .420	0	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
290	M46	PL2.25x0.3...	.918	.984	83 .194	.984	y 80	9042.588	18981	123.75	891	1...	H1-1a
291	M533	PL2.25x0.375	.916	1.627	81 .428	0	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
292	M102	PL2.25x0.375	.916	1.627	81 .017	0	y 77	5924.235	22788	177.75	1068.75	1...	H1-1a
293	M537	PL2.25x0.375	.911	1.627	72 .224	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
294	M505	PL2.25x0.3...	.910	.845	84 .112	1.689	y 80	11000.676	18981	123.75	891	1...	H1-1a
295	M59	PL2.25x0.3...	.910	.845	83 .112	1.689	y 81	11000.676	18981	123.75	891	1...	H1-1a
296	M524	PL2.25x0.375	.897	1.627	72 .120	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
297	M167	PL2.25x0.3...	.896	1.401	77 .061	2.586	y 84	6583.121	18981	123.75	891	1...	H1-1a
298	M91	PL2.25x0.375	.895	1.627	72 .224	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
299	M507	PL2.25x0.3...	.892	.911	84 .095	.892	y 81	10058.454	18981	123.75	891	1...	H1-1a
300	M61	PL2.25x0.3...	.892	.911	83 .095	.892	y 80	10058.454	18981	123.75	891	1...	H1-1a
301	M472	PL2.25x0.3...	.890	.877	84 .108	.859	y 81	10540.079	18981	123.75	891	1...	H1-1a
302	M26	PL2.25x0.3...	.889	.877	83 .108	.859	y 80	10540.079	18981	123.75	891	1...	H1-1a
303	M548	PL2.25x0.375	.888	1.627	81 .020	0	y 76	5924.235	22788	177.75	1068.75	1...	H1-1a
304	M539	PL2.25x0.375	.883	1.627	72 .092	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
305	M502	PL2.25x0.375	.883	1.474	66 .197	1.474	y 81	6952.75	22788	177.75	1068.75	1...	H1-1a
306	M627	PL2.25x0.4...	.880	1.678	76 .051	1.711	y 80	8535.498	26578.1...	242.249	1245.85	1...	H1-1a
307	M78	PL2.25x0.375	.880	1.627	72 .121	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
308	M519	PL2.25x0.375	.871	1.474	66 .094	2.948	y 80	6952.75	22788	177.75	1068.75	1...	H1-1a
309	M73	PL2.25x0.375	.869	1.474	65 .093	2.948	y 81	6952.75	22788	177.75	1068.75	1...	H1-1a
310	M526	PL2.25x0.375	.867	1.627	72 .047	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
311	M93	PL2.25x0.375	.867	1.627	72 .092	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
312	M470	PL2.25x0.3...	.864	.814	84 .099	1.628	y 80	11441.918	18981	123.75	891	1...	H1-1a
313	M24	PL2.25x0.3...	.863	.814	83 .099	1.628	y 81	11441.918	18981	123.75	891	1...	H1-1a
314	M56	PL2.25x0.375	.857	1.474	65 .198	1.474	y 80	6952.75	22788	177.75	1068.75	1...	H1-1a
315	M541	PL2.25x0.375	.852	1.627	72 .023	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
316	M80	PL2.25x0.375	.850	1.627	72 .047	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
317	M166	PL2.25x0.4...	.849	1.678	77 .051	1.711	y 81	8535.498	26578.1...	242.249	1245.85	1...	H1-1a
318	M467	PL2.25x0.375	.849	1.414	66 .101	1.414	y 81	7559.514	22788	177.75	1068.75	1...	H1-1a
319	M634	PL2.25 x 1/...	.838	.801	76 .240	1.478	y 76	8669.579	15201	78.75	711	1...	H1-1a
320	M95	PL2.25x0.375	.836	1.627	72 .024	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
321	M484	PL2.25x0.375	.836	1.414	66 .068	2.827	y 80	7559.514	22788	177.75	1068.75	1...	H1-1a
322	M38	PL2.25x0.375	.835	1.414	65 .068	2.827	y 81	7559.514	22788	177.75	1068.75	1...	H1-1a
323	M528	PL2.25x0.375	.835	1.627	72 .021	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
324	M543	PL2.25x0.375	.822	1.627	72 .042	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
325	M21	PL2.25x0.375	.821	1.414	65 .103	1.414	y 80	7559.514	22788	177.75	1068.75	1...	H1-1a
326	M82	PL2.25x0.375	.819	1.627	72 .021	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
327	M643	PL2.25x0.3...	.816	1.301	76 .043	1.326	y 83	5510	18981	123.75	891	1...	H1-1a
328	M198	L6x4x7	.811	86.865	76 .074	85.93	z 76	105209.703	112860	4892.152	10937.7...	1	H2-1
329	M632	PL2.25 x 1/...	.805	.893	76 .148	1.649	y 76	7513.847	15201	78.75	711	1...	H1-1a
330	M173	PL2.25 x 1/...	.804	.801	77 .235	1.478	y 77	8669.579	15201	78.75	711	1...	H1-1a
331	M97	PL2.25x0.375	.801	1.627	72 .042	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
332	M616	PL2.25x0.3...	.800	1.412	76 .090	2.658	y 80	4588.416	18981	123.75	891	2...	H1-1a
333	M530	PL2.25x0.375	.797	1.627	72 .444	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
334	M145	PL2.25x0.3...	.794	1.327	80 .092	1.353	y 80	5256.024	18981	123.75	891	1...	H1-1a
335	M84	PL2.25x0.375	.794	1.627	72 .443	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
336	M155	PL2.25x0.3...	.780	1.439	77 .090	2.658	y 81	6270.415	18981	123.75	891	2...	H1-1a
337	M606	PL2.25x0.3...	.778	1.327	81 .093	1.353	y 81	5256.024	18981	123.75	891	1...	H1-1a
338	M178	PL2.25x0.4...	.777	1.678	84 .036	1.711	y 80	8535.498	26578.1...	242.249	1245.85	2...	H1-1a
339	M182	PL2.25x0.3...	.777	1.301	77 .043	1.326	y 84	5510	18981	123.75	891	1...	H1-1a
340	M639	PL2.25x0.4...	.776	1.678	83 .038	1.678	y 76	8535.498	26578.1...	242.249	1245.85	2...	H1-1a
341	M171	PL2.25 x 1/...	.775	.893	77 .145	1.649	y 77	7513.847	15201	78.75	711	1...	H1-1a



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
342	M212	L2.5x2x5	.751	2.838	84 .002	5.449	z 72	12301.91	35640	809.265	1879.815	1...	H2-1
343	M249	L2.5x2x5	.751	2.611	84 .002	0	z 71	12301.91	35640	809.265	1879.815	1...	H2-1
344	M626	PL2.25x0.4...	.743	1.678	84 .042	3.158	y 81	8535.498	26578.1...	242.249	1245.85	2...	H1-1a
345	M165	PL2.25x0.4...	.741	1.678	83 .042	3.158	y 80	8535.498	26578.1...	242.249	1245.85	2...	H1-1a
346	M641	PL2.25x0.3...	.738	1.401	76 .062	1.401	y 83	6583.121	18981	123.75	891	1...	H1-1a
347	M605	PL2.25x0.3...	.729	1.439	76 .089	1.439	y 81	6270.415	18981	123.75	891	2...	H1-1a
348	M645	PL2.25 x 1/...	.727	.893	76 .074	.893	y 76	7513.847	15201	78.75	711	2...	H1-1a
349	M199	L6x4x7	.726	2.802	83 .089	44.833	y 75	105209.703	112860	4892.152	10937.7...	1	H2-1
350	M214	L2.5x2x5	.725	2.838	84 .002	5.449	z 71	12301.91	35640	809.265	1879.815	1...	H2-1
351	M264	L2.5x2x5	.717	2.838	83 .003	0	z 72	12301.91	35640	809.265	1879.815	1...	H2-1
352	M180	PL2.25x0.3...	.715	1.401	77 .062	1.401	y 84	6583.121	18981	123.75	891	1...	H1-1a
353	M266	L2.5x2x5	.715	2.838	83 .002	0	z 71	12301.91	35640	809.265	1879.815	1...	H2-1
354	M216	L2.5x2x5	.712	2.838	84 .002	5.449	z 71	12302.09	35640	809.265	1879.817	1...	H2-1
355	M144	PL2.25x0.3...	.710	1.439	77 .089	1.439	y 80	6270.415	18981	123.75	891	2...	H1-1a
356	M184	PL2.25 x 1/...	.709	.893	77 .072	.893	y 77	7513.847	15201	78.75	711	2...	H1-1a
357	M469	PL2.25x0.375	.695	1.472	81 .217	0	y 80	7204.703	22788	177.75	1068.75	1...	H1-1a
358	M23	PL2.25x0.375	.691	1.472	80 .214	0	y 81	7204.703	22788	177.75	1068.75	1...	H1-1a
359	M251	L2.5x2x5	.689	2.611	84 .003	0	z 71	12301.91	35640	809.265	1879.815	1...	H2-1
360	M579	L2.5x2.5x5	.681	2.689	81 .006	0	z 76	16679.435	39420	1096.767	2456.949	1...	H2-1
361	M133	L2.5x2.5x5	.677	2.689	80 .007	0	y 77	16679.435	39420	1096.767	2456.949	1...	H2-1
362	M227	L2.5x2x5	.669	2.611	83 .003	0	z 71	12301.91	35640	809.265	1879.815	1...	H2-1
363	M119	PL2.25x0.375	.659	1.627	81 .224	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
364	M565	PL2.25x0.375	.658	1.627	80 .225	1.627	y 80	5924.235	22788	177.75	1068.75	1.4	H1-1a
365	M229	L2.5x2x5	.654	2.611	83 .002	5.449	z 72	12301.91	35640	809.265	1879.815	1...	H2-1
366	M253	L2.5x2x5	.649	2.611	84 .003	0	z 71	12302.09	35640	809.265	1879.817	1...	H2-1
367	M225	L2.5x2x5	.647	2.611	83 .003	5.449	z 72	12302.09	35640	809.265	1879.817	1...	H2-1
368	M40	PL2.25x0.375	.645	1.503	83 .082	1.472	y 80	6696.061	22788	177.75	1068.75	1...	H1-1a
369	M486	PL2.25x0.375	.643	1.503	84 .084	1.472	y 81	6696.061	22788	177.75	1068.75	1...	H1-1a
370	M619	PL2.25x0.3...	.641	1.327	76 .077	1.327	y 76	5256.024	18981	123.75	891	1...	H1-1a
371	M274	L2.5x2.5x5	.634	3.122	65 .002	5.449	y 84	17522.255	39420	1096.767	2468.79	1...	H2-1
372	M158	PL2.25x0.3...	.627	1.327	77 .075	1.327	y 77	5256.024	18981	123.75	891	1...	H1-1a
373	M220	L2.5x2x5	.621	2.838	84 .003	5.449	z 71	12301.91	35640	809.265	1879.815	1...	H2-1
374	M272	L2.5x2.5x5	.619	3.122	65 .002	0	y 84	17522.048	39420	1096.767	2468.787	1...	H2-1
375	M223	L2.5x2x5	.617	2.611	83 .002	0	z 72	12301.91	35640	809.265	1879.815	1...	H2-1
376	M241	L2.5x2.5x5	.610	2.327	66 .002	0	y 83	17522.255	39420	1096.767	2468.79	1...	H2-1
377	M270	L2.5x2.5x5	.609	3.122	65 .002	0	y 84	17522.048	39420	1096.767	2468.787	1...	H2-1
378	M237	L2.5x2.5x5	.607	2.327	65 .002	0	y 84	17522.255	39420	1096.767	2468.79	1...	H2-1
379	M218	L2.5x2x5	.601	2.838	84 .003	5.449	z 72	12301.91	35640	809.265	1879.815	1...	H2-1
380	M221	L2.5x2x5	.597	2.611	83 .003	0	z 71	12301.91	35640	809.265	1879.815	1...	H2-1
381	M558	PL2.25x0.375	.593	1.627	80 .449	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
382	M112	PL2.25x0.375	.592	1.627	81 .447	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
383	M276	L2.5x2.5x5	.589	3.518	65 .003	0	y 83	18428.357	39420	1096.767	2481.474	1...	H2-1
384	M204	L2.5x2.5x5	.580	2.838	84 .002	5.449	y 83	17522.255	39420	1096.767	2468.79	1...	H2-1
385	M239	L2.5x2.5x5	.578	1.759	66 .003	0	y 77	18428.357	39420	1096.767	2481.474	1...	H2-1
386	M260	L2.5x2x5	.578	2.838	83 .003	5.449	z 71	12301.91	35640	809.265	1879.815	1...	H2-1
387	M258	L2.5x2x5	.576	2.838	83 .003	5.449	z 72	12301.91	35640	809.265	1879.815	1...	H2-1
388	M277	L2.5x2.5x5	.574	1.759	65 .002	5.277	y 84	18428.357	39420	1096.767	2481.474	1...	H2-1
389	M243	L2.5x2.5x5	.574	2.327	66 .002	0	y 83	17522.048	39420	1096.767	2468.787	1...	H2-1
390	M259	L2.5x2x5	.572	2.611	84 .002	0	z 72	12302.09	35640	809.265	1879.817	1...	H2-1
391	M235	L2.5x2.5x5	.571	2.611	83 .002	5.449	y 84	17522.048	39420	1096.767	2468.787	1...	H2-1
392	M206	L2.5x2.5x5	.570	2.838	84 .002	0	y 83	17522.048	39420	1096.767	2468.787	1...	H2-1
393	M233	L2.5x2.5x5	.566	2.327	65 .002	0	z 72	17522.048	39420	1096.767	2468.787	1...	H2-1
394	M262	L2.5x2x5	.566	2.838	83 .003	5.449	z 72	12302.09	35640	809.265	1879.817	1...	H2-1
395	M245	L2.5x2.5x5	.565	2.611	84 .002	0	y 83	17522.048	39420	1096.767	2468.787	1...	H2-1
396	M580	L2.5x2.5x5	.564	2.806	84 .008	0	y 76	16679.435	39420	1096.767	2456.949	1...	H2-1
397	M257	L2.5x2x5	.561	2.611	84 .003	0	z 71	12301.91	35640	809.265	1879.815	1...	H2-1
398	M134	L2.5x2.5x5	.561	2.806	83 .006	0	z 77	16679.435	39420	1096.767	2456.949	1...	H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 6 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC	Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [	phi*Mn y...	phi*Mn z...	Cb	Eqn
399	M208	L2.5x2.5x5	.557	2.838	84	.002	5.449	y	83	17522.048	39420	1096.767	2468.787	1...	H2-1
400	M256	L2.5x2x5	.557	2.838	83	.003	5.449	z	71	12302.09	35640	809.265	1879.817	1...	H2-1
401	M255	L2.5x2x5	.551	2.611	84	.003	0	z	71	12301.91	35640	809.265	1879.815	1...	H2-1
402	M247	L2.5x2.5x5	.551	2.611	84	.002	5.449	y	83	17522.255	39420	1096.767	2468.79	1...	H2-1
403	M210	L2.5x2.5x5	.546	2.838	84	.002	5.449	y	83	17522.255	39420	1096.767	2468.79	1...	H2-1
404	M222	L2.5x2x5	.541	2.838	84	.003	5.449	z	72	12302.09	35640	809.265	1879.817	1...	H2-1
405	M202	L2.5x2.5x5	.540	3.518	66	.003	0	y	83	18428.357	39420	1096.767	2481.474	1...	H2-1
406	M268	L2.5x2.5x5	.537	2.838	83	.002	0	y	84	17522.255	39420	1096.767	2468.79	1...	H2-1
407	M224	L2.5x2x5	.513	2.838	84	.002	5.449	z	72	12301.91	35640	809.265	1879.815	1...	H2-1
408	M261	L2.5x2x5	.511	2.611	84	.003	0	z	72	12301.91	35640	809.265	1879.815	1...	H2-1
409	M604	PL2.25x0.3...	.510	1.439	81	.042	1.439	y	76	6270.415	18981	123.75	891	2...	H1-1b
410	M143	PL2.25x0.3...	.508	1.439	80	.041	1.439	y	77	6270.415	18981	123.75	891	2...	H1-1b
411	M88	PL2.25x0.375	.503	1.627	77	.022	1.627	y	77	5924.235	22788	177.75	1068.75	1...	H1-1a
412	M226	L2.5x2x5	.500	2.838	84	.002	0	z	71	12301.91	35640	809.265	1879.815	1...	H2-1
413	M615	PL2.25x0.4...	.500	1.73	76	.061	3.256	y	80	7996.165	26578.1...	242.249	1245.85	1...	H1-1a
414	M534	PL2.25x0.375	.499	1.627	76	.021	1.627	y	76	5924.235	22788	177.75	1068.75	1...	H1-1a
415	M228	L2.5x2x5	.498	2.838	84	.002	5.449	z	71	12302.09	35640	809.265	1879.817	1...	H2-1
416	M154	PL2.25x0.4...	.491	1.73	77	.061	3.256	y	81	7996.165	26578.1...	242.249	1245.85	1...	H1-1a
417	M106	PL2.25x0.375	.490	1.627	81	.120	1.627	y	80	5924.235	22788	177.75	1068.75	1...	H1-1a
418	M552	PL2.25x0.375	.489	1.627	80	.121	1.627	y	81	5924.235	22788	177.75	1068.75	1...	H1-1a
419	M254	L2.5x2x5	.485	2.838	83	.002	0	z	71	12301.91	35640	809.265	1879.815	1...	H2-1
420	M263	L2.5x2x5	.477	2.611	84	.002	0	z	72	12301.91	35640	809.265	1879.815	1...	H2-1
421	M547	PL2.25x0.375	.474	1.627	76	.029	1.627	y	81	5924.235	22788	177.75	1068.75	1...	H1-1a
422	M413	PL2.25x0.3...	.473	2.795	84	.003	2.795	y	77	1149.04	18984.3...	123.597	889.893	1...	H1-1a
423	M217	L2.5x2x5	.470	2.611	83	.002	0	z	72	12301.91	35640	809.265	1879.815	1...	H2-1
424	M231	L2.5x2.5x5	.467	2.611	83	.002	0	y	84	17522.255	39420	1096.767	2468.79	1...	H2-1
425	M156	PL2.25x0.3...	.466	1.439	80	.092	2.658	y	80	6270.415	18981	123.75	891	2...	H1-1b
426	M252	L2.5x2x5	.464	2.838	83	.002	5.449	z	72	12301.91	35640	809.265	1879.815	1...	H2-1
427	M617	PL2.25x0.3...	.462	1.439	81	.092	2.658	y	81	6270.415	18981	123.75	891	2...	H1-1b
428	M575	PL2.25x0.375	.461	1.627	80	.063	1.661	y	80	5924.235	22788	177.75	1068.75	1...	H1-1a
429	M215	L2.5x2x5	.454	2.611	83	.002	0	z	71	12301.91	35640	809.265	1879.815	1...	H2-1
430	M213	L2.5x2x5	.445	2.611	83	.002	0	z	72	12302.09	35640	809.265	1879.817	1...	H2-1
431	M219	L2.5x2x5	.445	2.611	83	.003	0	z	71	12302.09	35640	809.265	1879.817	1...	H2-1
432	M618	PL2.25x0.3...	.440	1.327	76	.099	2.45	y	80	5256.024	18981	123.75	891	2...	H1-1a
433	M230	L2.5x2x5	.439	2.838	84	.003	0	z	72	12301.91	35640	809.265	1879.815	1...	H2-1
434	M129	PL2.25x0.375	.434	1.627	81	.060	1.627	y	81	5924.235	22788	177.75	1068.75	1...	H1-1a
435	M153	PL2.25x0.4...	.427	1.73	80	.044	3.256	y	80	7996.165	26578.1...	242.249	1245.85	1...	H1-1a
436	M614	PL2.25x0.4...	.423	1.73	81	.044	3.256	y	81	7996.165	26578.1...	242.249	1245.85	1...	H1-1a
437	M211	L2.5x2x5	.421	2.611	83	.002	0	z	71	12301.91	35640	809.265	1879.815	1...	H2-1
438	M121	PL2.25x0.375	.412	1.627	81	.091	1.627	y	81	5924.235	22788	177.75	1068.75	1...	H1-1a
439	M567	PL2.25x0.375	.411	1.627	80	.091	1.627	y	80	5924.235	22788	177.75	1068.75	1...	H1-1a
440	M265	L2.5x2x5	.410	2.611	84	.002	5.449	z	72	12302.09	35640	809.265	1879.817	1...	H2-1
441	M157	PL2.25x0.3...	.408	1.327	77	.098	2.45	y	81	5256.024	18981	123.75	891	2...	H1-1a
442	M267	L2.5x2x5	.407	2.611	84	.002	0	z	71	12301.91	35640	809.265	1879.815	1...	H2-1
443	M670	L2.5x2.5x5	.396	2.005	76	.062	2.005	z	76	33235.431	39420	1096.767	2551.08	2...	H2-1
444	M672	L2.5x2.5x5	.391	2.005	77	.059	2.005	y	77	33235.431	39420	1096.767	2551.08	2...	H2-1
445	M250	L2.5x2x5	.387	2.838	83	.002	5.449	z	72	12302.09	35640	809.265	1879.817	1...	H2-1
446	M554	PL2.25x0.375	.386	1.627	81	.046	1.627	y	80	5924.235	22788	177.75	1068.75	1...	H1-1a
447	M248	L2.5x2x5	.383	2.838	83	.002	5.449	z	71	12301.91	35640	809.265	1879.815	1...	H2-1
448	M108	PL2.25x0.375	.383	1.627	81	.046	1.627	y	81	5924.235	22788	177.75	1068.75	1...	H1-1a
449	M569	PL2.25x0.375	.377	1.627	81	.021	1.627	y	81	5924.235	22788	177.75	1068.75	1...	H1-1a
450	M101	PL2.25x0.375	.375	1.627	80	.029	1.627	y	80	5924.235	22788	177.75	1068.75	1...	H1-1a
451	M123	PL2.25x0.375	.373	1.627	80	.021	1.627	y	80	5924.235	22788	177.75	1068.75	1...	H1-1a
452	M556	PL2.25x0.375	.370	1.627	81	.021	1.627	y	80	5924.235	22788	177.75	1068.75	1...	H1-1a
453	M110	PL2.25x0.375	.366	1.627	80	.020	1.627	y	81	5924.235	22788	177.75	1068.75	1...	H1-1a
454	M125	PL2.25x0.375	.362	1.627	81	.044	1.627	y	81	5924.235	22788	177.75	1068.75	1...	H1-1a
455	M571	PL2.25x0.375	.362	1.627	81	.044	1.627	y	80	5924.235	22788	177.75	1068.75	1...	H1-1a



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 6 Structure

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Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
456	M280	L2.5x1.25x5	.341	1.395	77 .005	2.79	z 84	14342.333	29003.9...	340.889	1440.76	1...	H2-1
457	M424	PL2.25x0.3...	.318	2.795	83 .003	0	z 83	1149.04	18984.3...	123.597	745.551	1...	H1-1b
458	M431	PL2.25x0.3...	.313	2.795	83 .003	5.59	z 83	1149.04	18984.3...	123.597	889.893	1...	H1-1b
459	M275	L2.5x2.5x5	.309	2.781	65 .002	0	y 83	17522.048	39420	1096.767	2468.787	1...	H2-1
460	M238	L2.5x2.5x5	.304	2.725	83 .002	0	y 83	17522.048	39420	1096.767	2468.787	1...	H2-1
461	M240	L2.5x2.5x5	.304	2.725	84 .002	0	y 84	17522.048	39420	1096.767	2468.787	1...	H2-1
462	M400	PL2.25x0.3...	.303	2.795	84 .003	0	z 84	1149.04	18984.3...	123.597	887.877	1...	H1-1b
463	M562	PL2.25x0.375	.302	1.627	81 .056	1.627	y 80	5924.235	22788	177.75	1068.75	1...	H1-1a
464	M116	PL2.25x0.375	.297	1.627	80 .056	1.627	y 81	5924.235	22788	177.75	1068.75	1...	H1-1a
465	M407	PL2.25x0.3...	.295	2.795	83 .003	0	z 84	1149.04	18984.3...	123.597	889.893	1...	H1-1b
466	M273	L2.5x2.5x5	.292	2.725	83 .002	0	y 83	17522.048	39420	1096.767	2468.787	1...	H2-1
467	M203	L2.5x2.5x5	.292	2.725	84 .002	5.449	y 84	17522.048	39420	1096.767	2468.787	1...	H2-1
468	M412	PL2.25x0.3...	.290	2.795	84 .003	2.795	y 77	1149.04	18984.3...	123.597	889.893	1...	H1-1b
469	M271	L2.5x2.5x5	.290	2.725	83 .002	0	y 83	17522.255	39420	1096.767	2468.79	1...	H2-1
470	M242	L2.5x2.5x5	.289	2.725	84 .002	5.449	y 84	17522.048	39420	1096.767	2468.787	1...	H2-1
471	M236	L2.5x2.5x5	.289	2.725	83 .002	5.449	y 83	17522.048	39420	1096.767	2468.787	1...	H2-1
472	M425	PL2.25x0.3...	.288	2.795	84 .003	5.59	z 83	1149.04	18984.3...	123.597	858.746	1...	H1-1b
473	M209	L2.5x2.5x5	.285	2.611	83 .002	0	y 84	17522.048	39420	1096.767	2468.787	1...	H2-1
474	M418	PL2.25x0.3...	.285	2.795	84 .003	5.59	z 83	1149.04	18984.3...	123.597	880.527	1...	H1-1b
475	M419	PL2.25x0.3...	.284	2.795	83 .003	0	z 83	1149.04	18984.3...	123.597	688.157	1...	H1-1b
476	M406	PL2.25x0.3...	.279	2.795	84 .003	2.795	y 77	1149.04	18984.3...	123.597	773.337	1...	H1-1b
477	M401	PL2.25x0.3...	.278	2.795	83 .003	5.59	z 84	1149.04	18984.3...	123.597	889.893	1...	H1-1b
478	M244	L2.5x2.5x5	.278	2.725	84 .002	5.449	y 84	17522.255	39420	1096.767	2468.79	1...	H2-1
479	M430	PL2.25x0.3...	.278	2.795	84 .003	0	z 83	1149.04	18984.3...	123.597	889.893	1...	H1-1b
480	M205	L2.5x2.5x5	.277	2.725	84 .002	0	y 84	17522.048	39420	1096.767	2468.787	1...	H2-1
481	M234	L2.5x2.5x5	.276	2.725	83 .002	5.449	y 83	17522.255	39420	1096.767	2468.79	1...	H2-1
482	M207	L2.5x2.5x5	.275	2.725	84 .002	5.449	y 84	17522.255	39420	1096.767	2468.79	1...	H2-1
483	M246	L2.5x2.5x5	.273	2.725	84 .002	0	y 84	17522.048	39420	1096.767	2468.787	1...	H2-1
484	M340	L2.5x1.25x5	.264	1.413	71 .004	2.886	y 81	13653.181	29003.9...	340.889	1494.276	1...	H2-1
485	M232	L2.5x2.5x5	.261	2.838	84 .002	5.449	y 83	17522.048	39420	1096.767	2468.787	1...	H2-1
486	M269	L2.5x2.5x5	.257	2.725	83 .002	5.449	y 83	17522.048	39420	1096.767	2468.787	1...	H2-1
487	M341	L2.5x1.25x5	.244	1.413	72 .004	2.886	y 81	13652.469	29003.9...	340.889	1494.276	1...	H2-1
488	M342	L2.5x1.25x5	.237	1.414	71 .003	0	y 81	13646.766	29003.9...	340.889	1494.276	1...	H2-1
489	M394	L2.5x1.25x5	.234	1.473	72 .003	0	y 77	13652.647	29003.9...	340.889	1494.276	1...	H2-1
490	M344	L2.5x1.25x5	.228	1.414	71 .003	0	y 81	13646.766	29003.9...	340.889	1494.276	1...	H2-1
491	M343	L2.5x1.25x5	.228	1.414	72 .003	2.887	y 81	13646.41	29003.9...	340.889	1494.276	1...	H2-1
492	M338	L2.5x1.25x5	.226	1.331	72 .004	0	z 83	14441.746	29003.9...	340.889	1494.276	1...	H2-1
493	M393	L2.5x1.25x5	.224	1.473	71 .002	0	y 81	13652.825	29003.9...	340.889	1494.276	1...	H2-1
494	M346	L2.5x1.25x5	.210	1.414	71 .002	0	z 84	13646.41	29003.9...	340.889	1494.276	1...	H2-1
495	M345	L2.5x1.25x5	.210	1.414	72 .002	0	z 84	13646.766	29003.9...	340.889	1494.276	1...	H2-1
496	M391	L2.5x1.25x5	.208	1.474	71 .002	2.887	z 83	13646.41	29003.9...	340.889	1494.276	1...	H2-1
497	M392	L2.5x1.25x5	.207	1.474	72 .002	2.887	z 84	13646.766	29003.9...	340.889	1494.276	1...	H2-1
498	M395	L2.5x1.25x5	.207	1.417	71 .006	2.777	y 81	14441.904	29003.9...	340.889	1494.276	1...	H2-1
499	M337	L2.5x1.25x5	.203	1.388	76 .003	2.777	z 83	14441.746	29003.9...	340.889	1441.708	1...	H2-1
500	M282	L2.5x1.25x5	.201	1.413	72 .003	0	y 77	13652.647	29003.9...	340.889	1434.176	1...	H2-1
501	M390	L2.5x1.25x5	.199	1.474	72 .002	2.887	z 84	13646.766	29003.9...	340.889	1494.276	1...	H2-1
502	M347	L2.5x1.25x5	.199	1.414	72 .002	0	z 84	13646.766	29003.9...	340.889	1494.276	1...	H2-1
503	M660	L2.5x1.25x5	.198	1.393	71 .012	2.844	y 65	13953.051	29003.9...	340.889	1494.276	1...	H2-1
504	M661	L2.5x2.5x5	.198	2.661	76 .006	0	y 76	18763.279	39420	1096.767	2486.157	1...	H2-1
505	M348	L2.5x1.25x5	.192	1.414	71 .002	0	z 84	13646.41	29003.9...	340.889	1494.276	1...	H2-1
506	M283	L2.5x1.25x5	.190	1.413	71 .002	2.886	y 77	13652.825	29003.9...	340.889	1434.178	1...	H2-1
507	M284	L2.5x1.25x5	.190	1.414	72 .002	0	z 83	13646.766	29003.9...	340.889	1434.12	1...	H2-1
508	M389	L2.5x1.25x5	.190	1.474	71 .002	2.887	z 84	13646.766	29003.9...	340.889	1494.276	1...	H2-1
509	M336	L2.5x1.25x5	.189	1.473	71 .003	0	y 76	13653.181	29003.9...	340.889	1434.182	1...	H2-1
510	M335	L2.5x1.25x5	.189	1.473	72 .002	0	y 76	13652.469	29003.9...	340.889	1434.175	1...	H2-1
511	M279	L2.5x2.5x5	.186	2.553	77 .007	5.214	y 77	18763.279	39420	1096.767	2486.157	1...	H2-1
512	M388	L2.5x1.25x5	.180	1.474	72 .002	0	z 83	13646.41	29003.9...	340.889	1494.276	1...	H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 6 Structure

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn
513	M334	L2.5x1.25x5	.179	1.474	71	.002	2.887	z 84	13646.766	29003.9...	340.889	1434.12	1... H2-1
514	M356	L2.5x1.25x5	.178	1.444	76	.002	2.887	z 84	13646.766	29003.9...	340.889	1494.276	1... H2-1
515	M387	L2.5x1.25x5	.178	1.474	71	.002	2.887	z 83	13646.766	29003.9...	340.889	1494.276	1... H2-1
516	M659	L2.5x1.25x5	.178	1.395	76	.005	2.79	z 83	14342.333	29003.9...	340.889	1440.76	1... H2-1
517	M281	L2.5x1.25x5	.178	1.331	71	.003	0	z 84	14441.904	29003.9...	340.889	1441.709	1... H2-1
518	M285	L2.5x1.25x5	.178	1.414	71	.002	0	z 84	13646.41	29003.9...	340.889	1434.117	1... H2-1
519	M333	L2.5x1.25x5	.176	1.474	72	.002	2.887	z 83	13646.41	29003.9...	340.889	1434.117	1... H2-1
520	M286	L2.5x1.25x5	.175	1.414	72	.002	0	z 83	13646.766	29003.9...	340.889	1434.12	1... H2-1
521	M339	L2.5x1.25x5	.174	1.422	76	.012	0	y 66	13953.051	29003.9...	340.889	1494.276	1... H2-1
522	M349	L2.5x1.25x5	.172	1.414	72	.002	2.887	z 84	13646.766	29003.9...	340.889	1494.276	1... H2-1
523	M354	L2.5x1.25x5	.167	1.444	76	.003	0	z 83	13646.766	29003.9...	340.889	1494.276	1... H2-1
524	M287	L2.5x1.25x5	.166	1.414	71	.002	2.887	z 83	13646.766	29003.9...	340.889	1434.12	1... H2-1
525	M374	L2.5x1.25x5	.166	1.444	76	.002	2.887	z 83	13646.766	29003.9...	340.889	1494.276	1... H2-1
526	M377	L2.5x1.25x5	.166	1.444	77	.002	0	z 84	13646.41	29003.9...	340.889	1494.276	1... H2-1
527	M386	L2.5x1.25x5	.166	1.474	72	.002	2.887	z 83	13646.41	29003.9...	340.889	1494.276	1... H2-1
528	M385	L2.5x1.25x5	.165	1.474	71	.002	0	z 83	13646.695	29003.9...	340.889	1494.276	1... H2-1
529	M331	L2.5x1.25x5	.164	1.474	72	.002	0	z 84	13646.766	29003.9...	340.889	1434.12	1... H2-1
530	M332	L2.5x1.25x5	.163	1.474	71	.002	0	z 84	13646.766	29003.9...	340.889	1434.12	1... H2-1
531	M288	L2.5x1.25x5	.163	1.414	72	.002	2.887	z 84	13646.41	29003.9...	340.889	1434.117	1... H2-1
532	M368	L2.5x1.25x5	.162	1.444	76	.002	0	z 84	13646.41	29003.9...	340.889	1494.276	1... H2-1
533	M352	L2.5x1.25x5	.161	1.444	76	.002	2.887	z 84	13646.41	29003.9...	340.889	1494.276	1... H2-1
534	M379	L2.5x1.25x5	.160	1.444	77	.002	2.887	z 83	13646.41	29003.9...	340.889	1494.276	1... H2-1
535	M365	L2.5x1.25x5	.160	1.444	77	.002	2.887	y 76	13646.766	29003.9...	340.889	1494.276	1... H2-1
536	M662	L2.5x2.5x5	.160	2.607	83	.008	5.214	y 76	18763.279	39420	1096.767	2486.157	1... H2-1
537	M381	L2.5x1.25x5	.160	1.444	77	.002	2.887	z 84	13646.766	29003.9...	340.889	1494.276	1... H2-1
538	M359	L2.5x1.25x5	.157	1.444	77	.003	2.887	z 84	13646.41	29003.9...	340.889	1494.276	1... H2-1
539	M278	L2.5x2.5x5	.156	2.607	84	.005	5.214	y 77	18763.279	39420	1096.767	2486.157	1... H2-1
540	M383	L2.5x1.25x5	.154	1.444	77	.002	0	z 83	13646.766	29003.9...	340.889	1494.276	1... H2-1
541	M384	L2.5x1.25x5	.153	1.474	72	.002	2.887	z 83	13646.481	29003.9...	340.889	1494.276	1... H2-1
542	M330	L2.5x1.25x5	.152	1.474	71	.002	0	z 83	13646.41	29003.9...	340.889	1434.117	1... H2-1
543	M373	L2.5x1.25x5	.152	1.444	77	.002	2.887	z 83	13646.41	29003.9...	340.889	1494.276	1... H2-1
544	M358	L2.5x1.25x5	.150	1.444	76	.002	0	z 83	13646.766	29003.9...	340.889	1494.276	1... H2-1
545	M372	L2.5x1.25x5	.149	1.444	76	.002	2.887	z 83	13646.766	29003.9...	340.889	1494.276	1... H2-1
546	M350	L2.5x1.25x5	.149	1.444	76	.003	2.887	z 84	13646.41	29003.9...	340.889	1494.276	1... H2-1
547	M289	L2.5x1.25x5	.149	1.414	71	.002	0	z 83	13646.766	29003.9...	340.889	1434.12	1... H2-1
548	M329	L2.5x1.25x5	.149	1.474	72	.002	0	z 84	13646.766	29003.9...	340.889	1434.12	1... H2-1
549	M290	L2.5x1.25x5	.148	1.414	72	.002	0	z 83	13646.41	29003.9...	340.889	1434.117	1... H2-1
550	M321	L2.5x1.25x5	.147	1.444	76	.003	0	z 84	13646.41	29003.9...	340.889	1434.117	1... H2-1
551	M360	L2.5x1.25x5	.147	1.444	76	.003	0	z 84	13646.766	29003.9...	340.889	1494.276	1... H2-1
552	M363	L2.5x1.25x5	.146	1.444	77	.002	2.887	z 84	13646.766	29003.9...	340.889	1494.276	1... H2-1
553	M378	L2.5x1.25x5	.146	1.444	76	.002	2.887	z 83	13646.766	29003.9...	340.889	1494.276	1... H2-1
554	M366	L2.5x1.25x5	.145	1.444	76	.002	0	z 83	13646.41	29003.9...	340.889	1494.276	1... H2-1
555	M370	L2.5x1.25x5	.145	1.444	76	.003	2.887	z 83	13646.41	29003.9...	340.889	1494.276	1... H2-1
556	M361	L2.5x1.25x5	.144	1.444	77	.002	2.887	z 83	13646.41	29003.9...	340.889	1494.276	1... H2-1
557	M380	L2.5x1.25x5	.142	1.444	76	.002	0	z 83	13646.766	29003.9...	340.889	1494.276	1... H2-1
558	M351	L2.5x1.25x5	.142	1.414	72	.003	0	z 84	13646.766	29003.9...	340.889	1494.276	1... H2-1
559	M382	L2.5x1.25x5	.141	1.444	76	.002	0	z 83	13646.41	29003.9...	340.889	1494.276	1... H2-1
560	M319	L2.5x1.25x5	.140	1.444	76	.003	0	y 75	13646.41	29003.9...	340.889	1434.117	1... H2-1
561	M325	L2.5x1.25x5	.140	1.444	76	.003	2.887	z 84	13646.766	29003.9...	340.889	1434.12	1... H2-1
562	M375	L2.5x1.25x5	.139	1.444	77	.002	0	z 83	13646.41	29003.9...	340.889	1494.276	1... H2-1
563	M364	L2.5x1.25x5	.139	1.444	76	.002	0	z 84	13646.41	29003.9...	340.889	1494.276	1... H2-1
564	M298	L2.5x1.25x5	.138	1.444	77	.002	2.887	y 77	13646.766	29003.9...	340.889	1434.12	1... H2-1
565	M291	L2.5x1.25x5	.137	1.414	71	.002	0	z 83	13646.695	29003.9...	340.889	1434.119	1... H2-1
566	M292	L2.5x1.25x5	.137	1.414	72	.002	0	z 83	13646.481	29003.9...	340.889	1434.117	1... H2-1
567	M296	L2.5x1.25x5	.136	1.444	77	.002	2.887	z 83	13646.766	29003.9...	340.889	1434.12	1... H2-1
568	M303	L2.5x1.25x5	.134	1.444	76	.002	0	z 83	13646.41	29003.9...	340.889	1434.117	1... H2-1
569	M328	L2.5x1.25x5	.134	1.474	71	.002	0	z 84	13646.41	29003.9...	340.889	1434.117	1... H2-1



Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [k]	phi*Mn y	phi*Mn z	Cb	Eqn
570	M307	L2.5x1.25x5	.133	1.444	76 .003	2.887	y 75	13646.766	29003.9...	340.889	1434.12	1...	H2-1
571	M299	L2.5x1.25x5	.133	1.444	76 .003	2.887	z 84	13646.41	29003.9...	340.889	1434.117	1...	H2-1
572	M314	L2.5x1.25x5	.133	1.444	77 .002	2.887	z 83	13646.766	29003.9...	340.889	1434.12	1...	H2-1
573	M312	L2.5x1.25x5	.133	1.444	77 .002	2.887	z 84	13646.41	29003.9...	340.889	1434.117	1...	H2-1
574	M316	L2.5x1.25x5	.132	1.444	77 .003	0	z 84	13646.766	29003.9...	340.889	1434.12	1...	H2-1
575	M355	L2.5x1.25x5	.132	1.444	77 .003	2.887	z 84	13646.41	29003.9...	340.889	1494.276	1...	H2-1
576	M294	L2.5x1.25x5	.129	1.444	77 .002	0	z 83	13646.41	29003.9...	340.889	1434.117	1...	H2-1
577	M317	L2.5x1.25x5	.128	1.444	76 .003	0	z 84	13646.41	29003.9...	340.889	1434.117	1...	H2-1
578	M304	L2.5x1.25x5	.128	1.444	77 .002	0	z 83	13646.766	29003.9...	340.889	1434.12	1...	H2-1
579	M315	L2.5x1.25x5	.128	1.444	76 .002	2.887	z 83	13646.41	29003.9...	340.889	1434.117	1...	H2-1
580	M301	L2.5x1.25x5	.128	1.444	76 .003	0	z 83	13646.41	29003.9...	340.889	1434.117	1...	H2-1
581	M369	L2.5x1.25x5	.128	1.444	77 .003	0	y 75	13646.766	29003.9...	340.889	1494.276	1...	H2-1
582	M357	L2.5x1.25x5	.127	1.444	77 .003	2.887	y 75	13646.41	29003.9...	340.889	1494.276	1...	H2-1
583	M310	L2.5x1.25x5	.127	1.444	77 .003	2.887	z 83	13646.41	29003.9...	340.889	1434.117	1...	H2-1
584	M305	L2.5x1.25x5	.127	1.444	76 .003	0	z 84	13646.766	29003.9...	340.889	1434.12	1...	H2-1
585	M362	L2.5x1.25x5	.127	1.444	76 .002	0	z 83	13646.766	29003.9...	340.889	1494.276	1...	H2-1
586	M302	L2.5x1.25x5	.126	1.444	77 .002	0	z 83	13646.766	29003.9...	340.889	1434.12	1...	H2-1
587	M295	L2.5x1.25x5	.126	1.444	76 .002	2.887	z 83	13646.766	29003.9...	340.889	1434.12	1...	H2-1
588	M327	L2.5x1.25x5	.125	1.474	72 .002	0	z 83	13646.766	29003.9...	340.889	1434.12	1...	H2-1
589	M353	L2.5x1.25x5	.125	1.414	72 .002	2.887	z 83	13646.766	29003.9...	340.889	1494.276	1...	H2-1
590	M293	L2.5x1.25x5	.124	1.414	71 .002	2.887	z 83	13646.766	29003.9...	340.889	1434.12	1...	H2-1
591	M323	L2.5x1.25x5	.124	1.444	76 .002	2.887	z 83	13646.766	29003.9...	340.889	1434.12	1...	H2-1
592	M367	L2.5x1.25x5	.123	1.444	77 .002	0	z 83	13646.766	29003.9...	340.889	1494.276	1...	H2-1
593	M297	L2.5x1.25x5	.123	1.444	76 .002	2.887	z 84	13646.41	29003.9...	340.889	1434.117	1...	H2-1
594	M313	L2.5x1.25x5	.119	1.444	76 .002	0	z 84	13646.766	29003.9...	340.889	1434.12	1...	H2-1
595	M300	L2.5x1.25x5	.119	1.444	77 .002	0	z 83	13646.766	29003.9...	340.889	1434.12	1...	H2-1
596	M371	L2.5x1.25x5	.116	1.444	77 .003	2.887	z 84	13646.766	29003.9...	340.889	1494.276	1...	H2-1
597	M309	L2.5x1.25x5	.116	1.444	76 .002	0	z 83	13646.766	29003.9...	340.889	1434.12	1...	H2-1
598	M376	L2.5x1.25x5	.115	1.444	76 .002	0	z 83	13646.766	29003.9...	340.889	1494.276	1...	H2-1
599	M308	L2.5x1.25x5	.113	1.444	77 .003	0	z 84	13646.41	29003.9...	340.889	1434.117	1...	H2-1
600	M318	L2.5x1.25x5	.112	1.444	77 .003	2.887	z 83	13646.766	29003.9...	340.889	1434.12	1...	H2-1
601	M322	L2.5x1.25x5	.112	1.444	77 .003	2.887	z 83	13646.766	29003.9...	340.889	1434.12	1...	H2-1
602	M326	L2.5x1.25x5	.112	1.474	71 .003	0	z 84	13646.41	29003.9...	340.889	1434.117	1...	H2-1
603	M324	L2.5x1.25x5	.110	1.474	71 .002	0	z 83	13646.41	29003.9...	340.889	1434.117	1...	H2-1
604	M306	L2.5x1.25x5	.109	1.444	77 .003	2.887	z 84	13646.41	29003.9...	340.889	1434.117	1...	H2-1
605	M311	L2.5x1.25x5	.108	1.444	76 .002	2.887	z 83	13646.766	29003.9...	340.889	1434.12	1...	H2-1
606	M671	L2.5x2.5x5	.104	1.25	65 .051	0	y 80	33235.431	39420	1096.767	2551.08	1...	H2-1
607	M320	L2.5x1.25x5	.103	1.444	77 .002	2.887	z 84	13646.766	29003.9...	340.889	1434.12	1...	H2-1
608	M673	L2.5x2.5x5	.102	1.25	66 .046	0	z 81	33235.431	39420	1096.767	2551.08	1...	H2-1
609	M427	L2.5x1.25x5	.053	1.25	84 .002	0	y 76	16480.621	29003.9...	340.889	1494.276	1...	H2-1
610	M426	L2.5x1.25x5	.051	1.25	83 .002	2.5	y 76	16480.621	29003.9...	340.889	1461.213	1...	H2-1
611	M397	L2.5x1.25x5	.051	1.25	83 .002	0	y 77	16480.621	29003.9...	340.889	1494.276	1...	H2-1
612	M396	L2.5x1.25x5	.049	1.25	84 .002	2.5	y 77	16480.621	29003.9...	340.889	1461.213	1...	H2-1
613	M411	L3x2.5x5	.047	2.5	84 .002	5	z 84	24430.323	44010	1270.778	2935.268	1...	H2-1
614	M410	L3x2.5x5	.045	2.5	84 .003	0	z 83	24430.323	44010	1270.778	2935.268	1...	H2-1
615	M420	L2.5x1.25x5	.043	1.25	83 .002	0	z 83	16480.621	29003.9...	340.889	1461.213	1...	H2-1
616	M403	L2.5x1.25x5	.040	1.25	83 .002	0	z 83	16480.621	29003.9...	340.889	1494.276	1...	H2-1
617	M421	L2.5x1.25x5	.038	1.25	84 .002	0	z 83	16480.621	29003.9...	340.889	1494.276	1...	H2-1
618	M417	L3x2.5x5	.036	2.5	84 .002	0	z 84	24430.323	44010	1270.778	2935.268	1...	H2-1
619	M428	L3x2.5x5	.036	2.5	83 .002	5	z 84	24430.323	44010	1270.778	2836.636	1...	H2-1
620	M399	L3x2.5x5	.036	2.5	84 .002	0	z 84	24430.323	44010	1270.778	2935.268	1...	H2-1
621	M402	L2.5x1.25x5	.035	1.25	83 .002	2.5	y 77	16480.621	29003.9...	340.889	1461.213	1...	H2-1
622	M414	L2.5x1.25x5	.034	1.25	83 .002	0	z 83	16480.621	29003.9...	340.889	1461.213	1...	H2-1
623	M415	L2.5x1.25x5	.033	1.25	84 .002	0	z 83	16480.621	29003.9...	340.889	1494.276	1...	H2-1
624	M429	L3x2.5x5	.032	2.5	84 .002	0	z 83	24430.323	44010	1270.778	2935.268	1...	H2-1
625	M398	L3x2.5x5	.032	2.5	83 .002	0	z 84	24430.323	44010	1270.778	2836.636	1...	H2-1
626	M422	L3x2.5x5	.031	2.5	84 .003	0	z 83	24430.323	44010	1270.778	2935.268	1...	H2-1



Company : B&V
 Designer : S.Suntum
 Job Number : 190704
 Model Name : Type 6 Structure

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 Checked By: _____

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[ft]	LC Shear	...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [...]	phi*Mn y...	phi*Mn z...	Cb	Eqn	
627	M416	L3x2.5x5	.031	2.5	84	.002	0	z	83	24430.323	44010	1270.778	2935.268	1...	H2-1
628	M423	L3x2.5x5	.031	2.5	83	.002	0	z	84	24430.323	44010	1270.778	2836.636	1...	H2-1
629	M405	L3x2.5x5	.030	2.5	83	.002	0	z	83	24430.323	44010	1270.778	2836.636	1...	H2-1
630	M408	L2.5x1.25x5	.030	1.25	83	.002	2.5	y	77	16480.621	29003.9...	340.889	1461.213	1...	H2-1
631	M409	L2.5x1.25x5	.029	1.25	83	.002	0	y	77	16480.621	29003.9...	340.889	1494.276	1...	H2-1
632	M404	L3x2.5x5	.029	2.5	83	.002	5	z	83	24430.323	44010	1270.778	2836.636	1...	H2-1