Structural Analysis
AT&T

March 30, 2022

Site Number	CLU2454 (CLL02454)
Site Name	USC Parking Structure A
FA Number	10101404
Proposed Carrier	AT&T
Site Location	1020 W. Downey Way Los Angeles, CA 90089 34.021222 N NAD83 -118.2899 W NAD83
Site Type	Rooftop
Structural Usage Ratio	**74.3%**
Overall Result	**Pass**

Upon reviewing the results of this analysis, it is our opinion that the structure does not meet the specified IBC/ASCE/TIA code requirements. The FRP Frame is therefore deemed inadequate to support the existing and proposed loading as listed in this report.

16885 Via Del Campo Ct., Suite 318, San Diego, CA 92127
Office Phone: 858.432.4112 I *www.cellsite.net*

Summary of Contents

Assumptions and Limitations

Our structural calculations are completed assuming all information provided to CELLSITE CONCEPTS is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of "like new" and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure's condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report CELLSITE CONCEPTS should be notified immediately to complete a revised evaluation.

Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. CELLSITE CONCEPTS is not responsible for decisions made by others that are or are not based on our supplied assumptions and conclusions.

INTRODUCTION

At the request of **AT&T**, CELLSITE CONCEPTS has performed a structural analysis for the proposed modifications. All supporting documents have been obtained from the client and are assumed to be accurate and applicable at this site. The FRP Frame was analyzed using Risa3D version 17.0.

Supporting Documentation

Antenna Loading	Cellsite Construction Drawings, Dated: 03/25/22

Analysis Code Requirements

Wind Speed	95 mph (Vult)
Wind Speed w/ ice	30 mph (3-Second Gust) w/ 0" ice
TIA Revision	ANSI/TIA-222-H
Adopted IBC	2018 IBC / 2016 CBC
Structure Class	2
Exposure Category	C
Topographic Category	1
Calculated Crest Height	0

CONCLUSION

Upon reviewing the results of this analysis, it is our opinion that the structure does not meet the specified IBC/ASCE/TIA code requirements. The FRP Frame is therefore deemed inadequate to support the existing and proposed loading as listed in this report.

Final Configuration

Mount Height (ft)	Qty.	Appurtenance	Mount Type	Carrier
77.6 & 77	3	Quintel QS4658-7	2" Std. Pipe Mount	AT&T
	3	Ericsson Air 6449 N77D		
	3	Commscope NNH4-65A-R6H4		
	3	Ericsson RRUS 4426 B66	P1000 Unistrut	
	3	Ericsson RRUS 4415 B25		
	3	Ericsson RRUS-4449 B5/B12		
	3	Ericsson RRUS-32 B30		
	3	CBC Splitter		
	3	Combiner		
	1	WCS Filter		
	2	DC9 Surge Suppression Unit		

Structure Usages

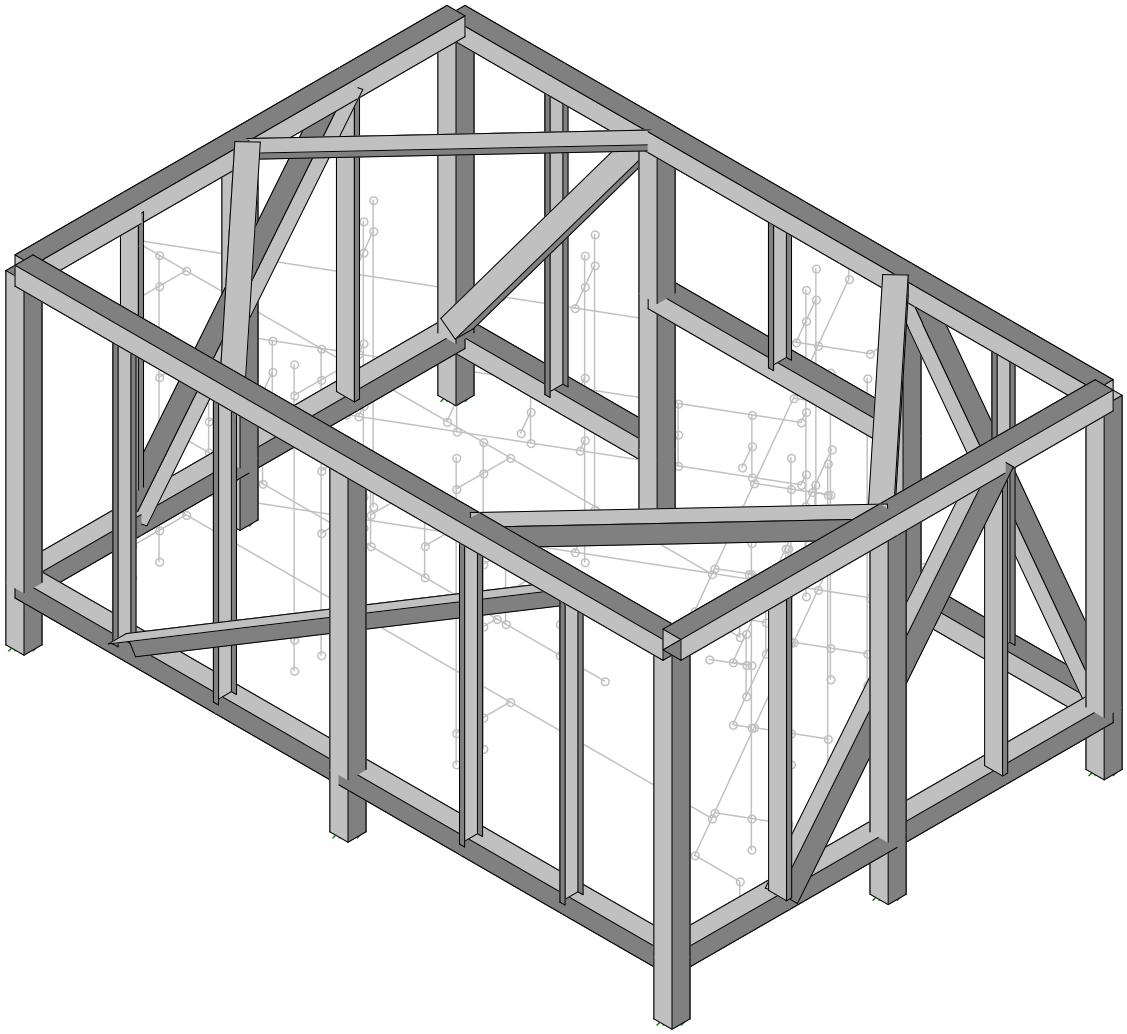
FRP C4X1.125X1/4"	.743
FRP HSS4X4X4	.460
FRP L4X4X4	.413

RESULTS = **74.3%**

Site Name:	CLU2454	Design Wind Velocity:	95.0
Client:	Cellsite	Wind Centerline:	77.5
Carrier:	AT&T	Exposure Category:	C
Date:	3/30/2022	Code	TIA-222-H

qz = 40.0 Fp = 0.91

Appurtenance Name	Quantity	Wind Force		Seismic Force	
		F-norm (lbs)	F-perp (lbs)	F-norm (lbs)	F-perp (lbs)
Quintel QS4658-7	3.0	111.2	92.3	97.0	97.0
Ericsson Air 6449 N77D	3.0	82.2	46.8	75.0	75.0
Commscope NNH4-65A-R6H4	3.0	196.6	90.8	67.1	67.1
Ericsson RRUS-4426 B66	3.0	40.5	24.9	54.5	54.5
Ericsson RRUS-4415 B25	3.0	40.5	24.9	38.6	38.6
Ericsson RRUS-4449 B5/B12	3.0	39.4	28.2	64.5	64.5
Ericsson RRUS-32 B30	3.0	40.5	24.9	54.5	54.5
CBC Splitter	3.0	11.1	7.7	18.5	18.5
WCS Filter	1.0	11.1	7.7	18.5	18.5
DC9 Surge Suppression Unit	2.0	58.1	58.1	29.8	29.8



Envelope Only Solution

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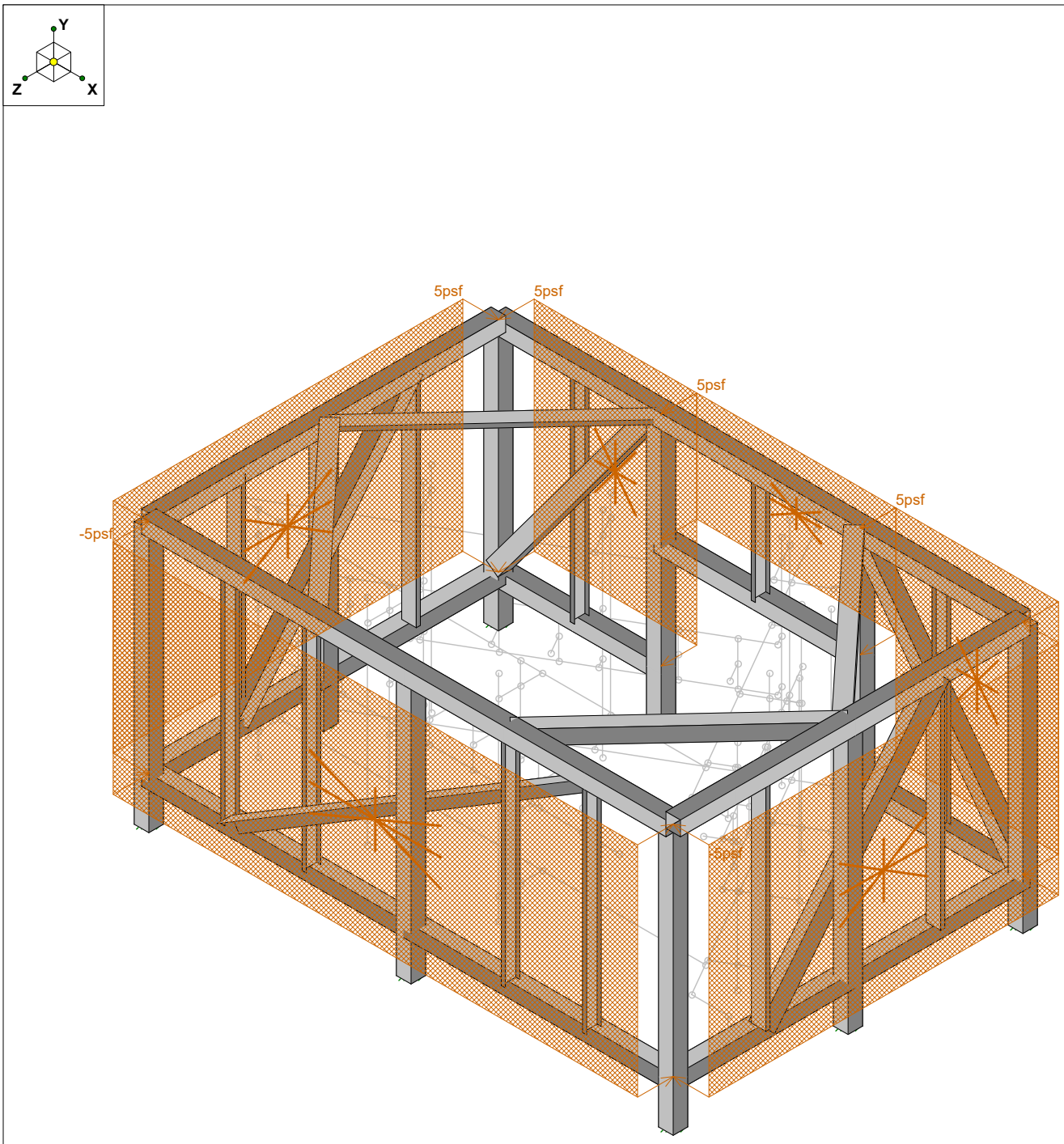

Loads: BLC 1, Self Weight
Envelope Only Solution

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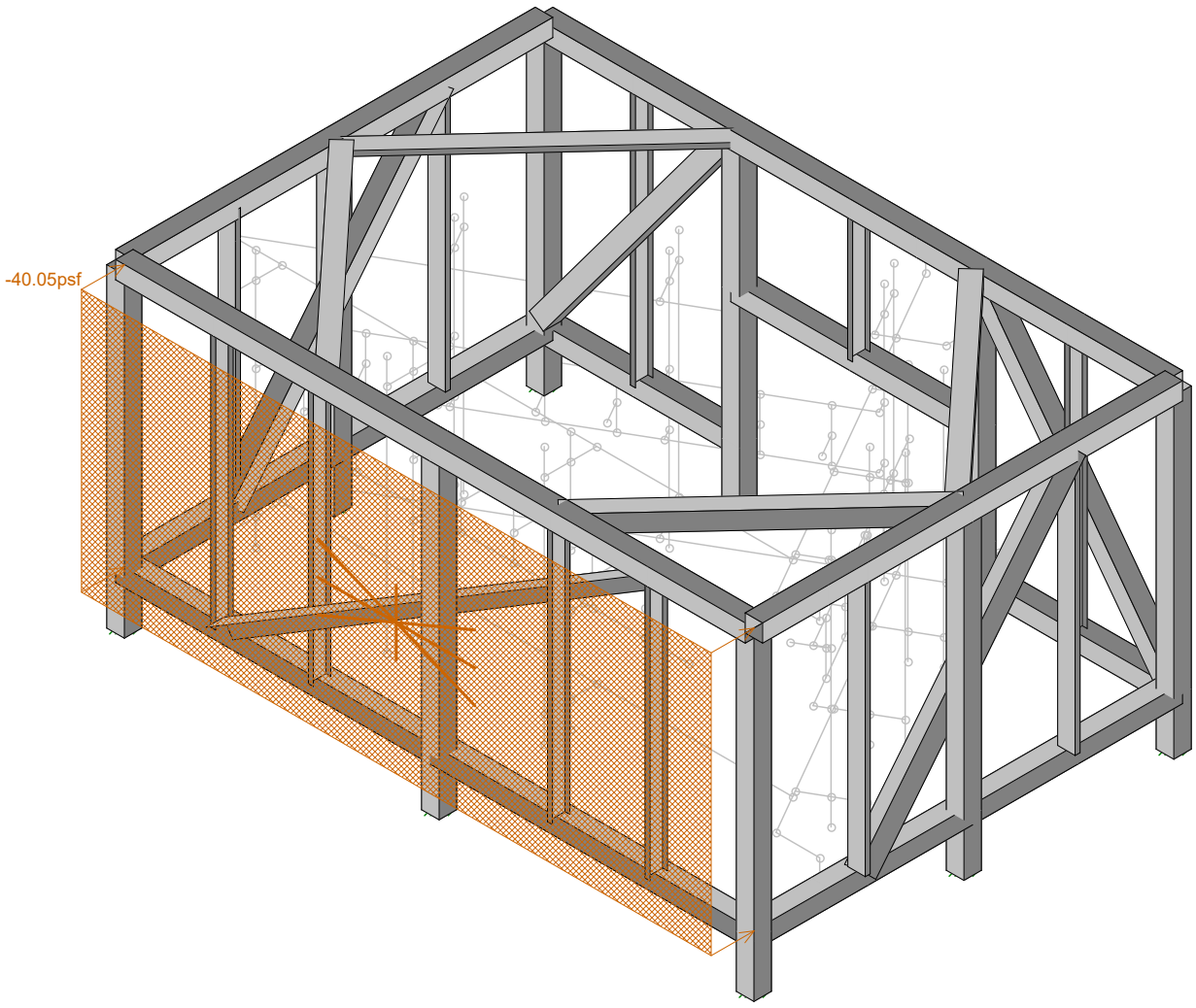

Loads: BLC 2, Wind Load AZI 000
Envelope Only Solution

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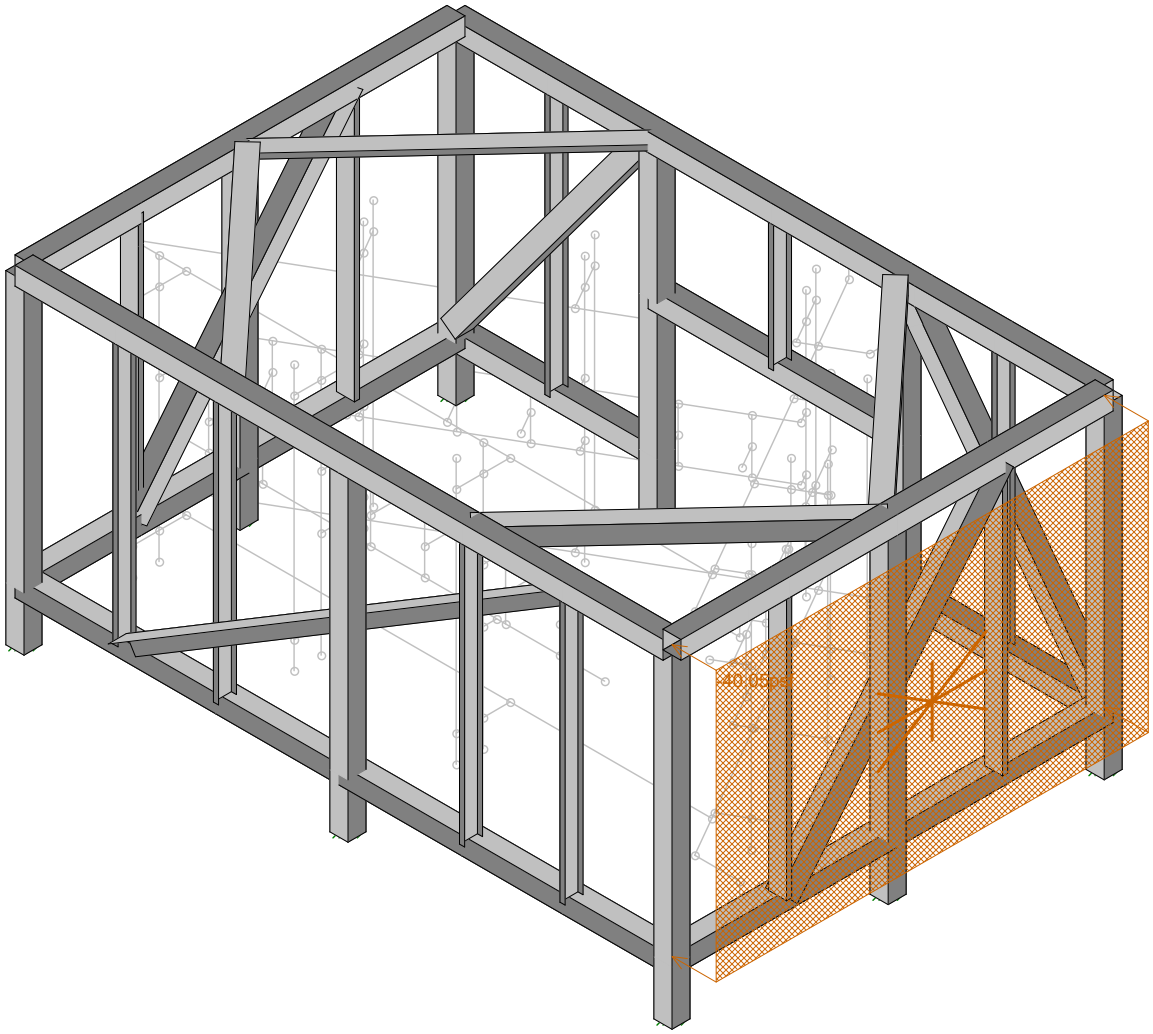

Loads: BLC 3, Wind Load AZI 090
Envelope Only Solution

Cellsite	CLL02454	SK - 6
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Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	FRP	10000	3333	.3	7	.07	12	1.5	12	1.2
2	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
4	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
5	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
6	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
7	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
8	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[ksi]	Fu[ksi]
1	A653 SS Gr33	29500	11346	.3	.65	.49	33	45
2	A653 SS Gr50/1	29500	11346	.3	.65	.49	50	65

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	FRP L4X4X4	FRP L4x4x4	None	None	FRP	Typical	1.938	3.039	3.039	.039
2	FRP HSS4X4X4	FRP HSS4x4x4	None	None	FRP	Typical	3.75	8.828	8.828	13.184
3	FRP C4x1.125x...	FRP C4x1.125x1...	None	None	FRP	Typical	1.438	.129	2.874	.027
4	L3X3X4	L3X3X4	None	None	A53 Gr.B	Typical	1.44	1.23	1.23	.031
5	PIPE_2.0	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	P1000 Unistrut	Unistrut P1...	Beam	CS	A653 SS G...	Typical	.533	.181	.245	.002

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N23A	-147.2	87.6	290.4	0	
2	N24A	-147.2	28.6	290.4	0	
3	N25	-147.2	34.6	284.4	0	
4	N26	-147.2	81.6	284.4	0	
5	N30	-147.2	81.6	290.4	0	
6	N32	-147.2	34.6	290.4	0	
7	N7	-147.2	87.6	284.4	0	
8	N8	-147.2	28.6	284.4	0	
9	N9	-147.2	34.6	278.4	0	
10	N11	-159.2	34.6	278.4	0	
11	N12	-30.396152	34.6	278.4	0	
12	N28	-159.2	87.6	302.4	0	
13	N29	-159.2	27.6	302.4	0	
14	N30A	-15.2	87.6	302.4	0	
15	N31	-15.2	27.6	302.4	0	
16	N41A	-147.2	81.6	278.4	0	
17	N43A	-159.2	81.6	278.4	0	
18	N44A	-30.396152	81.6	278.4	0	
19	N71	-147.2	64.1	284.4	0	
20	N72	-147.2	64.1	281.4	0	
21	N74	-51.2	64.1	281.4	0	
22	N85	-61.2	58.1	281.4	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
23	N86	-61.2	58.1	275.4	0	
24	N87	-147.2	52.1	284.4	0	
25	N88	-147.2	52.1	281.4	0	
26	N90	-51.2	52.1	281.4	0	
27	N99	-61.2	64.1	281.4	0	
28	N102	-61.2	52.1	281.4	0	
29	N85A	-159.2	87.6	206.4	0	
30	N86A	-159.2	27.6	206.4	0	
31	N87A	-15.2	87.6	206.4	0	
32	N88A	-15.2	27.6	206.4	0	
33	N89A	-159.2	87.6	278.4	0	
34	N90A	-159.2	27.6	278.4	0	
35	N91A	-15.2	87.6	278.4	0	
36	N92A	-15.2	27.6	278.4	0	
37	N93A	-159.2	87.6	254.4	0	
38	N94A	-159.2	27.6	254.4	0	
39	N95A	-15.2	87.6	254.4	0	
40	N96A	-15.2	27.6	254.4	0	
41	N97B	-159.2	87.6	230.4	0	
42	N98B	-159.2	27.6	230.4	0	
43	N99A	-15.2	87.6	230.4	0	
44	N100A	-15.2	27.6	230.4	0	
45	N101A	-136.868	87.6	302.4	0	
46	N102A	-136.868	27.6	302.4	0	
47	N103	-114.536	87.6	302.4	0	
48	N104	-114.536	27.6	302.4	0	
49	N105	-87.204	87.6	302.4	0	
50	N106	-87.204	27.6	302.4	0	
51	N107	-59.872	87.6	302.4	0	
52	N108	-59.872	27.6	302.4	0	
53	N109	-37.54	87.6	302.4	0	
54	N110	-37.54	27.6	302.4	0	
55	N111	-136.868	87.6	206.4	0	
56	N112	-136.868	27.6	206.4	0	
57	N113	-114.536	87.6	206.4	0	
58	N114	-114.536	27.6	206.4	0	
59	N115	-87.204	87.6	206.4	0	
60	N116	-87.204	57.6	206.4	0	
61	N117	-59.872	87.6	206.4	0	
62	N118	-59.872	27.6	206.4	0	
63	N119	-37.54	87.6	206.4	0	
64	N120	-37.54	27.6	206.4	0	
65	N121	-114.536	57.6	206.4	0	
66	N122	-59.872	57.6	206.4	0	
67	N123	-159.2	15.6	302.4	0	
68	N124	-15.2	15.6	302.4	0	
69	N125	-159.2	15.6	206.4	0	
70	N126	-15.2	15.6	206.4	0	
71	N127	-159.2	15.6	254.4	0	
72	N128	-15.2	15.6	254.4	0	
73	N129	-87.204	15.6	302.4	0	
74	N130	-114.536	15.6	206.4	0	
75	N131	-59.872	15.6	206.4	0	
76	N78	-111.2	87.6	290.4	0	
77	N79	-111.2	28.6	290.4	0	
78	N80	-111.2	34.6	284.4	0	
79	N81	-111.2	81.6	284.4	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
80	N82	-111.2	81.6	290.4	0	
81	N83	-111.2	34.6	290.4	0	
82	N84	-111.2	87.6	284.4	0	
83	N85B	-111.2	28.6	284.4	0	
84	N86B	-111.2	34.6	278.4	0	
85	N87B	-111.2	81.6	278.4	0	
86	N88B	-111.2	64.1	284.4	0	
87	N89B	-111.2	64.1	281.4	0	
88	N90B	-111.2	52.1	284.4	0	
89	N91	-111.2	52.1	281.4	0	
90	N92	-75.2	87.6	290.4	0	
91	N93	-75.2	28.6	290.4	0	
92	N94	-75.2	34.6	284.4	0	
93	N95	-75.2	81.6	284.4	0	
94	N96	-75.2	81.6	290.4	0	
95	N97	-75.2	34.6	290.4	0	
96	N98	-75.2	87.6	284.4	0	
97	N99B	-75.2	28.6	284.4	0	
98	N100	-75.2	34.6	278.4	0	
99	N101	-75.2	81.6	278.4	0	
100	N102B	-75.2	64.1	284.4	0	
101	N103A	-75.2	64.1	281.4	0	
102	N104A	-75.2	52.1	284.4	0	
103	N105A	-75.2	52.1	281.4	0	
104	N104B	-73.2	58.1	281.4	0	
105	N105B	-73.2	58.1	275.4	0	
106	N106A	-73.2	64.1	281.4	0	
107	N107A	-73.2	52.1	281.4	0	
108	N108A	-91.2	58.1	281.4	0	
109	N109A	-91.2	58.1	275.4	0	
110	N110A	-91.2	64.1	281.4	0	
111	N111A	-91.2	52.1	281.4	0	
112	N112A	-103.2	58.1	281.4	0	
113	N113A	-103.2	58.1	275.4	0	
114	N114A	-103.2	64.1	281.4	0	
115	N115A	-103.2	52.1	281.4	0	
116	N116A	-127.2	58.1	281.4	0	
117	N117A	-127.2	58.1	275.4	0	
118	N118A	-127.2	64.1	281.4	0	
119	N119A	-127.2	52.1	281.4	0	
120	N120A	-139.2	58.1	281.4	0	
121	N121A	-139.2	58.1	275.4	0	
122	N122A	-139.2	64.1	281.4	0	
123	N123A	-139.2	52.1	281.4	0	
124	N124A	-71.669256	87.6	214.007695	0	
125	N125A	-71.669256	28.6	214.007695	0	
126	N126A	-68.669256	34.6	219.203848	0	
127	N127A	-68.669256	81.6	219.203848	0	
128	N128A	-71.669256	81.6	214.007695	0	
129	N129A	-71.669256	34.6	214.007695	0	
130	N130A	-68.669256	87.6	219.203848	0	
131	N131A	-68.669256	28.6	219.203848	0	
132	N132	-65.669256	34.6	224.4	0	
133	N133	-55.276952	34.6	218.4	0	
134	N135	-65.669256	81.6	224.4	0	
135	N136	-55.276952	81.6	218.4	0	
136	N138	-68.669256	64.1	219.203848	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
137	N139	-67.169256	64.1	221.801924	0	
138	N140	-150.307695	64.1	269.801924	0	
139	N141	-141.647441	58.1	264.801924	0	
140	N142	-138.647441	58.1	269.998076	0	
141	N143	-68.669256	52.1	219.203848	0	
142	N144	-67.169256	52.1	221.801924	0	
143	N145	-150.307695	52.1	269.801924	0	
144	N146	-141.647441	64.1	264.801924	0	
145	N147	-141.647441	52.1	264.801924	0	
146	N148	-102.846171	87.6	232.007695	0	
147	N149	-102.846171	28.6	232.007695	0	
148	N150	-99.846171	34.6	237.203848	0	
149	N151	-99.846171	81.6	237.203848	0	
150	N152	-102.846171	81.6	232.007695	0	
151	N153	-102.846171	34.6	232.007695	0	
152	N154	-99.846171	87.6	237.203848	0	
153	N155	-99.846171	28.6	237.203848	0	
154	N156	-96.846171	34.6	242.4	0	
155	N157	-96.846171	81.6	242.4	0	
156	N158	-99.846171	64.1	237.203848	0	
157	N159	-98.346171	64.1	239.801924	0	
158	N160	-99.846171	52.1	237.203848	0	
159	N161	-98.346171	52.1	239.801924	0	
160	N162	-134.023085	87.6	250.007695	0	
161	N163	-134.023085	28.6	250.007695	0	
162	N164	-131.023085	34.6	255.203848	0	
163	N165	-131.023085	81.6	255.203848	0	
164	N166	-134.023085	81.6	250.007695	0	
165	N167	-134.023085	34.6	250.007695	0	
166	N168	-131.023085	87.6	255.203848	0	
167	N169	-131.023085	28.6	255.203848	0	
168	N170	-128.023085	34.6	260.4	0	
169	N171	-128.023085	81.6	260.4	0	
170	N172	-131.023085	64.1	255.203848	0	
171	N173	-129.523085	64.1	257.801924	0	
172	N174	-131.023085	52.1	255.203848	0	
173	N175	-129.523085	52.1	257.801924	0	
174	N176	-131.255136	58.1	258.801924	0	
175	N177	-128.255136	58.1	263.998076	0	
176	N178	-131.255136	64.1	258.801924	0	
177	N179	-131.255136	52.1	258.801924	0	
178	N180	-115.666679	58.1	249.801924	0	
179	N181	-112.666679	58.1	254.998076	0	
180	N182	-115.666679	64.1	249.801924	0	
181	N183	-115.666679	52.1	249.801924	0	
182	N184	-105.274374	58.1	243.801924	0	
183	N185	-102.274374	58.1	248.998076	0	
184	N186	-105.274374	64.1	243.801924	0	
185	N187	-105.274374	52.1	243.801924	0	
186	N188	-84.489764	58.1	231.801924	0	
187	N189	-81.489764	58.1	236.998076	0	
188	N190	-84.489764	64.1	231.801924	0	
189	N191	-84.489764	52.1	231.801924	0	
190	N192	-74.09746	58.1	225.801924	0	
191	N193	-71.09746	58.1	230.998076	0	
192	N194	-74.09746	64.1	225.801924	0	
193	N195	-74.09746	52.1	225.801924	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
194	N196	-107.238476	81.6	248.4	0	
195	N197	-20.807695	87.6	271.007695	0	
196	N198	-20.807695	28.6	271.007695	0	
197	N199	-26.003848	34.6	274.007695	0	
198	N200	-26.003848	81.6	274.007695	0	
199	N201	-20.807695	81.6	271.007695	0	
200	N202	-20.807695	34.6	271.007695	0	
201	N203	-26.003848	87.6	274.007695	0	
202	N204	-26.003848	28.6	274.007695	0	
203	N205	-31.2	34.6	277.007695	0	
204	N206	-25.2	34.6	287.4	0	
205	N207	-71.965372	34.6	206.4	0	
206	N208	-31.2	81.6	277.007695	0	
207	N209	-25.2	81.6	287.4	0	
208	N210	-71.965372	81.6	206.4	0	
209	N211	-26.003848	64.1	274.007695	0	
210	N212	-28.601924	64.1	275.507695	0	
211	N213	-58.601924	64.1	223.546171	0	
212	N214	-53.601924	58.1	232.206425	0	
213	N215	-58.798076	58.1	235.206425	0	
214	N216	-26.003848	52.1	274.007695	0	
215	N217	-28.601924	52.1	275.507695	0	
216	N218	-58.601924	52.1	223.546171	0	
217	N219	-53.601924	64.1	232.206425	0	
218	N220	-53.601924	52.1	232.206425	0	
219	N221	-32.807695	87.6	250.223085	0	
220	N222	-32.807695	28.6	250.223085	0	
221	N223	-38.003848	34.6	253.223085	0	
222	N224	-38.003848	81.6	253.223085	0	
223	N225	-32.807695	81.6	250.223085	0	
224	N226	-32.807695	34.6	250.223085	0	
225	N227	-38.003848	87.6	253.223085	0	
226	N228	-38.003848	28.6	253.223085	0	
227	N229	-43.2	34.6	256.223085	0	
228	N230	-43.2	81.6	256.223085	0	
229	N231	-38.003848	64.1	253.223085	0	
230	N232	-40.601924	64.1	254.723085	0	
231	N233	-38.003848	52.1	253.223085	0	
232	N234	-40.601924	52.1	254.723085	0	
233	N235	-44.807695	87.6	229.438476	0	
234	N236	-44.807695	28.6	229.438476	0	
235	N237	-50.003848	34.6	232.438476	0	
236	N238	-50.003848	81.6	232.438476	0	
237	N239	-44.807695	81.6	229.438476	0	
238	N240	-44.807695	34.6	229.438476	0	
239	N241	-50.003848	87.6	232.438476	0	
240	N242	-50.003848	28.6	232.438476	0	
241	N243	-55.2	34.6	235.438476	0	
242	N244	-55.2	81.6	235.438476	0	
243	N245	-50.003848	64.1	232.438476	0	
244	N246	-52.601924	64.1	233.938476	0	
245	N247	-50.003848	52.1	232.438476	0	
246	N248	-52.601924	52.1	233.938476	0	
247	N253	-50.601924	58.1	237.402577	0	
248	N254	-55.798076	58.1	240.402577	0	
249	N255	-50.601924	64.1	237.402577	0	
250	N256	-50.601924	52.1	237.402577	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
251	N257	-44.601924	58.1	247.794882	0	
252	N258	-49.798076	58.1	250.794882	0	
253	N259	-44.601924	64.1	247.794882	0	
254	N260	-44.601924	52.1	247.794882	0	
255	N261	-38.601924	58.1	258.187187	0	
256	N262	-43.798076	58.1	261.187187	0	
257	N263	-38.601924	64.1	258.187187	0	
258	N264	-38.601924	52.1	258.187187	0	
259	N265	-32.601924	58.1	268.579492	0	
260	N266	-37.798076	58.1	271.579492	0	
261	N267	-32.601924	64.1	268.579492	0	
262	N268	-32.601924	52.1	268.579492	0	
263	N269	-15.2	34.6	287.4	0	
264	N270	-15.2	81.6	287.4	0	
265	N265A	-15.2	87.6	287.4	0	
266	N266A	-15.2	27.6	287.4	0	
267	N267A	-62.597114	34.6	222.626298	0	
268	N268A	-62.597114	81.6	222.626298	0	
269	N269A	-55.276952	34.6	206.4	0	
270	N270A	-55.276952	81.6	206.4	0	
271	N271	-55.276952	87.6	206.4	0	
272	N272	-55.276952	27.6	206.4	0	
273	N273	-71.965372	87.6	206.4	0	
274	N274	-59.871972	34.6	206.4	0	

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M4	PIPE 2.0	59									Lateral
2	M6	L3X3X4	128.804	Segment	Segment							Lateral
3	M19A	L3X3X4	128.804	Segment	Segment							Lateral
4	M44A	FRP HSS4...	96	Segment	Segment							Lateral
5	M45A	FRP HSS4...	144	Segment	Segment							Lateral
6	M46A	FRP HSS4...	96	Segment	Segment							Lateral
7	M47A	FRP HSS4...	144	Segment	Segment							Lateral
8	M52A	FRP HSS4...	96	Segment	Segment							Lateral
9	M53	FRP HSS4...	144	Segment	Segment							Lateral
10	M54	FRP HSS4...	96	Segment	Segment							Lateral
11	M56	FRP C4x1.1...	60									Lateral
12	M57	FRP C4x1.1...	60									Lateral
13	M60	FRP C4x1.1...	60									Lateral
14	M61	FRP C4x1.1...	60									Lateral
15	M62	FRP C4x1.1...	60									Lateral
16	M63	FRP C4x1.1...	60									Lateral
17	M65	FRP C4x1.1...	60									Lateral
18	M66	FRP C4x1.1...	60									Lateral
19	M67	FRP L4X4X4	116.043									Lateral
20	M68	FRP C4x1.1...	60									Lateral
21	M70	FRP C4x1.1...	30									Lateral
22	M72	FRP C4x1.1...	60									Lateral
23	M72A	FRP HSS4...	44.664	Segment	Segment							Lateral
24	M73	FRP HSS4...	44.672	Segment	Segment							Lateral
25	M74	FRP HSS4...	54.664	Segment	Segment							Lateral
26	M66A	FRP HSS4...	72									Lateral
27	M67A	FRP HSS4...	72									Lateral
28	M68A	FRP HSS4...	72									Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
29	M69	FRP HSS4...	72									Lateral
30	M70A	FRP HSS4...	72									Lateral
31	M71	FRP HSS4...	72									Lateral
32	M72B	FRP HSS4...	72									Lateral
33	M73A	FRP HSS4...	72									Lateral
34	M74A	FRP HSS4...	72									Lateral
35	M75	FRP L4X4X4	74.799									Lateral
36	M76	FRP L4X4X4	74.804									Lateral
37	M77	FRP L4X4X4	65.566									Lateral
38	M78	FRP L4X4X4	65.566									Lateral
39	M79	FRP L4X4X4	65.571									Lateral
40	M80	FRP L4X4X4	65.571									Lateral
41	M81	FRP L4X4X4	76.837									Lateral
42	M82	FRP L4X4X4	76.837									Lateral
43	M57A	PIPE_2.0	59									Lateral
44	M65A	PIPE_2.0	59									Lateral
45	M83	PIPE_2.0	59									Lateral
46	M85	L3X3X4	120	Segment	Segment							Lateral
47	M87	L3X3X4	120	Segment	Segment							Lateral
48	M97	PIPE_2.0	59									Lateral
49	M105	PIPE_2.0	59									Lateral
50	M123	PIPE_2.0	59									Lateral
51	M125	L3X3X4	93.531	Segment	Segment							Lateral
52	M127	L3X3X4	93.531	Segment	Segment							Lateral
53	M137	PIPE_2.0	59									Lateral
54	M145	PIPE_2.0	59									Lateral

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N23A						
2	N24A						
3	N25						
4	N32						
5	N7						
6	N8						
7	N28						
8	N29						
9	N30A						
10	N31						
11	N11						
12	N12						
13	N43A						
14	N44A						
15	N85A						
16	N86A						
17	N87A						
18	N88A						
19	N89A						
20	N90A						
21	N91A						
22	N92A						
23	N93A						
24	N94A						
25	N95A						
26	N96A						

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
27	N97B						
28	N98B						
29	N99A						
30	N100A						
31	N101A						
32	N102A						
33	N103						
34	N104						
35	N105						
36	N106						
37	N107						
38	N108						
39	N109						
40	N110						
41	N111						
42	N112						
43	N113						
44	N114						
45	N115						
46	N116						
47	N117						
48	N118						
49	N119						
50	N120						
51	N121						
52	N122						
53	N123	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
54	N124	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
55	N125	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
56	N126	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
57	N127	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
58	N128	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
59	N129	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
60	N130	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
61	N131	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
62	N78						
63	N79						
64	N80						
65	N83						
66	N84						
67	N85B						
68	N92						
69	N93						
70	N94						
71	N97						
72	N98						
73	N99B						
74	N124A						
75	N125A						
76	N126A						
77	N129A						
78	N130A						
79	N131A						
80	N133						
81	N136						
82	N148						
83	N149						

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
84	N150						
85	N153						
86	N154						
87	N155						
88	N162						
89	N163						
90	N164						
91	N167						
92	N168						
93	N169						
94	N196						
95	N197						
96	N198						
97	N199						
98	N202						
99	N203						
100	N204						
101	N206						
102	N207						
103	N209						
104	N210						
105	N221						
106	N222						
107	N223						
108	N226						
109	N227						
110	N228						
111	N235						
112	N236						
113	N237						
114	N240						
115	N241						
116	N242						
117	N269						
118	N270						
119	N265A						
120	N266A						
121	N267A						
122	N268A						
123	N269A						
124	N270A						
125	N271						
126	N272						
127	N273						
128	N274						
129	N26						
130	N30						
131	N9						
132	N41A						
133	N71						
134	N72						
135	N74						
136	N85						
137	N86						
138	N87						
139	N88						
140	N90						

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
141	N99						
142	N102						
143	N81						
144	N82						
145	N86B						
146	N87B						
147	N88B						
148	N89B						
149	N90B						
150	N91						
151	N95						
152	N96						
153	N100						
154	N101						
155	N102B						
156	N103A						
157	N104A						
158	N105A						
159	N104B						
160	N105B						
161	N106A						
162	N107A						
163	N108A						
164	N109A						
165	N110A						
166	N111A						
167	N112A						
168	N113A						
169	N114A						
170	N115A						
171	N116A						
172	N117A						
173	N118A						
174	N119A						
175	N120A						
176	N121A						
177	N122A						
178	N123A						
179	N127A						
180	N128A						
181	N132						
182	N135						
183	N138						
184	N139						
185	N140						
186	N141						
187	N142						
188	N143						
189	N144						
190	N145						
191	N146						
192	N147						
193	N151						
194	N152						
195	N156						
196	N157						
197	N158						

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
198	N159						
199	N160						
200	N161						
201	N165						
202	N166						
203	N170						
204	N171						
205	N172						
206	N173						
207	N174						
208	N175						
209	N176						
210	N177						
211	N178						
212	N179						
213	N180						
214	N181						
215	N182						
216	N183						
217	N184						
218	N185						
219	N186						
220	N187						
221	N188						
222	N189						
223	N190						
224	N191						
225	N192						
226	N193						
227	N194						
228	N195						
229	N200						
230	N201						
231	N205						
232	N208						
233	N211						
234	N212						
235	N213						
236	N214						
237	N215						
238	N216						
239	N217						
240	N218						
241	N219						
242	N220						
243	N224						
244	N225						
245	N229						
246	N230						
247	N231						
248	N232						
249	N233						
250	N234						
251	N238						
252	N239						
253	N243						
254	N244						

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
255	N245						
256	N246						
257	N247						
258	N248						
259	N253						
260	N254						
261	N255						
262	N256						
263	N257						
264	N258						
265	N259						
266	N260						
267	N261						
268	N262						
269	N263						
270	N264						
271	N265						
272	N266						
273	N267						
274	N268						

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	Self Weight	DL		-1.05			42		6	
2	Wind Load AZI 000	WLZ					42		1	
3	Wind Load AZI 090	WLX					42		1	
4	Ice Weight	OL1								
5	Wind + Ice Load AZI 000	OL2					42			
6	Wind + Ice Load AZI 090	OL3					42			
7	Service Live 1	LL								
8	Seismic Load AZI 000	ELZ			-.357		42			
9	Seismic Load AZI 090	ELX	-.357				42			
10	BLC 1 Transient Area Loads	None						175		
11	BLC 2 Transient Area Loads	None						39		
12	BLC 3 Transient Area Loads	None						41		

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	M3	Y	-41.7	0
2	M93	Y	-41.25	0
3	M94	Y	-36.93	0
4	M1	Y	-60	0
5	M2	Y	-60	0
6	M90	Y	-71	0
7	M91	Y	-60	0
8	M92	Y	-20.4	0
9	M44	Y	-20.4	0
10	M92	Y	-20.4	0
11	M1	Y	-32.8	0
12	M3	Y	-41.7	53
13	M93	Y	-41.25	53
14	M94	Y	-36.93	53
15	M80A	Y	-41.7	0
16	M80A	Y	-41.7	53

Member Point Loads (BLC 1 : Self Weight) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
17	M90A	Y	-20.4	0
18	M94A	Y	-41.25	0
19	M94A	Y	-41.25	53
20	M102	Y	-36.93	0
21	M102	Y	-36.93	53
22	M110	Y	-20.4	0
23	M110	Y	-20.4	0
24	M112	Y	-60	0
25	M114	Y	-71	0
26	M116	Y	-60	0
27	M118	Y	-60	0
28	M118	Y	-32.8	0
29	M120	Y	-41.7	0
30	M120	Y	-41.7	53
31	M130	Y	-20.4	0
32	M134	Y	-41.25	0
33	M134	Y	-41.25	53
34	M142	Y	-36.93	0
35	M142	Y	-36.93	53
36	M150	Y	-20.4	0
37	M150	Y	-20.4	0
38	M152	Y	-60	0
39	M154	Y	-71	0
40	M156	Y	-60	0
41	M158	Y	-60	0
42	M158	Y	-32.8	0

Member Point Loads (BLC 2 : Wind Load AZI 000)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	M3	Z	-55.59	0
2	M93	Z	-41.12	0
3	M94	Z	-98.3	0
4	M1	Z	-40.47	0
5	M2	Z	-40.47	0
6	M90	Z	-39.39	0
7	M91	Z	-40.47	0
8	M92	Z	-11.08	0
9	M44	Z	-11.08	0
10	M92	Z	-11.08	0
11	M1	Z	-58.08	0
12	M3	Z	-55.59	53
13	M93	Z	-41.12	53
14	M94	Z	-98.3	53
15	M80A	Z	-55.59	0
16	M80A	Z	-55.59	53
17	M90A	Z	-11.08	0
18	M94A	Z	-41.12	0
19	M94A	Z	-41.12	53
20	M102	Z	-98.3	0
21	M102	Z	-98.3	53
22	M110	Z	-11.08	0
23	M110	Z	-11.08	0
24	M112	Z	-40.47	0
25	M114	Z	-39.39	0
26	M116	Z	-40.47	0
27	M118	Z	-40.47	0

Member Point Loads (BLC 2 : Wind Load AZI 000) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
28	M118	Z	-58.08	0
29	M120	Z	-55.59	0
30	M120	Z	-55.59	53
31	M130	Z	-11.08	0
32	M134	Z	-41.12	0
33	M134	Z	-41.12	53
34	M142	Z	-98.3	0
35	M142	Z	-98.3	53
36	M150	Z	-11.08	0
37	M150	Z	-11.08	0
38	M152	Z	-40.47	0
39	M154	Z	-39.39	0
40	M156	Z	-40.47	0
41	M158	Z	-40.47	0
42	M158	Z	-58.08	0

Member Point Loads (BLC 3 : Wind Load AZI 090)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	M3	X	-46.15	0
2	M93	X	-23.39	0
3	M94	X	-45.39	0
4	M1	X	-24.95	0
5	M2	X	-24.95	0
6	M90	X	-28.19	0
7	M91	X	-24.95	0
8	M92	X	-7.7	0
9	M44	X	-7.7	0
10	M92	X	-7.7	0
11	M1	X	-58.08	0
12	M3	X	-46.15	53
13	M93	X	-23.39	53
14	M94	X	-45.39	53
15	M80A	X	-46.15	0
16	M80A	X	-46.15	53
17	M90A	X	-7.7	0
18	M94A	X	-23.39	0
19	M94A	X	-23.39	53
20	M102	X	-45.39	0
21	M102	X	-45.39	53
22	M110	X	-7.7	0
23	M110	X	-7.7	0
24	M112	X	-24.95	0
25	M114	X	-28.19	0
26	M116	X	-24.95	0
27	M118	X	-24.95	0
28	M118	X	-58.08	0
29	M120	X	-46.15	0
30	M120	X	-46.15	53
31	M130	X	-7.7	0
32	M134	X	-23.39	0
33	M134	X	-23.39	53
34	M142	X	-45.39	0
35	M142	X	-45.39	53
36	M150	X	-7.7	0
37	M150	X	-7.7	0
38	M152	X	-24.95	0

Member Point Loads (BLC 3 : Wind Load AZI 090) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
39	M154	X	-28.19	0
40	M156	X	-24.95	0
41	M158	X	-24.95	0
42	M158	X	-58.08	0

Member Point Loads (BLC 5 : Wind + Ice Load AZI 000)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	M3	Z	-9.86	0
2	M93	Z	-7.29	0
3	M94	Z	-17.43	0
4	M1	Z	-7.17	0
5	M2	Z	-7.17	0
6	M90	Z	-6.98	0
7	M91	Z	-7.17	0
8	M92	Z	-1.96	0
9	M44	Z	-1.96	0
10	M92	Z	-1.96	0
11	M1	Z	-10.3	0
12	M3	Z	-9.86	53
13	M93	Z	-7.29	53
14	M94	Z	-17.43	53
15	M80A	Z	-9.86	0
16	M80A	Z	-9.86	53
17	M90A	Z	-1.96	0
18	M94A	Z	-7.29	0
19	M94A	Z	-7.29	53
20	M102	Z	-17.43	0
21	M102	Z	-17.43	53
22	M110	Z	-1.96	0
23	M110	Z	-1.96	0
24	M112	Z	-7.17	0
25	M114	Z	-6.98	0
26	M116	Z	-7.17	0
27	M118	Z	-7.17	0
28	M118	Z	-10.3	0
29	M120	Z	-9.86	0
30	M120	Z	-9.86	53
31	M130	Z	-1.96	0
32	M134	Z	-7.29	0
33	M134	Z	-7.29	53
34	M142	Z	-17.43	0
35	M142	Z	-17.43	53
36	M150	Z	-1.96	0
37	M150	Z	-1.96	0
38	M152	Z	-7.17	0
39	M154	Z	-6.98	0
40	M156	Z	-7.17	0
41	M158	Z	-7.17	0
42	M158	Z	-10.3	0

Member Point Loads (BLC 6 : Wind + Ice Load AZI 090)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	M3	X	-8.18	0
2	M93	X	-4.15	0
3	M94	X	-8.05	0
4	M1	X	-4.42	0

Member Point Loads (BLC 6 : Wind + Ice Load AZI 090) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
5	M2	X	-4.42	0
6	M90	X	-5	0
7	M91	X	-4.42	0
8	M92	X	-1.37	0
9	M44	X	-1.37	0
10	M92	X	-1.37	0
11	M1	X	-10.3	0
12	M3	X	-8.18	53
13	M93	X	-4.15	53
14	M94	X	-8.05	53
15	M80A	X	-8.18	0
16	M80A	X	-8.18	53
17	M90A	X	-1.37	0
18	M94A	X	-4.15	0
19	M94A	X	-4.15	53
20	M102	X	-8.05	0
21	M102	X	-8.05	53
22	M110	X	-1.37	0
23	M110	X	-1.37	0
24	M112	X	-4.42	0
25	M114	X	-5	0
26	M116	X	-4.42	0
27	M118	X	-4.42	0
28	M118	X	-10.3	0
29	M120	X	-8.18	0
30	M120	X	-8.18	53
31	M130	X	-1.37	0
32	M134	X	-4.15	0
33	M134	X	-4.15	53
34	M142	X	-8.05	0
35	M142	X	-8.05	53
36	M150	X	-1.37	0
37	M150	X	-1.37	0
38	M152	X	-4.42	0
39	M154	X	-5	0
40	M156	X	-4.42	0
41	M158	X	-4.42	0
42	M158	X	-10.3	0

Member Point Loads (BLC 8 : Seismic Load AZI 000)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	M3	Z	-48.5	0
2	M93	Z	-37.5	0
3	M94	Z	-33.57	0
4	M1	Z	-54.54	0
5	M2	Z	-38.59	0
6	M90	Z	-64.54	0
7	M91	Z	-54.54	0
8	M92	Z	-18.54	0
9	M44	Z	-18.54	0
10	M92	Z	-18.54	0
11	M1	Z	-29.82	0
12	M3	Z	-48.5	53
13	M93	Z	-37.5	53
14	M94	Z	-33.57	53
15	M80A	Z	-48.5	0

Member Point Loads (BLC 8 : Seismic Load AZI 000) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
16	M80A	Z	-48.5	53
17	M90A	Z	-18.54	0
18	M94A	Z	-37.5	0
19	M94A	Z	-37.5	53
20	M102	Z	-33.57	0
21	M102	Z	-33.57	53
22	M110	Z	-18.54	0
23	M110	Z	-18.54	0
24	M112	Z	-54.54	0
25	M114	Z	-64.54	0
26	M116	Z	-38.59	0
27	M118	Z	-54.54	0
28	M118	Z	-29.82	0
29	M120	Z	-48.5	0
30	M120	Z	-48.5	53
31	M130	Z	-18.54	0
32	M134	Z	-37.5	0
33	M134	Z	-37.5	53
34	M142	Z	-33.57	0
35	M142	Z	-33.57	53
36	M150	Z	-18.54	0
37	M150	Z	-18.54	0
38	M152	Z	-54.54	0
39	M154	Z	-64.54	0
40	M156	Z	-38.59	0
41	M158	Z	-54.54	0
42	M158	Z	-29.82	0

Member Point Loads (BLC 9 : Seismic Load AZI 090)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	M3	X	-48.5	0
2	M93	X	-37.5	0
3	M94	X	-33.57	0
4	M1	X	-54.54	0
5	M2	X	-38.59	0
6	M90	X	-64.54	0
7	M91	X	-54.54	0
8	M92	X	-18.54	0
9	M44	X	-18.54	0
10	M92	X	-18.54	0
11	M1	X	-29.82	0
12	M3	X	-48.5	53
13	M93	X	-37.5	53
14	M94	X	-33.57	53
15	M80A	X	-48.5	0
16	M80A	X	-48.5	53
17	M90A	X	-18.54	0
18	M94A	X	-37.5	0
19	M94A	X	-37.5	53
20	M102	X	-33.57	0
21	M102	X	-33.57	53
22	M110	X	-18.54	0
23	M110	X	-18.54	0
24	M112	X	-54.54	0
25	M114	X	-64.54	0
26	M116	X	-38.59	0

Member Point Loads (BLC 9 : Seismic Load AZI 090) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
27	M118	X	-54.54	0
28	M118	X	-29.82	0
29	M120	X	-48.5	0
30	M120	X	-48.5	53
31	M130	X	-18.54	0
32	M134	X	-37.5	0
33	M134	X	-37.5	53
34	M142	X	-33.57	0
35	M142	X	-33.57	53
36	M150	X	-18.54	0
37	M150	X	-18.54	0
38	M152	X	-54.54	0
39	M154	X	-64.54	0
40	M156	X	-38.59	0
41	M158	X	-54.54	0
42	M158	X	-29.82	0

Member Area Loads (BLC 1 : Self Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N28	N30A	N31	N29	Z	Two Way	-5
2	N85A	N86A	N114	N113	Z	Two Way	5
3	N113	N117	N122	N121	Z	Two Way	5
4	N117	N87A	N88A	N118	Z	Two Way	5
5	N85A	N28	N29	N86A	X	Two Way	5
6	N30A	N87A	N88A	N31	X	Two Way	-5

Member Area Loads (BLC 2 : Wind Load AZI 000)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N28	N30A	N31	N29	Z	Two Way	-40.05

Member Area Loads (BLC 3 : Wind Load AZI 090)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N30A	N87A	N88A	N31	X	Two Way	-40.05

Load Combinations

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	1.4D	Yes	Y		DL	1.4																				
2	1.2D + 1W..	Yes	Y		DL	1.2	WLZ	1																		
3	1.2D + 1W..	Yes	Y		DL	1.2	WLZ	.866	W...	.5																
4	1.2D + 1W..	Yes	Y		DL	1.2	WLZ	.5	W...	.866																
5	1.2D + 1W..	Yes	Y		DL	1.2			W...	1																
6	1.2D + 1W..	Yes	Y		DL	1.2	WLZ	-.5	W...	.866																
7	1.2D + 1W..	Yes	Y		DL	1.2	WLZ	-.866	W...	.5																
8	1.2D + 1W..	Yes	Y		DL	1.2	WLZ	-1																		
9	1.2D + 1W..	Yes	Y		DL	1.2	WLZ	-.866	W...	-.5																
10	1.2D + 1W..	Yes	Y		DL	1.2	WLZ	-.5	W...	-.866																
11	1.2D + 1W..	Yes	Y		DL	1.2			W...	-1																
12	1.2D + 1W..	Yes	Y		DL	1.2	WLZ	.5	W...	-.866																
13	1.2D + 1W..	Yes	Y		DL	1.2	WLZ	.866	W...	-.5																
14	0.9D + 1W..	Yes	Y		DL	.9	WLZ	1																		
15	0.9D + 1W..	Yes	Y		DL	.9	WLZ	.866	W...	.5																
16	0.9D + 1W..	Yes	Y		DL	.9	WLZ	.5	W...	.866																
17	0.9D + 1W..	Yes	Y		DL	.9			W...	1																

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
18	0.9D + 1W..	Yes	Y		DL	.9	WLZ	-.5	W...	.866														
19	0.9D + 1W..	Yes	Y		DL	.9	WLZ	-.866	W...	.5														
20	0.9D + 1W..	Yes	Y		DL	.9	WLZ	-1																
21	0.9D + 1W..	Yes	Y		DL	.9	WLZ	-.866	W...	-.5														
22	0.9D + 1W..	Yes	Y		DL	.9	WLZ	-.5	W...	-.866														
23	0.9D + 1W..	Yes	Y		DL	.9			W...	-1														
24	0.9D + 1W..	Yes	Y		DL	.9	WLZ	.5	W...	-.866														
25	0.9D + 1W..	Yes	Y		DL	.9	WLZ	.866	W...	-.5														
26	1.2D + 1.0..	Yes	Y		DL	1.2	OL1	1																
27	1.2D + 1.0..	Yes	Y		DL	1.2	OL1	1	OL2	1														
28	1.2D + 1.0..	Yes	Y		DL	1.2	OL1	1	OL2	.866	OL3	.5												
29	1.2D + 1.0..	Yes	Y		DL	1.2	OL1	1	OL2	.5	OL3	.866												
30	1.2D + 1.0..	Yes	Y		DL	1.2	OL1	1			OL3	1												
31	1.2D + 1.0..	Yes	Y		DL	1.2	OL1	1	OL2	-.5	OL3	.866												
32	1.2D + 1.0..	Yes	Y		DL	1.2	OL1	1	OL2	-.866	OL3	.5												
33	1.2D + 1.0..	Yes	Y		DL	1.2	OL1	1	OL2	-1														
34	1.2D + 1.0..	Yes	Y		DL	1.2	OL1	1	OL2	-.866	OL3	-.5												
35	1.2D + 1.0..	Yes	Y		DL	1.2	OL1	1	OL2	-.5	OL3	-.866												
36	1.2D + 1.0..	Yes	Y		DL	1.2	OL1	1			OL3	-1												
37	1.2D + 1.0..	Yes	Y		DL	1.2	OL1	1	OL2	.5	OL3	-.866												
38	1.2D + 1.0..	Yes	Y		DL	1.2	OL1	1	OL2	.866	OL3	-.5												
39	1.2D + 1.5..	Yes	Y		DL	1.2	LL	1.5	WLZ	.109														
40	1.2D + 1.5..	Yes	Y		DL	1.2	LL	1.5	WLZ	.094	W...	.054												
41	1.2D + 1.5..	Yes	Y		DL	1.2	LL	1.5	WLZ	.054	W...	.094												
42	1.2D + 1.5..	Yes	Y		DL	1.2	LL	1.5			W...	.109												
43	1.2D + 1.5..	Yes	Y		DL	1.2	LL	1.5	WLZ	-.054	W...	.094												
44	1.2D + 1.5..	Yes	Y		DL	1.2	LL	1.5	WLZ	-.094	W...	.054												
45	1.2D + 1.5..	Yes	Y		DL	1.2	LL	1.5	WLZ	-.109														
46	1.2D + 1.5..	Yes	Y		DL	1.2	LL	1.5	WLZ	-.094	W...	-.054												
47	1.2D + 1.5..	Yes	Y		DL	1.2	LL	1.5	WLZ	-.054	W...	-.094												
48	1.2D + 1.5..	Yes	Y		DL	1.2	LL	1.5			W...	-.109												
49	1.2D + 1.5..	Yes	Y		DL	1.2	LL	1.5	WLZ	.054	W...	-.094												
50	1.2D + 1.5..	Yes	Y		DL	1.2	LL	1.5	WLZ	.094	W...	-.054												
51	(1.2+0.2S...	Yes	Y		DL	1.364	ELZ	1																
52	(1.2+0.2S...	Yes	Y		DL	1.364	ELZ	.866	ELX	.5														
53	(1.2+0.2S...	Yes	Y		DL	1.364	ELZ	.5	ELX	.866														
54	(1.2+0.2S...	Yes	Y		DL	1.364			ELX	1														
55	(1.2+0.2S...	Yes	Y		DL	1.364	ELZ	-.5	ELX	.866														
56	(1.2+0.2S...	Yes	Y		DL	1.364	ELZ	-.866	ELX	.5														
57	(1.2+0.2S...	Yes	Y		DL	1.364	ELZ	-1																
58	(1.2+0.2S...	Yes	Y		DL	1.364	ELZ	-.866	ELX	-.5														
59	(1.2+0.2S...	Yes	Y		DL	1.364	ELZ	-.5	ELX	-.866														
60	(1.2+0.2S...	Yes	Y		DL	1.364			ELX	-1														
61	(1.2+0.2S...	Yes	Y		DL	1.364	ELZ	.5	ELX	-.866														
62	(1.2+0.2S...	Yes	Y		DL	1.364	ELZ	.866	ELX	-.5														
63	(0.9-0.2Sd..	Yes	Y		DL	.736	ELZ	1																
64	(0.9-0.2Sd..	Yes	Y		DL	.736	ELZ	.866	ELX	.5														
65	(0.9-0.2Sd..	Yes	Y		DL	.736	ELZ	.5	ELX	.866														
66	(0.9-0.2Sd..	Yes	Y		DL	.736			ELX	1														
67	(0.9-0.2Sd..	Yes	Y		DL	.736	ELZ	-.5	ELX	.866														
68	(0.9-0.2Sd..	Yes	Y		DL	.736	ELZ	-.866	ELX	.5														
69	(0.9-0.2Sd..	Yes	Y		DL	.736	ELZ	-1																
70	(0.9-0.2Sd..	Yes	Y		DL	.736	ELZ	-.866	ELX	-.5														
71	(0.9-0.2Sd..	Yes	Y		DL	.736	ELZ	-.5	ELX	-.866														
72	(0.9-0.2Sd..	Yes	Y		DL	.736			ELX	-1														
73	(0.9-0.2Sd..	Yes	Y		DL	.736	ELZ	.5	ELX	-.866														
74	(0.9-0.2Sd..	Yes	Y		DL	.736	ELZ	.866	ELX	-.5														

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N123	max	363.097	4	802.094	7	348.353	14	460.498	14	0	74	350.902	11
2		min	-350.422	22	-124.866	25	-491.075	8	-651.167	8	0	1	-327.806	17
3	N124	max	127.418	16	1531.431	8	374.555	14	513.956	14	0	74	456.657	10
4		min	-673.137	10	-435.663	14	-775.524	8	-838.33	8	0	1	-307.943	16
5	N125	max	298.272	6	746.091	4	348.282	14	365.827	14	.042	20	215.664	24
6		min	-232.47	24	-584.654	22	-469.812	8	-569.256	8	-.153	2	-262.192	6
7	N126	max	387.245	6	807.96	12	443.18	14	426.226	14	.141	54	357.182	24
8		min	-352.703	24	-781.804	18	-599.331	8	-666.155	8	-.005	72	-418.529	6
9	N127	max	452.466	54	873.394	55	401.314	2	417.845	14	160.583	54	175.116	72
10		min	-138.934	72	387.914	73	-209.179	20	-574.919	8	-36.884	72	-365.976	54
11	N128	max	570.874	5	361.638	12	310.811	14	459.334	14	64.189	66	459.038	23
12		min	-494.663	23	117.893	18	-671.101	8	-748.856	8	-82.831	60	-611.506	5
13	N129	max	313.635	16	82.272	1	858.769	2	954.264	2	7.198	15	351.04	10
14		min	-322.595	10	42.746	63	-681.382	20	-851.654	20	-19.329	9	-305.577	16
15	N130	max	203.6	6	530.388	24	-11.205	63	66.682	14	12.457	58	186.831	24
16		min	-181.866	24	-658.371	6	-56.81	57	-218.136	8	-11.568	64	-225.045	6
17	N131	max	455.242	6	1717.652	4	1504.113	2	788.718	2	90.008	53	347.991	24
18		min	-424.205	24	128.738	22	-504.394	20	-639.47	20	-86.001	71	-398.047	6
19	Totals:	max	2844.229	5	3696.388	1	4397.806	2						
20		min	-2844.225	23	1942.187	71	-4278.2...	20						

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotati...	LC	Y Rotati...	LC	Z Rotati...	LC
1	N28	max	.025	11	0	25	.071	8	2.907e-4	20	0	74	1.565e-4	19
2		min	-.018	17	-.001	7	-.037	14	-1.263e-3	2	0	1	-1.099e-3	13
3	N29	max	.004	11	0	25	.007	8	8.266e-4	8	0	74	3.015e-4	17
4		min	-.003	17	0	7	-.005	14	-5.838e-4	14	0	1	-3.612e-4	11
5	N30A	max	.023	11	0	14	.058	8	2.897e-4	20	0	74	2.033e-3	8
6		min	-.018	17	-.002	8	-.048	14	-1.262e-3	2	0	1	7.449e-4	14
7	N31	max	.004	10	0	14	.009	8	9.176e-4	8	0	74	5.345e-4	4
8		min	-.004	16	0	8	-.006	14	-6.663e-4	14	0	1	-2.808e-4	22
9	N85A	max	.009	24	0	21	.07	8	1.642e-3	2	4.998e-7	2	1.567e-4	19
10		min	-.012	6	0	3	-.036	14	2.665e-4	20	-1.377e-7	20	-1.098e-3	13
11	N86A	max	.002	24	0	22	.006	8	6.818e-4	8	4.998e-7	2	2.303e-4	6
12		min	-.003	6	0	4	-.004	14	-3.908e-4	14	-1.377e-7	20	-2.029e-4	24
13	N87A	max	.01	24	0	19	.058	8	1.479e-3	13	1.675e-8	72	2.029e-3	8
14		min	-.014	6	0	13	-.047	14	5.142e-4	19	-4.631e-7	54	7.457e-4	14
15	N88A	max	.004	24	0	18	.007	8	7.476e-4	8	1.675e-8	72	4.598e-4	6
16		min	-.004	6	0	12	-.004	14	-4.17e-4	14	-4.631e-7	54	-3.691e-4	24
17	N89A	max	.038	11	.004	14	.071	8	5.288e-5	55	3.214e-4	14	1.565e-4	19
18		min	-.014	17	-.025	8	-.037	14	2.067e-5	73	-3.535e-4	8	-1.099e-3	13
19	N90A	max	.006	72	.006	14	.007	8	1.277e-4	8	5.174e-5	23	2.93e-4	5
20		min	-.02	54	-.027	8	-.005	14	2.158e-5	14	-9.305e-5	5	-2.884e-4	23
21	N91A	max	.029	11	.01	14	.058	8	1.899e-4	7	5.075e-5	72	2.032e-3	8
22		min	-.023	17	-.018	8	-.048	14	-4.604e-6	25	-5.043e-4	54	7.451e-4	14
23	N92A	max	.015	10	.011	14	.009	8	3.717e-4	9	4.469e-4	58	1.288e-3	53
24		min	-.013	16	-.02	8	-.006	14	-2.616e-5	15	-1.365e-4	64	3.424e-4	71
25	N93A	max	.029	10	0	72	.071	8	1.248e-3	8	6.131e-4	59	1.565e-4	19
26		min	-.018	16	-.001	54	-.037	14	-4.901e-4	14	-9.28e-5	65	-1.099e-3	13
27	N94A	max	.002	72	0	73	.007	8	9.868e-4	8	1.209e-4	72	2.981e-4	4
28		min	-.004	54	0	55	-.004	14	-4.705e-4	14	-5.263e-4	54	-2.286e-4	22
29	N95A	max	.031	11	0	19	.059	8	8.875e-4	8	2.692e-4	72	2.03e-3	8
30		min	-.015	17	0	12	-.047	14	-7.069e-4	14	-3.623e-4	54	7.456e-4	14
31	N96A	max	.005	23	0	18	.008	8	8.425e-4	8	2.714e-4	60	6.647e-4	5

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotati...	LC	Y Rotati...	LC	Z Rotati...	LC
32		min	-.006	5	0	12	-.005	14	-6.196e-4	14	-2.104e-4	66	-4.315e-4	23
33	N97B	max	.018	10	.017	8	.07	8	-3.999e-6	21	5.895e-4	9	1.567e-4	19
34		min	-.015	16	-.013	14	-.036	14	-5.082e-5	3	-3.319e-4	15	-1.098e-3	13
35	N98B	max	.002	52	.015	8	.006	8	-4.436e-7	21	3.876e-5	7	2.594e-4	5
36		min	0	70	-.011	14	-.004	14	-4.17e-5	3	-3.524e-5	25	-2.11e-4	23
37	N99A	max	.029	12	.014	20	.058	8	9.655e-6	19	5.235e-4	57	2.029e-3	8
38		min	-.019	18	-.015	2	-.047	14	-4.024e-5	13	-3.077e-5	63	7.457e-4	14
39	N100A	max	.005	23	.012	20	.007	8	-4.873e-6	18	3.611e-5	67	5.593e-4	5
40		min	-.008	5	-.012	2	-.005	14	-4.232e-5	12	-5.587e-5	61	-3.973e-4	23
41	N101A	max	.025	11	.01	11	.086	8	2.907e-4	20	2.784e-4	14	2.588e-4	11
42		min	-.018	17	-.009	17	-.048	14	-1.263e-3	2	-3.851e-4	8	-2.069e-4	17
43	N102A	max	.004	11	.011	11	.026	20	8.924e-4	8	5.536e-4	2	2.518e-4	11
44		min	-.003	17	-.01	17	-.03	2	-7.342e-4	14	-4.098e-4	20	-2.145e-4	17
45	N103	max	.024	11	.01	11	.087	8	2.907e-4	20	3.888e-4	12	2.016e-4	17
46		min	-.018	17	-.009	17	-.051	14	-1.263e-3	2	2.797e-6	18	-2.175e-4	11
47	N104	max	.004	10	.01	11	.023	20	9.585e-4	8	5.171e-4	20	2.283e-4	17
48		min	-.003	16	-.009	17	-.027	2	-8.842e-4	14	-6.372e-4	2	-2.496e-4	11
49	N105	max	.024	11	0	72	.078	8	2.901e-4	20	7.566e-4	62	3.521e-4	17
50		min	-.018	17	0	54	-.06	14	-1.263e-3	2	-2.717e-5	68	-4.619e-4	11
51	N106	max	.004	10	0	63	.009	20	1.043e-3	20	6.334e-5	9	3.194e-4	17
52		min	-.003	16	0	1	-.01	2	-1.072e-3	2	-2.359e-5	15	-4.033e-4	11
53	N107	max	.024	11	.008	17	.064	8	2.895e-4	20	4.406e-4	62	1.793e-4	17
54		min	-.018	17	-.012	11	-.062	14	-1.263e-3	2	-1.057e-4	68	-2.911e-4	11
55	N108	max	.004	10	.008	17	.021	20	9.931e-4	8	5.041e-4	2	1.675e-4	17
56		min	-.003	16	-.012	11	-.025	2	-9.154e-4	14	-4.221e-4	20	-2.846e-4	11
57	N109	max	.023	11	.008	17	.064	8	2.897e-4	20	9.632e-5	20	2.676e-4	11
58		min	-.018	17	-.013	11	-.063	14	-1.262e-3	2	-3.367e-4	2	-2.009e-4	17
59	N110	max	.004	10	.008	17	.022	20	9.553e-4	8	3.177e-4	20	2.819e-4	11
60		min	-.003	16	-.012	11	-.026	2	-7.909e-4	14	-5.022e-4	2	-1.942e-4	17
61	N111	max	.009	24	0	18	.055	8	1.642e-3	2	5.872e-4	9	5.314e-5	5
62		min	-.012	6	0	12	-.028	14	2.665e-4	20	-2.839e-4	15	-3.879e-5	23
63	N112	max	.002	24	0	18	.005	8	5.351e-4	8	7.685e-5	8	1.236e-5	5
64		min	-.002	6	0	12	-.002	14	-2.699e-4	14	-6.552e-5	14	-9.761e-6	23
65	N113	max	.009	24	.002	6	.049	8	1.642e-3	2	2.275e-4	64	2.164e-5	14
66		min	-.012	6	-.001	24	-.027	14	2.665e-4	20	-2.449e-4	58	-2.94e-5	8
67	N114	max	.002	24	0	6	.003	8	3.884e-4	8	3.791e-5	64	2.514e-4	6
68		min	-.002	6	0	24	0	14	-1.49e-4	14	-4.082e-5	58	-1.954e-4	24
69	N115	max	.01	24	0	14	.064	8	1.644e-3	2	3.617e-4	14	6.794e-5	24
70		min	-.013	6	-.001	8	-.036	14	2.659e-4	20	-6.356e-4	8	-1.014e-4	6
71	N116	max	.007	24	0	14	.031	8	9.743e-4	8	1.311e-4	63	1.801e-5	23
72		min	-.01	6	-.001	8	-.013	14	-5.181e-4	14	-3.096e-4	57	-4.366e-5	5
73	N117	max	.01	24	0	24	.072	8	1.524e-3	13	4.426e-4	72	1.855e-5	74
74		min	-.014	6	-.002	6	-.039	14	4.466e-4	19	-5.347e-4	54	-1.419e-4	56
75	N118	max	.003	24	0	22	.007	8	8.915e-4	8	2.818e-4	71	3.47e-4	6
76		min	-.004	6	0	4	-.007	14	-1.761e-4	14	-2.95e-4	53	-2.769e-4	24
77	N119	max	.01	24	0	63	.07	8	1.479e-3	13	5.855e-4	57	1.049e-4	55
78		min	-.014	6	-.002	57	-.042	14	5.142e-4	19	-4.352e-5	63	-3.853e-5	73
79	N120	max	.004	24	0	64	.011	55	9.391e-4	56	1.077e-4	67	5.664e-5	61
80		min	-.004	6	-.002	58	-.008	73	1.155e-4	74	-1.707e-4	61	-1.081e-5	67
81	N121	max	.007	24	0	6	.022	8	8.461e-4	8	1.327e-4	64	1.764e-4	6
82		min	-.01	6	0	24	-.01	14	-4.586e-4	14	-1.429e-4	58	-1.249e-4	24
83	N122	max	.007	24	0	23	.039	8	1.103e-3	8	4.312e-4	72	1.23e-4	5
84		min	-.01	6	-.001	5	-.016	14	-5.776e-4	14	-4.825e-4	54	-8.202e-5	23
85	N123	max	0	74	0	74	0	74	0	74	0	74	0	74
86		min	0	1	0	1	0	1	0	1	0	1	0	1
87	N124	max	0	74	0	74	0	74	0	74	0	74	0	74
88		min	0	1	0	1	0	1	0	1	0	1	0	1

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotati...	LC	Y Rotati...	LC	Z Rotati...	LC
89	N125	max	0	74	0	74	0	74	0	74	0	74	0	74
90		min	0	1	0	1	0	1	0	1	0	1	0	1
91	N126	max	0	74	0	74	0	74	0	74	0	74	0	74
92		min	0	1	0	1	0	1	0	1	0	1	0	1
93	N127	max	0	74	0	74	0	74	0	74	0	74	0	74
94		min	0	1	0	1	0	1	0	1	0	1	0	1
95	N128	max	0	74	0	74	0	74	0	74	0	74	0	74
96		min	0	1	0	1	0	1	0	1	0	1	0	1
97	N129	max	0	74	0	74	0	74	0	74	0	74	0	74
98		min	0	1	0	1	0	1	0	1	0	1	0	1
99	N130	max	0	74	0	74	0	74	0	74	0	74	0	74
100		min	0	1	0	1	0	1	0	1	0	1	0	1
101	N131	max	0	74	0	74	0	74	0	74	0	74	0	74
102		min	0	1	0	1	0	1	0	1	0	1	0	1

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

	Member	Shape	Code Check	Loc[in]	...	Shear C...	Loc...	...	...	phi*P...	phi*P...	phi*M...	phi*M...	...	Eqn
1	M56	FRP C4x1.125x1/4"	.743	53.125	56	.148	0	y	2	2800...	15525	224.8...	1638...	...	H1-1a
2	M54	FRP HSS4x4x4	.460	15	9	.167	0	y	9	4030...	40500	4753...	4753...	...	H1-1b
3	M67	FRP L4x4x4	.413	58.022	2	.026	11...	y	2	7085...	2093...	1070...	1735...	...	H2-1
4	M68A	FRP HSS4x4x4	.260	72	9	.074	60	z	8	3620...	40500	4753...	4753...	...	H1-1b
5	M52A	FRP HSS4x4x4	.252	72	7	.063	48	z	8	3999...	40500	4753...	4753...	...	H1-1b
6	M81	FRP L4x4x4	.250	38.419	6	.019	0	z	5	1242...	2093...	1070...	1981...	...	H2-1
7	M46A	FRP HSS4x4x4	.250	15	7	.058	0	y	8	4030...	40500	4753...	4753...	...	H1-1b
8	M71	FRP HSS4x4x4	.225	72	13	.153	60	z	2	3620...	40500	4753...	4753...	...	H1-1b
9	M67A	FRP HSS4x4x4	.223	72	3	.084	60	z	2	3620...	40500	4753...	4753...	...	H1-1b
10	M69	FRP HSS4x4x4	.223	72	7	.073	60	z	8	3620...	40500	4753...	4753...	...	H1-1b
11	M70A	FRP HSS4x4x4	.211	72	7	.057	60	z	8	3620...	40500	4753...	4753...	...	H1-1b
12	M44A	FRP HSS4x4x4	.205	72	59	.042	48	y	8	3999...	40500	4753...	4753...	...	H1-1b
13	M66A	FRP HSS4x4x4	.190	72	9	.047	60	z	8	3620...	40500	4753...	4753...	...	H1-1b
14	M76	FRP L4x4x4	.182	7.792	13	.009	0	z	5	1271...	2093...	1070...	2166...	...	H2-1
15	M73	FRP HSS4x4x4	.180	4.188	2	.311	0	y	2	4048...	40500	4753...	4753...	...	H1-1b
16	M66	FRP C4x1.125x1/4"	.171	31.25	2	.032	60	y	2	2800...	15525	224.8...	1420...	...	H1-1b
17	M62	FRP C4x1.125x1/4"	.171	28.75	2	.032	0	y	2	2800...	15525	224.8...	1420...	...	H1-1b
18	M61	FRP C4x1.125x1/4"	.161	32.5	4	.023	54...	y	5	2800...	15525	224.8...	1447...	...	H1-1b
19	M74A	FRP HSS4x4x4	.154	72	7	.085	72	y	54	3620...	40500	4753...	4753...	...	H1-1b
20	M57	FRP C4x1.125x1/4"	.153	28.75	5	.025	0	y	5	2800...	15525	224.8...	1440...	...	H1-1b
21	M65	FRP C4x1.125x1/4"	.150	34.375	2	.034	60	y	2	2800...	15525	224.8...	1423...	...	H1-1b
22	M73A	FRP HSS4x4x4	.150	72	7	.045	60	z	8	3620...	40500	4753...	4753...	...	H1-1b
23	M63	FRP C4x1.125x1/4"	.148	25.625	2	.035	0	y	2	2800...	15525	224.8...	1423...	...	H1-1b
24	M60	FRP C4x1.125x1/4"	.135	60	14	.004	60	y	60	2800...	15525	224.8...	1447...	...	H1-...
25	M47A	FRP HSS4x4x4	.122	39	55	.051	43.5	z	6	4022...	40500	4753...	4753...	...	H1-1b
26	M82	FRP L4x4x4	.114	38.419	8	.004	76...	z	62	1242...	2093...	1070...	1980...	...	H2-1
27	M53	FRP HSS4x4x4	.106	72	2	.036	70.5	y	2	3985...	40500	4753...	4753...	...	H1-1b
28	M75	FRP L4x4x4	.100	37.399	6	.004	74...	z	2	1271...	2093...	1070...	1997...	...	H2-1
29	M45A	FRP HSS4x4x4	.090	121.5	13	.020	10...	z	2	4006...	40500	4753...	4753...	...	H1-1b
30	M72B	FRP HSS4x4x4	.087	72	6	.020	60	y	6	3620...	40500	4753...	4753...	...	H1-1b
31	M79	FRP L4x4x4	.075	32.786	6	.003	0	z	8	1399...	2093...	1070...	2046...	...	H2-1
32	M77	FRP L4x4x4	.054	32.783	2	.002	0	z	8	1399...	2093...	1070...	2046...	...	H2-1
33	M80	FRP L4x4x4	.046	32.786	2	.002	0	z	60	1399...	2093...	1070...	2046...	...	H2-1
34	M72	FRP C4x1.125x1/4"	.042	60	55	.004	60	y	57	2800...	15525	224.8...	1408...	...	H1-...
35	M78	FRP L4x4x4	.031	32.783	9	.001	65...	z	2	1399...	2093...	1070...	2046...	...	H2-1
36	M68	FRP C4x1.125x1/4"	.016	30.625	60	.003	0	y	9	2800...	15525	224.8...	1425...	...	H1-1b
37	M72A	FRP HSS4x4x4	.010	22.332	12	.008	44...	z	8	4006...	40500	4753...	4753...	...	H1-1b
38	M74	FRP HSS4x4x4	.008	27.332	8	.006	54...	z	57	3985...	40500	4753...	4753...	...	H1-1b

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

Member	Shape	Code Check	Loc[in]	...	Shear C...	Loc...	...	...	phi*P...	phi*P...	phi*M...	phi*M...	...	Eqn
39	M70	FRP C4x1.125x1/4"	.006	14.687	54	.003	30	y	9	9334....	15525	224.8...	1638....	...	H1-1b

Envelope AISI S100-12: LRFD Cold Formed Steel Code Checks

Mem...	Shape	Code Check	Loc.....	Sh...	Lo...	...	...	phi*...	phi*T...	phi*...	phi*...	Cb	C...	C...	Eqn
No Data to Print ...															

APPENDIX A
Design Tables & Resources

Seismic Loads

Latitude and longitude were determined from existing as-builts, **AT&T** records, and confirmed using GoogleEarth. Design spectral acceleration parameters were optained using NSHMP Hazard, a program by USGS for determining seismic values within the continental US. Input data and program output are provided at the end of this report.

Latitude:	34.021222	º
Longitude:	-118.2899	º

S_s =	1.894	Site Class:	D
F_a =	1.20	Occupancy Category:	II
S_{MS} =	2.273	Importance Factor, I:	1.00
S_{DS} =	1.515	Seismic Design Catagory:	D
S_1 =	0.670	Amplification Factor, a_p:	1.0
F_v =	0.00	Response Factor, R_p:	2.5
S_{M1} =	0.000	z =	1.0 ft
S_{D1} =	0.000	h =	1.0 ft

Telecommunication cabinets and radio equipment are non-structural components to be designed under the provisions of ASCE 7-16 chapter 13.

(ASCE 7-16 13.3-3) $F_{p,\min} = 0.3 S_{DS} I_p W_p$ = 0.455 w_p

(ASCE 7-16 13.3-1) $F_p = \dfrac{0.4 a_p S_{DS} W_p}{\left(\dfrac{R_p}{I_p}\right)}\left(1 + 2\dfrac{z}{h}\right)$ = 0.727 w_p

(ASCE 7-16 13.3-2) $F_{p,\max} = 1.6 S_{DS} I_p W_p$ = 2.424 w_p

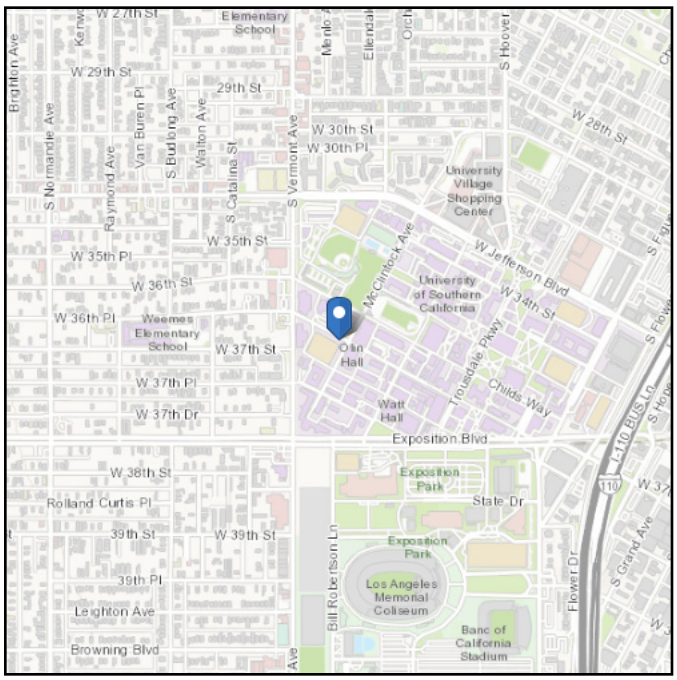
Use F_p = 0.727

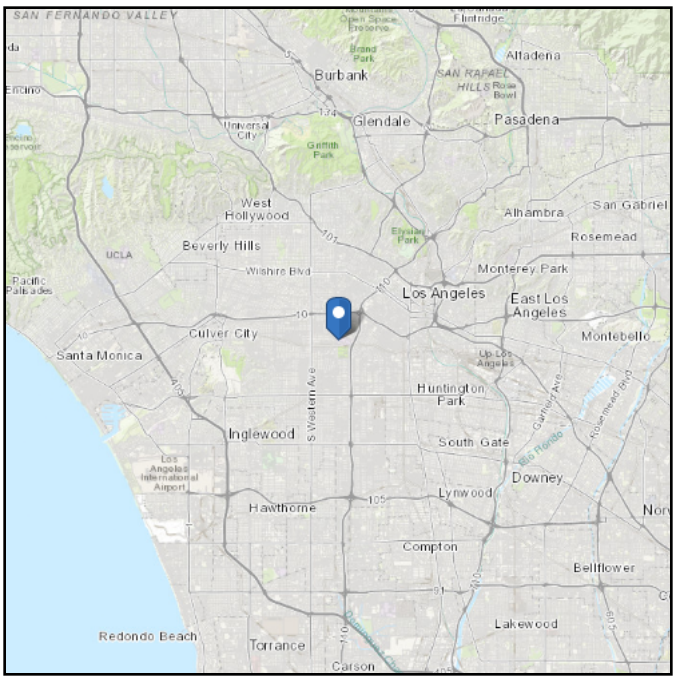
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 176.47 ft (NAVD 88)
Latitude: 34.021222
Longitude: -118.2899





Wind

Results:

Wind Speed	95 Vmph
10-year MRI	66 Vmph
25-year MRI	71 Vmph
50-year MRI	76 Vmph
100-year MRI	81 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Mon Mar 28 2022

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

Seismic

Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_S :	1.894	S_{D1} :	N/A
S_1 :	0.67	T_L :	8
F_a :	1.2	PGA :	0.807
F_v :	N/A	PGA_M :	0.969
S_{MS} :	2.273	F_{PGA} :	1.2
S_{M1} :	N/A	I_e :	1
S_{DS} :	1.515	C_v :	1.479

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Mon Mar 28 2022

Date Source: USGS Seismic Design Maps

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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